

# Driving Circularity

Birla Carbon  
Sustainability Report 2021

ADITYA BIRLA



BIRLA CARBON

# Our progress on circularity and sustainability in FY2021

At Birla Carbon, we have been sharing knowledge for over a century, creating carbon black which adds value to countless everyday products. We want our stakeholders to share in the strength of our product, the strength of our organization and the strength of our impact, as we continue to drive sustainability progress.

## About our report

Our ninth report includes performance highlights from April 2020 to March 2021 (FY2021) covering the full scope of our global operations. It contains a detailed analysis of performance against our Sustainable Operational Excellence (SOE) strategy over the past year and highlights specific targets for the future. Our enduring commitment to sustainability is exemplified by our series of Continua™ sustainability offerings and the launch of our [Continua™ 8000 product](#), a carbonaceous material that brings a circular solution to our customers and the wider value chain.

We document our journey through annual Sustainability Reports to promote transparency, continuing to learn through ongoing monitoring and evaluation of our approach.

We welcome suggestions and feedback from our stakeholders – including customers, employees and suppliers – as we work to fully embed sustainability-led thinking throughout our global business.

This report was approved by Birla Carbon's Senior Management Team and has been produced in accordance with the GRI Standards at Comprehensive level.

📄 For more information, read our [Global Reporting Initiative \(GRI\) content index](#), including references to the relevant Sustainable Development Goals (SDGs).

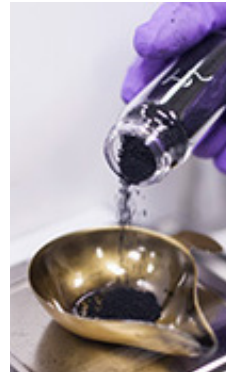
📄 For additional information, including our detailed materials map, please visit our [website](#).

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# Key highlights

FY2021



Birla Carbon became the **first carbon black multinational to receive IATF certification** across all its manufacturing sites.

Product quality

We were awarded a **Gold Rating** by EcoVadis for the fifth consecutive year.



Global recognition



**All our 11,000+ suppliers** screened using NAVEX Global's RiskRate® due diligence system.

Supplier management



Following the onset of COVID-19 we leveraged our global geographical footprint to ensure employees had access to personal protective equipment.

Health and safety



We have innovated to help our customers address the end-of-life tires challenge. Continua™ 8000 is our first Sustainable Carbonaceous Material designed to re-enter the economy as new tires, plastics or rubber compounds.

Continua™ 8000



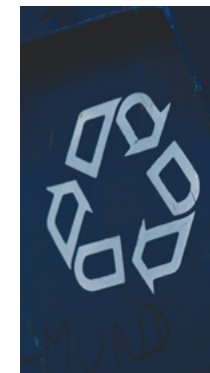
**WE SUPPORT**



We have recently become signatories of the **United Nations Global Compact (UNGC)**, committing to share the positive impact of our business with society.

**12 Birla Carbon sites received a Gold Award from ICBA** for their safety performance. For six of these sites, it was their third consecutive year receiving this recognition.

Health and safety



**8% improvement** against our waste repurposing KPI, reducing the amount of waste sent to landfill.

Waste management

# Our approach

Driven by our Purpose,  
Vision and Strategy

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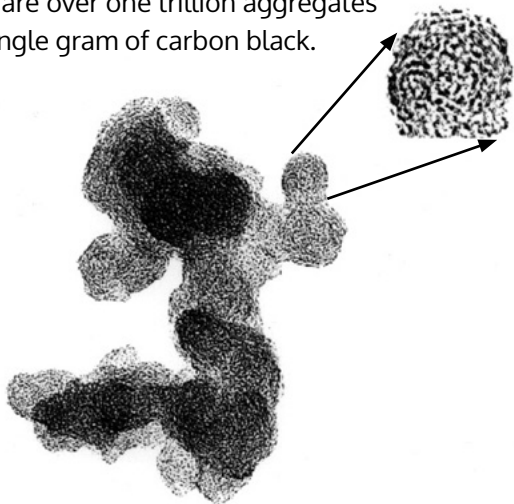
# Our approach

We are driven by our Vision and Strategy, leveraging the power of carbon black to create social value. For centuries, carbon black has played a vital, but often overlooked, role in making our lives better, advancing agriculture, aiding safer travel and improving the performance of everyday products.

We are sharing our knowledge with customers, finding new and sustainable carbon black solutions that support their business goals and our own.

## Did you know?

There are over one trillion aggregates in a single gram of carbon black.



## Building a global legacy

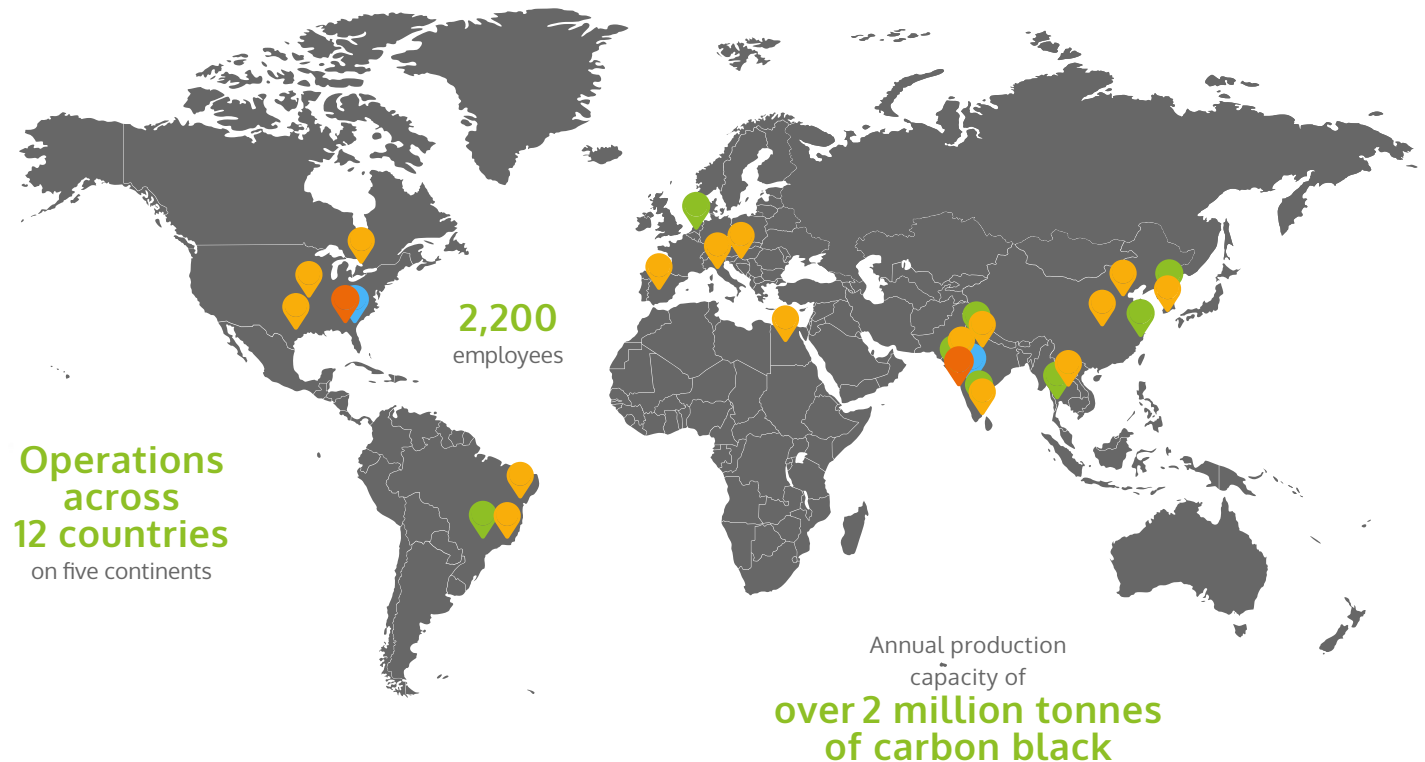
As the world's largest carbon black producer and supplier, we serve customers from across the globe and have an operational footprint that is just as large.

**2** corporate offices

**2** technology centers

**8** offices

**16** manufacturing facilities



## Global recognition

We take pride in the recognition we receive for our achievements on our journey towards Sustainable Operational Excellence.

### Global



We were awarded with the following:

- EcoVadis Gold rating for advanced sustainable practices;
- ICBA Gold awards for 12 plants and two research and development laboratories for industry-leading safety levels; and
- In May 2020, we became the first and only global carbon black manufacturer to achieve International Automotive Task Force (IATF) certification for all our sites.

### Santander, Spain



We were awarded a “Cantabria Occupational Road Safety Distinction” by The Cantabrian Institute for Safety and Health at Work (ICASST) for involvement in the “CIRCULA” Project. This initiative was launched in collaboration with the General Road Traffic Office of Cantabria to reduce and control traffic accidents during working hours.

### Weifang, China



We received the following recognition from the Dajia Wa subdistrict office, under the Binhai Economic Development Zone Governmental Office:

- Top 10 Tax Paying Enterprises;
- Advanced Enterprises on Safety Production and Environmental Protection; and
- Advanced Enterprises on Epidemic Prevention.

### Jining, China



**In 2020 we received an** Annual Site Management Star Enterprise – 4-star award from the Jining Bureau of Industry and Information Technology.

### Angthong, Thailand



Our plant received the following recognitions:

- Excellent Establishment on Labor Relations and Welfare Award 2020 (for the second consecutive year) from the Minister of Labor
- Excellent Establishment on Anti-Drug from the Governor of Angthong
- Excellent Establishment on Safety Zero Accidents from the Governor of Angthong
- The AMCHAM CSR Excellence Recognition Award for 2020 for CSR

### Patalganga, India



Received second prize for the Best Boiler User Award 2020 from the Directorate of Steam Boilers, Department of Labour, Government of Maharashtra.

# Our Vision

Our Vision is to be the most respected, sustainable and dynamic global carbon black business. As recent signatories to the United Nations Global Compact (UNGC), we aim to use both our scale and our diversity to fulfil this Vision.

## Our Purpose: Share the Strength

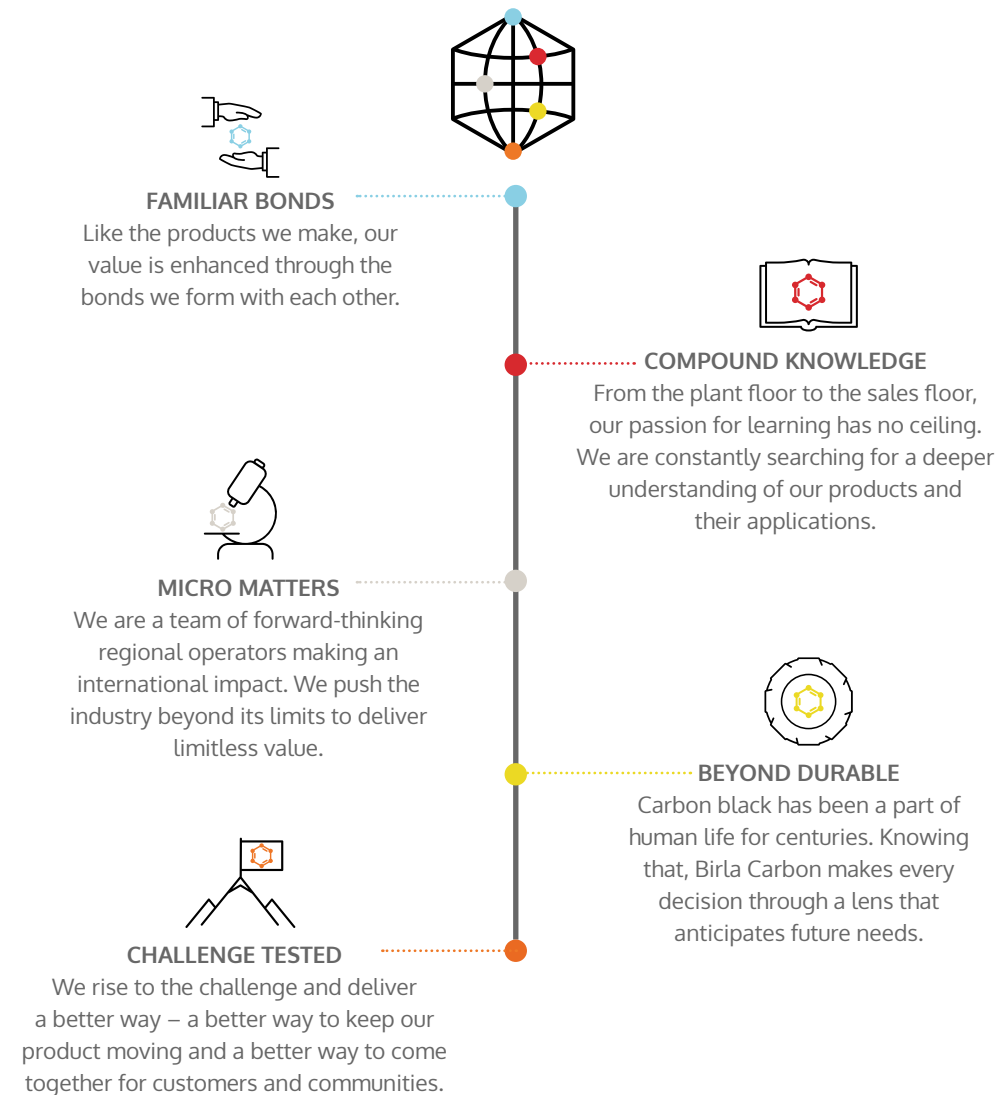
Our global collaborations focus on what we can do for our customers and for our customers' customers. We exchange ideas and aim to communicate with humility so that we continue to stand strong as industry leaders and responsible members of society.

Through our long history of balanced and shared leadership, we maximize the strength that carbon black brings to products and the dependability and stability we bring to employees, customers and communities.

### Did you know?

Over 13 million tonnes of carbon black are produced worldwide annually.

## Our five Purpose Principles



# Our sustainability strategy

Sustainable Operational Excellence (SOE) is our sustainability strategy and influences every decision we make. From designing and operating our plants to interacting with our customers and communities, SOE guides our efforts to Share the Strength of Birla Carbon's carbon black.

By embedding sustainable thinking at every level, we can ensure we meet the ever-changing needs of our stakeholders. Sustainability supports our business: regardless of economic volatility, increasing environmental and societal concerns or evolving customer expectations, we are ready to deliver while driving positive impacts.

[Read more about our approach in the Birla Carbon Sustainability Policy](#)



## The three pillars of our SOE strategy

### People

We encourage a culture of responsibility that promotes the health, safety and wellbeing of our employees and the communities in which we operate.

[Our People](#)

### Product

We are committed to producing a consistent supply of world-class carbon black for our customers while driving circularity to reduce environmental impact and generate greater social value.

[Our Product](#)

### Process

We strive to be a responsible steward of the environment by optimizing the conversion of carbon to carbon black, minimizing our carbon dioxide emissions and maximizing the recovery of energy generated during our manufacturing process.

[Environment](#)

## How we are adapting for the future

To continue to achieve SOE, Birla Carbon has aligned with the Aditya Birla Group's (ABG) three-step agenda:

- We have become **responsible stewards**
- We have begun greater **stakeholder engagement**
- We are **future-proofing** our business over the long term



# Net zero by 2050

As leaders in carbon black manufacturing, we are committed to growing more sustainably wherever possible. Following a natural progression in our circularity and Life Cycle Assessment approach, we are pledging to lower our carbon emissions to net zero by 2050, a first for the industry.

## Our pledge

To fulfil our vision of becoming the most respected, sustainable and dynamic global carbon black business we are driving our ambitions forward with our newest goal:

**We aim to reach net zero carbon emissions by 2050.**

This requires industry collaboration, so we are mapping our technologies, engaging experts and creating long-term partnerships to reach our goal. We understand that our customers value sustainability, therefore we are pledging to bring down our emissions alongside many of our suppliers.

## A unified approach to sustainability

Our net zero ambitions align with the Paris Agreement. We're also aligned with the World Business Council for Sustainable Development's (WBCSD) [Tire Industry Project SDG Roadmap](#), which aims to address the social and environmental impacts of tires by 2050. This supports our environmental commitments as we Share the Strength of our leadership capabilities for a greener future.



**We are choosing to lead through bold commitment and industry-first initiatives for a more sustainable tomorrow."**

**JOHN LOUDERMILK**  
CEO, Birla Carbon

## How we will achieve net zero carbon emissions

Most of our carbon footprint reductions will come from our investments in advanced technologies to upgrade our sites. These will target carbon capture and conversion, increasing use of bio-based feedstocks, and advancing the production of more circular products. We'll maintain our focus on lowering our direct and indirect emissions linked to our carbon conversion from feedstock and energy-procurement processes.

A smaller portion will come from the indirect impacts of our entire supply chain (Scope 3), which will require working with external partners – for example with our suppliers to reduce their emissions. Our next step is to continue developing a rigorous plan that will guide us to net zero.

Our approach is based on four pillars:

### Research



**We will research new ways to capture and convert carbon emissions.**

A significant part of our net zero target will come from future technologies that capture and convert carbon dioxide into valuable carbon products. We will focus on investing in and developing these technologies and assets.

### Reduce



**We will reduce our dependence on traditional manufacturing processes.**

We will continue to focus on optimizing processes for converting carbon to carbon black, and to prioritize energy efficiencies throughout our operations.

### Replace



**We will replace our current energy and feedstock with low-carbon solutions.**

Some of our locations have introduced renewable energy sources to power parts of our facilities. We will focus on adding more renewable energy solutions, and shifting a portion of our production to alternative feedstocks derived from biomass.

### Repurpose



**We will repurpose materials through a circularity approach.**

Through creating more circular products, like Continua™ 8000, we will enable our customers to develop the next generation of sustainable products. Our carbon black boosts product longevity, preventing end-of-life materials going to landfill.

# Leadership messages

## Our CEO, John Loudermilk, and Chief Legal, Risk and Sustainability Officer, Joe Gaynor, discuss Birla Carbon's progress, successes and plan for the future.

Following a year of unprecedented global disruption due to the COVID-19 pandemic, sustainability has taken on new meaning for many companies as we have transitioned into a new normal, filled with additional uncertainty. Businesses have adapted to a world where restrictions necessary to preserve health can bring normal activity to a halt with little notice – and can relax those limitations with similar speed. Clear vision has never been more important to guide organizations. However, flexibility and agility to manage the urgent while maintaining momentum towards our long-term goals have helped us all understand the value of sustainability in real time as well as for the future.

Global economic growth is now projected to be 6.0 in 2021 and 4.9 in 2022 according to the International Monetary Fund [July 2021 data](#). These projections have been revised upward numerous times over the course of the year as the economy has rebounded more strongly than anyone expected. However, the pace of recovery is also divergent, looking very different depending on geography. Sustainable business practices have played a part in supporting the recovery and will continue to be key ingredients to drive it forward to reach everyone.

At Birla Carbon, we define sustainability in the broadest terms to ensure we are leveraging every aspect to ensure the future for our business, our customers, our communities and the world. Because of this approach, sustainability is a key pillar in our success and we are indeed proud to be viewed as the leader in our industry. As signatories of the United Nations Global Compact (UNGC), we are committed to sharing the positive impact of our business with the society supporting the principles of the UNGC on Human Rights, Labor, Environment and Anti-Corruption. Aligned with our company values, we take this obligation to heart, making it a part of our culture, strategy and day-to-day operations globally.

Staying true to our purpose to 'Share the Strength,' along with our Sustainable Operational Excellence (SOE) framework, Birla Carbon is now making sustainable solutions a reality today. We have incorporated sustainability, circularity and innovation into our business to create value for our stakeholders. With the introduction of the Continua™ brand of Sustainable Carbonaceous Materials (SCM), we are linked to the long-term sustainability goals of our customers, bringing true circularity to the value chains we serve.

Continua™ embodies our spirit of untiring innovation in the realm of sustainability, to change the future of our industry for the better.

Continua™ products, by their circular nature, enable a significant carbon footprint reduction, paving the way for greener, cleaner and more sustainable industry value chains. With the Continua™ offering, Birla Carbon aims to provide consistent, high-quality SCM with the assurance of secure supply at scale for a broad range of applications. Continua™ is not just a product, it is a step that we take together with our customers, towards a sustainable future.

So, where do we go next in our journey? For Birla Carbon, it is clear that Sharing the Strength through innovation is more than an objective, but an obligation we assume as the leader in our industry. In line with this ethos, we have announced our aspiration to achieve Net Zero Carbon Emissions by the year 2050. We are proud to be the first in our industry to have committed to this target aligned to the Paris Climate Accord, covering climate change mitigation, adaptation and finance. It is also aligned with the World Business Council for Sustainable Development's Tire Industry Project ([SDG Roadmap](#)) aimed at addressing health and environmental impacts associated with the life cycle of tires.

We will reference the Science Based Target Initiative and release interim targets over the coming year providing a clear path and accountability. Our approach will focus on four

over-arching segments including Research, Reduce, Replace and Repurpose (4Rs approach). By making this bold commitment, I invite all stakeholders to join and collaborate with us as we seek to achieve net zero carbon emissions together.

With that, I invite you to enjoy our 2021 Sustainability Report, providing a view into our journey over the past year and progress towards our objectives along with goals for the future. The theme of circularity ties the report together as we take our first steps towards true circularity with Continua™ brand products. I thank you for being our partner and a constant source of support and inspiration for Birla Carbon.

All the best for a brighter future!

**John Loudermilk,**  
Chief Executive Officer,  
Birla Carbon



We at Birla Carbon began reporting on our sustainability initiatives in 2013 and, since the beginning, we have remained focused on our vision to be not only the most respected and dynamic global carbon black leader but to be the most sustainable one as well. Sustainability is embedded not just in our manufacturing operations but in our overall business strategy, and while we are proud to have been recognized for our sustainability efforts by leading rating agencies, our real reason for the focus is because it is the right thing to do.

As with all companies, the global pandemic has created both unique challenges and learning opportunities. We faced challenges associated with ensuring continued operations and responding to dramatic swings in product demand from our customers, but through our focus on Sustainable Operational Excellence (SOE) and the extensive work we have done through the years in business continuity planning, we were able to respond quickly and nimbly to the needs of our customers. These challenging times also reaffirmed our commitment to build close relationships with our customers and it is because of those relationships that we have been able to successfully weather these times together. Working together in these ways is what it means to live our purpose on a daily basis to “Share the Strength.”

We believe that a key driver of sustainability is innovation. We have remained focused on both innovative products and innovative processes. From a product perspective, we were excited this year to introduce our Continua™ brand of SCM. By doing so, we have started to close the loop of the carbon black value chain and demonstrated our commitment to making

circularity a reality. Continua™ 8000 is a brand of SCM that offers customers a sustainable alternative to traditional furnace carbon blacks. With Continua™ brand products, we are striving to be a true pioneer in circular materials that have quantified reductions in carbon footprint and are available at the scale, consistency and quality that our customers require. We expect Continua™ brand products to have applications in the tire, Mechanical Rubber Goods and plastics segments.

Birla Carbon continues to take steps towards more circularity in our processes in addition to our products and in 2020 we engaged with the Ellen MacArthur Foundation to assess the circularity of our business by utilizing their [Circulytics tool](#) and their three guiding principles:

1. Design out waste in production
2. Keep products and materials in use
3. Regenerate natural systems

We also received our first score from the Circulytics method, which continues to push us towards investing more in our sustainable practices and evolving at every juncture.

Operating sustainably means balancing many challenges and priorities. Birla Carbon continues to achieve world-class safety performance while at the same time, exploring innovative ways to minimize its environmental impact. Over the years, we have developed methods to significantly reduce our waste and implemented technologies to optimize our production processes. While it is a long journey, we believe there are numerous innovations that are still left to be discovered and shared with our customers and others.

Our purpose to Share the Strength has been a way of exploring who we are at our best. It is the foundational rock that helps us develop our business for the future. We live our purpose daily and provide value to our customers by developing innovative products that benefit our common value chains; constantly strive to make our operations more sustainable so that we minimize our environmental footprint; and ultimately, give back to the communities and the society in which we operate globally.

Keeping in line with this, we announced our aspiration to generate [Net Zero Carbon Emissions by 2050](#). As the first and only carbon black company to state such a goal, Birla Carbon is focusing on the four pillars of Research, Reduce, Replace and Repurpose (4Rs approach) in order to achieve this goal. Our drive for innovation and sustainability will continue to take us in the right direction to achieve our ambition.

Our focus will be on all the three scopes of carbon emissions, but we anticipate the majority of our carbon footprint reduction to come from Scope 1 (direct) and 2 (electricity indirect) based on our direct and indirect emission reduction initiatives. A smaller portion of the reduction will come from emissions in Scope 3 (other indirect) based on the operations of upstream and downstream industries in our value chain.

By the nature of our business, we have our own carbon stewardship responsibility, and we are choosing to lead through bold commitments and industry-first initiatives for a more sustainable tomorrow. Our aim is to constantly innovate and evolve our capabilities through our purpose, Share the Strength, to have a positive impact on the ecosystem and society.

As I end my note, in retrospect, the one thing that stands out is the importance of sustainability – it is non-negotiable today. During the last 18 months, we have realized that sustainability – not just at a business level but also at a personal level – is going to be the key differentiator and enabler for a successful future. Innovating in this domain on a constant basis is the most effective way for a business to live long and survive, amongst these constantly changing times. Hence, I urge each one of you to adopt and practice sustainability within your daily lives.

I hope that you enjoy reading and learning from our 2021 Sustainability Report and we look forward to your views on the same.

Thank you.

**Joe Gaynor,**  
Chief Legal, Risk and Sustainability Officer,  
Birla Carbon



# Our response to COVID-19

The global spread of COVID-19 has impacted people around the world, from businesses to communities and individuals. At Birla Carbon, we acted quickly to implement protective measures for our employees and communities while ensuring business continuity for our customers.

As the COVID-19 pandemic intensified, keeping our employees safe was crucial. Crisis management teams were established globally, regionally and locally to ensure the health and safety of our people. We formed a COVID-19 response task force that developed a framework for responding to the pandemic across our facilities.

## This dedicated task force coordinated efforts to:

- Keep facilities open, including establishing social distancing and sanitation, and recognizing symptoms;
- Review changing guidance from the Centers for Disease Control and Prevention (CDC), World Health Organization (WHO) and regional organizations;
- Review governmental guidance including specific community/state requirements;
- Benchmark progress with peers;
- Track global cases, from suspected symptoms to diagnosed cases through to hospitalization;
- Maintain communication with the Senior Management Team; and

- Facilitate the procurement of personal protective equipment (PPE) supplies for all sites.

We saw a range of localized actions in all of our plants, all led by the overarching work of our task force.

## Examples of global teamwork include:

- In **Egypt**, we enabled a work-from-home system for all administrative employees so that work could be delivered to schedule. The IT department provided laptops and computers to employees and configured software updates on old laptops where necessary;
- In Cubatão and Bahia, **Brazil**, the leadership team met with contracted doctors to provide guidance on health and safety during the pandemic;
- When our facility in **China** faced a shortage of masks, the team in Korea sent thousands to them. In turn, when masks could not be found locally in **Korea**, we shipped them from our team in **Brazil**, who also sent PPE to **Italy**;

- Local vendor relationships in the **USA** helped us acquire face masks to ship to **Spain**. We readily adopted exhaustive protocols, and the ability of our plants to remain flexible shone through; and
- In facilities globally, we launched the “New Normal” initiative to engage employees as they worked from home. The initiative offers a platform for colleagues to share how they have adapted to a new way of working.

[Read more about our employee engagement](#)





## Building resilience during COVID-19 in Hickok, Kansas

Our Birla Carbon Hickok team demonstrated true leadership during the onset of the pandemic. This closely connected group, where colleagues are neighbors in the nearby community, was dedicated to caring for each other to ensure everyone stayed safe at work.

Measures were implemented to maintain social distancing, such as splitting teams into smaller groups for safety tailgate meetings and moving meetings from office spaces to the larger maintenance shop.

The leadership team had already taken some critical steps before the pandemic that proved to be extremely valuable. These included initiating the setup of secure remote access so that key operations and maintenance leaders were able to continue working during periods of quarantine.

Prior cross-training of employees also supported Hickok's COVID-19 response, as agile working practices allowed people to move around the plant to keep it running efficiently. For example, warehouse staff helped fill in for the maintenance department if colleagues were in quarantine. The sense of community was reinforced as everyone stepped up to help their co-workers wherever possible.

Thanks to the dedication of the Hickok team, who went above and beyond expectations during the pandemic, the site did not miss a single customer shipment – and not a single positive COVID-19 case or quarantine has been reported in 2021 to date.

# Focusing on what matters

Everything we do at Birla Carbon is driven by our Purpose to Share the Strength. Our sustainability strategy guides us to work in ways that not only benefit our customers but also empower local communities and preserve the planet we all rely on.

We have identified the areas where we can have the greatest positive impact, focusing our efforts on what matters most to our stakeholders.

## Assessing sustainability

To effectively consider internal and external impacts, we continually review the challenges that are most relevant to our business. Our Sustainability Steering Committee (SSC) uses quantitative and qualitative analyses to determine the materiality of each issue. Quantitative analysis looks at data sources such as employee surveys and Health, Safety and Environmental (HSE) metrics, while qualitative analysis focuses on customer feedback and community input. The SSC reviews the materiality of each issue, considering the influence of stakeholder assessments and the significance of our economic, environmental and social impacts.

To validate our assessment and ensure our reporting achieves the GRI principle of completeness, we regularly evaluate the scope and boundaries of our material issues and the

timescale considered. The SSC attributes each issue to a relevant material topic – whether internal or external to the organization – as per the GRI Standards. The results are subsequently approved by the Chief Legal, Sustainability and Risk Officer, Joe Gaynor, on behalf of Birla Carbon’s Senior Management Team.

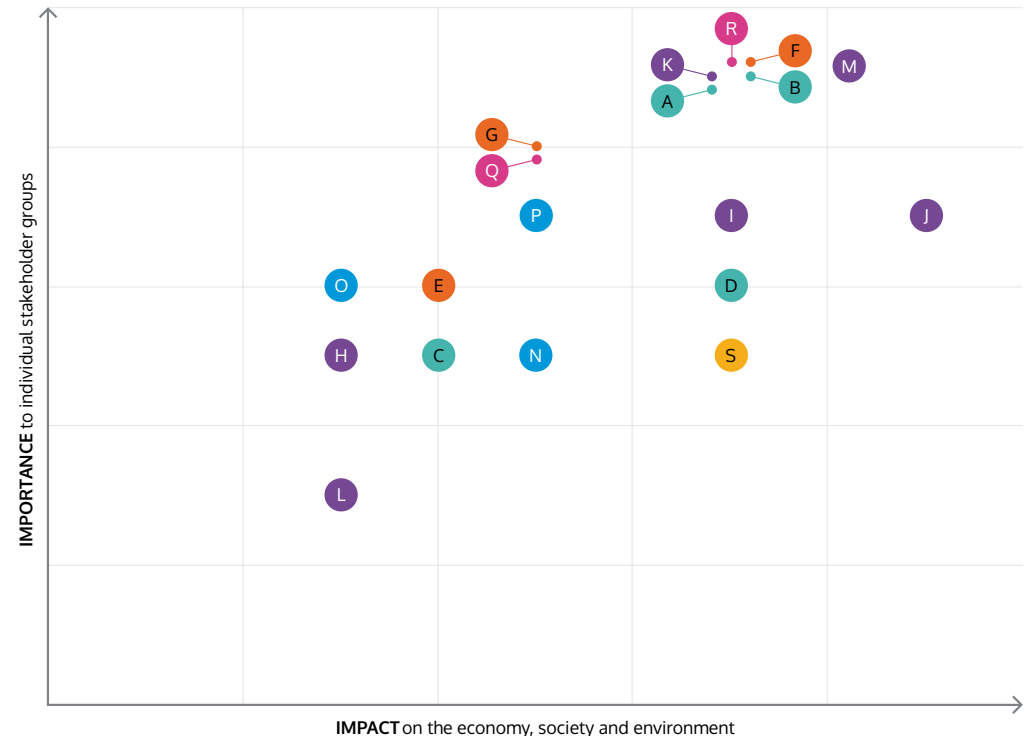
The issues listed below were reviewed in FY2021 and confirmed as the most significant for Birla Carbon, ranked according to the level of interest to stakeholders and business impact.

- Product consistency
- Water
- Global presence
- Business continuity
- Human rights
- Employee engagement
- Product stewardship
- Innovation
- Circularity
- Air emissions
- Ethics
- Energy
- Sustainable procurement
- Waste
- GHG
- Community engagement
- Governance
- Health and safety
- Customer engagement

## Our materiality matrix

As a result of a formal materiality assessment, we have identified the key issues for Birla Carbon, as defined by our major stakeholder groups. We then mapped these issues onto matrices based on their importance. See our [stakeholder matrices](#) in the Appendix.

- A Business continuity
- B Ethics
- C Governance
- D Human rights
- E Innovation
- F Product stewardship
- G Product consistency
- H Air emissions
- I Energy
- J GHG
- K Water
- L Waste
- M Circularity
- N Customer engagement
- O Global presence
- P Sustainable procurement
- Q Employee engagement
- R Health and safety
- S Community engagement



## Our key sustainability issues

Our main sustainability issues are grouped into six overarching focus areas: Governance and Ethics, Our Product, Environment, Customers and Suppliers, Our People, and Communities.

## Boundaries

We have attributed each of our material issues to a relevant topic outlined in the GRI Standards. Where the topic has been identified as relevant within the organization, it applies across all entities of the Birla Carbon business. To tailor this list to our stakeholders, we have used Birla Carbon terminology to describe each of the aspects. Below we have outlined the boundaries for each of our topics.

### Governance and Ethics

#### Our material aspects and sustainability issues

	Material to stakeholders		Relevance outside the organization
	Internal	External	
<b>A Business continuity</b> Ensuring a constant supply of carbon black for our customers through our enterprise risk management approach.	✓	✓	Business continuity is important to our customers as they require a secure supply of carbon black. Our suppliers and the communities around our sites also have a vested interest in our business.
<b>B Ethics</b> Ensuring fair labor and business practices, including anti-corruption, antitrust and collective bargaining, and discouraging anti-competitive behavior.	✓	✓	Ethical issues can occur along the supply chain and in the communities around our operations.
<b>C Governance</b> Upholding through our management structure our policies, standards, compliance mechanisms and world-class manufacturing processes.	✓	✗	Not applicable.
<b>D Human rights</b> Maintaining full respect for economic, social and cultural rights, including no child labor, fair wages and decent working conditions.	✓	✓	Human rights issues can occur along the supply chain, especially in countries identified as high risk.

### Our Product

#### Our material aspects and sustainability issues

	Material to stakeholders		Relevance outside the organization
	Internal	External	
<b>E Innovation</b> Developing our processes, technology and products to meet an evolving market and regulatory and societal demands.	✓	✓	Innovating processes, technology and products to meet evolving market, regulatory and societal demands.
<b>F Product stewardship</b> Taking proactive care to ensure our products reach high standards, incorporating health, safety, environmental and regulatory considerations into our product development and maintenance.	✓	✓	Product stewardship ensures we provide customers with products that are safer, more efficient and specific to their needs. This also has an impact on end consumers who look for greater value from products.
<b>G Product consistency</b> Making efforts to guarantee that our product continues to meet high quality standards while meeting market demands.	✓	✓	Our customers require consistent quality from our products as this has an impact on their own operations and end products.

## Environment

### Our material aspects and sustainability issues

	Material to stakeholders		Relevance outside the organization
	Internal	External	
<b>H Air emissions</b> Non-greenhouse gas (GHG) emissions from our operations, including sulfur oxides (SO <sub>x</sub> ), nitrogen oxides (NO <sub>x</sub> ) and particulate matter.	✓	✓	Air emissions can be produced during extraction and transportation of raw materials from our suppliers and during distribution to customers.
<b>I Energy</b> The efficient use of energy resources, including consumption, recovery and generation.	✓	✓	We strive to develop more efficient grades of carbon black to support customer sustainability objectives. Our Strategy to remain energy positive means we also provide low-carbon energy for local energy grids.
<b>J Greenhouse gases</b> Direct and indirect GHG emissions – focusing on CO <sub>2</sub> as other GHGs emitted by our operations are negligible.	✓	✓	GHG emissions can be produced during extraction and transportation of raw materials and during distribution to customers.
<b>K Water</b> Our water supply, water collection and wastewater management practices and governance systems.	✓	✓	Water use and discharge has the potential to impact communities around our operations. This is particularly material in areas where water scarcity is a potential risk.
<b>L Waste</b> The minimizing of solid waste generation, both hazardous and non-hazardous, and the optimization of our management processes, including recycling, reuse and reduction of waste to landfill.	✓	✓	Waste from our operations has the potential to impact the communities and environment around our operations if not managed appropriately.
<b>M Circularity</b> Actively expanding our research and development to improve the circularity of our products. Applying a circular approach to our waste management system.	✓	✓	Engagement and collaboration with our upstream and downstream value chain will be necessary to drive circularity in our industry.

## Customers and Suppliers

### Our material aspects and sustainability issues

	Material to stakeholders		Relevance outside the organization
	Internal	External	
<b>N Customer engagement</b> How we build, nurture and manage relationships with customers, including aligning our sustainability agenda with theirs.	✓	✓	We aim to align with our customers' sustainability initiatives and goals.
<b>O Global presence</b> Our manufacturing and distribution footprint, relative to customer locations, resources and suppliers.	✓	✓	Manufacturing and distribution footprint relative to customer locations, resources, suppliers, etc.
<b>P Sustainable procurement</b> Maintaining a supply chain that is ethical, resilient and viable in the context of risks and opportunities that may arise from external legal, technical, environmental and social megatrends.	✓	✓	It is important to engage with each of our suppliers to ensure they uphold our environmental and ethical standards. This applies to both global and regional suppliers.



## Our People

### Our material aspects and sustainability issues

	Material to stakeholders		Relevance outside the organization
	Internal	External	
<p><b>Q Employee engagement</b> How we build, nurture and manage relationships with our people through training and development, recognition and feedback mechanisms.</p>	✓	✗	Not applicable.
<p><b>R Health and safety</b> The health and safety of our employees, from the moment they arrive at work each day to the moment they leave.</p>	✓	✓	The safety of all people visiting our sites is of high priority. This includes guests such as customers, contractors and third-party partners.

## Communities

### Our material aspects and sustainability issues

	Material to stakeholders		Relevance outside the organization
	Internal	External	
<p><b>S Community engagement</b> Building, nurturing and managing relationships with the communities where we have a presence by understanding and responding to their expectations.</p>	✓	✓	Building and maintaining strong relationships with the communities around our sites is very important to our business and to local people. Our engagement covers local community and charitable organizations, residents, education systems and local governments.

## Future issues and trends

Futureproofing is a key stage in our SOE journey, helping us to adapt to long-term global and social megatrends while building the resilience of our international business.

We use horizon scanning and scenario planning to identify external factors that could potentially impact our business, considering the risks and opportunities as we shape our future strategy. As part of this process, we also monitor how our business could impact them.

Over 170 years, we have cultivated an efficient and flexible future-proofing approach. As we look forward, we understand the value in applying an increasingly structured way of thinking about risks and opportunities.

In FY2017, we worked with international sustainability nonprofit Forum for the Future to identify trends and issues most relevant to Birla Carbon. In FY2021, we continued to apply Forum for the Future's findings, and our Sustainability team regularly discussed issues with our Enterprise Risk Management (ERM) team. We then undertook long-term risk mapping, looking at these challenges beyond five years. Our Sustainability and ERM Committee will continue to monitor these issues on an annual basis.

[Read more about our governance approach](#)

## Megatrends

Here we present several external factors that may impact the global carbon black industry between now and 2030.

### Disruptive innovation



#### Future of mobility

Three transformative mobility revolutions have kicked off: sharing, electrification and automation. Electric cars may have positive implications for our industry as they wear through tires more quickly and use carbon black in battery technology. The effect of driverless cars is more uncertain, especially as they may enable a transition to fleet models of shared mobility, replacing ownership and leading to fewer cars and thus reduced carbon black demand.

#### Smart cities and urban mobility

There is a growing demand for walkable and bikeable cities, with visible efforts worldwide to reduce car use and congestion. By 2030, fleets of on-demand, shareable electric driverless vehicles may also reduce traffic. The various stakeholders we engaged with on this topic are divided as to whether this will affect carbon black demand or not. Changes to urban planning will, however, undoubtedly generate challenges.

## Climate change



In response to the Paris Agreement, climate change policy could profoundly shift transportation away from cars by 2030, resulting in a marked impact on our business. Potential carbon taxes could influence oil prices, affecting the availability of our feedstock. However, as a material impact there could be more demand for carbon black as tire components that improve efficiency are prioritized.

## Demographic shifts



#### Growing middle class

The popular definition of a growing middle class implies more consumption in emerging economies. However, premature deindustrialization is already visible in some African and Asian countries, leading to a different, less affluent model of "middle class" that prioritizes access over possession. For Birla Carbon, the fact that a rising middle class may not mean a rise in consumption is a challenge.

#### Millennial consumption patterns

A new model of living that prioritizes access over ownership is emerging. This lifestyle is driven by millennials. A key indicator of this is changing car use – using car-sharing services in place of ownership. As millennials will be the dominant generation by 2030, this represents a significant challenge for Birla Carbon.

## Resource scarcity



#### Oil and gas

Oil availability will inevitably have an impact on our business, as carbon black production requires feedstock that is a byproduct of oil. There is a need for Birla Carbon and others to consider alternative sources over the next decade, particularly in the face of other attractive materials, such as silica.

#### Energy

The global shift from fossil fuels to renewables may impact oil demand and pricing and affect electricity generation or transportation. Any change from traditional energy and transportation systems represents both challenges and opportunities for Birla Carbon in terms of resilience and adaptation.

#### Circular economy

Carbon black is a highly engineered material requiring carbon-rich feedstock. As such, using renewable or recycled sources which contain elements besides carbon in our production process presents significant emission and environmental challenges. Once incorporated into finished articles made out of rubber or plastics, carbon black is difficult to separate from other materials, making it impossible to recover at the end-of-life stage. However, through partnerships and by focusing on areas where we can be more flexible in our processes, Birla Carbon seeks to lead the industry in SCMs, curving the linear model of our value chain.

Our [Continua™ 8000 product](#) is our best-in-class example of driving circularity at large scale.

#### Water

This is a key area for all industries – nearly half the global population is expected to face shortages by 2030. Use reduction and recapture will become increasingly important for Birla Carbon in the years to 2030.

# Stakeholder engagement

We are stronger when we work together, sharing knowledge and innovative new solutions with our global customers. We engage with a variety of stakeholders from across the world, building on the knowledge of others and bringing together diverse ideas to progress our operations.



As a responsible leader, we work collaboratively with our stakeholders to align our sustainability strategy more closely with theirs. We have built strong relationships and improved our understanding of the future trends that could affect us by conducting product Life Cycle Assessments (LCAs) and sharing information with peers.

Our engagement with those that have the greatest impact on our business is important for our success, and we are shaping our strategy based on what is material to them.

## Customers

### How we engage



We aim to develop long-term relationships with customers and, based on our excellent service and high-quality product, become the carbon black provider of choice.

One way we achieve this is by engaging with customers on key sustainability issues and aligning our sustainability agenda with theirs.

Our Global Engagement Managers engage with customers regularly through our Key Account Management program.

### Examples in FY2021

We perform satisfaction surveys using the Net Promoter Score® methodology, through which we compare our performance with that of our peers.

We hold periodic customer dialogue and training events to align sustainability strategies. We also train our customer-facing employees on sustainability issues, with increasing customer interest in circular products, GHG emissions and sustainable supply chains.

Our Technical Services, Sales and Product Development teams participate in a range of technical conferences as an opportunity to interact with our customers. In FY2021, these included Recovered Carbon Black 2020, Spring Technical Meeting of the American Chemical Society's Rubber Division, Chinaplas 2021 and Thermoplastic Concentrates 2021 Virtual Summit.

## Employees

### How we engage



We conduct biennial employee feedback surveys to encourage a continual dialogue between managers and employees.

We also provide a hotline for our people to anonymously report any concerns or grievances.

### Examples in FY2021

To encourage sharing of best practice and to stimulate progress, we continue to issue an internal KPI report quarterly. The results of this report are discussed at regular internal meetings. This process has initiated benchmarking and discussions between facilities on their performance, leading us to begin developing internal KPIs to drive further improvement.

We launched an e-learning module on sustainability at Birla Carbon. We also introduced the second round of our Hype innovation campaign globally, inviting employees to put forward ideas for innovation in all aspects of our business.

## Suppliers

### How we engage

As our business depends on suppliers, we work closely with them to develop strong relationships.

Our suppliers' behavior reflects on us, so ensuring that they uphold our high ethical standards is vital.



## Aditya Birla Group

### How we engage

Our parent company, the ABG, follows a three-step sustainability agenda: responsible stewardship, stakeholder engagement and future-proofing.



## Communities

### How we engage

We take a local approach to building community relationships to ensure we understand the unique priorities of our global communities. We focus on delivering long-term socioeconomic benefits through our engagement – namely health, education, social support and charitable giving.



## NGOs, civil society, academics

### How we engage

We continue to interact with nongovernmental organizations (NGOs) and wider social institutions that are particularly relevant to our business.

This engagement takes the form of meetings and participation in events where we share knowledge with our peers.



### Examples in FY2021

Our Code of Ethics includes contractual terms and conditions that we expect every supplier to uphold.

We review our global feedstock suppliers and encourage suppliers to audit our own operations.

In FY2021, we continued to implement our supplier compliance and sustainability screening and assessment systems through NAVEX Global's RiskRate® and EcoVadis.

### Examples in FY2021

We have aligned our sustainability strategy with the Group's three-step agenda.

We participate in a Group-wide monthly sustainability webinar, during which businesses and outside experts present on current sustainability topics. We regularly communicate our progress through this channel.

We also participate in several working groups with other ABG businesses to facilitate sharing of best practices and problem solving. Working groups cover topics such as waste, health and safety, water, risk management, product stewardship and sustainable supply chains. We also participate in the annual ABG Sustainability Conference.

### Examples in FY2021

See our [Communities section](#), where we describe our community engagement in greater detail, for example how we support local healthcare, education, livelihoods and infrastructure.

### Examples in FY2021

We participate in the Sustainability Leadership Forum, where business leaders from a range of industries collaborate to overcome sustainability challenges.

As part of the wider dialogue on how companies can help achieve global sustainability targets, we have aligned our SOE strategy with the UN Sustainable Development Goals (SDGs). In FY2021, we also became signatories of the UN Global Compact.

Many of our facilities are involved in local chemical industry associations. For example, in Brazil we participate in several Brazilian Chemical Industry Association (ABIQUIM) committees, covering topics such as health and safety, sustainability and emergency response. Our Corporate Health and Safety Managers participate in the American Society of Safety Professionals, the largest professional safety society in the world. Our Global Director of HSE presented at the eighth Verdantix Summit, an HSE conference covering many innovative technologies in the field.

We are engaged with both the WBCSD and the Ellen MacArthur Foundation on measuring the circularity of our production processes.

# Sustainable Development Goals



We first mapped our efforts to the UN SDGs in FY2016 and continue to align our progress to global development targets by becoming signatories of the UN Global Compact. This ensures our sustainability progress is coordinated at a global level.

We have divided the SDGs into three key areas of focus: Economy, Society and Environment.

## Economy

### SDG 2 – Zero hunger

In its use in farming, including improved irrigation, carbon black helps agriculture to become more efficient.

[Read more about carbon black's uses](#)



### SDG 8 – Decent work and economic growth

Carbon black ensures greater resource efficiency, which in turn promotes economic growth. We provide decent work and boost economic growth in the areas where we operate through a range of initiatives designed to provide education and training opportunities to local people.

[Read more about how we support economic growth](#)



### SDG 9 – Industry, innovation and infrastructure

Our product supports the development of quality, reliable, sustainable and resilient infrastructure and the advancement of inclusive and sustainable industrialization.

We have successfully innovated with our Continua™ 8000 offering, working towards a circular application of carbon black. End-of-life tires are recycled to extract carbon black for repurposing into new products such as rubber compounds and paints.

We also play our part by increasing efficient resource use, enabling the adoption of clean and environmentally sound technologies, encouraging innovation and enhancing research.

Our aim is to ensure sustainable and resilient infrastructure in developing countries and enhance local technology, research and innovation with carbon black.

[Read more about the properties of carbon black](#)



### SDG 10 – Reduced inequalities

Carbon black plays an important role in technology, giving people greater access to transportation and communication. It also ensures products last longer.

We are committed to helping the communities where we work develop programs to improve the lives and working prospects of our neighbors.

[Read more about our community-focused work](#)



### SDG 11 – Sustainable cities and communities

Carbon black is crucial in the development of safe, affordable, accessible and sustainable transportation systems, particularly in terms of its role in tire safety, durability and improved rolling resistance. Our product enhances sustainable urbanization.

[Read more about the social value of carbon black](#)



### SDG 17 – Partnerships for the goals

We help achieve the goals by working closely with all our stakeholders, including our customers and communities.

[Find out more about our customer engagement work](#)



## Society

### SDG 1 – No poverty

Through our community activities, we help members of the public to improve their own lives, including healthcare initiatives and education.

[Read more about our approach to community engagement](#)



### SDG 2 – Zero hunger

Our community engagement programs around the world include supporting small-scale agriculture by investing in infrastructure, financial aid and training for farmers as well as providing food provisions to those most in need.

[Learn more about our global community projects](#)



### SDG 3 – Good health and well-being

We provide healthcare through a variety of social initiatives, such as providing access to vaccines and doctors.

Our Commitment Based Safety approach encourages employees to make steps towards improving their own health and wellbeing, including safe driving into and out of plants.

We also seek to prevent illnesses indirectly by reducing air, water and waste pollution.

[Read more about how we are reducing NO<sub>x</sub> emissions](#)



### SDG 4 – Quality education

As a member of the ABG, which is strongly committed to education, Birla Carbon provides learning support through community activities across all regions where we operate.

Our Code of Ethics training provides education for our employees on human rights and diversity.

[Read more about our community education programs](#)



### SDG 5 – Gender equality

We improve gender equality by offering equal opportunities within Birla Carbon, without discrimination, and by empowering women in the communities where we operate through vocational training and support.

We recognize that we have room to grow in terms of more fully addressing diversity within our company.

[Read more about how we are supporting workplace diversity](#)



### SDG 6 – Clean water and sanitation

Water, sanitation and hygiene (WASH) are a priority for us; we signed the WASH Pledge in 2015 and have been growing in our commitment year on year. Birla Carbon achieved the highest WASH rating of 2 in FY2021, compared to 1.77 in 2015 when we signed the pledge.



During the pandemic we invested in improving the sanitation of our facilities, with all our sites now achieving a level 2 rating. We provided separate contractor washrooms to enable social distancing, introduced COVID-19 precaution training and increased our employee communications around effective sanitation practices.

A total of 143 awareness campaigns and training sessions have been delivered at Birla Carbon plants and 53 action plans created and implemented. We also work with local communities to improve access to clean, safe water for residents.

[Learn more about our community water projects](#)

### SDG 8 – Decent work and economic growth

We offer employment and career development opportunities across all regions. We believe that the educational component of our community engagement work both reduces youth unemployment and leads to productive job creation.

The health and safety of our people is a priority that underpins our work. We must ensure that our people leave work each day as healthy as when they arrive.

[Read more about how we are offering employees global training opportunities](#)



### SDG 10 – Reduced inequalities

Following in the path of the ABG, we seek to reduce inequalities by offering opportunities to the poorest and most vulnerable, empowering people, promoting inclusion and adopting equality policies, notably for women.

We are looking to open our apprenticeships to more people around the world. With operations on all five continents, we are well situated to cultivate a more diverse workforce.

[Discover our approach to employee engagement](#)



### SDG 16 – Peace, justice and strong institutions

Through our internal governance mechanisms, we prevent corruption and bribery from taking place in our business and reinforce our own institutional accountability and transparency.

We are constantly making our supply chain more robust and transparent.

[Read more about our approach to human rights](#)



### SDG 17 – Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, including community groups, universities, NGOs and the ABG.

[Find out about how we support the communities where we operate](#)



## Environment

### SDG 6 – Clean water and sanitation



We monitor our water use and recycle and reuse as much as possible. We have implemented a more detailed water risk assessment approach, designed to produce site-specific performance appraisals.

While many of our sites have water risk management plans in place, we are constantly developing our understanding of our impacts to devise more effective mitigation plans.

[Read more about how we are using water efficiently](#)

### SDG 7 – Affordable and clean energy



We continually seek opportunities to use more affordable and cleaner energy. Our facilities that contain co-generation units convert tail gas into energy that is then either used in our plants or sold to the grid. Globally, we are energy positive.

Our feedstock is the byproduct of fossil fuel use, and utilizing this byproduct reduces the impact of these fossil fuels.

[Read more about how we are saving natural resources at Birla Carbon Thailand](#)

### SDG 12 – Responsible consumption and production



We contribute to responsible consumption and production by ensuring that our feedstock comes from suppliers close to our facilities, who we screen for risk management.

We strive to reduce our carbon footprint, an effort which includes being more efficient about the energy we consume; we have been net energy positive since at least FY2016.

We aim to avoid emissions and leaks as much as possible and annually report on our sustainability efforts.

Our Continua™ offering demonstrates Birla Carbon's commitment to sustainable product innovation. This supports our customers' ambitions to include more renewable or recycled materials in their own products.

Our feedstock is a limited and non-renewable resource, which, in the long term, may have an impact on our consumption. We continue to develop more responsible procurement practices.

[Read more about how we are developing a sustainable supply chain](#)

### SDG 13 – Climate action



We focus on carbon stewardship, being net energy positive and reducing our GHG emissions.

Our operations continue to generate emissions, which we are always working to reduce.

[Read more about the steps we are taking to reduce our CO<sub>2</sub> footprint at Patalganga](#)

### SDG 17 – Partnerships for the goals



We help achieve the SDGs by working closely with our stakeholders, including our suppliers, regulators and governments. We also collaborate to develop innovative sustainability solutions with external parties.

[Read more about how we assess our water vulnerability](#)

### Did you know?

More than 144 trees have been planted by visitors to our site in Patalganga, India, symbolizing the deep-rooted ties between Birla Carbon and our customers.



# Our product

Evolving together – working with our customers to advance cutting-edge circular products.

## In this section:

- 26 The social value of carbon black
- 27 The circularity of carbon black
- 29 Product responsibility
- 32 The big questions
- 34 Product quality
- 37 Research and development







# Our product

At Birla Carbon, we have been sharing our knowledge and advancing new techniques for over a century. Today we are further developing our products with circularity in mind, as shown by the innovation of Continua™. This highlights how we are leading the industry by progressing our products and processes and meeting our customers' evolving needs.



## COMPOUND KNOWLEDGE

For us, our Compound Knowledge Purpose Principle – sharing insights and building customer understanding of the value of carbon black – is our most important resource.

Find out more about our [five Purpose Principles](#)

## Did you know?

Any water facility containing piping, including those for drinking and washing, contains carbon black – as do all power cables.

By collaborating with customers, we can learn what they want in terms of a sustainable product, while we share our expert knowledge of carbon black and its various applications.

We invest in robust health and safety measures to meet regulatory requirements, effectively communicating our efforts to our customers. This allows us to continue delivering high-quality carbon black with added social value. We are evolving our stewardship approach, developing our products to address evolving customer needs while raising the bar for the industry.

## WE SUPPORT THE FOLLOWING SDGs



At Birla Carbon, we strive to deliver carbon black to our customers responsibly. With a proven framework in place, we are confident that we are providing the most current information available. Our approach to product stewardship is activated in the earliest phases of new product development, guaranteeing that we are forming a product that aligns to the highest safety and environmental standards.”

## BLAKE ODOM

Product Stewardship Program Manager, HSE and Legal, Birla Carbon USA Inc.



# The social value of carbon black

Carbon black has been part of human life for centuries. It is a fine black powder composed of elemental carbon: a highly engineered microscopic material included in hundreds of thousands of our valued everyday products.

From cars to computers, plumbing to agriculture and banknotes to shoes, carbon black makes our lives better. It helps us use resources more efficiently, travel safely, communicate easily and access clean water for drinking and irrigation.

## What is carbon black?

Carbon black is virtually pure, elemental carbon in the form of colloidal particles, which are microscopic and arranged in a grape-like form. Its physical appearance is that of a black, finely divided pellet or powder – individual particles of carbon black are invisible to the human eye. Carbon black is entirely different from, and should not be confused with, black carbon, which is more commonly known as soot.

The size of the particles and the way they are aggregated determine the specific properties of carbon black and how it can be used. For example, a large-particle-sized “soft” carbon black grade will contribute to the elasticity of tire sidewalls, while a small-particle-sized “hard” carbon black grade is essential to ensure the durability of a tire’s tread.

## What are its uses?

Carbon black enables the smooth running of the everyday. It brings many useful properties and qualities to countless finished products and articles made from rubber or plastics, as well as providing color and protection from UV rays in paint, ink and coatings.



[▶ Watch our video to learn how carbon black is part of our everyday lives.](#)

## ↔ Movement

Carbon black, with its affinity for various polymers, makes rubber products safer, more efficient and stronger for longer, giving us the freedom to move. It also reduces CO<sub>2</sub> emissions and saves energy over the life cycles of many products:

- Vehicle tires
- Shoe soles
- Sealing systems
- Hoses, belts and engine mounts
- Toys
- Playgrounds
- Tubeless tires
- Inner tubes

## ⏻ Power

Carbon black is so versatile that its morphology can be engineered to modulate the electric and thermal conductivity of many products. It is an essential component of the wires, cables and technologies that interconnect us. In many applications, it also helps dissipate electrostatic build-up. Examples include:

- Electrical cables
- Portable energy devices
- Computers (circuit boards)
- Tires
- High-voltage cable jacketing
- Safety shoes
- Conductive flooring

## 🌱 Health and food

The light-absorbing properties of carbon black ensure that plastic and rubber products last longer despite exposure to sunlight. It keeps water safe to drink while being transported and enables more efficient agricultural practices through a range of applications. Examples include:

- High-voltage cables
- Water and irrigation pipes
- Geomembranes (e.g. liners for liquid-retention pools)
- Agroplastics (e.g. mulching)

## 👤 Society

Carbon black is always around us – from the clothes and shoes we wear to the mascara we put on our eyelashes, from flowerpots to toys, from banknotes to newspapers. It is used as a pigment to produce a deeper black in the following products:

- Car paint
- Inks for printer cartridges and printing newspapers, magazines, books, banknotes, etc.
- Mascara
- Black building products
- Leather coating
- Black fibers for fabrics, carpets, woven materials, etc.

# The circularity of carbon black

Designing products with sustainability in mind is as important to us as it is to our customers. Given the complex nature of finished articles containing carbon black, moving to a completely closed-loop system may not be realistic. However, we remain dedicated to working with our customers to develop innovative ways to increase circularity throughout our value chain.

## How carbon black is made and recycled

Guided by our SOE, we hold circularity as a key element of our manufacturing processes, from the recovery of energy to water harvesting and waste reduction. Utilizing the Ellen MacArthur Foundation's [Circulytics tool](#) we measure our efforts against three principles:

1. Design out waste and pollution
2. Keep products and material in use
3. Regenerate natural systems

We produce carbon black in a reactor through a tightly controlled flame-synthesis process that uses carbon-rich oil residue, and sometimes natural gas, as feedstock. This process gives a waste product a valuable second life, as oil residues have limited usage and would otherwise be burnt as bunker fuel.


Water is then injected into the reactor, reducing the temperature of the smoke stream, which is routed to a baghouse that separates the light, powdered carbon black from the reactor. This powder is mixed with a binding agent and water to form pellets that allow for efficient transportation to our customers.

Carbon black, created by repurposing a carbon-rich byproduct, brings numerous benefits to finished articles, including strength, durability and the ability to lower tires' rolling resistance.

## Did you know?

Over 13 million tonnes of carbon black are produced worldwide annually – some 70% of which goes into tires.



 Watch our video to learn more about how carbon black is made.



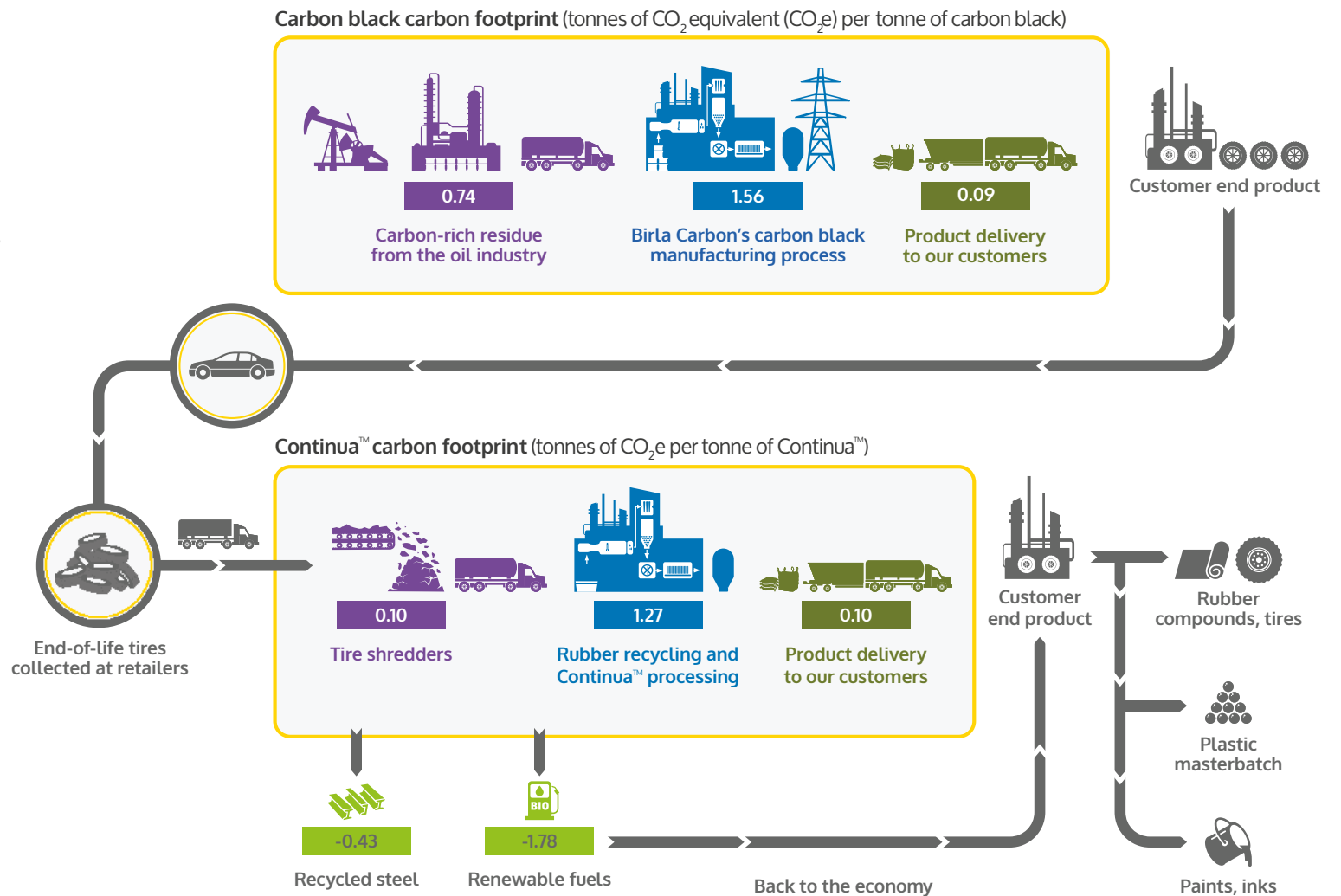
## Visualizing the Continua™ 8000 process

In a bid to continue bending our value chain towards circularity, in 2020 we harnessed an exciting opportunity with Circtec to accelerate the recovery of carbonaceous material from end-of-life tires. The result is our new Continua™ 8000 offering, an innovative and sustainable solution at scale. By introducing this Sustainable Carbonaceous Material (SCM), we are helping the rubber and plastic industries to include more recycled materials in their own products. This offering significantly reduces the overall carbon footprint throughout our common value chain.

Continua™ 8000 requires ongoing collaboration and shared innovation with our customers to explore further application possibilities. We are taking risks, embracing uncertainty and stepping out of our comfort zone through accelerating our commitments to make circularity a reality.

[Read more about our circular economy partnership with Circtec](#)

### From creation to CONTINUA™



# Product responsibility

Sustainability is at the core of our growth strategy. We design high-quality products while mitigating any potential effects on people and the environment. We recognize the responsibility we have to ensure our carbon black is safe for people and the planet.

Our approach to product responsibility is divided into two key areas: stewardship and safety. Product stewardship is about ensuring our carbon black complies with applicable health and safety requirements and global regulations for end uses by customers. Product safety is how we help our customers handle and use carbon black effectively and safely. We also have specific safety and health programs to protect our employees.

## How do we create safe products?

Our customers rely on us to develop safe carbon black for incorporation into their products. We remain well informed of any developments, enabling us to support our customers in meeting regulatory obligations while safeguarding an uninterrupted supply of carbon black.

We thoroughly test our carbon black so that it surpasses regulatory health, safety and environment (HSE) requirements. This includes conducting and commissioning product safety studies with renowned third-party institutes through our industry association, the International Carbon Black Association (ICBA).

We understand our responsibility to educate and guide customers on handling our carbon black safely and minimizing any potential environmental impacts. This includes having the correct infrastructure in place throughout the supply chain to prevent the release of carbon black dust into the air.



## Over 3,400 tests

related to food contact and other regulatory requirements performed on our products.



## Leading on product safety through innovation and collaboration

Carbon black plays an important role in many food and human-contact applications, so product safety is a vital part of the manufacturing process. Key to this is providing robust scientific evidence that finished articles containing carbon black do not release carcinogenic compounds related to polycyclic-aromatic hydrocarbons (PAH). We therefore conduct both PAH and metals testing to ensure these materials are certified as being below prescribed limits.

There are many methods for testing for impurities in carbon black, but only one approach for testing for PAH with the sensitivity and selectivity needed. Birla Carbon has led the way in advancing standards for PAH measurement.

**Rafael Vargas** is our expert in gas chromatography and mass spectrometry, the analytical techniques used in quantifying trace levels of PAH in carbon black. He heads the ASTM D24.66 Technical Committee, which deals with HSE aspects for the D24 Committee on Carbon Black and holds jurisdiction for developing HSE standards for carbon black.

Through this open committee, we have established a series of internationally recognized test methods specific to carbon black and validated using scientific processes. This is how we Share the Strength, using our experts and research capabilities to support the industry in evolving better test standards and safer products to benefit society.

 [Sustainable Development Goals](#)

## Investing in health and safety

We ensure all our internal and external customers are fully informed about the safety of our products, focusing on product characteristics, approved uses, and health and environmental risks. Any information gaps are proactively identified through our testing program. All business areas contribute to the consistency and compliance of our carbon black from a product stewardship perspective, offering input as to what can be improved.

Birla Carbon has been an active member of the CB4REACH consortium since its inception over 10 years ago. The consortium addresses the regulatory issues of our product related to the REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) regulations. For instance, we are diligently preparing for the substance-evaluation process due to be carried out in 2022 by the French Agency for Food, Environmental and Occupational Health and Safety (ANSES). This is part of the European Chemicals Agency's community rolling action plan (CoRAP) to determine whether any health or safety risks exist with carbon black. Other countries, including Korea, Taiwan, Turkey, the UK and India, have also introduced regulations similar to REACH. While this presents a challenge in terms of complying with several regulatory frameworks, we are stepping up to meet the deadlines for aligning with all new standards.

[Read more about CB4REACH](#)

## Enhancing customer understanding

Customers and end consumers want to understand more about carbon black. Through our [Statements on Product Stewardship](#), customers can find up-to-date and accurate information, including Safety Data Sheets (SDSs), labels and product stewardship statements.

We respond to direct queries from our stakeholders. In FY2021, Birla Carbon received over 1,100 queries related to product safety and compliance with specific environmental or food contact regulations. In all cases, we sent an initial response within one business day. We continually educate our sales and distribution network about carbon black product safety and its regulated applications.

## Product stewardship

We continue to build a culture of product stewardship throughout our operations, creating an environment in which our people feel able to seek advice and support. We encourage employees to stop, think and ask about what they are doing at all stages of product development and production changes.

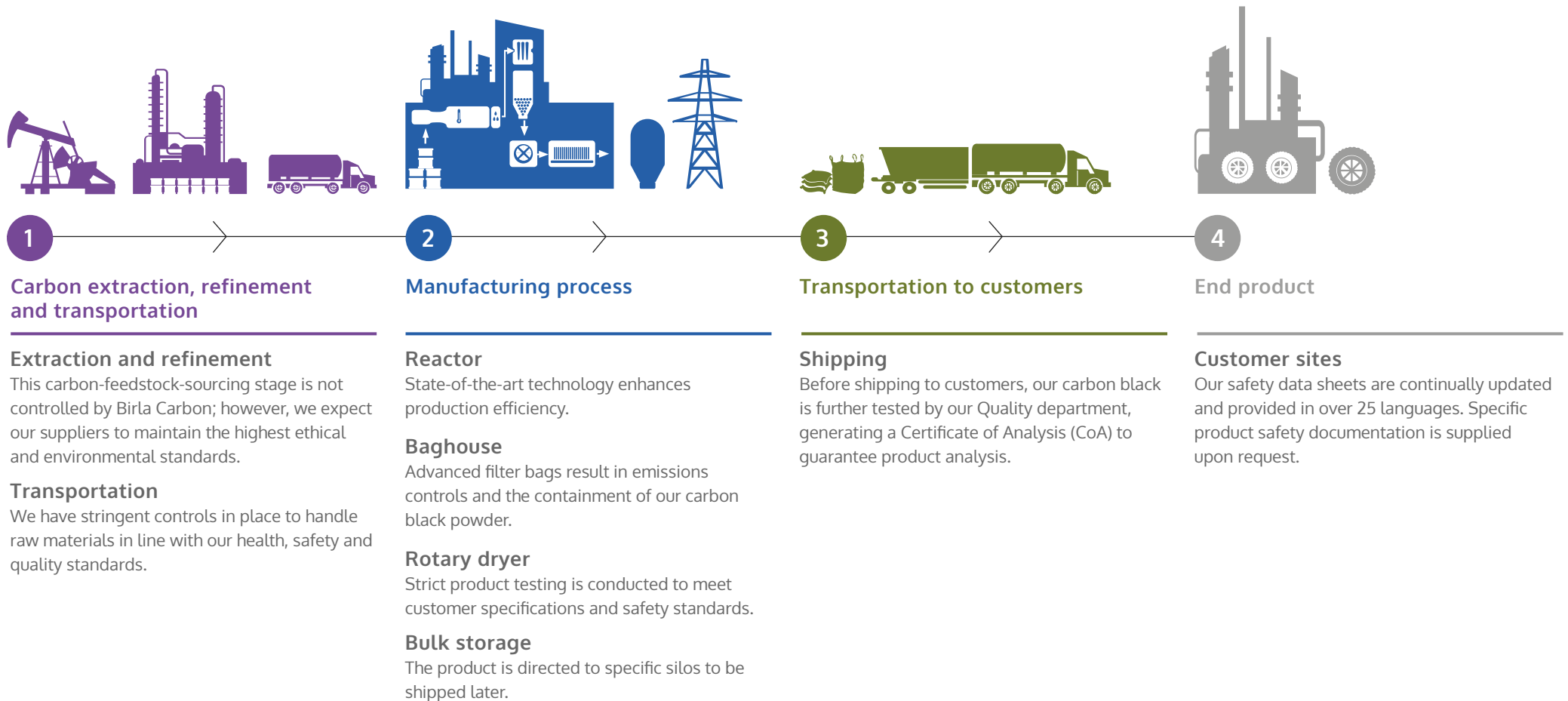
Our Product Stewardship Standard (the Standard) requires enhanced testing intervals for all products and provides a robust description of which actions will prompt product re-testing at a manufacturing site. Each site is required to send samples of the carbon black they are producing to our world-class laboratory in Marietta, USA, where they are logged into the laboratory information management system (LIMS), ensuring full traceability.

The Standard is enforced on-site by our Product Stewards, who monitor progress and employee training through annual assessments. Our Management of Change Standard ensures we formally document any changes that could potentially impact our product. In 2020, we revised the Standard to further strengthen testing requirements for certified products. We set up a Product Review Committee to oversee these efforts, meeting at least quarterly to review the status of certified products based on commercial requirements.



## Product responsibility across the value chain

Across our value chain, preserving product quality is of the utmost importance. Our rigorous process of quality testing, emissions controls, storage and shipping serves to maintain our high standards. Our value chain is divided into four areas: Carbon extraction, refinement and transportation; Manufacturing process; Transportation to customers; and End product.



# The big questions

As an engineered industrial product, manufactured from oil and gas, carbon black is sometimes perceived as a cause for concern by consumers, employees and the communities where we operate.

To alleviate any doubts that consumers may have regarding the safety of carbon black, our industry has invested in robust scientific studies to understand the potential HSE risks associated with our product.

## What is Birla Carbon doing to change how carbon black is perceived?

There is some confusion between black carbon (soot formed through the incomplete combustion of fossil fuels, biofuels or biomass) and the engineered carbon black material we produce. As such, carbon black is often incorrectly perceived as a polluting, dirty, carcinogenic black dust that is detrimental to society and the environment.

Birla Carbon is at the forefront of industry investigations into the potential effects of carbon black on both humans and the environment. Through our work with the ICBA, we engage closely with HSE officials across the world to ensure that accurate, science-based information is utilized during regulatory processes.

As we continue to research the impacts of carbon black, we are working tirelessly to close the loop of our production processes. Achieving circularity with Continua™ demonstrates our commitment to bringing sustainability to the fore of the carbon black industry. We are leading the way through innovation, creating industry-wide shifts by providing sustainable solutions for carbon black.

## What is the ICBA?

The ICBA is a scientific industry-wide association designed to facilitate research into the impacts of carbon black. Several Birla Carbon professionals hold leadership positions on the ICBA's board of directors and regional Product Safety and Regulatory Committees for North America, Europe and Asia. These groups host regular meetings to address the changing regulatory landscape in specific regions.

Additionally, the organization sponsors an independent Scientific Advisory Group (SAG), which conducts and participates in product and occupational health investigations, research and analysis. This often results in peer-reviewed publications in internationally recognized journals, relating to the HSE aspects of the production and use of carbon black. The SAG is also instrumental in providing feedback, and comments on other published material to clarify and/or correct perceptions of carbon black.

We also help our customers conduct research into the safety and efficiency of their own products. Through regular engagement with our customers and with our Sales, Marketing, and Research and Development teams, we keep our value chain up to date with the latest industry developments.

Learn more

[International Carbon Black Association \(ICBA\)](#)

[Carbon Black Product Safety Studies](#)

## Can carbon black cause health problems?

Peer-reviewed scientific studies have shown that carbon black is neither a toxin nor a carcinogen, and there is no evidence of any long-term adverse health effects on our employees. Black carbon is a known carcinogen; by association, our product (carbon black) is often also, mistakenly, linked with cancer. As the material is fully embedded in the polymeric matrices of rubber and plastic, consumers are not directly exposed to carbon black through products placed on the market.

## Is carbon black safe to handle?

Carbon black does not pose any risk to humans, and there is no evidence to suggest that exposure to carbon black results in chronic adverse health effects. Although carbon black is not defined as a respiratory irritant, carbon black dust is considered a combustible dust which is dispersed easily in the air and therefore should be handled carefully. It may cause drying of the skin with repeated and prolonged contact, but can be easily washed from the skin using mild soap and water, along with gentle scrubbing. If carbon black has been spilled or requires cleaning up, dry vacuuming is the preferred method.

Learn more

[Safety Data Sheets](#)

[International Carbon Black Association \(ICBA\)](#)

## Is carbon black harmful to the environment?

As a form of elemental carbon, carbon black itself is not harmful to the environment. However, due to the nature of our manufacturing processes, we recognize that our activities can have environmental impacts in relation to water use, greenhouse gas (GHG) emissions and waste generated. We are working to reduce GHG and other air emissions by investing in pioneering air-emission-control technologies. We are also committed to ensuring that our production facilities do everything possible to prevent the release of carbon black dust into the atmosphere.



Furthermore, as carbon black is typically embedded in finished consumer products and difficult to extract from the rubber or plastic polymeric matrix, once these products are disposed of, the environmental impact of carbon black itself is minimal, if any.

### Is carbon black a nanomaterial?

At Birla Carbon, the primary particle (near-spherical building blocks of carbon black) diameters are generally in the 10–100 nanometer range. However, our carbon black products, as placed into commerce (the final product), are agglomerates, which are much larger in size (100–1,000 nanometers in diameter). Because of the effect of van der Waals forces, these agglomerates do not break down into smaller components (e.g. aggregates) unless adequate force is applied (i.e. shear force). Thus, as placed on the market, carbon black products are not nanoparticles.

### How does Birla Carbon provide solutions to the product end-of-life challenge?

Birla Carbon's partnership with Cirtec is a big step towards product circularity in our value chain, bringing our customers' sustainability aspirations closer to reality.

Birla Carbon is set to become the world's largest supplier of SCM, aligning technological expertise and customized solutions. For example, our Continua™ 8000 product is an SCM produced from end-of-life tires. SCMs are a new class of products and have different characteristics to those of the original carbon black used to build the tires. Through innovations such as our Continua™ offering, we are inviting our customers to explore with us how and when these secondary raw materials could be used in various applications to make circularity a reality.

### Did you know?

The process of producing carbon black was first described by the Roman architect and engineer Vitruvius more than 2,000 years ago.



# Product quality

The quality of our carbon black has a direct impact on the performance and safety of our customers' own products. As a leading global carbon black business, we are in a strong position to supply innovative materials that are consistently of the very highest quality.

## Quality assurance

In FY2021, we continued certification of our sites under the International Automotive Task Force (IATF) 16949 requirements. All our manufacturing sites are now ISO 9001 and IATF 16949 certified, providing a sound basis for our sustainable development initiative and helping us continually improve on our overall performance and customer focus.

Our quality management system (QMS) is integrated into every process within our manufacturing sites (operations, plant quality, maintenance and repair/instrumentation, and warehouse/shipping) and is regularly reviewed and audited internally. As part of the QMS, each production facility has a quality assurance (QA) laboratory, which uses state-of-the-art equipment to test our products against stringent shipping specifications. These QA laboratories, along with the other functions, ensure that the material sent to our customers complies exactly with their specific requirements.

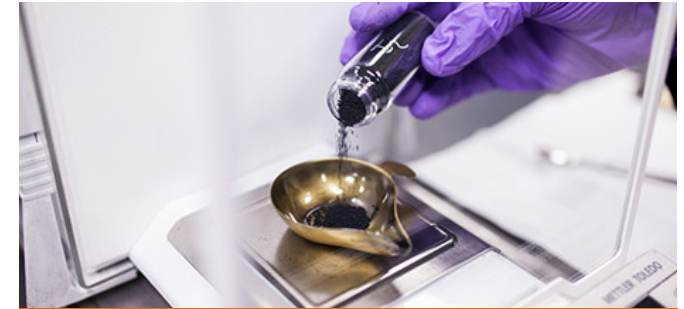


**Becoming a certified VDA 6.3 auditor placed further emphasis on the importance of meeting industry standards for quality management. This importance applies not only for our direct customers, but for their customers too, demonstrating that Birla Carbon is associated with the highest quality manufacturing standards."**

**DAVID BOURQUE**  
Quality Systems Manager,  
Marietta, USA



**100% alignment**  
with the ASTM Laboratory  
Proficiency Rating System



## Receiving industry-first certification

In May 2020, Birla Carbon became the first and only global-scale carbon black manufacturer that, in addition to ISO 9001, achieved IATF 16949 certification for all 16 manufacturing sites. This achievement demonstrates our commitment to the highest standards and product quality, and confirms we meet all the requirements of the global QMS standard.

Determined to continue building on this accomplishment, we are now working towards implementing the newest and most important quality indicators and certificates throughout our value chain. For example, in FY2021 we started the process of appointing and training Product Safety and Conformity Representatives at each of our manufacturing sites in Europe and some in Asia, in order to support our customers in meeting German automotive industry requirements.

We also began training in VDA (Verband der Automobilindustrie) 6.3, a German automotive industry process-based auditing standard, to understand how customers in that supply chain audit and to improve our own auditing systems.

## Improving our processes

We continually seek to make our manufacturing processes better. Following requirements set by the IATF 16949, we are developing a system through which we can identify costs caused by poor quality. The system tracks these costs through several elements:

- Customer claims
- Complaint-handling costs
- Returned material and associated freight due to complaints
- Nonstandard production

Information on each of these is gathered from the relevant internal functions, including Accounting, Customer Service, Supply Chain and Operations. It is then tracked and analyzed by our Quality Management team. This data supports our management review process to monitor trends and develop actions for reducing costs, as well as improving customer focus and satisfaction.

## Sharing best practice on product convergence efforts

In FY2020, we established several quality-related key performance indicators (KPIs) that are communicated internally through regional and global quarterly reports: Net Promoter Score (NPS), complaints and process reliability. These KPIs will help us continue to improve QA Processes, our information-sharing program for quality issues and for devising solutions.

The aim of this approach is to prevent reoccurrence of quality issues at the same, or other, manufacturing facilities. It will also help to improve communication and awareness of quality initiatives to the benefit of all manufacturing sites.

Our Global Quality group, in collaboration with Plant Quality Managers, determines what information should be shared and how best to distribute it. All information is shared throughout our facilities in the form of a quality bulletin, which is maintained for employee reference on our SharePoint.



**100% of our manufacturing sites**

are now IATF 16949 certified

## Focus on product consistency

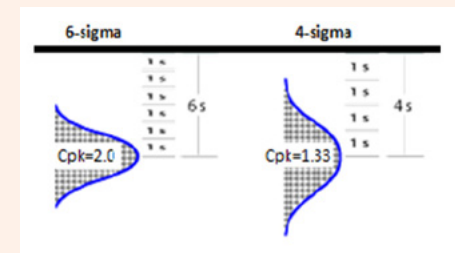
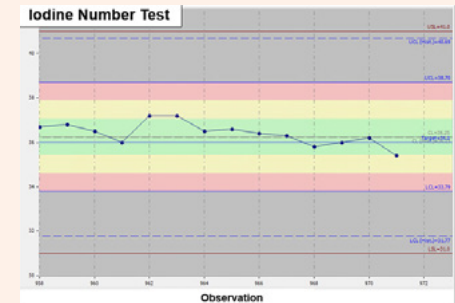
Birla Carbon customers expect a product that consistently meets the highest quality standards. For carbon black, these standards focus on three key areas:

- **Colloidal properties** – or those related to the carbon black's morphology (microscopic physical characteristics);
- **Physical form** – referring to the bead quality (size and hardness) of carbon black; and
- **Cleanliness** – the purity of our product.

At Birla Carbon, we rigorously test our carbon black through internationally recognized test procedures and participate in the development of testing standards. All Birla Carbon laboratories undertake industry-wide proficiency testing to ensure daily performance checks against the reliability of measurements, and testing facilities are regularly monitored for compliance.

Based on customer requirements, we define upper specification limits (USL) and lower specification limits (LSL) for each test. Our products only leave our factories when all the required parameters have been tested, and the products are certified within the customer's limits.

Our manufacturing processes utilize statistical process control (SPC) to help produce the highest-quality products. Important properties are analyzed using a process capability index (Cpk), a statistical measure of a process's reliability. A Cpk level of 1.33 or greater indicates that a process will meet customer requirements.



## Working with ASTM

Our plant laboratories are regularly audited by our Quality Technology group and assessed twice a year through an international proficiency testing program, the Laboratory Proficiency Rating System (LPRS). This program, organized by ASTM International, provides us with an opportunity to internally compare our laboratories with nearly 100 industry laboratories worldwide. If LPRS identifies any anomalies or deviations, we conduct internal investigations, with support from our two world-class central laboratories located in Marietta, USA and Taloja, India. This commitment to upholding best practice ensures our laboratories meet the very highest global standards.

Birla Carbon actively participates in the ASTM D24 Technical Committee, which develops internationally recognized and accepted test standards applicable to carbon black. The ASTM standards play a key role for our products in areas such as composition, properties, classification, nomenclature, analysis and QA.

Learn more

[Research and development](#)

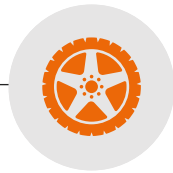
[ASTM D24 Technical Committee](#)

## Our global quality management approach



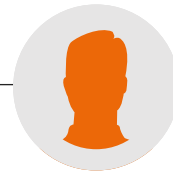
### Certificate of Analysis (CoA)

A CoA contains the required product quality information for our customers and contact details.



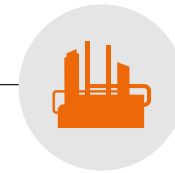
### Guaranteed consistency

We work with our customers to establish rigorous consistency tests to guarantee that the characteristics of our carbon black lie well within the specification limits.



### Customer tests

Our customers often conduct further stringent and thorough quality tests to confirm our product's performance.



### World-Class Manufacturing (WCM)

Our WCM approach helps us continually improve the quality of our product through adapting the best available practices and technologies across Birla Carbon.



### Measurement systems analysis (MSA)

We conduct MSAs to closely examine the performance of our testing equipment.



### Quality organization

Regular meetings are held between quality leadership, plant-specific Quality Managers and the Technical Service Managers to discuss and implement best practices in the area of quality.

# Research and development

When our ancestors painted on cave walls, they used carbon from fires to share stories. Sharing that fire guided the way for humanity to migrate and discover new frontiers. Today, we are constantly searching for a deeper understanding of our products and their applications so that we can build for the future through innovative and state-of-the-art processes.

By using the best technology available, we continue to improve our product and develop new opportunities for carbon black application. This is supported by investing more into new research and development (R&D) channels. Our teams take a proactive approach to product design, working to address the problems our customers may face in the future rather than waiting for them to come to us.

In 2020, our approach to innovation saw us achieve a closed-loop system through our Continua™ offering, marking a milestone in our sustainability journey. A result of our long-standing commitment to developing more sustainable products, Continua™ 8000



## 5.4% of profit

reinvested in research and development in FY2021

is a response to a growing customer demand for circularity. Through our R&D process, we created a solution which can be scaled to achieve wider environmental benefits for our business and our customers.

## Leading through innovation

It has been over 75 years since our historic installation of one of the world's first industrial electron microscopes. Decades later, our laboratories and product-development scientists continue to exploit this tool to gain insight into current and future carbon blacks.

Our customers say that our carbon black identification technology (CB ID) is still the best in the industry, and we gladly share our process with them. Our engineers continually investigate and develop new approaches to carbon black production and improved efficiency, while minimizing its impact on the environment. To ensure we remain at the cutting edge of our industry, we depend on leading scientists, dedicated to taking us forward.

We encourage an open culture of innovation, looking for ideas from any area of our organization – not just R&D. We know that to build on our Share the Strength ethos, we must spread this message across our varied departments.

[Read more about how we are promoting a culture of innovation across Birla Carbon](#)

To facilitate this process, we provide our scientists with state-of-the-art research facilities, bringing together our R&D and Manufacturing teams from around the world. Our two principal R&D Centers in Taloja (Maharashtra, India) and Marietta (Georgia, USA) are supported by two regional satellite laboratories in South Korea and Brazil where our scientists are developing solutions for our products and processes.

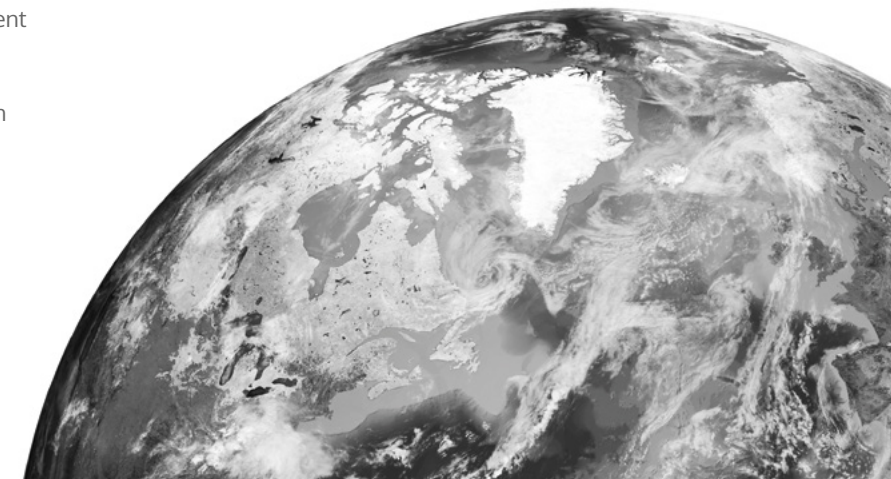
Our R&D Centers are dedicated to five areas of expertise:

- Manufacturing technology
- Analytical services and quality
- Product development
- Process innovation
- Material innovation

Our R&D Centers employ around 80 leading scientists and technological experts in materials science, analytical chemistry, nanocomposites, physics and process engineering. They allow access to computational fluid dynamics for engineering design and development, as well as high-level personnel and fully equipped laboratories. This includes a range of sophisticated electron microscopes, which aid discovery and practical development to meet the ongoing challenges of the 21st century.

## Did you know?

If laid out end to end along their longest dimensions, the aggregates in one gram of carbon black would more than encircle the Earth at its equator!



## Innovating with circularity in mind

As we continue to explore new product possibilities, circularity is not just something we aspire to, but a key R&D consideration. In FY2020, we entered into a joint development agreement with CHASM Advanced Materials to expand the application of nanomaterials for a variety of uses, including high-performance tires and next-generation batteries. The hybrid nanomaterials bring together carbon substrates and carbon nanotubes to produce a stronger, more sustainable material for customers.

We transitioned to a strategic partnership in FY2021 and broadened our scope to include conductive plastics and novel coatings. This strengthened collaboration is aimed at driving sustainable solutions to address increasing customer and industry needs.

We also conducted open innovation campaigns on seeking sustainable feedstocks for carbon black, inviting ideas from inside and outside the company. We are pursuing new processes and products that these new feedstocks enable.

As well as designing for circularity, we are always on the lookout for other ways we can reduce our environmental footprint. We are currently partnering with start-ups in this domain, including US Department of Energy grant winners, allowing us to capture and convert our CO<sub>2</sub> emissions into novel, solid-carbon products, including carbon nanomaterials, that we could then use to replace or improve existing products.



**If the 20th century was dominated by iron and steel, the 21st century will be dominated by carbon. This versatile element has a near-infinite number of uses and, if we can efficiently recycle carbon dioxide, it forms the core of a perfectly circular economy. With the innovations underway in Birla Carbon today, we are perfectly positioned for this future."**

**DOUG BARR**

Director, Materials Innovation,  
Birla Carbon USA Inc.



## Meeting customer needs

The Product Technology group works with our customers and global Technical Service teams to ensure customer needs are understood and addressed. Part of their work is to develop new grades of carbon black to improve the performance and sustainability of our customers' products. For instance, we propose new carbon black products that are less energy demanding during the incorporation phase in rubber, plastic, ink or paint formulations. We have also developed new grades of carbon black that are helping our coatings customers create safer products with water-based coatings rather than traditional, solvent-based products. This new carbon black will also achieve unseen levels of quality, superior performance and improved formulation costs.

## Enabling sustainable mobility

Rolling resistance is a key focus for our tire customers, who are concerned with the environmental credentials of their product. Our objective is to develop new carbon black grades and sustainable materials to further lower the rolling resistance for the next generation of tires. In the past four years alone we have commercialized two new grades created with this goal in mind.

## New areas of development

Over the years, our research into improving carbon black for our existing customers has remained a priority. However, we are also dedicated to exploring novel areas of products. Areas adjacent to where we currently work, such as tire materials, coatings, inks and plastics, all hold potential for increasing value for our business and our customers.

We have a team of dedicated scientists researching new, highly conductive carbon blacks for use in lithium batteries to improve energy efficiency, power density and charging speed. These batteries could then be used in the next generation of electric vehicles, in grid storage systems to improve the efficiency of wind farms or for home energy storage. We are also investing to expand our battery material portfolio to include natural and synthetic graphite.



## Developing materials that champion sustainability

Our collaboration with GranBio (formerly American Process Inc.) is working to enhance the sustainability of tires and rubber goods.

In February 2020, we announced the introduction of a patent-pending Nanocellulose Dispersion Composite (NDC™) for qualification by tire and rubber companies. This NDC™ masterbatch, the result of a three-year joint development program with GranBio, provides optimal dispersion of nanocellulose in rubber formulations to improve tire rolling resistance and vehicle fuel economy. This innovative material not only enhances the in-service performance of tires, but also improves environmental performance, as nanocellulose is derived from renewable biomass resources. This allows our customers to achieve their sustainability goals and Birla Carbon to further drive our commitment to SOE.



# Environment



Evolving to reduce  
our footprint

**In this section:**

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# Environment

As an international business, with customers and operations in several countries, we recognize our responsibility to safeguard the environment. This means taking a long-term view and continually adapting and investing in our environmental stewardship to use resources more efficiently and minimize our adverse impacts.

Our processes produce emissions, and we are responsible for ensuring we minimize these as much as possible. We monitor our emissions and continue to invest in new technologies to guarantee compliance with local regulations in the areas where we operate.

Although the quantity is relatively small, we generate waste at all stages of our industrial process, from manufacturing to packaging, and we are implementing strategies to reduce, reuse and recycle this waste.

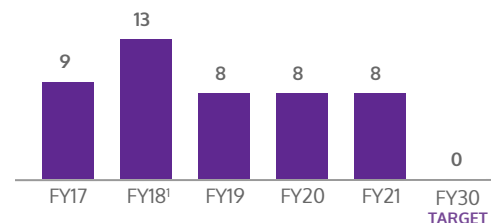


I have a mantra: think until it hurts, then think a bit more. It is how I approach Sustainable Operational Excellence (SOE) at Birla Carbon, always looking for ways we can improve. Through our SOE program, we are identifying and investing in initiatives and technologies that will help us to decrease our environmental impact on a global scale."

**DAVID NUNEZ**  
Global Manufacturing Manager Technology,  
Corp Technology ESP EU

## Progress towards our target

Record zero environmental releases year on year



## WE SUPPORT THE FOLLOWING SDGs



## Considering the environment at every step of our process

We are committed to continually improving our environmental performance. Through regular Life Cycle Assessments (LCAs), we measure the impacts of every step of our carbon black production process, from sourcing feedstock to transporting the final product to our customers. For example, working in areas where water scarcity is an issue, we have developed a strategy that identifies where we can improve usage and where we can reduce the strain on potable water sources.

As a global company, we take our responsibility to environmental stewardship seriously and have made strides to reduce our carbon footprint throughout our operations. We are increasing energy efficiency at our plants, sourcing local feedstock oil to reduce transportation emissions and recovering energy to be recycled back into our operations or sold on to neighboring facilities.

**BEYOND DURABLE**  
Carbon black has been a part of human life for centuries and will continue to be integral to our lives in the future. This is why we are taking a long-term view of innovation, and why sustainability must be central to our growth strategy.

[Find out more about our five Purpose Principles](#)

<sup>1</sup> In FY2018, we had two releases of carbon black/feedstock exceeding regulatory reporting limits to soil and one to air. The remaining releases were reported on a voluntary basis to regulatory authorities.



# Life Cycle Assessments

Through conducting regular Life Cycle Assessments (LCAs), we can quantify our ongoing contribution to circularity. In partnership with [Circotec](#), we are adding credibility and scale to our processes.

Leading the way for the industry, LCAs cement our sustainability approach by evaluating all environmental impacts in a product life cycle, from raw material extraction through to end-of-life.

Our initial LCA, carried out in FY2017, indicated that our overall carbon footprint per tonne of carbon black has decreased by 12% relative to our FY2012 baseline. We achieved this through taking a holistic approach, resulting in greater efficiency by:

- Converting carbon into carbon black;
- Optimizing our energy performance; and
- Increasing the proportion of our feedstock that is sourced locally.

Traditionally, a large percentage of our feedstock oil has come from the US Gulf Coast in the form of fluid catalytic cracker oil. Despite the efficiency advantages of this oil due to its high carbon content, transportation costs and sulfur-emission restrictions have led us to source alternative local feedstock, especially in India, Southeast Asia and the Far East region.

We have compared our LCA results with those of the general carbon black industry, which are recorded by ecoinvent, an external company that specializes in developing LCA methodology. While the ecoinvent process is not specific to Birla Carbon's operations, and as such is not fully representative of our manufacturing process, it does represent impacts for carbon black production globally. The results show that our carbon black production impacts are lower than industry averages. We share these results with key customers and suppliers to further reduce our global environmental impact.

## Understanding our impact

Our Environmental Policy, published in FY2018, outlines our commitment to continually improve our performance in this area. We have used LCAs to measure the impacts of our feedstock and carbon black for the past five years.

The scope of our LCA is "from cradle to gate": from the moment the raw materials are extracted to the moment the carbon black is delivered to our customers following ISO 14040 guidelines. This enables us to

better understand our impact regarding CO<sub>2</sub> emissions and identify opportunities to reduce our overall carbon footprint.

In FY2020, we took the results of our most recent LCA and developed a Carbon Footprint Statement. This statement is publicly available as a tool to help our customers determine the complete carbon footprint of their own products. It also ensures we are communicating transparently on our impacts.

[Environmental Policy](#)

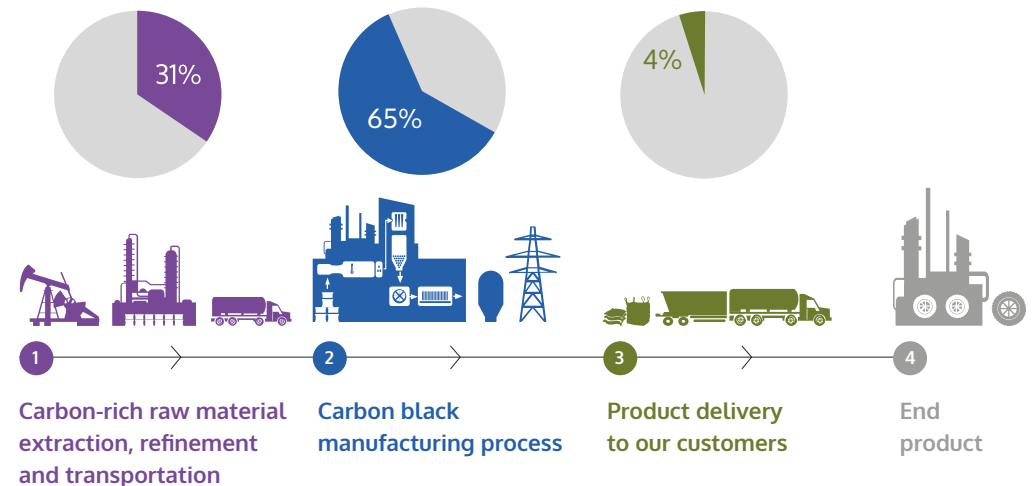
[Carbon Footprint Statement](#)

## Carbon stewardship across our value chain

Our approach to carbon stewardship extends throughout our value chain, from raw material

extraction to manufacturing, product delivery and product end-of-life. Across each of the following points we look to monitor and reduce our carbon footprint.

### Our carbon footprint



## Carbon-rich raw material extraction, refinement and transportation

Because we use a waste product of the oil and gas industry, Birla Carbon has little control over carbon emissions during the extraction and refinement stages.



10%

### Extraction and refinement

Carbon-rich crude oil is extracted as a raw material.



12%

### Transportation to refinery

The crude oil is sent to refineries for processing.



8%

### Refinement

Through fractional distillation, crude oil is separated into different chemicals including gas, petrol and kerosene. The low-value carbon-rich fraction, a waste product from this process, is our feedstock.



1%

### Transportation to Birla Carbon

Birla Carbon has some control over the transportation stage. The feedstock is transported to our manufacturing facilities. We source our raw materials from regional suppliers as much as possible, reducing the carbon footprint that we generate through this stage.

## Carbon black manufacturing process



65%

### Manufacturing process

During our manufacturing process, the feedstock oil is converted into valuable carbon black. This stage comprises the single largest contribution to our overall carbon footprint, and it is also the stage at which we have the greatest ability to reduce our footprint.



### Energy management

Through co-generation, we convert the tail gas produced at our plants into heat, steam or electricity. The recovered energy is used in our own operations, and the surplus is distributed through local networks. Any remaining residual energy is flared, although we minimize this where possible.

## Product delivery to our customers



4%

### Transportation

Carbon black is delivered to our customers in a variety of containers, ranging from bags to supersacks or bulk transportation.

## End product



Carbon black is used by our customers to produce countless different items, from tires to cables and from ink to food packaging. By engaging and working closely with our customers, we actively help them to understand the carbon life cycle of their own products.

We have successfully developed our product-recycling capacities with Cirttec through end-of-life tire pyrolysis. The resulting Continua™ products are a testament to our drive for circularity.

### Did you know?

The largest primary particles of carbon black are 1,000 times thinner than a human hair.

# Ensuring our product has a second life

**Our LCA looks at our product from when we first source the raw materials to when we deliver a final product to our customer. But our concern does not stop there.**

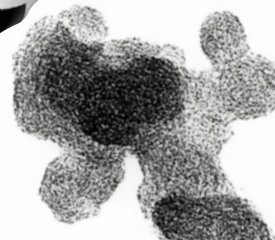
We are industry leaders when it comes to sustainability and want to help our customers develop their own sustainability practices. That is why we constantly collaborate with interested customers to share best practices in developing recycling options and reducing waste emissions for a more environmentally sound business.

Our product-based research is focused on end-of-life innovation, striving to increase longevity and to understand how we can better support customers to repurpose carbon black. We are currently researching the benefits of switching from paper to plastic packaging.

This may appear to be counterintuitive, but a large proportion of our European customers can feed polymer-based packaging directly into their products, therefore reducing the overall amount of waste generated. Adopting this collaborative approach aims to change traditional approaches to the carbon black life cycle by improving product recyclability.

## Did you know?

In terms of size ratio, the difference between a primary particle of carbon black and a soccer ball is about the same as between a soccer ball and the moon!



## Tire use, end-of-life tire collection and transportation to tire shredder

We formed a [partnership with Cirttec](#) in 2021 to develop a solution that addresses our product end-of-life challenge. The resulting Continua™ 8000 Sustainable Carbonaceous Material (SCM) allows for greater recyclability of our original carbon black products from end-of-life tires.

Cirttec has developed its production processes over more than a decade to achieve commercial scale. To support this landmark partnership, Cirttec plans to open a flagship production plant in the Netherlands. Expected to be operational by the end of 2022, this will be the largest and most sustainable pyrolysis plant in Europe. Tire pyrolysis is the process of treating end-of-life tires through heat to recover pyrolysis oils and carbonaceous material.

Over the next five years, by putting millions of tires through the pyrolysis recycling process, we will introduce over 70,000 tonnes of SCMs to the market annually, making us the largest single source of this new class of materials. Cirttec will also commercialize large quantities of product-grade renewable fuels that result from the pyrolysis of end-of-life tires. Once Cirttec’s new plant is at full capacity, over 228,000 tonnes of direct and indirect CO<sub>2</sub> emissions will be eliminated annually when compared to our conventional carbon black process.



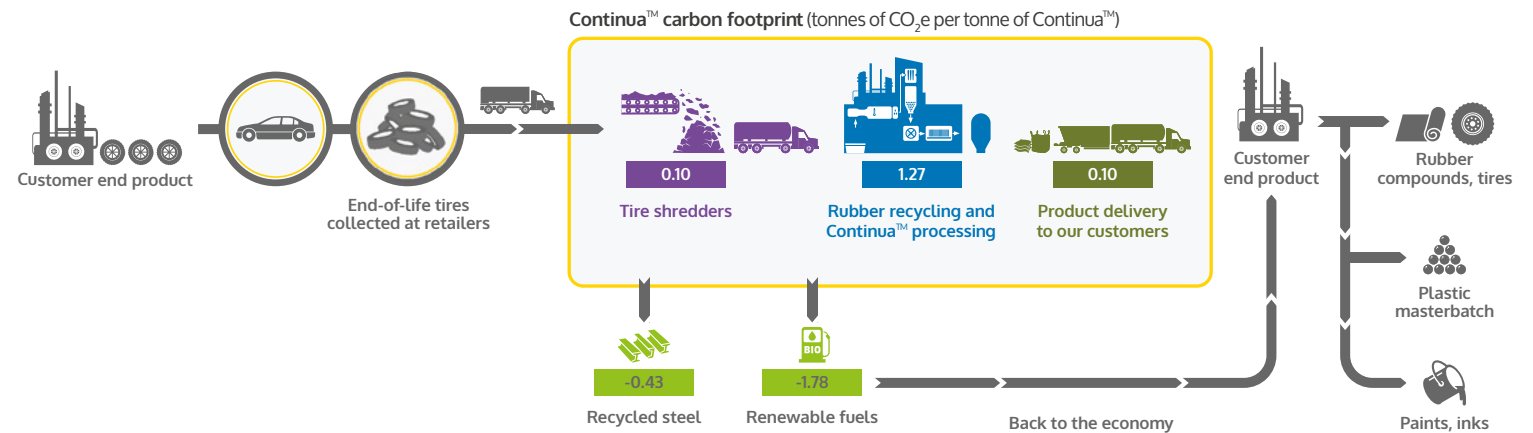
## The circularity of Continua™ 8000

We performed a comprehensive LCA according to ISO 14040 and ISO 14044 to calculate the carbon footprint of Continua™ 8000, with results showing a significant reduction when compared to our traditional furnace carbon black products.

Continua™ 8000 reduces the consumption of fossil fuels through recovering steel and producing renewable fuels, aligning with a system expansion approach. The product also contributes to a value chain with a net negative carbon footprint, capturing 0.73 tonne of CO<sub>2</sub> for every tonne produced

[Read more detail on our latest Life Cycle Assessment and our ecoinvent results](#)

## From creation to CONTINUA™




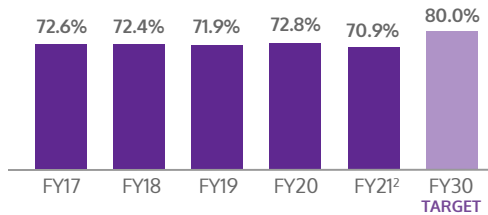
**Did you know?**  
We are reducing our environmental impact by capturing 0.73 tonnes of CO<sub>2</sub> for every tonne of Continua™ 8000 produced.

# Carbon stewardship

Our carbon stewardship strategy relies on two key factors: the conversion of more carbon from oil into carbon black and the optimization of our energy cycle.

## Progress towards our target

 Increase our absolute energy-conversion efficiency to 80%



## Net energy positive


Efficient energy use and recovery is critical to our business. We have been tracking energy conversion efficiency since FY2015, with the aim of increasing absolute efficiency to 80% by FY2030. This means that for every 100 carbon units introduced to our facilities, a minimum of 80 would be converted either to carbon black or to a useful form of energy.

The implementation of several projects to increase energy efficiency in FY2021 required us to use more power. In the long term, these measures will have a positive impact on how

efficiently we consume energy. Production volumes were also impacted as a result of the pandemic. However, at some facilities we must use the same amount of energy to run our air-emission-control equipment to maintain compliance with stringent regulations.

Since establishing our energy conversion KPI, we have made real progress: we now recover more energy from our own facilities and consume less energy per tonne of carbon black produced. Much of this energy is used in our manufacturing process, while any surplus is sold to neighboring facilities and local grids in the form of electricity, steam, tail gas or hot water.

Regional Energy Managers lead these efforts, assessing the energy cycle of each of our plants and providing local expertise and support in areas where improvement is suggested. This knowledge is then shared across the rest of the business through our World-Class Manufacturing group. We also partner with the ABG's Corporate Technical and Energy Services team for knowledge-sharing purposes. Our Energy and Carbon Policy sets out our commitments not only to comply with but to exceed regulations by reducing our energy intensity and carbon footprint.

 [Energy and Carbon Policy](#)  
 [World-Class Manufacturing Group](#)

<sup>2</sup> FY2021 results were impacted significantly by the COVID-19 pandemic.

## Designing for sustainability at Gummidipoondi

At our Gummidipoondi site in India, we have incorporated a range of energy-efficiency and water-conservation measures into the design of a new production line. To reduce energy consumption, we adopted a regenerative design approach, using low-grade extraction for feed water heating and reducing steam consumption in the deaerator. By upgrading the co-generation system, we produce an additional 1.7 MW of electricity from our process tail gas, displacing the electricity coming from the public grid.

As Gummidipoondi is located in an area of water stress, we use an air-cooled condenser, reducing the amount of water needed to convert steam to condensate. The system was also designed to enable zero liquid discharge.



## Co-generation at Birla Carbon Italy

We commissioned a new electricity turbine at our Birla Carbon Italy (BCI) plant in Trecate at the end of FY2021, aimed at reducing fossil fuel consumption. The production unit is now able to use steam emitted from the boiler more efficiently: turbine efficiency has leapt from 12% to 21%, increasing electricity production from 115 kWh to 200 kWh. This is a huge step forward, demonstrating how BCI is progressing with sustainability in mind.

BCI is planning a further upgrade, set to take place at the end of 2021. A regulated extraction system will be installed to decrease thermal losses via pressure-reduction stations. This process will make more steam available for electricity production, eventually improving the site's overall energy-conversion efficiency.

Installation of new, more efficient technologies means that BCI is now net energy positive, producing additional electricity which it can export to the national grid. As well as offsetting Italy's national grid demand, BCI upgrades will have national benefits in the form of reduced overall CO<sub>2</sub> emissions.


## Reducing our direct CO<sub>2</sub> emission intensity

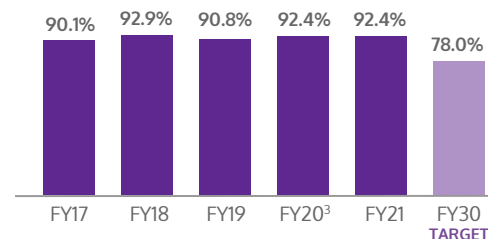
We continue to work to reduce our direct CO<sub>2</sub> emission intensity. While we reduced our absolute CO<sub>2</sub> emissions in FY2021, the intensity (per tonne of carbon black) remained the same as in FY2020 as production fell due to the COVID-19 pandemic.

Through the implementation of best practice and continual technology investments, we have already achieved 35% of our CO<sub>2</sub> emission-intensity reduction target (FY2020: 35%). These results were accomplished through a series of capital-intensive global, regional and local initiatives. For example, we designed reactors and technologies that enable us to optimize temperatures and gas flows, improving the conversion of carbon into carbon black.

Some of the challenges we face in achieving our carbon intensity target include the current low price of oil and a market demand for low-yield grades of carbon black. In the long term, these can help our customers reduce their carbon footprint through extending the life of tires or reducing the rolling resistance of tires and consequently vehicle fuel consumption. We still have several plants where significant improvements are expected to occur in the coming years.

## Progress towards our target

 Reduce our direct CO<sub>2</sub> emissions intensity by more than 22% against the 2005 baseline



## Promoting transparency

CDP is a nonprofit organization that works with companies and shareholders to disclose carbon emissions and the use of natural resources. In FY2015, we began to disclose our performance through CDP's online platform; we continue to do this annually. In FY2021, we voluntarily responded to its Climate Change questionnaire, receiving a B rating, and replied to specific customer requests for information on our carbon footprint through our Supply Chain response.



## Taking steps to reduce our CO<sub>2</sub> footprint at Patalganga

Each of our sites is on its own path to sustainability. To help them along, we are establishing teams through our SOE program, focusing efforts on our sites which have the most room for improvement.

One site identified as such was our factory in Patalganga, India, where several opportunities were noted for improving CO<sub>2</sub> emissions performance. To address this, a cross-functional, global team consisting of employees from Engineering, IT, Plant Operations and the Regional Technology Manager group was created. Performing gap analysis, data collection, evaluation and testing, the team produced an action plan for the site with 16 areas for improvement and 55 actions.

The team remained on-site for the first two weeks, following which they performed weekly calls and week-long visits on a monthly basis. Through a range of actions such as faster data analytics and equipment upgrades, the site achieved a 4% reduction in CO<sub>2</sub> emission intensity in FY2020 compared to the previous year.

Using a similar methodology in Thailand and Gummidipoondi, multiple areas for improvement have been identified, with CO<sub>2</sub> emission intensities expected to improve in FY2022.

<sup>3</sup> FY2020 and FY2021 results were impacted significantly by the COVID-19 pandemic.

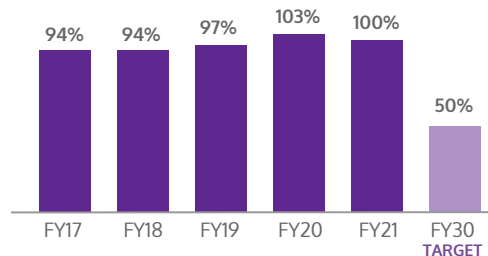
# Water

Effective water stewardship is a key priority, especially in locations where this vital resource is scarce or where it is predicted to become scarce. Our Strategy considers short-, medium- and long-term scenarios to identify areas of improvement within our water cycle. We want to develop a more circular approach in this area and are constantly looking for ways we can reuse the water we withdraw.

## Progress towards our target



Reduce our water withdrawal intensity ( $m^3/t_{\text{carbon black}}$ ) by 50% versus FY2013 baseline at our high- and medium-risk sites



## 100%

of our manufacturing locations use recycled process water and/or rainwater in their operations

## Assessing our water vulnerability

We partnered with the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) in 2016 to assess the water stress level at each of our manufacturing sites using the WRI's Aqueduct tool. For our plants based in India, we complemented the assessment using the India Water Tool. This approach provided us with an informative, high-level and generic assessment for all our sites.

Using the results of our assessments, we have determined which sites are at a medium or high risk for water availability to include in our Water Withdrawal KPI<sup>4</sup>.

- [World Business Council for Sustainable Development](#)
- [World Resources Institute](#)
- [Aqueduct](#)
- [India Water Tool](#)
- [Governance](#)

## Our water risk management approach

Our Water Stewardship Policy sets out our commitments to protect and conserve water resources through management practices and governance systems.

Our water risk management approach is inspired by a six-step methodology detailed in our [Water Stewardship Policy](#) and advocated by the [European Water Stewardship Standard](#), the [Alliance for Water Stewardship Standard](#) and the ABG Technical Standard (Water Management).

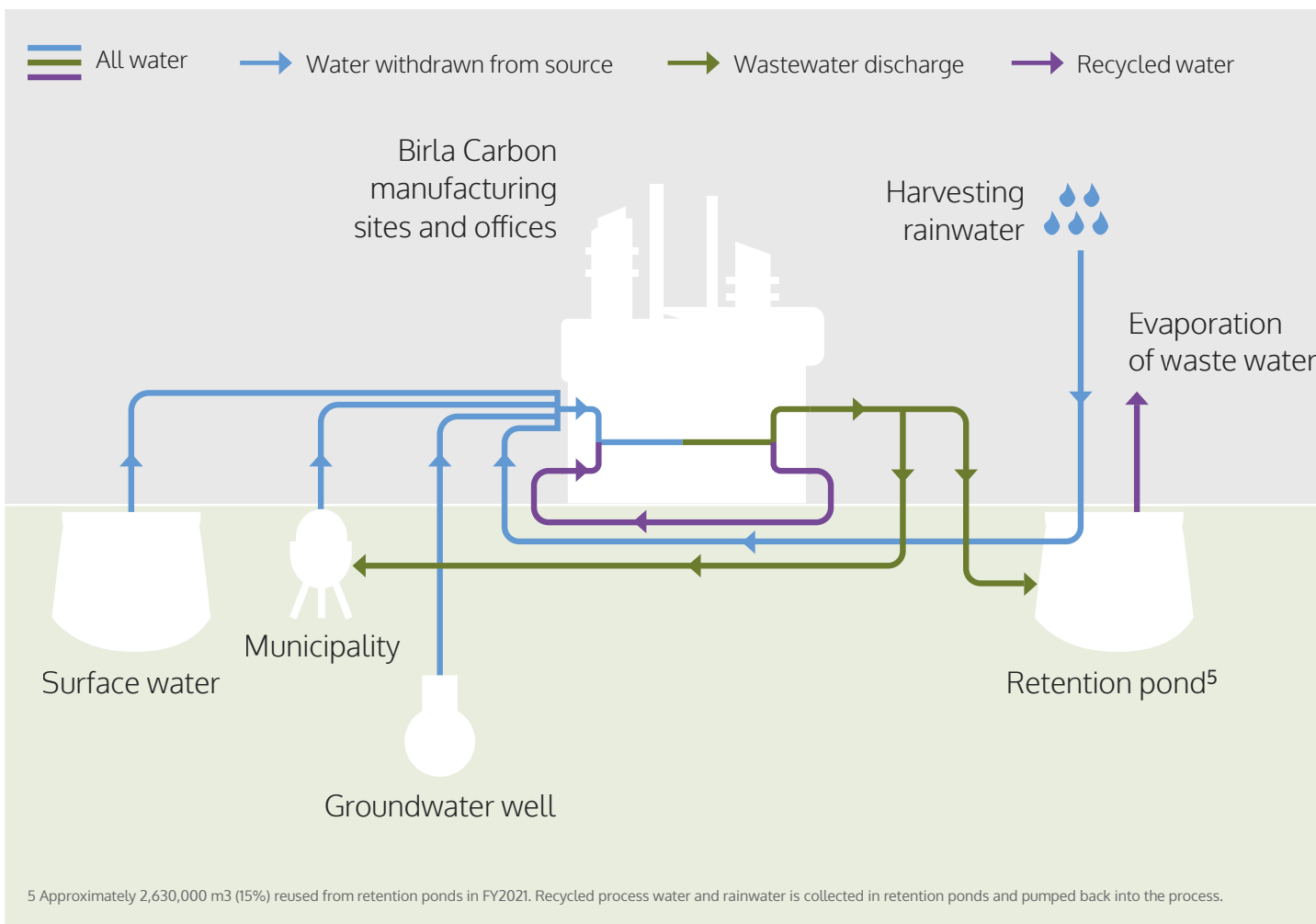
We have recently integrated our water risk management approach into our wider [Enterprise Risk Management](#) (ERM) strategy, while high-risk sites are now incorporating Water Risk Mitigation Plans into their existing Business Continuity Plans. These mitigation plans identify both existing and additional strategies for managing critical water risks. New mitigation measures are actioned with deadlines set for completion, while existing mitigation strategies are reviewed at least annually through our ERM process.

<sup>4</sup> Sites comprised Hickok, Cubatão, Gummidipoondi, Alexandria, Weifang and Bahia.



## Water cycle at Birla Carbon sites

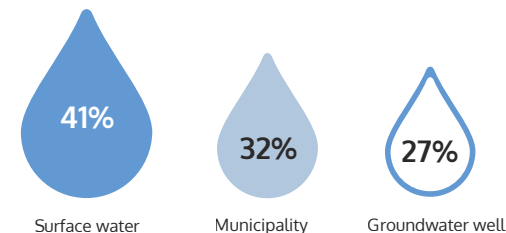
We try to limit our use of potable water, looking for ways to increase circularity by recycling and reusing it where feasible. Once water has been used in the manufacturing process, it is directed into retention ponds, from where it will be re-directed back into other processes. Our water-conservation best practices are shared across all our locations as part of our SOE strategy.



## Water withdrawal by source

FY2021

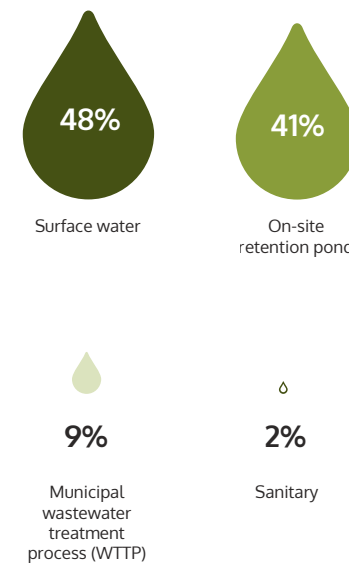
**15,983,063 m<sup>3</sup>**



## Water withdrawal by destination

FY2021

**6,252,532 m<sup>3</sup>**



## Maximizing resource reuse through creative solutions

We are constantly exploring, and investing in, the best available technology to mitigate our environmental impacts, looking for smart solutions that will deliver multiple benefits. The water we require for carbon black manufacturing is primarily used for cooling the gas stream produced. Reducing the need for this is key to decreasing our water consumption.

In Alexandria, Egypt, we continue to identify ways to optimize wastewater reuse while minimizing the amount of potable water we need to use. The Egypt site is a zero-liquid-discharge facility, meaning no liquid is discharged from our retention pond to off-site areas and water must be reused at an appropriate rate to maintain the pond level and avoid flooding.

However, not all discharge water can be circulated back into use at our plants, and there are quality requirements that must be met before water can be reused. The team in Egypt identified a stream that was going straight from the cooling tower blowdown to the settling pond. This presented an opportunity to instead direct this water to a pretreatment process and then on to the reverse osmosis plant.

By re-directing water in this way, the Egypt facility was able to decrease the amount of water in the settling pond and lower freshwater requirements by approximately 270 m<sup>3</sup>/day. Ongoing improvements in water reuse systems have helped scale down water withdrawal in Egypt by 35% over the last three years.

[Sustainable Development Goals](#)



# Waste

**In any industry, effective waste management and minimization should be a priority; carbon black is no exception. Although the quantity is relatively small, we generate waste at all stages of our industrial process, and we are implementing strategies to increase the circularity of our operations.**

## Managing our waste

Our Strategy aims to reduce the amount of waste we generate and ensure that what we do produce is reused or recycled – whether for the same purpose or for a secondary use. Our sites comply with all applicable health, safety and environmental requirements, and we ensure waste materials are sent for disposal in the most sustainable manner.


We have fully implemented our Waste Management Standard (the Standard), which outlines internal requirements for the proper accounting, handling, transfer, storage, transportation and disposal of solid and hazardous wastes generated during construction of and operation at our facilities.

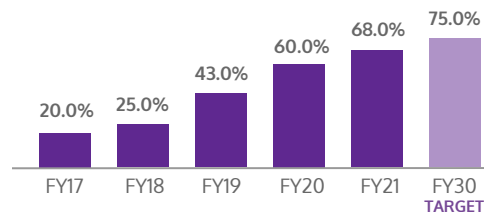


**75%**

waste repurposed, including recycling, reuse and recovery, by 2030

## Progress towards our target

 75% waste repurposed, including recycling, reuse and recovery, by 2030



The Standard specifies roles and responsibilities for the management of solid and hazardous waste at our facilities to protect both people and the environment. It also encourages sites to consider new and updated waste-minimization options on an annual basis. Our waste management approach continues to evolve as we improve identification and accounting of our waste.

Achieving this waste-reduction target presents a significant challenge. We expect the repurposing of gypsum to make a significant contribution to our performance, but there are currently limited outlets available for doing so in some locations. We are exploring solutions to this challenge with our ABG peers. Recent stronger focus on waste management in our facilities globally, including composting of gypsum at our plant in Thailand and recycling of scrap material in all our plants, accounts for the marked increase in progress seen in FY2021.

## Reprocessing carbon black

When we produce off-grade carbon black, rather than disposing of it, we segregate it and put it through the manufacturing process again until we have a product that meets our stringent quality standards. As carbon black has a long shelf life, customers are also able to return unused carbon black to us so it can be reprocessed. This way, not only are we reducing the waste that we generate but we are also taking steps to close the loop on our production.

## Did you know?

Our new waste Standard was implemented in 2018 to drive best practice across our manufacturing sites.



## Reduce waste in our facilities

The canteen in our Trecate, Italy facility is taking a range of steps to drive progress towards sending zero waste to landfill. In a bid to reduce food waste, team member Vincenzo De Bortoli has volunteered to collect leftover bread from the facility and deliver it to a local kitchen, where it is used to make free meals for people in need.

The efforts of the Italian facility do not stop at reducing food waste. Converting from single-use plastics, all plates in the canteen are now made from cellulose pulp and are fully compostable at end of use. Single-use cups are also made from compostable materials. The polylactic acid polymer used is derived from plants such as corn, wheat or beets and can be broken down in industrial composting facilities once it has been used. To encourage employees to participate in these efforts and to take responsibility for their own plastic consumption, more bins have been placed in office areas to separate plastic from other waste so it can be recycled.

In our Gummidipoondi, India plant, composting of canteen food waste has been standard practice since 2016. This compost is then used in the plant's organic vegetable garden. Each month approximately 25 kg of food waste is composted through this initiative. In Patalganga, India, employees are made aware of the amount of food they are disposing of with signs, updated on a daily basis with the quantity of waste thrown away that day. Any food waste is converted into composite fertilizer – currently around one tonne every year.

[Sustainable Development Goals](#)



# Air emissions

**Our manufacturing processes generate air emissions, and it is our responsibility to ensure these emissions are as low as they can be. Our commitment to SOE guides our approach to emission reductions, encouraging us to continually search for the best possible processes and technologies.**

We monitor our air emissions to ensure compliance with local regulations wherever we operate. We have policies and procedures in place that enable us to notify the local authorities and, when required, to act as soon as possible should specific limits be exceeded.

## Investing in technology

We continue to invest in and promote technological improvements, such as state-of-the-art filter materials, which ensure maximum containment and recovery of carbon black dust. In addition, we're evaluating the technologies and assessing how they can be implemented across our operations. A balanced approach is key: technologies for air emission control can have high water and energy requirements, so implementation must be considered in a holistic way and on a case-by-case basis.

In December 2017, we entered into a consent decree with the US Environmental Protection Agency (EPA) to further reduce emissions of nitrogen oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>)

and particulate matter (PM) from our plants in Franklin, Louisiana and Hickok, Kansas.

At our Kansas facility, we commissioned a control system, which was installed in February 2021. The system uses staged combustion technology alongside strict feedstock controls to ensure the site continues to sustainably provide high-quality carbon black products. Initial testing of the installation indicates that we have effectively reduced our NO<sub>x</sub> emissions by our goal of 30% versus the baseline. A boiler was also installed to utilize the combustion heat from this new technology, providing the plant's steam requirements without the need for any supplemental fuel.

The Louisiana facility will have its state-of-the-art control systems installed and operational by December 2021. This technology will be the first of its kind, to the best of our knowledge, in the United States. It combines low-NO<sub>x</sub> combustion technology, selective catalytic reduction technology and a seawater scrubbing system that will minimize the environmental impact of the control systems.

The technology utilizes the brackish water in the Gulf Intracoastal Waterway to reduce sulfur components to salts which are naturally found in oceans. Through this technology, Birla Carbon has eliminated the transportation and disposal issues associated with traditional wet limestone scrubber systems, which generate a gypsum-like waste.



**Birla Carbon has always maintained the highest levels when it comes to environmental compliance and performance. As these aspects form an integral part of our sustainability agenda, we ensure a constant effort across our global units."**

**SANJEEV SOOD**

Chief Manufacturing Officer, Asia



## Birla Carbon Jining – a leader in environmental management

In 2020, Birla Carbon Jining, China, received recognition for its industry-leading technological capabilities in pollution control and advanced environmental management. Nominated by the Department of Ecological Environment of Shandong Province under the "heavy-polluting weather" performance category as an "A-level" company, the plant has a commitment to advancing environmental protection levels.

Several critical actions were initiated to reach this benchmark, including the creation of a committee to lead the project and a review of the DeSO<sub>x</sub>/DeNO<sub>x</sub> systems to confirm the plant was fully compliant. Emissions-concentration controls were also enforced, ensuring the concentration of PM, SO<sub>2</sub> and NO<sub>x</sub> does not exceed 7 mg/m<sup>3</sup>, 35 mg/m<sup>3</sup> and 70mg/m<sup>3</sup> standards.



# Customers and suppliers

Engaging with customers and suppliers to perfect our business

**In this section:**

- 56 Customer engagement
- 59 Supplier management





# Customers and suppliers

Focusing on the present while imagining what is next fuels our motivation and ignites our inspiration to Share the Strength. We yield our best results when we are open to other perspectives and work together to make a difference. That is why we aim to develop relationships with our customers and suppliers, ensuring that we all meet our high ethical standards and align our sustainability strategies to take us Beyond Durable for the long term.



## MICRO MATTERS

We believe that by encouraging forward-thinking operations on a regional level, we can create value at an international level. By working with local customers and suppliers in the countries where we operate, we can communicate local learning throughout a worldwide network, creating innovative and industry-leading solutions.

Find out more about our [five Purpose Principles](#)

## Did you know?

A typical passenger tire tread contains a surface area of carbon black of more than 65,000 m<sup>2</sup>.

## Working to create value for our customers and suppliers

In an ever-changing business landscape, we must learn to adapt as the needs of our customers evolve. This includes not only asking for and acting on the feedback of our customers to improve the products we offer but also ensuring we are transparent about our ongoing sustainability efforts. Through our Continua™ offering we are reaching collective circularity goals with our customers, collaborating throughout the value chain to close the loop on tire production.

We strive to ensure we act ethically and responsibly throughout our operations. This involves working with our complex supply base to make sure they adhere to our strict Code of Ethics and our compliance standards. In FY2021, we were awarded a Gold rating by EcoVadis for the fourth consecutive year for our advanced sustainable practices.



At Birla Carbon, sustainability is not confined to our plants and the environment we operate in. It has a much broader role to play in our business. It is an integral component of our Customer Value Management Process and together they form the core of our Sales & Marketing DNA. Sustainability as a key intangible differentiator has helped us to create real value for our customers globally."

**JAYANT GEHLOT**

Senior Area Marketing Manager, Asia

## WE SUPPORT THE FOLLOWING SDGs



# Customer engagement

We stand strong with our customers; our unique and effective global collaboration is what enables us to achieve our Purpose to Share the Strength with the world. We seek to nurture open, trusting relationships with all stakeholders and to maintain these relationships by offering our customers a consistently high-quality product, excellent service and global supply security. By aligning our sustainability strategy with those of our customers, we are growing together with them to be a company they know they can trust.

## How we engage with our customers

We aim to develop long-term relationships with our customers so that their businesses, and ours, can succeed. Our cross-functional engagement model is spearheaded by our Key Account Management (KAM) program. KAM is designed to increase points of contact across customer organizations to establish valuable and lasting partnerships. We track the success of this by measuring customer loyalty and how attractive our products are to our customers. These engagements also enable us to continue developing new products to meet customer needs.

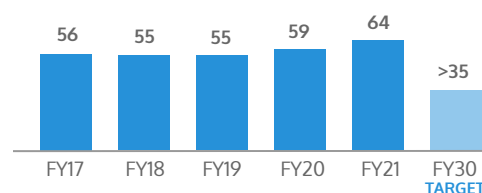
## Measuring our customer loyalty

Introduced in FY2017, our customer satisfaction KPI is based on the well-established Net Promoter Score (NPS), which asks our customers around the world to rank Birla Carbon's performance against that of our peers.

NPS is calculated based on how customers respond to a single question: "On a scale of 1 to 10, how likely are you to recommend Birla Carbon to a business partner or a friend?"

## Progress towards our target

Remain above the NPS threshold of 35<sup>6</sup>



Through the NPS process, our sales representatives contact a minimum of five customers per month, and those that respond are divided into three groups: Promoters, Passives and Detractors.

- **Promoters (score of 9 or 10)** – loyal and continuing purchasers.
- **Passives (score of 7 or 8)** – customers who are satisfied yet vulnerable to competitive offerings.
- **Detractors (score of 0 to 6)** – customers whose unhappiness can damage our reputation and impede growth.

Our NPS score is considered excellent for a business-to-business company such as ours, and we aim to keep our score above 35. Although this is still considered to be a "good" score, dropping to this value would alert us to the need to improve our performance; our historical results suggest that this threshold would correspond to a 10-point drop from our quarterly low.



## Our Net Promoter Score in FY2021 was 64

demonstrating increased customer satisfaction<sup>7</sup>

<sup>6</sup> Net Promoter Scores range from -100 to +100.

<sup>7</sup> NPS is calculated by subtracting the percentage score of Detractors from the percentage score of Promoters. In FY2021, our global NPS was 64 (FY2019: 59), and there was good uniformity across regions.



## Turning feedback into action

We use customer feedback to drive continual improvements. For customers providing us with high NPS scores, we work to maintain, and ultimately improve, our score. To those who rate us lower, we respond through the appropriate department (Sales, Marketing or Functional Presidents).

In FY2021, our ratings from Detractors indicated improved ratings around supply and room for improvement in pricing. It is important for our customers to know that we respond quickly to their feedback through a range of strict processes and procedures. If a product-related issue is brought to our attention, scientists from our technology centers assess the problem before producing a detailed report. We thoroughly review all customer dissatisfaction, whether it relates to products, sales or the supply chain, before responding to the customer.

## Developing our customer complaint resolution methodology

To strengthen our customer complaint process, we recently added the “5 Why” methodology, which is now built into our Salesforce Case Management system. We also developed Case Prevention Training to add to this process. During this training, past cases from all 16 plants are reviewed and sorted into major categories to help us analyze the root causes and determine prevention methods for the future.

To ensure we address customer concerns in the most efficient manner, we have developed a new resolution methodology based on eight disciplines (8D):

1. Establish a team
2. Describe the problem
3. Immediate measures
4. Determine root causes
5. Choose corrective actions
6. Implement and validate corrective actions
7. Take preventative measures
8. Congratulate your team

The 8D process is a collaborative effort that brings together employees from our customer services teams, plants, lab services, and global quality and technical services. Through following these eight steps for each customer complaint we receive, we endeavor to respond in a targeted and timely manner every time.

### Did you know?

There are several manufacturing processes to make carbon black. All of our carbon black is made using the furnace process.



## Sharing sustainability strategies

Transparency is key to building joint strategic approaches with our customers and other stakeholders, advancing sustainability performance across our supply chains.

We invite our customers to visit our plants and offices to carry out their own audits and process reviews. They place a high level of value in having a secure supply – a requirement that we meet through our business continuity strategy and enterprise risk management approach.

Our customers constantly work to assess and improve the sustainability of their own products. We engage with their sustainability teams to share our carbon black LCA approach, and in FY2020 developed a [Carbon Footprint Statement](#) for our customers to easily reference and incorporate into their own analyses. When designing new products, we meet with partners to better understand their expectations and sustainability goals related to their growing use of renewable and recycled materials. We can then use this feedback to inform the sustainability attributes we prioritize in our carbon black as we help our customers meet their goals.

Our Continua™ offering represents an exciting opportunity to work closely with customers, developing sustainable products that advance industry-wide sustainability.

## Empowering customers to make the right choices for themselves

In February 2020, Birla Carbon took the Tire Technology Expo 2020 in Hannover, Germany as an opportunity to announce the launch of the new Birla Carbon mobile app. Through the app, which has received engagement from over 1,100 customers since launch, users can search for the right carbon black solutions across tires, rubber, plastics, inks, coatings and other niche industries.

A Solutions Guide helps customers to identify the right options for their specific needs, while the Hardness Calculator Tool provides guidance on comparative carbon black loading levels for rubber compound formulation development. A dispersant calculator is also available on the Solutions Guide. This tool helps formulators of inks and coatings to identify the optimal carbon black dosage to stabilize their product.

Having selected the products and solutions which best meet their needs, the app then directs customers to the option to discuss their specific needs further with a Birla Carbon expert.

[Sustainable Development Goals](#)



**We built the app to help customers narrow down their carbon black choice to a manageable list, while still having the option of choosing specific application performance parameters to offer a solution. We wanted to show customers we had the information, technology and experience to help them find a solution to all of their carbon black needs.”**

**KEVIN BROWN**

Technical Service Manager, Birla Carbon USA



# Supplier management

**With operations in 12 countries on five continents, we have a highly complex supply chain. Maintaining close ties with local, regional and global suppliers is crucial for managing risks throughout our network; our suppliers' behavior reflects on our own reputation and on that of our customers. We work together with our suppliers to ensure they meet our high ethical standards and to drive improvements in our supply chain.**

## Responsible and ethical supply chain

The most basic requirement of our supply chain is that it be reliable and ethical. We have established robust internal standards and principles to guide our employees, business partners and suppliers to meet our expectations. Our diverse business partners include vendors, service providers, consultants, contractors, distributors and agents.

We share our Code of Ethics with all our suppliers and ensure they adhere to it through our Terms and Conditions. This includes a clause establishing the ethical principles with which we expect our business partners to comply.

[Code of Ethics](#)

Our Supply Chain and Procurement Policy guides our sites to ensure compliance with the relevant legislation and the Birla Carbon Code of Ethics. Standards we expect include promotion of resource conservation, use of renewable energy, water stewardship, employee safety, respect for human rights and elimination of child and forced labor across the supply chain. This is part of our wider sustainable procurement approach, which is deployed across all our buyers and supplier base worldwide. Our internal Procurement Policies were updated in FY2020 to require due diligence screening of all suppliers and use of our Terms and Conditions of Purchase.

[Supply Chain and Procurement Policy](#)

## Performing due diligence

We see procurement as being central to business, legal and regulatory risks and sustainability considerations. We began reviewing and analyzing our key distributors and agents through NAVEX Global's RiskRate® in FY2015 to identify any potential risks posed, reaching 9,366 (our entire supplier base) in FY2019. The process is now well established and runs automatically for all suppliers.



## All +11,000 Birla Carbon vendors and suppliers have been screened

using NAVEX Global's RiskRate® due diligence system, with over 94% receiving green ratings

## Ensuring continual improvement

RiskRate® is an automated and continuous screening program, which performs efficient and reliable due diligence checks on companies. The process identifies histories of working in areas with trade sanctions and government watch lists, instances of fraud, bribery or corrupt dealings, cases of government investigations or convictions, or adverse media attention.

In FY2021, over 94% of our suppliers were highlighted by RiskRate as being green. It marked about 5% as yellow suppliers, while less than 1% were flagged as red. We are now working with those marked as yellow and red (medium- to high-risk) suppliers to improve their compliance measures, with our Legal department running enhanced due diligence for this group.

We have terminated 18 red-flagged vendors since September 2019 and cleared an additional seven red-flagged vendors after conducting additional due diligence. Going forward, any vendor wanting to work with Birla Carbon must be flagged as green through the program, or be approved by our Legal department, before they enter our system.

Birla Carbon vendors and suppliers, a network of over 11,000, have been screened using NAVEX Global's RiskRate® due diligence system, with over 94% receiving green ratings.

## Ensuring a sustainable supply chain


As we have developed our sustainability integration and reporting, we have continued to explore further ways to encourage best practices throughout our supply chain. Birla Carbon's procurement process is generally decentralized and is managed at the local and regional levels. This promotes local sourcing of materials and services to meet our business needs, but it can also present a challenge in terms of risk management.

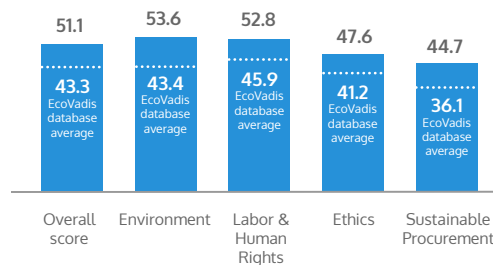
Developing a robust global approach to procurement is key. That is why we elected to increasingly engage with key suppliers (based on spend, criticality as per our IATF 16949 certification, reputation risk and other considerations) and encourage them to improve on their own environmental and societal impacts. We have partnered with EcoVadis to facilitate sharing of sustainability best practices and to assess the sustainability profile of our key suppliers as part of our Sustainable Procurement program.

EcoVadis screening is a voluntary program for our suppliers, and many have already shared their scores, which are split into four categories (Environment, Ethics, Labor & Human Rights and Sustainable Procurement). Our average supplier sustainability score is 51.1, significantly higher than the global average of 43.3 (from more than 55,000 companies worldwide). This suggests that, globally, our key suppliers are already performing above average in the four criteria. For instance, over 65% of our critical suppliers report on energy consumption or greenhouse gases and have a policy on corruption; over 55% report on health and safety issues and are ISO 14001 certified.

However, fewer than half disclose their carbon footprints through the CDP platform or have a certified safety management program. We expect these figures to improve over the coming years through best-practice sharing. By continuing to roll this process out to more of our suppliers, we will be able to better recognize, and better select, sustainable and ethical suppliers to work with.

## EcoVadis scores

 A sustainable supply chain, recognized by EcoVadis<sup>8</sup>



## In FY2021, we continued to promote EcoVadis

to over 250 of our suppliers

<sup>8</sup> Results based on the limited but statistically significant number of assessed suppliers.

## Sustainable procurement progress

Since launching our Global Purchasing Symposium to adopt sustainable procurement practices throughout Birla Carbon we have made progress in a number of areas. The event established three main elements: terms and conditions; RiskRate® and EcoVadis.

We are continuing to drive sustainable procurement throughout our business in FY2021 through our well-established due diligence process, which includes screening for new vendors. Red flagged vendors cannot be brought in as new vendors, and existing red-flagged vendors must be investigated and cleared by our legal team for us to continue working with them.

New critical suppliers are invited to complete virtual training sessions where Birla Carbon Sustainability collaborates with EcoVadis and buyers to ensure a smooth launch of the EcoVadis campaign.

As pioneers in sustainable procurement practices at ABG, Birla Carbon has shared our learnings with other businesses throughout ABG's Global Expert Conversation Series platform, as well as through working groups and one-on-one information sessions with Group companies.



**Our updated due diligence screening process allows for increased precision, efficiency and confidence in our supplier onboarding process. Our legal team work closely with the procurement team to investigate red-flagged vendors and ensure that the integrity of our procurement system is upheld."**

**PRIYANKA BAHETI**

Secretarial & Legal, General Manager, India



## Response planning and preparedness

We strive to ensure that our sites and suppliers have up-to-date inventories available at all times. Challenging and unexpected global circumstances can impact inventory approaches for both ourselves and our suppliers. Our Business Continuity Plans and Crisis Management Response Guidelines provide solutions for sourcing raw materials and critical spare parts with minimal risk through our contract supplier agreements. We maintain an updated list of approved, assured and certified alternative suppliers for emergencies.

[Business Continuity Plans](#)



# Our people

Bringing out the best in  
our people and the best  
in our business

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# Our people

We believe that our value is increased not only by creating industry-leading products, but also by creating a supportive workplace where employees feel encouraged to develop and be their best. We are committed to providing learning opportunities for our employees across the globe as well as ensuring their safety and wellbeing so they feel inspired to continue making great products.

## Becoming an employer of choice

By supporting the creation of a workplace where we encourage employee development, we are increasing our shared value. We seek to attract the best people to Birla Carbon and provide a range of learning opportunities for our global employees to thrive. The health and safety of our employees is paramount at Birla Carbon, and we encourage our people to take responsibility for their own safety and that of their colleagues through our Commitment Based Safety (CBS) approach.

Keeping our global workforce motivated and working together to achieve our goals is fundamental to our success as a business. To ensure our diverse employees are engaged, and to determine areas where we could be doing more, we conduct regular employee surveys.



What the caterpillar calls the end of the world, the rest of the world calls a butterfly. When we were hit by a sudden storm here in Italy, rather than stopping operations, we took it as an opportunity to evolve by foreseeing and adapting to change. It took time, working tirelessly to change established work patterns. We survived and have emerged at the other end better and stronger."

**GIUSEPPE ZANOTTI**  
General Manager, Birla Carbon Italy

## WE SUPPORT THE FOLLOWING SDGs



### THE BIRLA CARBON FAMILY

The bonds we form with each other are as important to our business as the product we make. This means putting our employees first to ensure they feel safe and supported in a workplace that promotes shared growth.

Find out more about our [five Purpose Principles](#)

### Did you know?

Our Commitment-Based Safety approach encourages employees to make commitments to their own health and wellbeing.



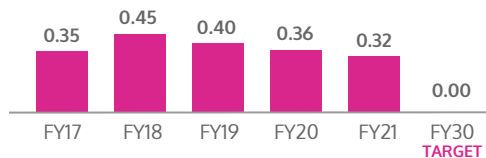
# Health and safety

In FY2021, we have continued to establish a culture of safety excellence within Birla Carbon – steered by strong leadership and driven by the commitment of our own people to prioritizing their own safety and the safety of others. In light of the global spread of COVID-19, we acted quickly to ensure each of our employees was kept safe and healthy, regardless of where they were.

Building a strong safety culture takes time; we do not pretend to be at the end of our journey. There is always room for progress at every level, as we develop a workspace in which we take responsibility for the safety of every one of our employees.

## Progress towards our target

🎯 Achieve zero recordable injuries year on year (employee and contractor Total Recordable Incident Rate (TRIR))



## Reducing workplace injuries

We are responsible for ensuring that everyone at our facilities is safe, from the moment they arrive to when they leave. Our injury rate continues to position us as a leader in our industry. In FY2021, Birla Carbon reduced recordable injuries by 11% compared to FY2020, reporting the lowest Lost Workday Case Rate (LWCR) in company history. Ten sites completed the year without a recordable injury to an employee and 14 sites completed the year without a recordable injury to a contractor. We can still do more as we strive for zero incidents, but our progress to date demonstrates that people have understood our safety expectations and are taking care in their daily work.

We have identified indicators, designed to proactively prevent incidents and injuries before they occur. These indicators focus on:

- Health, Safety and Environment (HSE) training and qualification;
- Responding to hazard reports or employee concerns within 48 hours;
- Investigating near misses within two business days; and
- HSE self-assessments and the completion of action plans to address findings.

Focusing on these key indicators, we continue to see positive results. Our facilities reported 100% completion of all required HSE training. Approximately 70 near misses were reported in FY2021, with 91% of investigations of these events completed within two business days, an achievement which is considered world class. All sites completed a second round of perception surveys in 2020 and results suggest an increased level of engagement from employees and leaders in HSE initiatives, resulting in a positive change in safety culture. We expect these leading indicators to continue to drive improvements over the coming years and as our HSE programs mature, we are looking to develop new metrics to advance our activities and behaviors in FY2022.



**Birla Carbon saw an 11% reduction in TRIR** in FY2021 as compared to FY2020





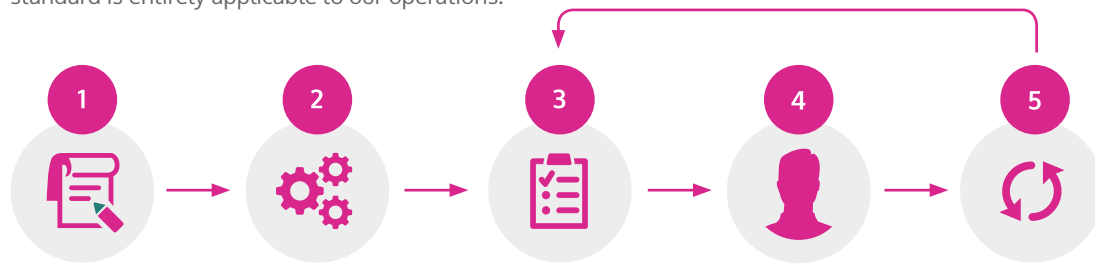


## Our health and safety programs

We prepare our people as much as possible to identify and manage the potential safety risks they might face while working in our facilities. This preparation includes adherence to clear standards, processes for issuing of work permits, education, training, auditing and follow-up to reinforce accountability.

### Safety management

Our approach to safety and health management involves a methodical, five-step process to ensure that each standard is entirely applicable to our operations.



#### Developing a standard

In addition to regulatory requirements and recognized industry best practices, we conduct our own retrospective review of incidents and near misses at our sites to develop appropriate standards and expectations. All standards are reviewed and revised every two years.

#### Training and implementation

Once developed, each plant is responsible for training in and implementing these standards. Our safety leadership training focuses on the roles and responsibilities of leaders in instilling a culture of safety excellence for both our employees and the contracted workforce.

#### Executing an action plan

Each safety standard is internally and externally validated. An action plan is executed to track its successful implementation, monitor progress and reinforce accountability.

#### Conducting audits

Each location is audited at two-year intervals by an external body to review the compliance of the safety standards with regulatory requirements and company standards. Safety Managers from our other sites also participate in the review process, sharing best practices.

#### Refining action plans

Specific tasks or activities identified during the audits are addressed by adjusting the action plan, reinforcing our drive for continual improvement and safety excellence.



### Celebrating World Day for Safety and Health at Work

This year, in celebration of World Day for Safety and Health at Work, we ran a week-long program across our plant locations.

Our Birla Carbon Egypt team delivered a "toolbox talk" that reinforced key safety topics followed by an interactive quiz session. The team also collected safety suggestions from employees to improve the work environment and rewarded the best suggestions:

- Muhammed Hussain Thabet provided a solution to mitigate fumes that are emitted from production tanks. He suggested installing a device called a hopper that connects to the tank cover. This would safely empty fumes from the tank without workers having to open the tank door, reducing exposure to fumes or any caustic substances;
- Mahmoud Yassien suggested adding a portable water tank with shower heads for all workers to rapidly minimize the impact of injuries; and
- Mohamed Abdel Fattah Saad suggested covering the control circuits and hoses of our CO<sub>2</sub> cylinders, protecting them from damaging weather exposure.

The event inspired colleagues to come together to advance safety at Birla Carbon and was a huge success for Birla Carbon Egypt.

## Serious Injury and Fatality initiative

In FY2019, we rolled out our Serious Injury and Fatality (SIF) initiative. This program focuses on higher-risk tasks and situations.

A critical element of this initiative is the emphasis on near-miss reporting, which we aim to improve. According to the Campbell Institute at the National Safety Council, 85% of all serious injuries and fatalities are preceded by near-miss events.

This effort continued in FY2021, with sites improving the tracking and communication of best practices for SIF prevention. Likewise, reporting of near-miss events improved, with investigation findings quickly communicated to all sites. Emphasis on SIF prevention and the Safe Six will continue through FY2021 and beyond until they are a part of our safety DNA.

### The Safe Six: key health and safety risks

A central component of the SIF initiative, the Safe Six represent key areas where high precision is essential to prevent a serious injury or fatality. These are lockout/tagout (LOTO), working at height, mobile equipment, electrical, hot work and confined space.

We encourage individuals to make a personal safety commitment to change the overall safety culture. Among the factors that we ask our employees to consider are these six occupational health risks, which every person working at our sites must be aware of.



#### Working at height

Use all prescribed PPE for the task, including fall protection where work is performed at heights of above two meters.



#### Hot work

Secure a hot work permit and follow permit precautions when performing any spark-producing work, such as grinding or welding.



#### LOTO

Isolate and verify all types of energy, including electrical, hydraulic, pneumatic and stored, when performing maintenance on equipment. Follow line-breaking procedures when opening equipment that may contain hazardous materials.



#### Mobile equipment

Be aware of limitations and safety requirements, including the one-meter rule, for operating or working around mobile equipment such as forklift trucks.



#### Confined space

Follow procedures for identifying and controlling risks prior to and during an entry into a confined space to ensure it is safe to enter.



#### Electrical

Enable all employees to recognize potential electrical hazards and risks; develop systems and procedures, including the use of specialized protective equipment, to reduce the potential risks of arc flash and electrical shock for persons qualified to service and maintain plant electrical systems.

While all our employees receive regular training related to these six critical areas, we believe that increasing awareness and reinforcing requirements will help us achieve flawless execution of these principles on a daily basis. In late FY2020, the HSE team began developing micro-learning modules focused on our Safe Six standards. These modules present a full training program for employees in short, easy-to-understand segments that can be viewed over a cell phone or other portable device.

We developed a range of online resources on the Safe Six for our employees, from a designated intranet page with links to our GVC Learning App COVID-19 Channel. The channel provides employees with information on safety, resilience, managing teams, maintaining a positive and productive mind-set and returning to work. More micro-learning modules are planned for 2021.

## Changing our HSE culture

At Birla Carbon, we believe a culture of safety is created by engaged individuals who actively manage their risks every day. We are continuing to deploy the CBS process, where specific risks and the behaviors required to manage them are identified at a site level. Employees create safe habits by providing daily reports on their progress. The understanding is that full compliance is not automatic but that improvements can be made each day.

Through CBS our aim is to create a culture where all employees are aware of the risks they face and take active care of others: when someone observes someone at risk, we want them to stop and take action to help avert accidents.

## Protecting our contractors

Improving our HSE performance demands that we work closely with contractors, who may not work to the same standards that we expect from our employees. Since we introduced our Global Standard on Contractor Management in 2015, we have seen contractor safety performance improve significantly, with the incident rate halved. In FY2021, we maintained focus on the importance of contractor management and saw a reduction in contractor incidents from FY2020 (from six to five). Our contractor TRIR was 0.21 and the LWCR was 0.13.

In FY2018, our sites in North America contracted Avetta, a third-party risk management provider, to improve the qualification process. Avetta collected information from contractors, including safety incidence rates, insurance coverage and HSE programs, based on Birla Carbon specifications. The information was evaluated and scored, with each contractor assigned a rating. Only those that met Birla Carbon requirements qualified to work in the plants. The process has also saved the sites time in qualifying and selecting contractors. We are now evaluating the feasibility of expanding the Avetta contractor qualification process to our facilities in other regions.



## Our award-winning safety culture

We have always placed a strong focus on the health and safety of everyone who steps into our facilities. Twelve Birla Carbon sites have been recognized by the ICBA for their employee safety efforts, receiving the Gold standard, six for the third consecutive year: the Marietta Technical Center, Camaçari, Weifang, Korea, Gummidipoondi and Thailand.

The ICBA acknowledges outstanding safety records, educating policy makers and the general public about the carbon black industry. It aims to raise awareness about the industry's genuine regard for employee safety. The ICBA's Safety Recognition Program identifies facilities that have excelled in protecting the industry's workforce, promoting safety 24 hours a day.

## Auditing our performance

Due to COVID-19 travel restrictions, our Global HSE group was unable to conduct audits in FY2021. In response, the team developed online self-assessments that mirrored the global audit protocol. These were completed over a nine-month period, with results reported monthly on an HSE scorecard, allowing for the integration of future on-site results to validate the accuracy of self-assessments.

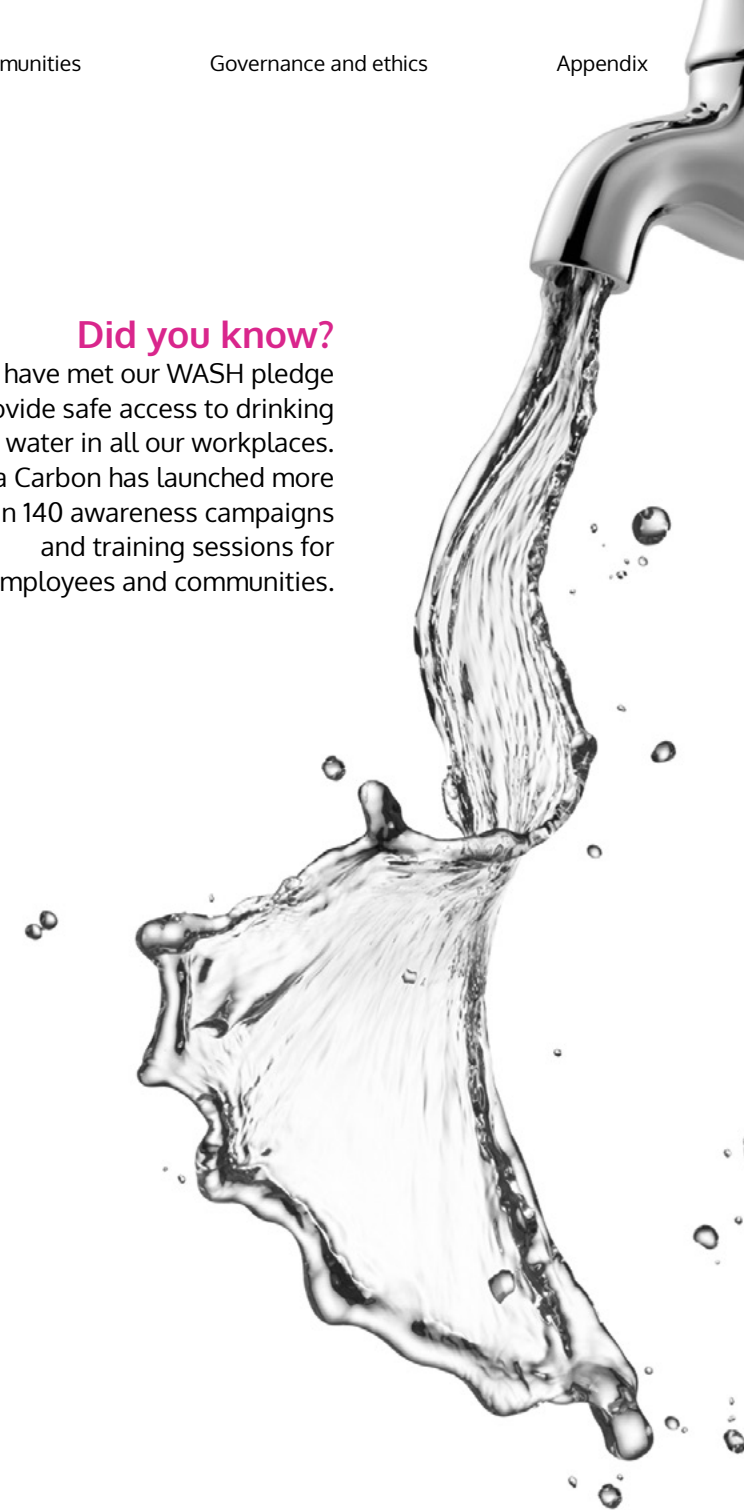
In FY2020, we completed our first interval of scored HSE audits, encompassing compliance with HSE regulatory requirements, for all operating facilities. This audit-scoring process enables us to identify common strengths and opportunities for improvement across the organization.

The average audit score for all sites was 90%. Future audits will stress accountability for improvement against previous results. Results are tracked to completion in an action plan and reported to company leadership on a monthly basis.

Several new standards were implemented, with other key standards revised in FY2020, in areas such as inspection, testing and maintenance of fire protection and emergency equipment, and management of change, to improve and reinforce expectations in key areas and address gaps identified in audits. We also revised our Incident Reporting Standard in FY2021 to improve our reporting on small releases of carbon black.

## Did you know?


We have met our WASH pledge to provide safe access to drinking water in all our workplaces. Birla Carbon has launched more than 140 awareness campaigns and training sessions for employees and communities.

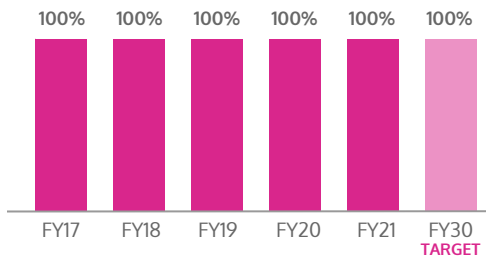


# Attracting and retaining talent

We believe that we achieve the best results when we are open to other perspectives and work together to make a difference. To maintain our industry-leading position, we seek to engage and attract bright minds in the countries where we operate.

## Progress towards our target

 100% of Birla Carbon managers to have stated and measured goals set annually



We enable our employees to develop their skills and potential, offering exciting opportunities for career development, learning, recognition and wellbeing, in alignment with A World of Opportunities, the ABG's Employee Value Proposition.

 [Our Group Employee Value Proposition](#)

## Our HR vision and strategy

The HR team created a new strategy which will be valid until FY2024, aiming to make Birla Carbon an aspirational workplace for diverse groups of people.

It focuses on five key pillars:



### Employer of Choice

Recognized for diversity and inclusion practices and a great place to work for diverse workforce in the industry;



### Culture and Engagement

Enabling a culture for empowered and engaged employees;



### Career and Talent

Providing avenues for career velocity and building a talent pipeline to support business growth;



### Capability Building

Business-critical capability for a future-ready organization; and



### Consumer Grade Experience

Differentiated and personalized employee experience built through digital enablement of HR processes.

These pillars are supported by action plans that are equipped to achieve our HR goals for the year.

## How do we attract and retain talent?

We seek to be an employer of choice in every geography where we operate. We place emphasis on talent development, targeted internal movement and continual engagement with our employees.

Our progress as a company is driven by both the expertise of our seasoned carbon black professionals and the continual exchange of ideas with the next generation of engineers and scientists. For this purpose, we continue building partnerships with local colleges and universities and invite interns to gain realistic work experience with us.

We build effective partnerships with colleges and universities through our participants in the ABG Leadership Program (ABGLP). The cohort are offered global project opportunities in varied business functions, such as Operations, Marketing, Finance and HR. In FY2021, six participants from leading schools and universities in India and across Asia completed projects with Birla Carbon through this program. We have also hired four ABGLP participants at Birla Carbon, and have given two internship projects to participants of the Group Internship project.

## Identifying leaders through our talent management system

Our talent management process aims to build a community of competent and highly engaged global leaders. Our approach includes a range of initiatives:

- Assessment of potential – evaluating behavioral competencies for success in future roles;
- Talent councils – bringing leadership teams together for collective and in-depth discussion on high-potential individuals and their career progression; and
- Development centers – applying a rigorous process to assessing and creating a clear plan for each individual based on their strengths and opportunities.

Cyclic assessment of individual potential is a fundamental part of our talent management and leadership-development process.

## Developing our people at all levels

From the plant floor to the sales floor, our passion for learning has no ceiling. We encourage our people to continue to learn throughout their careers by providing multiple opportunities and platforms to fit their needs, enabling them to meet career aspirations and perform successfully.

By combining the best of local learning with our worldwide network, we can take our expertise to global levels. Our enterprise

learning management system is designed to enhance employee skill levels, encourage employees to apply the knowledge gained to real-world situations and conduct all training from a centralized source. The platform records all learning activities, and an online library of over 1,000 courses is available to all employees at no cost. Courses are provided in multiple languages, covering a range of topics, both functional and behavioral:

- Coaching and counseling
- Performance management
- Conflict management
- Customer focus
- Developing employees
- Collaboration and teamwork
- Finance essentials
- HSE
- Wellbeing
- Communication to influence and engage

In FY2021, we focused on our GVC Learning App, a mobile application powered by artificial intelligence. The app is learner-centric, providing a personalized experience for each user. With easy access to information, employees can learn while on the go. We created business-specific content in the areas of safety and sustainability, hosted on this app for all employees to view. We also curated curriculums on 10 behavioral topics, which are accessible for all employees.

## Growing employee knowledge with eAcademy

The Birla Carbon eAcademy, established in FY2017, aims to share the experience and knowledge of our business leaders and subject matter experts (SMEs) with employees and to simplify key aspects of the business.

We have developed e-learning modules specific to Birla Carbon to institutionalize the knowledge accumulated by our SMEs through our long history. Modules developed to date include Carbon Black 101, Reactor Technology and Commitment Based Safety. A 30-minute e-learning focusing on sustainability was developed during FY2021 in partnership with the Business Sustainability team. This e-learning covers what sustainability is, the United Nations Sustainable Development Goals and how they tie back to Birla Carbon's Purpose, Vision and Strategy.

## Sharing knowledge through our mentorship program

Birla Carbon rolled out its mentorship program in FY2019. The first cohort successfully completed its mentoring program in December 2019. Owing to the extremely encouraging feedback, a second batch was launched in December 2020, with 12 employees being assigned to seven Senior Management Team mentors.

## Providing learning experience through our Global Rotation Program

With the goal of providing employees with a range of functional and management experiences, a short-term Global Rotation Program was launched in April 2019. Through the program, we provided nine high-performing employees with exposure to diverse technologies and practices, enhancing their functional competence and growth.

We leveraged our global presence to tap into a wide network of knowledge and resources, giving participants the opportunity to work across diverse cultures and geographies. A second batch of participants for the Global Rotation Project has been identified. This will be rolled out once travel restrictions are reduced post COVID-19.

## Using Core Conclave to build future leaders

The Aditya Birla Core Conclave is an annual event for middle and senior management – including our future leaders – that aims to build depth, broaden perspectives and foster interaction across the ABG. Over 140 Birla Carbon employees have participated in the first four Core Conclaves.

## Recognizing our people

Our employees are recognized and rewarded for their contribution to our success. Besides performance-based rewards, exceptional performance is also recognized through regional, business and group-level awards.

### Total Reward Philosophy

Our Total Reward Philosophy is to:

- Strive to pay fair and competitive compensation, valuing skills and credentials;
- Promote a culture of wellbeing by offering competitive benefits according to living standards; and
- Maintain a rewarding working environment, providing global exposure and offering flexible work options where possible.

### Fair and competitive total rewards

Birla Carbon continually assesses local and global standards of pay and benefits to ensure we remain competitive and compatible within and outside the ABG.

- Rigorous market benchmarking exercises are implemented each year with major stakeholders across regions to ensure that our salaries reflect the market realities at any given point in time. While nationwide references are used for market comparison, local geographic differences are considered where relevant.

- Manager-driven pay for performance offers aggressive performance differentiation, thereby rewarding the exceptional performances and contributions of our employees.
- Total rewards for executives are benchmarked with competitors each year to enhance performance and award opportunities.

### Global and local recognition

There are several programs across units, regions and the business through which we recognize individuals and teams who go above and beyond their defined roles. The APPLAUSE platform, our first real-time online global recognition program, was launched in FY2020 and gained a lot of traction in FY2021.

- APPLAUSE offers a common platform where any employee can recognize their colleagues across the organization, irrespective of location, function and level.
- The categories of recognition are tied to our Purpose and Values, which all employees across the globe can relate to.
- A wide range of redeemable online gift options are available, sourced from local vendors, which makes the platform eco-friendly and diverse.

Exceptional individual and team performance were recognized through our Performance Recognition in Delivering Excellence (PRIDE) program, which includes monetary rewards for outstanding contributions to the business.

## Receiving Group recognition

Employees are also recognized through the ABG Awards for Outstanding Achievement. Exceptional performers are nominated for individual awards, including Emerging Professional, Distinguished Achiever, Exceptional Contributor, Accomplished Leader and Outstanding Leader.

## Career movements with Birla Carbon

We have continued to make internal career paths clearer through a streamlined framework for the Technology, Engineering and Operations areas. We encourage intra- and inter-regional movements of qualified employees, as well as transfers from other businesses within the ABG. We engage with employees and their spouses prior to a potential relocation, ensuring they are comfortable with the move and their new role. We offer comprehensive support to employees and their families who are relocating, including assistance with school admissions and employment assistance for spouses. Over 8% of employees changed or progressed in their role during FY2021.

# Employee engagement

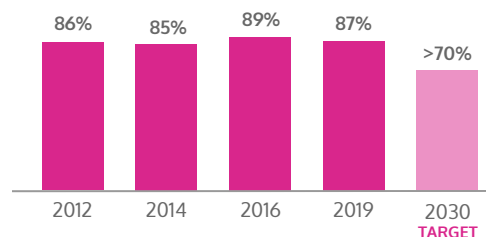
**We share an unbreakable bond throughout our company; because we share the same goals, we support each other to achieve them.**

Maintaining a motivated and inspired global workforce is instrumental to our success and learning how our employees feel is crucial for developing as an organization. We have a diverse workforce with a broad geographical spread, and we seek to engage all our people as we support them and their lifestyles.

Although the pandemic created challenges, Human Resources worked to ensure that we kept our employees engaged. The “New Normal Narratives” campaign was launched to crowdsource stories from the experiences of Birla Carbon employees. We collected around 22 stories that were shared across the business and were positively received by our colleagues.

## Progress towards our target

Remain above the chemical industry annual benchmark for employee engagement<sup>9</sup>



## Our approach to engagement

Every two years, we conduct our employee engagement surveys: One Voice (for staff and hourly workers) and Vibes (for management). From FY2020, the One Voice and Vibes surveys were combined for all ABG businesses.

## One Voice

Our latest One Voice survey achieved an outstanding response rate, with 94% of employees participating. The results showed an improvement in employee experience across topics such as development, fairness and ethics, values and safety, and declines in some areas, including work processes, employee innovations and improving overall communications. Using these results, we have created action plans to address lower-scoring areas in FY2021.

## Vibes

The Vibes survey provides valuable feedback from management, which helps us develop and execute action plans in specific areas that are tracked at local, regional and global levels.

We conducted our most recent Vibes survey in FY2020, with a 98% response rate. The survey shows that we are now achieving, or scoring higher than, the industry benchmark for employee engagement, highlighting that employees are proud to work for Birla Carbon. The results have been distilled into action plans in each region and unit. We continue to track progress through scorecards during FY2021.

## Employee wellbeing

We want our employees to feel that we create a positive working environment. Their wellbeing, and our care for it, is an integral part of our relationship with our people. We continually look for ways in which we can encourage them to lead healthy lifestyles. All regions have their own employee wellness initiatives, tailored to match local health and wellness interests.



<sup>9</sup> This KPI was amended in FY2020 to exclude the results of the Team Vibes survey. It has also been modified to show results for calendar year rather than financial year, in line with Vibes survey timings.



## Inviting innovation from everyone

We want employees to be engaged in every aspect of the business, by Sharing the Strength and promoting a culture of innovation. To support our Senior Management Team in achieving this goal, the Innovation Action Team (IAT) was formed in 2019. The IAT is tasked with creating opportunities that empower employees to share their ideas, to build on them in collaboration with their colleagues and to innovate new solutions and products.

To further this initiative, the first Hype Open Innovation campaign was launched in July 2019. The campaign, which ran over four weeks, invited employees from across Birla Carbon to submit their ideas via a secure online platform. The campaign garnered support from across the organization: from the 87 ideas submitted, 18 were selected for implementation by our global Evaluation Team, including teleworking (just in time for COVID-19), improving diversity and developing a network of innovation ambassadors across the company.

Going forward, we are expanding on this initiative through additional platforms, including a Share the Idea SharePoint site and corresponding Share the Idea mobile app through which employees can share ideas anytime and anywhere.

**“Innovation is one of the key enablers for the continued success of Birla Carbon. The company is investing in its people through innovation platforms aimed at empowering employees to share their ideas, provide feedback and engage with colleagues globally. The smallest idea can have the largest impact.”**

**CAITLIN LAWRENCE**

Innovation Action Team, Birla Carbon USA Inc.



## Supporting diversity in the workplace

With operations in 12 countries, our diverse workforce includes many different cultural backgrounds, and with this a wide range of skills. We are strongly committed to supporting diversity and equality and believe all employees should be given the opportunity to progress based on their merits and abilities. We aim to ensure that our leadership is representative of the local workforce, that we hire local talent regardless of ethnicity, sexuality or social background and that skills are transferred equally throughout our operations. We comply with all relevant employment legislation in the countries where we operate, as a minimum.

In FY2021, a Diversity and Inclusion (D&I) strategy was created for Birla Carbon, focused on making Birla Carbon an aspirational workplace for diverse workgroups. This strategy was formulated after completing a comprehensive study to understand industry best practices regarding gender and generational diversity.

The initiatives implemented include:

- Encouraging diverse employees to be part of mentoring initiatives;
- Developing an Employee Resource Group program that is currently being piloted at our Marietta office with plans to expand globally;
- Assuring equal growth opportunities for all at Birla Carbon;
- Establishing gender diversity in the Executive Committee team;
- Encouraging a diverse candidate pool and hiring a gender-diverse workforce;
- Tracking and communicating diversity matrices in the HR dashboard;
- Representation of women in various committees at unit locations;
- Celebrating International Women’s Day across our locations; and
- Rewriting job descriptions with gender-neutral language.

# Communities

Collaborating with our communities  
to grow stronger together

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# Communities

We engage with local groups and associations to provide targeted programs, focusing on good health, quality education, sustainable livelihoods and community infrastructure, in alignment with the SDGs. Through addressing our communities' most pressing challenges, we are helping to make local people, and Birla Carbon, more resilient.



## CHALLENGE TESTED

As a global company with local connections, we see community growth and improvement as an opportunity for Birla Carbon to grow too. Every day we rise to the challenge of delivering positive change for our local communities through a range of initiatives and development programs.

Find out more about our five Purpose Principles

Following the global outbreak of COVID-19, we have increased our efforts to ensure those in our local communities have access to the resources and support they need to stay safe and healthy during this difficult time.

## Delivering benefits to communities

As a global company, we recognize that we are well positioned to create long-term benefits for the communities around us, such as enabling access to healthcare. Through a variety of initiatives, we promote immunization programs and invest in medical infrastructure.

We can also enable communities to grow, by empowering people in our communities to take ownership of their own advancement. Through giving people the tools they need to progress and learn valuable vocational skills, we help equip them to find fulfilling employment and improve their livelihoods.

Young people are the future of Birla Carbon, and we depend on our communities as a source of emerging talent. Working with local schools and educational institutions, we promote quality education through financial support, training opportunities, help with building schools and provision of learning resources.

In order to deliver the best results for our local communities, we have focused on four key areas where we believe we can support the biggest growth: healthcare, education, livelihoods and infrastructure.

## WE SUPPORT THE FOLLOWING SDGs



We continue to actively participate in the social and economic development of our local communities, doing so with the intention of empowering sustainable livelihoods across society. Together we can raise the human development index of India."

### MRS. RAJASHREE BIRLA

Chairperson, Aditya Birla Centre for Community Initiatives and Rural Development



# Community engagement

As a member of the ABG, our commitment to social good is far reaching. We believe in using our resources to provide communities with support and to enable people to improve their own lives. At the same time as supporting charitable activities, we aim to help the communities where we operate achieve real and lasting social development.

## How do we assess community needs?

Guided by the work of the ABG Foundation, we support the sustainable development of communities close to our plants, tailoring how we can help with their specific social issues and priorities. We want to actively participate with our communities, engaging with people to better understand the issues that concern them so we can target our interventions accordingly.

Our community engagement activities focus on four key areas, each of which is aligned to the SDGs:

- [Access to healthcare](#)
- [Quality education](#)
- [Sustainable livelihoods](#)
- [Community infrastructure](#)

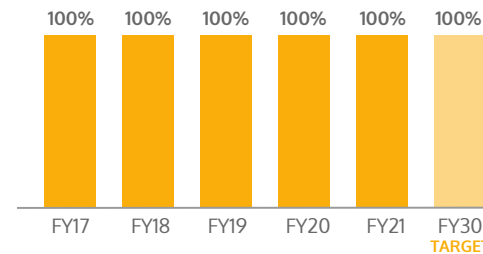
In FY2018, we published the Birla Carbon Stakeholder Engagement Policy, which includes clear standards for our sites to aim for when it comes to engaging with their local stakeholders, including embedding the principles of inclusiveness, transparency, materiality, completeness and cultural appropriateness in all engagement activities.

[Stakeholder Engagement Policy](#)



## Progress towards our target

100% of our facilities participate in community engagement



## Did you know?

100% of our facilities participate in community engagement activities.



## Identifying the right community projects

Our approach to engaging with communities includes building lasting, mutually beneficial partnerships with the people impacted by our operations.



### Our community strategy



#### Global commitment

To engage and support communities around our sites.



#### Regional approach

Varies from site to site depending on the region's development goals.

### How we do this



We identify short- and long-term community risks



We assess local impact and priorities of the region



We engage with communities to identify views and needs



We devise a relevant regional community engagement strategy and focus areas



We implement activities and investment

# Access to healthcare

In some of the areas where we work, local and regional health infrastructure faces pressure due to population growth and a lack of resources.

Birla Carbon is well positioned in these regions to have a long-term positive impact; we facilitate access to doctors and medicine, promote immunization programs and invest in medical infrastructure for the people who live near our facilities.

## Investing in good health

Healthcare is an area where our community engagement work has the potential to have an immediate and visible impact. We add real value to our communities by supporting strained healthcare providers and bringing important medical services closer to those who really need them.

We invest in access to healthcare through:

- Vaccination programs
- Building health centers and hospitals
- Mobile clinics and doctors' visits
- Medical camps
- Infant and women's health projects
- Safe drinking water and sanitation
- Illness prevention and awareness
- Blood donation
- Encouraging responsible childcare
- Biometrics screening

## Promoting healthy communities

The people at our facilities have a direct, hands-on role in the communities that they impact.

### Hickok, USA

Our Hickok unit supplied 40 respirators to local law enforcement and 40 respirators to the local sanitation department.

### North Bend, USA

Our North Bend team contributed to Healthy Skin, an educational and screening program developed by The Skin Cancer Foundation. The program's purpose is to educate the public about skin cancer risks, disease avoidance and early-stage recognition. Approximately 1,000 people have received free skin cancer screenings and thousands more have benefited from sun protection and early detection education.

### Camaçari and Cubatão, Brazil

We donated mechanical ventilator equipment to the state of Bahia, Brazil as part of a partnership with chemical and petrochemical industries in Bahia led by FIEB (Bahia Industries Federation). Each industry donated at least one ventilator.

Our Cubatão plant joined the charity entities led by the local Cities Hall Social Fund to donate hygiene products, blankets, non-perishable food kits and gallons of water. We also donated hospital respirator equipment to local hospitals, in partnership with FIEB.

### Hannover, Germany

Our team in Germany recently promoted community health through sponsoring wheelchair basketball team Hannover United, which plays in the German National League.

### Santander, Spain

We donated 50 masks and 75 Tyvek protective suits to emergency services during the COVID-19 outbreak. Eight hundred masks, 100 Tyveks and 20 pairs of safety glasses were donated to the Cantabrian Health Service, which distributed them among hospitals and health centers in the region.

## Did you know?

The team in Italy donated €1,500 to Novara Hospital to go towards the purchase of materials and machinery, and a further €10,000 to help local charity organizations purchase masks for the local community.

### Trecate, Italy

Birla Carbon Italy has continued to help the community through donations to the City of Trecate for masks and those in need. We also provided the Red Cross with Tyvek protective suits. The team donated €1,500 to Novara Hospital to go towards the purchase of materials and machinery, and a further €10,000 to help local charity organizations purchase masks for the local community.

### Tiszaújváros, Hungary

We supported the Foundation for Pediatric Surgical Patients through generous donations of over €500 from our team.

## WE SUPPORT THE FOLLOWING SDG THROUGH OUR WORK



**Alexandria, Egypt**

We established primary health centers in four villages. These provide access to health services for around 300 people every month, along with medical campaigns, a lab service and access to medicines. We provided Amreya District with sanitization tools and materials such as road sprayer tanks, backpack sprayers and chlorine. This year, we increased Ramadan boxes of essential commodities by 10% (compared to 2019) and distributed them to local low-income families, especially those self-isolating due to COVID-19 and those who do not have any source of income. We also worked with schools in surrounding villages to sanitize gates, ensuring a healthy environment for students and staff.

**Renukoot, India**

We organized multiple mobile medical camps that reached 23 villages, providing them with general check-ups and free medicine. We supported the Pulse Polio Campaign and provided safe drinking water at remote locations. We also held health awareness camps twice a month in locations with limited access.

Masks and sanitation material were provided to the district administration. We also organized a COVID-19 awareness campaign for communities near the plant and surrounding localities.

**Patalganga, India**

We organized a wide range of health initiatives, including dental check-up camps for school students, a blood group testing camp for college students and HIV/AIDS awareness programs to mark World AIDS Day. We also provided a reverse osmosis water system for clean and safe drinking water at primary schools, held various women's health seminars in the villages and supported the Pulse Polio Campaign.

At the request of the local community panchayat (village council), we provided masks and sanitation materials during the COVID-19 outbreak.

**Gummidipoondi, India**

We continue to support the Pulse Polio Campaign to promote childhood polio vaccination and provided multi-specialty health camps for local villagers and students in association with the Public Health Department.

Birla Carbon Gummidipoondi supported access to safe, potable water for both school students and Primary Health Centres. This was achieved through installation of a reverse osmosis plant and Newborn Kit Distribution project in association with the Rotary Club.

At the request of the local community panchayat we supplied COVID-19 awareness materials, reusable cloth masks, sanitation materials and provisions. We also organized dengue fever and COVID-19 awareness programs for nearby villages.

**Angthong, Thailand**

Our Thailand plant collaborated with other ABG companies to source portable ventilators, PPE and masks to support ABG COVID-19 response initiatives in India.

**Yeosu, South Korea**

We provided flu vaccines for employees and families and organized a blood donation drive for the Korean Red Cross.

**Did you know?**

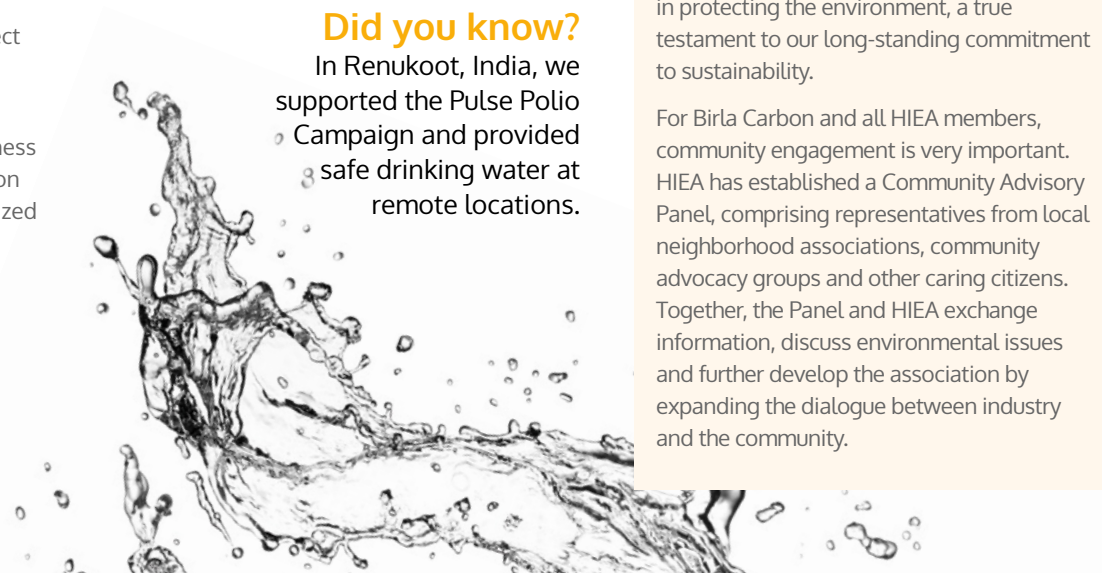
In Renukoot, India, we supported the Pulse Polio Campaign and provided safe drinking water at remote locations.

**Meeting our neighbors' needs**

Wherever Birla Carbon operates, we aim to engage with the local community to understand what is of concern to them. In Hamilton, Canada, environmental concerns were one such issue. Since 1998, we have Shared the Strength by partnering with other industries and community groups to become founding members of the Hamilton Industrial Environmental Association (HIEA).

HIEA is a group of companies working closely with neighbors, community initiative groups and not-for-profit environmental sector organizations, as well as with representatives from the City authority and the Ministry of the Environment, Conservation and Parks. HIEA includes 12 member companies and addresses critical issues facing Hamilton, such as climate change and its effects, sustainability and new growth. Over 20 years after being established, this association is still in existence and is fulfilling its role in protecting the environment, a true testament to our long-standing commitment to sustainability.

For Birla Carbon and all HIEA members, community engagement is very important. HIEA has established a Community Advisory Panel, comprising representatives from local neighborhood associations, community advocacy groups and other caring citizens. Together, the Panel and HIEA exchange information, discuss environmental issues and further develop the association by expanding the dialogue between industry and the community.



# Quality education

We believe that young people are the future, and we depend on local communities as a source of talent for our business. We are targeting our efforts to support local young people in reaching their full potential.

## Providing educational support

Effective, high-quality education provides opportunities for young people, but school systems do not always receive the support they need. As the leaders of tomorrow, we engage with local teenagers, introducing them to what our industry has to offer. In some regions, we provide financial support and internships. In others, we help build schools and provide practical training in specific areas for adults.

Our educational support spans:

- Open days for students
- Scholarship programs and internships
- Funding for new school buildings
- Community awareness training
- Immersive English-language camps
- Safety awareness and training

## Supporting the next generation

The educational support we offer varies from region to region, as we tailor our local community engagement approach to ensure we meet local needs.

### Marietta, USA

We have developed our partnership with Kennesaw State University in Georgia, now in its seventh year, pledging \$55,000 to offer scholarships to students. As part of our partnership, we also provide internships and employment opportunities at Birla Carbon. Since 2014, 61 scholars have participated in the summer research opportunity. This year's cohort was recognized by the university at a symposium where scholars presented their work.

### Hamilton, Canada

Every year, Mohawk College in Hamilton selects four students from its Power Engineering program to complete a three-month training program at Birla Carbon. The traineeship provides students with hands-on operating experience of the co-generation power plant and counts towards their Power Engineering certification.

### Camaçari and Cubatão, Brazil

We focus on supporting students at local public schools to help improve their employment prospects and career planning. Our volunteers talk about their own careers, highlighting the competences that students need to enter the labor market, as well as discussing the role of chemistry in our lives. Through a volunteer program, developed in collaboration with apprenticeship program CAMP, we hosted a lecture for students on how to prepare for their first job interview as well as career prospects and what to expect from application and recruitment processes.

In October 2019, the Health, Safety and Environment team at Birla Carbon Cubatão held a training session for students of the ETEC Dona Escolástica Rosa. During the session, students were given a tour of the plant and learned more about our safety procedures and best practices related to the carbon black industry.

### Santander, Spain

Birla Carbon Spain (BCS) sponsored and opened a special library for Marina de Cudeyo, a school in Cantabria. The library, which has been designed as a labyrinth with a secret entrance and a slide to exit, is one of five libraries that BCS has sponsored and built in collaboration with various companies and members of the educational community.

### Trecate, Italy

In September 2018, we began sponsorship of the Rodari Primary School in Trecate. In September 2019, phase two of this sponsorship was completed with the inauguration of the "ArchiLab." This space, which is located within the school's premises, will be an architecture and photography section for the whole city. Included in the space are architecture and design projects produced by students over the year.

We participated in the Smart Challenge Project, an innovative project which is trialing a virtual schoolwork alternation for the first time, in the Piedmont region of Italy. Through the project, students were challenged to develop concepts for managing a company training database. Birla Carbon Italy awarded students from different high schools and challenged them on their problem solving, creativity, innovation and teamwork skills.

## WE SUPPORT THE FOLLOWING SDGs THROUGH OUR WORK





### Alexandria, Egypt

We supported classes in three government-run schools to help 400 students achieve better grades. We also provided sports, arts and computer literacy activities to 1,300 students in village schools. Three nursery school facilities, benefiting 400 children and their families, have been established. We ran our “LEARN” program for the second consecutive year, expanding it to allow over 200 children from three villages to participate. The children prepared for the next academic year through a range of scouting, arts and crafts, and healthy habits classes. New activities were introduced this year, including recycling waste materials back into useful objects.

For the third year, Birla Carbon Egypt (BCE) held its “Towards a Sustainable Tomorrow” competition for graduating students of the Faculty of Engineering at Pharos University, Alexandria. This competition encourages students to relate their graduation projects to sustainability in creative ways. Eight projects were submitted for consideration, with the top four receiving awards at a special ceremony in July 2020. The four winning projects covered the topics of solar collectors, an Internet of Things approach for a green campus, a home-scale wind turbine and fabric recycling. Due to the positive outcome of this program, BCE is expanding it to a second university, Egypt-Japan University of Science and Technology, in FY2022.

### Renukoot, India

We provided free education at the Aditya Bal Vidya Mandir school, including classes in public speaking and personality development, and donated uniforms and educational kits to a nearby school. We also led various celebrations and rallies, including the School Enrollment and Awareness Rally, and supported local sports teams.

### Patalganga, India

We distributed school uniforms, school bags and stationery items to students in pre-primary, primary and secondary years as well as providing 20 computers and furniture to surrounding schools. We also supported creative learning through a wall-painting activity at a local primary school.

### Gummidipoondi, India

We continued our water, sanitation and hygiene project to promote access to safe water and hygiene facilities in two educational institutions, with around 1,275 children benefiting from the initiative. Our Eureka Super Kids After School Program, developed in collaboration with AID INDIA, aided 200 children from the poorest families with extra educational support. We also funded a range of scholarships and educational support to enhance students’ learning capacity. We funded the construction of several educational facilities, including a computer lab and two primary schools.

### Jining, China

We conducted community safety training for students at a local primary school.

### Weifang, China

In August 2019, Birla Carbon Weifang (BCW) hosted its third “Sail the Life” award ceremony, where 80 students were presented with awards for excellent performance in college entrance examinations. Five students were further awarded with donations for their studies. During Children’s Day, 200 outstanding students were invited to visit the BCW plant to learn more about the value of carbon black and the focus the plant places on safety and environmental protection. In addition, we donated sports equipment to a community program.

### Yeosu, South Korea

We covered the operational expenses for a multicultural youth soccer club within the community.

### Did you know?

In Italy, the Birla Association for Education and Promotion of Human Development supports sustainability initiatives through local schools.



# Sustainable livelihoods

We depend on thriving local communities to support our workforce and our supply chain. Rural societies in particular can suffer from a lack of resources and assistance, and empowering these people to take ownership of their own advancement is key to our engagement activities.

It is important that young people are educated, but it is equally important that adults are given the tools they need to progress.



## Did you know?

In Huapai, Thailand, we helped villagers establish model chicken farms to produce organic food.

## Empowering local communities

Support is crucial, and our help comes in many forms, but our goal is that local residents take the opportunities we offer to improve their lives for themselves. We want to enable residents to become self-reliant and empowered with our support.

We support sustainable livelihoods through:

- Women's empowerment
- Self-help through microfinancing (women and farmers)
- Agricultural development
- Livestock development (including husbandry)
- Micro-enterprise development
- Skill development/vocational training

## Supporting local people

We provide targeted training to support independent and empowered workers in our local areas.

### Birla Carbon Spain

BCS delivered €3,500 to the Social Services department of the Marina de Cudeyo City Council to put towards the purchase of sports equipment and winter clothing. This initiative was aimed at supporting families during the pandemic who are at risk of social exclusion.

BCS also recently delivered two defibrillators to the Marina de Cudeyo City Council to be provided to the local police, an initiative aimed at improving health and safety measures for the residents of the municipality.



### Birla Carbon Italy

In support of the soup kitchen Il Pane Quotidiano (The Daily Bread) in Trecate, Birla Carbon Italy donated a new van in an effort to help the local community access food supplies during the ongoing pandemic.

### Marietta, USA

We continued support of our local community through our annual United Way campaign, raising around \$10,000 during our annual campaign. Birla Carbon was named as one of the Top 100 Community Partners for the Greater Atlanta area by United Way in FY2021.

### North Bend, USA

We supplied water bottles, toothbrushes, pedometers, hot/cold compresses and duffel bags to Chez Hope, an organization that supports families in need in Franklin, Louisiana. We also purchased 30 benefit lunches from the Baldwin Fire Department to donate to the foundation.

### Hamilton, Canada

Team members from Birla Carbon Canada held a food drive for the McQuesten Community Food Bank. The McQuesten neighborhood is approximately one mile from our Hamilton plant and is home to over 7,000 residents, around 31% of whom are younger than 20. Distance from grocery stores and limited income are both major obstacles to food supply and healthy eating habits for community members. Our efforts provided 350 nutritious meals and brought children and their families together during the holiday season.

### Alexandria, Egypt

We equipped four centers with tools and materials to train 32 women in tailoring, with the aim of developing at least 20 more trainers in other villages. We have also financed 108 micro-projects in various trades (including poultry farming, fishing, tailoring and sewing, vegetable supply and the fodder trade), enhancing the living conditions of around 600 people in four villages. We developed a literacy program in Egypt to address adult education and illiteracy eradication. Local teachers have been employed and have delivered specialized training and coaching for 150 people in local villages. During the COVID-19 outbreak, BCE continues funding 60 micro-projects for needy families in the surrounding area to help them generate income by working from home.

### Renukoot, India

We continued to provide safe drinking water through a tanker at Khairahi village, along with a sanitization program and donation of blankets to poor villagers. Toilets and urinals were constructed at the local primary school for teachers and students. We made a model election booth for Women's Day and held a World Environment Day program for school students.

During the pandemic, we collaborated with district police, donating supplies to a police-run food bank. We also distributed food packets to the local community and to laborers.

### Patalganga, India

We hosted women from local villages to mark International Women's Day and promote activities designed to empower women. The celebrations included a session on women's health and a presentation encouraging the take-up of work experience by the leader of a local nongovernmental organization. We also continued our new school uniform stitching project, which provided training in tailoring skills to women who then made uniforms for female students. We provided special seeds to a kitchen gardening project in the tribal community so they can grow vegetables at home.

At the request of district administration, we donated provisions to feed migrant laborers stranded in the area during COVID-19.

### Gummidipoondi, India

We support Project Kaushalya, a skills-training center for unemployed rural youth that provides instruction in three trades – fitting, welding and hairdressing – with 70% of participants subsequently securing placements. We also train local women through the Women's Economic Empowerment Initiative (ANYA) in 11 skills, including tailoring, embroidery, gardening and liquid soap making.

Through district administration, we provided food supplies for migrant contract laborers who were working with us before the lockdown and were stranded in nearby villages. We also provided supplies for laborers stranded at the state border.

### Angthong, Thailand

We supported the Pracharat Market scheme to promote the livelihoods of local people and supported farmers in the Huapai community, working with them to develop new agricultural practices.

### Yeosu, South Korea

In Yeosu, we funded a new kitchen for the Rainbow Women's Shelter, an organization that helps victims of prostitution, while psychotherapy support was offered to female victims of sexual violence at the Ivy Shelter. We also supported the Immigrant Women's Resting Place, which protects the human rights of women who have been victims of domestic violence and their children. To address the issue of hunger, rice was provided to people in need in local communities.

### WE SUPPORT THE FOLLOWING SDGs THROUGH OUR WORK



**Did you know?**  
In India, we train local women on practical skills like tailoring, embroidery, gardening and liquid soap making through the Women's Economic Empowerment Initiative (ANYA).



# Community infrastructure

Many of the communities where we operate are severely underequipped in terms of basic infrastructure such as buildings, roads and public facilities. We believe that we have a responsibility to partner with local people to provide practical and sustainable infrastructure solutions.

## Structural support where needed

We identify opportunities to improve local buildings and infrastructure through our ongoing engagement with local people, focusing on the most critical requirements.

Examples of areas where we contribute include:

- Community centers
- Schools
- Roads
- Homes
- Rural power supplies
- Sanitation
- Irrigation and water-storage facilities

## Building resilient communities

We believe that access to basic infrastructure is a non-negotiable right for everyone, and some of those nearest to us need practical support to achieve it.

### Hickok, USA

We make annual donations to support the local fire department in nearby Ulysses, allowing them to purchase equipment and fund training. Ulysses is a small community, and the fire department is run by volunteers, including some of our Hickok employees. The Hickok Unit Head volunteered on the COVID-19 task force for Grant County.

### Trecate, Italy

We sponsor a local youth basketball team, with funding going towards basketball training at the local elementary school and the purchase of equipment.

### Tiszaújváros, Hungary

We supported the planting of new trees in the parks of Tiszaújváros.

### Alexandria, Egypt

Four community development centers are now up and running in nearby villages. The centers each house a nursery, literacy facilities, a primary health center, tailoring center, offices and other amenities.

### Gummidipoondi, India

We sponsored a new garbage-collection vehicle for local villages, as well as greenery development and wildlife conservation programs. We renovated a community health center in Pappankuppam village in association with the Rotary Club of Gummidipoondi Industrial City. We also provided funding to install household toilets and a reverse osmosis plant in two villages to ensure safe, potable water for villagers. Development of an overhead water tank ensured villagers had a water supply even during times of power cut or low water availability. Mini mast lights and streetlights have been installed by Birla Carbon Gummidipoondi, reducing mugging and providing safer environments for our employees after dark.

### Patalganga, India

We supported the development of a women's and childcare center at the government office for rural communities so that local women may have a place for feeding and caring for their children. We also constructed a cement road for a nearby village to reduce the likelihood of accidents. We donated school furniture to two classrooms and provided a shed to the local police station which is used as a waiting area for visitors. During the pandemic, groceries were distributed to community members and migrant workers.

### Renukoot, India

We provided access to safe drinking water to 2,000 people living in local villages and funded the purchase of a water tank to store clean water for 3,260 people in the village of Muirpur. We also supported the Clean India Campaign to clean the streets of local villages and provided clothes and blankets to people living in poverty. During the COVID-19 outbreak, we carried out sanitization of roads and streets in the local community.

### Angthong, Thailand

Collaborating with local traffic police, we set up barriers for incoming traffic control and related checkpoints in the province, to help control the spread of COVID-19. We also collaborated with the village chief of the Huapai, Saithong and Posa subdistricts in Angthong to distribute food to about 3,000 families.

### Weifang, China

We support families in need through clothing donations. One of our Production General Foremen led a team of volunteers who disinfected local schools and public areas in January and February 2020. The team spent their personal time and purchased the equipment themselves.

### Yeosu, South Korea

We provide financial support for the maintenance of local welfare centers for migrant workers, women and their families. We welcomed new arrivals and invited them to tour our facility.

## WE SUPPORT THE FOLLOWING SDGs THROUGH OUR WORK



# Governance and ethics

Building an ethical company that customers can trust

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# Governance and ethics

It is easy to get things done and hard to let each other down when everyone is truthful and transparent. At Birla Carbon, we focus on knowledge as our strength to deliver solutions around the world.

As we look to go Beyond Durable, we uphold the highest ethical standards across all our business activities, and we expect our stakeholders to do the same. We can only continue to innovate our products if we comply with international laws and codes of conduct and we aim to be an industry leader in best practice.

We are focused on building the strongest governance teams to ensure that we are performing to the highest standards and that our employees feel supported in their work development. We have modeled our governance on the ABG's Responsible Stewardship Framework, through which we are aligned with the United Nations Global Compact.



United Nations  
Global Compact

WE SUPPORT THE FOLLOWING SDGs



“

At Birla Carbon, Enterprise Risk Management is a fundamental element of SOE. By identifying risks as soon as possible and accurately assessing the potential impacts on the business, we can deploy strategies focused on avoiding or minimizing the risk, rather than having to react to a crisis. By doing so, we are making sure we always provide our customers with an uninterrupted supply of carbon black.”

STEVEN BRENSKE

Global Health and Safety Manager,  
Birla Carbon USA Inc.



## CHALLENGE TESTED

Our Challenge Tested Purpose Principle highlights our commitment to seeing every obstacle as an opportunity for growth. We view a growing customer focus on sustainability and transparency as a chance to develop our governance structure and ethical standards to ensure we are protecting the environment, human rights and the interests of our customers.

Find out more about our  
five Purpose Principles



## Did you know?

All of our employees are trained on our Combined Code of Ethics every year.



# Governance

**Our success depends on the strong, effective and responsive management of all our global operations. We are developing our organization to place a stronger focus on cross-team functionality. While we continue to support efficient decision-making that is supportive of local needs, we are also promoting more active communication between functional leaders.**

Our new organization structure will help share and implement best practices and take us to the next level of SOE throughout Birla Carbon.

## How is our governance organized?

We restructured our governance system in 2020 to increase focus on customers, markets and operational excellence while driving our culture of innovation. Consistent with our Purpose, to Share the Strength, these changes will build on our spirit of collaboration to drive global consistency and rapid adoption of best practices across all aspects of our business.

Recognizing the benefits of refining our governance approach, we transitioned to a global functional organization, from one that previously delegated responsibility for all business operations to five global geographic regions. The legal entities that comprise Birla Carbon are governed by a Board of Directors,

led by our Senior Management Team (SMT). The SMT is made up of John Loudermilk, Chief Executive Officer, and eight Chief Functional Officers (Sales & Marketing; Asia Manufacturing; Americas, Europe & Africa Manufacturing; Finance; IT; HR; Legal/Sustainability/HSE, and Research & Development).

The diagram to the right illustrates how we organize our governance.

## Our governance structure

The Chief Sustainability Officer has two roles: firstly, communicating the work of the Sustainability Steering Committee (SSC) to the SMT; and secondly, acting as the guardian of sustainability principles and best practices and supporting the SMT in their adoption.



**Our business committees ensure we uphold world-class standards**

## Sustainability Steering Committee

Our sustainability strategy is directed by the SSC, which ensures it is aligned with the sustainability vision and approach of our parent company, the ABG.

The SSC is responsible for reporting on its activities through the annual Sustainability Report, quarterly meetings with the SMT and ad hoc communications with Birla Carbon employees. Another role of the SSC is to influence the integration of sustainability concepts into the company's strategic business decisions.

The SSC tackles specific issues through dedicated working groups, each composed of the Global Sustainability Director, the Sustainability Manager, subject matter experts (SMEs), employees with relevant expertise and occasional third-party advisors.

These teams identify areas of opportunity for integrating sustainability further into the business, for which action plans can be developed. Their ideas and plans are ultimately presented to and evaluated by the entire SSC, with final approval or rejection of projects lying with the SMT.

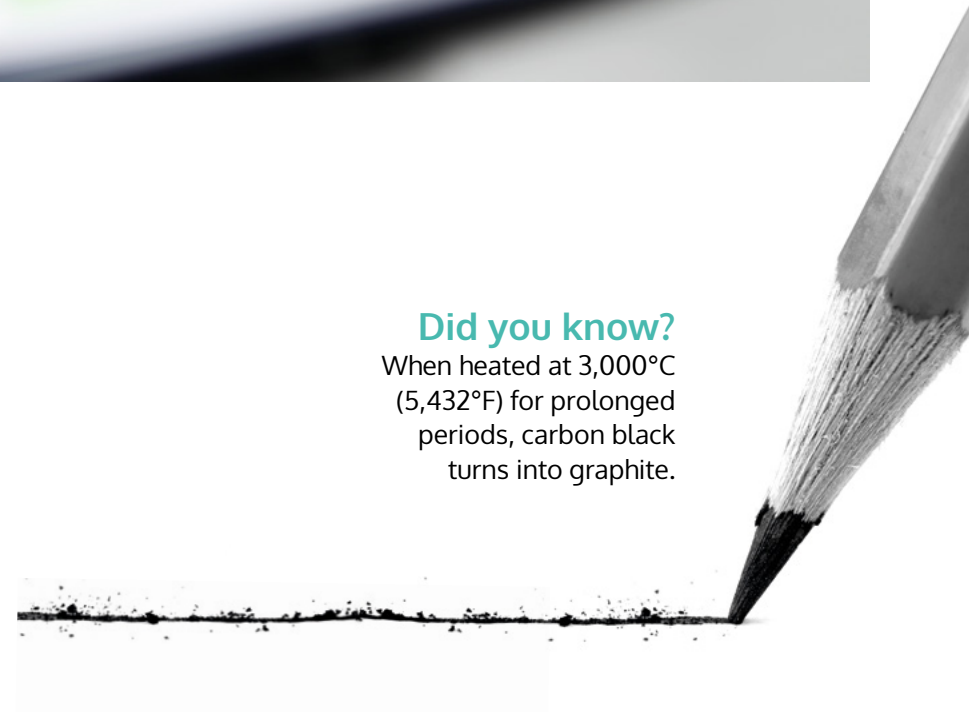
[Sustainability Policy](#)

[Focusing on what matters](#)



### Did you know?

When heated at 3,000°C (5,432°F) for prolonged periods, carbon black turns into graphite.





## Key topics discussed in FY2021

### Governance and ethics

Key topics	Decisions made	Impact on business
<b>Long-term risk management</b>	Incorporate long-term sustainability risks into our formal Enterprise Risk Management (ERM) program.	Evaluation and monitoring of long-term sustainability risks ensures we maintain the resiliency and sustainability of our business.

### Customers and suppliers

Key topics	Decisions made	Impact on business
<b>Customer engagement</b>	<p>Increase direct engagement with customers on sustainability.</p> <p>Develop a better understanding of the recent circularity and greenhouse gas pledges made by select customers to enable us to better align efforts.</p>	Align our sustainability initiatives and goals with our customers' to remain a strategic partner.
<b>Supplier risk assessment</b>	Roll out second EcoVadis campaign to new critical suppliers and those that did not respond to 2019 campaign.	A more resilient and ethical supply chain will enable us to ensure business continuity.

### Environment

Key topics	Decisions made	Impact on business
<b>Solid waste management</b>	Continued focus on reducing and repurposing waste to achieve KPI objective. Focus on partnerships to achieve goals.	We seek to drive improvements around key stakeholder concerns.
<b>Water risk assessment</b>	Performed ERM review and updated processes taking into consideration the challenges posed by COVID-19.	
<b>Energy and emissions KPIs</b>	<p>Continue to evaluate challenges in meeting goals.</p> <p>Conducted Continua™ 8000 LCA to determine the product's contribution to our overall carbon footprint.</p>	
<b>Circularity</b>	Investigate and quantify the level of circularity in our production processes, including implementing tools developed by the World Business Council for Sustainable Development and the Ellen MacArthur Foundation's Circulytics tool.	

## Key topics discussed in FY2021

### Our product

Key topics	Decisions made	Impact on business
Product stewardship	Approved the roll-out of internal and external training on carbon black product safety and its regulated applications.	We aim to ensure people understand how our carbon black is made and their role in its safe manufacturing, as well as helping our customers handle and use carbon black effectively and safely.

### Our people

Key topics	Decisions made	Impact on business
Engaging our employees	Continue to ensure all sites have safe access to water, sanitation and hygiene.	A motivated workforce is instrumental to business success. We seek to engage our people and support them and their lifestyles.

### Community

Key topics	Decisions made	Impact on business
Global program	Benchmark our global Community Service program and identify opportunities for providing more global support to our regional programs.	Improving our contribution to the social and economic development of the communities in which we operate.

### Did you know?

We have mapped the 17 UN Sustainable Development Goals against our business since 2016.



## Internal audit committees

Our Internal Audit Department runs regular audits and investigations across the business, covering financial, compliance and operational reviews. In FY2021, 12 audits were conducted focusing on areas such as procurement, inventory management, fixed assets, plant maintenance and sales. The outcomes of these audits were shared with the SMT. The Risk Committee are also updated on the status of the reported findings annually.

## Mitigating sustainable risk

Serving our customers is the top priority for Birla Carbon. Our robust ERM program helps identify and mitigate potential risks to our business, fully engaging our regions and individual sites.

## Our structure

Our Enterprise Risk Management Committee (ERMC) consists of Birla Carbon's leadership team as well as ERM functional heads. The implementation of risk management measures is overseen by Regional Risk Officers, while site-based SMEs identify and manage risks as they arise. We have developed a Corporate Working Group, a cross-functional committee with members from our financial, legal, IT, HR and other business areas, to identify and mitigate departmental risks. Alongside these two groups, employees are encouraged to report any risks they identify. This includes reporting any near-miss safety incident, unethical activities or any other risky activities they observe.

Any risks identified are captured and prioritized through a Risk Register, based on potential financial impacts, probability of occurrence and volatility. Risk Registers are managed by Regional Risk Officers, with information displayed in heat maps and dashboards for ease of access.

## Risk mitigation and business continuity

Our detailed approach to risk mitigation differentiates Birla Carbon from our competitors. We utilize the finest loss-protection engineers to help us identify and minimize risks at our facilities. A network of worldwide brokers helps us to identify emerging risks and provide insurance, while assuring we are compliant in the countries where we operate. Our Business Continuity Plan (BCP) is central to our ERM program, preparing us for issues and providing solutions, protecting our operations and helping prevent unforeseen events.

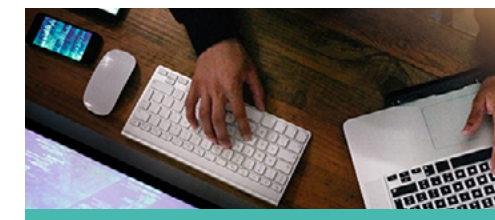
Individual site risks have been identified and are actively managed through Origami, our risk management information system. We also use this system to manage our Risk Registers, BCPs, reviews, schedules and ownership of risks.

Each of Birla Carbon's locations has a comprehensive Disaster Recovery Plan and BCP, based on 12–15 specific risks, to ensure it is prepared for interruptions due to natural disasters or disruptions. Our Business Continuity Management System (BCMS) is based on the ISO 22301 standard and reviewed and tested annually. The BCMS guides recovery strategies for our most crucial processes and activities to ensure the continual supply of carbon black to our customers.

Information on material risks identified at the site and regional levels is captured on a Risk Register that is maintained and aggregated at the enterprise level and reviewed during ERMC meetings.

To help site leadership teams respond appropriately during crises, we developed our "In Case of Crisis" application. The app, designed to improve emergency response, provides access to important information such as local numbers, contacts and procedures on users' smartphones.

[BCP statement](#)



## Ensuring a constant supply for our customers

COVID-19 caught everyone off guard. However, the culture of business continuity is well established at Birla Carbon, meaning we were already armed with a guide and the mind-set needed to quickly develop a recovery plan.

Carbon black is a crucial element of emergency vehicle tires, water pipes and packaging ink. In Europe, many companies wrote to governments on our behalf to communicate this essential nature of our carbon black products, our business and the need for our facilities to stay open. We also worked with local officials in China to educate them on our products and why it was essential to remain open.

We have taken several additional steps to ensure a constant supply of carbon black for our customers. In Italy, we transferred some of our products to an external warehouse for certain market-sensitive grades. Due to curfews in Egypt, several of our employees found themselves being challenged by law enforcement during their commute from the bus stop to their homes. To ensure they could get to and from work without issues, we arranged the provision of company cars.

## Managing the increasing risk of storms

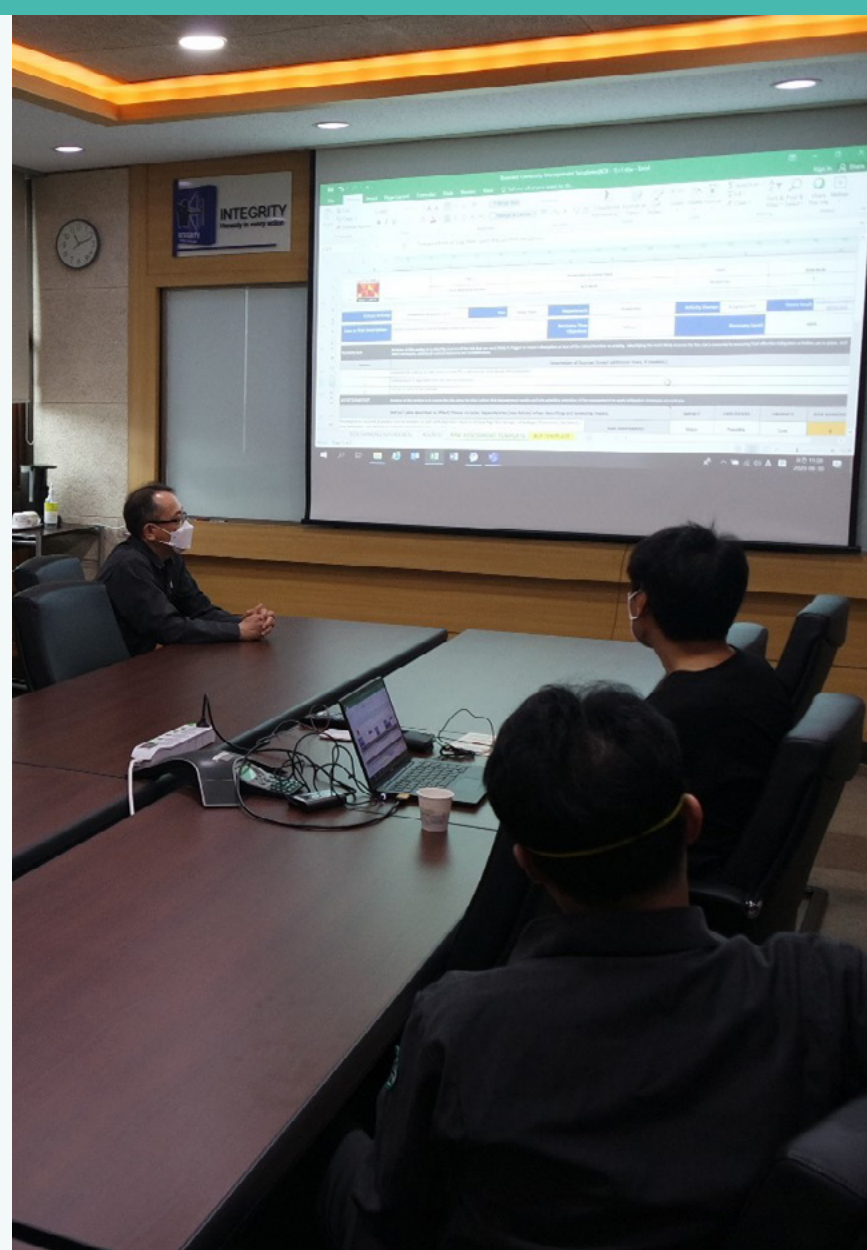
As a global business we are increasingly aware of the devastating impacts of more frequent and intense storms. We continue to track severe weather globally through the International SOS app and locally at our sites. Each plant at risk of exposure has established a preparedness program and BCP in case the plant is damaged.

Sites test their BCPs annually, and through tabletop exercises during COVID-19. Tabletop exercises simulated real events to see how well colleagues execute preparation plans and BCPs. Through these exercises we have identified areas to further develop our preparedness approach.

At North Bend, colleagues practiced their plans before hurricane season, executing their preparedness programs for each storm. Weather patterns were carefully tracked via briefings from the National Hurricane Center, with the plant shut down and evacuated 24–48 hours before anticipated impacts.

This proactive approach protects the plant's employees and assets and allows for people to take shelter when necessary. No significant damage occurred at North Bend during this season, just the impacts of localized minor flooding and the sequence of re-starting the plant.

Seven named storms affected our sites in FY2021: four at North Bend, Louisiana, two at Yeosu, Korea and one at Chennai, India.



## IT Steering Committee

The IT Steering Committee ensures we leverage the latest innovative technology and provides governance and oversight to make sure our IT strategy and integration is aligned with business and sustainability goals. The IT Steering Committee, which feeds directly into the SMT, is made up of representative leaders from all business functions and the Head of Human Resources.



## Committing to online security

As part of Birla Carbon's commitment to online safety, in FY2019 we initiated a new mandatory training program on information and computer security for all employees. The course represents our information security standards, establishing guidelines to ensure that our day-to-day actions protect the safety and integrity of our IT and intellectual property.

The training is designed as a resource for understanding IT risks, provides tips for appropriate online and offline conduct and explains the policy standards that apply to our employees. The course builds a key understanding of the risks faced when working with computers, the internet and other IT systems to safeguard Birla Carbon's assets, both physical and virtual.

[Sustainable Development Goals](#)

## Operational excellence: Building quality mind-sets and quality processes

Our sites continually work towards building operational excellence and world-class manufacturing practices into day-to-day activities through regular external and self-assessments. Tools such as 5S, a lean manufacturing management system for better workplace management, and Kaizen projects by employees and small groups, result in ownership of areas, equipment and processes. This ultimately improves the quality of products and services that we deliver.

In FY2020, we increased the focus of our Operational Excellence program in key areas such as Health, Safety and Environment (HSE), process efficiency and quality. While these areas have always been part of our program, we have established new internal metrics for tracking and reporting on performance. We have also created new multi-regional, multi-discipline support teams to help guide the sites we have identified as having the most room for improvement.

Progress towards implementation of best practice is monitored via semi-annual assessments and scorecards detailing the status of each manufacturing facility. Biennial on-site assessments are also conducted to ensure that local management teams fully understand best practice.



## Striving for world-class standards in information technology

We strive to provide world-class IT standards and infrastructure, providing consistent support across our entire business. This allows us to be confident in the information we base our decisions on, and that we share with our customers.

Our IT organization was designed to encourage deeper engagement with business priorities. It focuses on driving technology optimization across our processes, from procurement and manufacturing to logistics and customer invoicing.

Three pillars were established as areas of focus: Enterprise Systems, Information Security, and Infrastructure Services and Operations. These pillars help us to utilize technological innovation, seize opportunities quickly and implement business strategies successfully.

The IT team established a single enterprise resource planning system through which all processes and functions are now managed globally. This plays a key role in ensuring business continuity and provides a robust foundation upon which we can build.

We are also working to present quality, real-time information to manufacturing facilities so that they can make effective interventions, enabling us to provide the information our customers require.

While building robust infrastructure we will implement adequate governance practices for infrastructure to ensure we remain agile, responsive and responsible in the industry.

# Ethics

**Achieving our goals depends on operational integrity and how our people behave. We expect all our employees to align with our values: Integrity, Commitment, Passion, Seamlessness and Speed. It is fundamental that we uphold these values at all levels and that we adopt the fair business and labor practices our stakeholders expect.**

## Conducting business with ethics

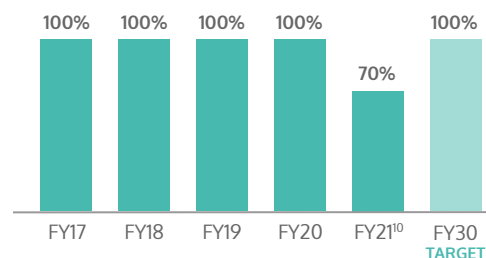
Our ethics approach includes aspects that influence our business activities: human rights, antitrust and anti-corruption, grievance measures and collective bargaining. We ensure that ethical conduct is embedded across our operations, and we expect all our employees, contracted workers and external partners to do the same.

To embed high ethical standards across our entire operation, we formally train every employee, who must then sign a document confirming their compliance with our Code of Global Business Ethics and Compliance Standards (Code of Ethics). The Code of Ethics covers our policies on fair competition, antitrust, freedom from discrimination and harassment or other abusive situations, and anti-money laundering.

Our compliance program was developed back in 2011, following the acquisition of Columbian Chemicals and the need for a more coordinated approach to ethics and compliance. Having re-evaluated our Code of Ethics, in 2014 we rolled out a new code, which would be effective in every region we work in, as well as an online training program that reintroduces our employees to the Code of Ethics on an annual basis.

## Progress towards our target

100% of active employees to receive Code of Ethics training



<sup>10</sup> FY2021 saw a drop in the percentage of our employees receiving Code of Ethics training due to the COVID-19 pandemic. We were unable to roll out the training to employees with no access to a computer.

## Human rights

For us, respecting human rights is non-negotiable and we recognize the valuable role we can play in the protection of these rights. It is crucial to our reputation and license to operate that this approach is embedded across all our activities and relationships. This includes our extended supply chain. We are committed to respecting the human rights of our workforce, communities, contractors, suppliers and those affected by our operations, in line with internationally recognized frameworks.

We engage with employees at every level of our operations to ensure our commitments in this area are applied to all our business activities. We strive to comply with, and exceed, laws and regulations wherever we operate, as well as adhering to international standards and those of our own Group. We seek to proactively prevent and address any negative impacts we may have on the people we employ, do business with or interact with.

Our Human Rights Policy sets out our commitments in line with the UN Global Compact principles, of which we are signatories. It covers key issues such as due diligence, employee and stakeholder engagement, diversity and equal opportunities, and forced and child labor.

- Supplier Management
- Birla Carbon Human Rights Policy

## Antitrust and anti-corruption

We are committed to complying with antitrust and anti-corruption laws in all locations where we conduct business, and we intend to uphold competitive free enterprise while prohibiting payments or promises to pay anything of value to obtain or retain business. In FY2021, two claims were investigated, and the employees involved were terminated.

## Grievance measures

We request that our employees voice any concerns or grievances they have about our operations, other employees or our products, and we expect our contractors and suppliers to do the same. To this end, we provide reporting channels enabling them to do so. Our hotline is available for employees to anonymously report, via telephone, text message or email, any illegal or non-compliant behavior they observe. The hotline is run by an independent third party, 24 hours a day, 365 days a year, and escalates issues to our Internal Audit Department and Chief Legal Officer.

Employees may ask questions concerning actual or potential situations, and calls made to the hotline are handled in full compliance with local law. Depending upon the issues, these are then investigated by a team of auditors and/or HR professionals. The hotline is available at all our plants and offices.

## Collective bargaining agreements

We are committed to absolute fairness when it comes to employee concerns such as wages, working hours, benefits and conflict-resolution processes. As such, we sign legally binding collective bargaining agreements to ensure we operate fairly and consistently with all our staff. In FY2021, 75% of Birla Carbon sites were unionized. If conflicts occur, we have communications and conflict-resolution measures in place for our employees to make their concerns known.

Grievances received	FY19	FY20	FY21
Hotline calls (total)	10	17	24
Calls investigated	10	16	24
No further action needed	3	6	13
Resolved through collective bargaining	0	5	4
Disciplinary actions	7	5	2
Formal community grievances	0	0	0

Labor, human rights and environment grievances	FY19	FY20	FY21
Labor grievances at the local level	14	17	6
Labor grievances resolved	12	17	6
Human rights grievances filed and resolved	0	1	0
Environmental grievances filed and resolved	3	0	1

## Suppliers

We understand the importance of building a sustainable supply chain, and we expect our external partners to adhere to the same standards and principles of ethics and integrity as we do. It is vital that every member of our supply chain demonstrates responsibility and transparency. All major suppliers receive a copy of our Code of Ethics in their own language, which they must review prior to the request for proposal stage.

We require all our suppliers to sign with Birla Carbon's terms and conditions (T&Cs) of sale.

In FY2020, we updated our Purchasing Policies to require use of these standard T&Cs. We also ensure that all new vendors are vetted via NAVEX Global's Risk Rate® system. Birla Carbon will not engage with any new vendor with a red flag.

We partner with NAVEX Global's RiskRate®, a third-party due diligence screening program, to vet all our vendors. We also work with EcoVadis to screen our key suppliers and rate them based on sustainability performance to ensure alignment with our own sustainability goals.

[Terms and Conditions](#)

[How we engage with our suppliers on ethical issues](#)

# Compliance

**Our license to operate is predicated on our compliance with international laws, standards, codes of conduct and our own strict business principles. Compliance is also a basic customer and stakeholder expectation.**

As responsible stewards of the world around us, we not only comply with but adopt best practices and internationally recognized standards that guide our work and allow us to take greater industry leadership.

## Management systems

All our operating manufacturing plants are certified to the International Organization for Standardization (ISO) 14001 environmental management standard. By FY2021, six plants (38%) had received certification in the ISO 50001 standard. ISO 50001 requires organizations to establish systems and procedures necessary to improve their energy efficiency, use and consumption.

In FY2020, we finished certifying all our sites to the International Automotive Task Force 16949 standard, which is an automotive quality management system certification with a quality management standard above the requirements of ISO 9001.

Our Environmental Audit Program not only reviews the compliance and implementation of our standards but also includes biennial safety and compliance audits. These audits, conducted

by HSE corporate staff and outside auditors, include inspections, employee interviews and detailed reviews of regulatory issues at each plant to ensure 100% compliance with national, regional and local regulations.

Any issue identified is prioritized and tracked monthly by the Corporate HSE Managers through [Enablon](#), our integrated sustainability management tool. In FY2021, we were unable to conduct on-site audits due to COVID-19. As an alternative, we launched a self-assessment process that focuses on compliance with [our HSE Standards and management systems](#).

## Investing in world-class facilities

To improve efficiency, we continually invest in and enhance our older plants while also developing a new generation of facilities to support future sustainable business growth. In FY2021, we invested over \$17.5 million in state-of-the-art technology to help us maximize the efficiency of our manufacturing processes and enhance our environmental performance.

These investments include:

- Making our sites safer for workers;
- Minimizing our environmental impact through better air emission control and more efficient water management;
- Improving our carbon and energy cycles; and
- Enhancing the plants' appearance for the wellbeing of employees and communities.



## Ensuring high standards of data privacy globally

On May 25, 2018, the European Union enacted the General Data Protection Regulation (GDPR) to harmonize data privacy laws across Europe and reshape the way organizations approach data privacy. Since then the European GDPR has become the global gold standard regarding data privacy.

Birla Carbon is committed to preserving the privacy rights of all individuals whose personal data we process, not just in Europe but globally. We have put in place a new set of data-processing policies and procedures that ensure compliance with GDPR's privacy protections.

Consistent with our compliance philosophy that the highest standard anywhere is the minimum requirement everywhere, these policies and procedures establish the baseline rules and procedures for all processing activities involving personal data within Birla Carbon – in Europe and throughout the world. We have rolled out our training to all our active employees in many countries all over the world.

We keep up to date regarding new data privacy trends and the latest legislation, which we apply thoroughly. We check our standards and policies frequently – data privacy is no challenge for us, but rather a commitment which comes with our high ethical standards. We have a Data Protection Steering Committee comprising the Data Privacy Officer, Deputy General Counsel and Head of Governance and Risk – it meets every two weeks to discuss ongoing requirements and ways ahead for businesses in this area.

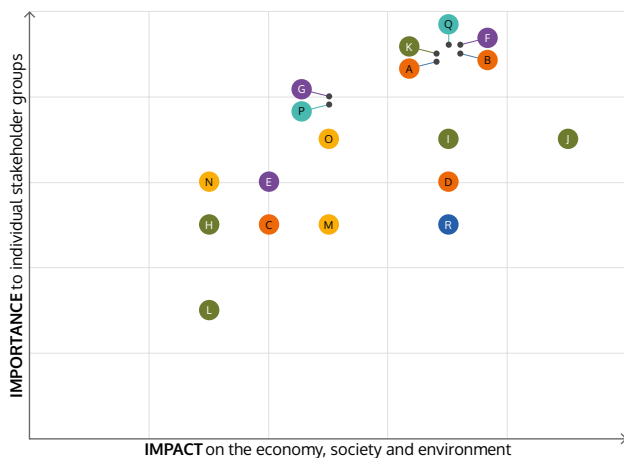


# Appendix

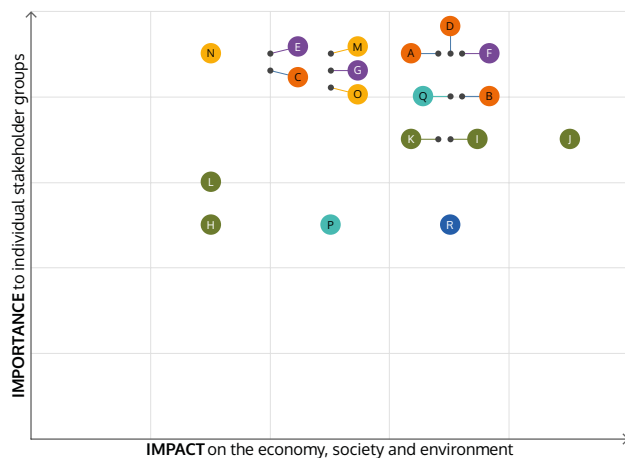
## Stakeholder matrices

Resulting from a formal materiality assessment, the following graphs display key issues for Birla Carbon, defined by our major stakeholder groups.

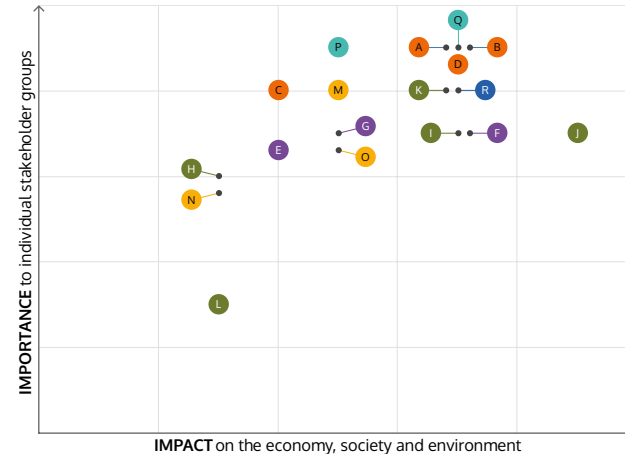
### Overall average



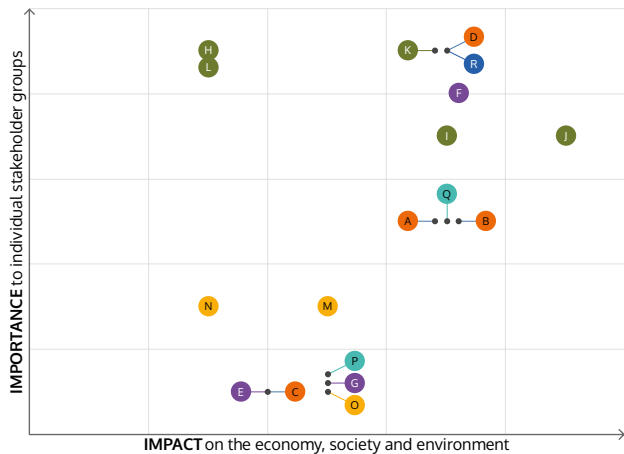
### Customers and suppliers



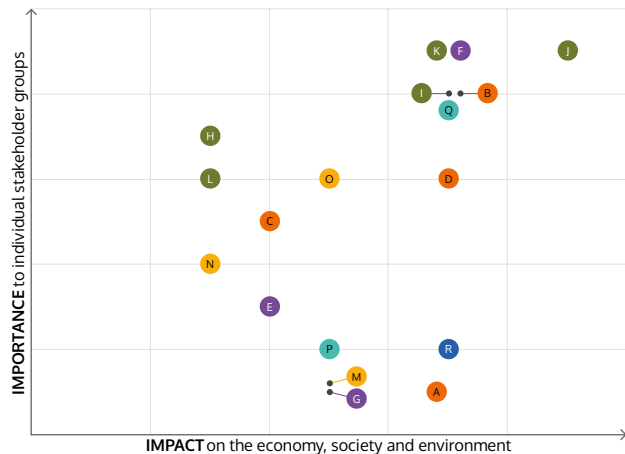
### ABG and employees



### Community



### NGOs and regulators



- A Business continuity
- B Ethics
- C Governance
- D Human rights
- E Innovation
- F Product stewardship
- G Product consistency
- H Air emissions
- I Energy
- J GHG
- K Water
- L Waste
- M Circularity
- N Customer engagement
- O Global presence
- P Sustainable procurement
- Q Employee engagement
- R Safety
- S Community engagement

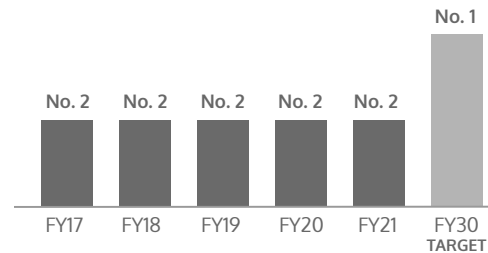
## Targets and progress

To meet our Vision to be the most respected, sustainable and dynamic global carbon black business, we have set key performance indicators (KPIs) to track our progress towards FY2030.

In FY2020, we revised our employee engagement KPI to adjust to changes in the delivery of employee engagement surveys.

### Business continuity/reputation

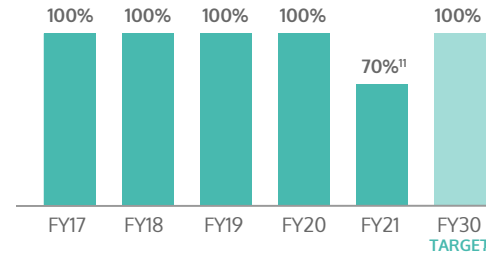
Improve our leadership position in terms of carbon black production capacity



Status: On track to meet target

### Ethics

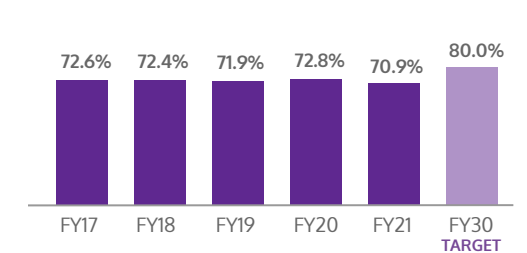
100% of employees to receive Code of our Ethics training



Status: Behind schedule

### Energy

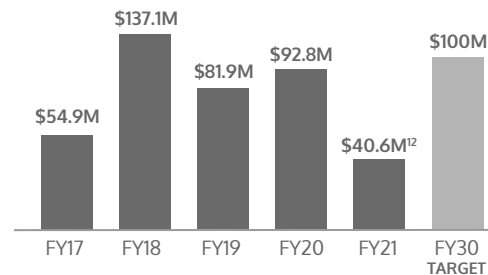
Increase our absolute energy conversion efficiency to 80%



Status: On track to meet target

### Business continuity

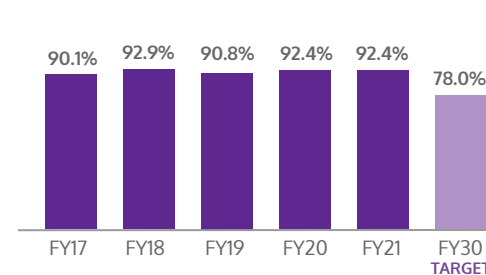
Approximately double our annual capital spending against FY2012 baseline to reach \$100M



Status: On track to meet target

### Direct CO<sub>2</sub> emissions

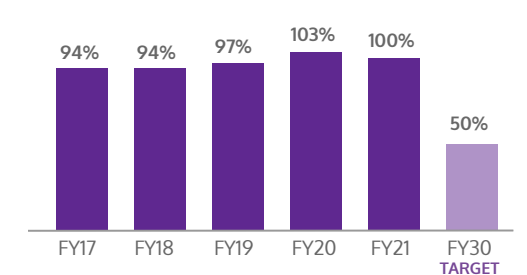
Reduce our direct CO<sub>2</sub> emission intensity (tCO<sub>2</sub>/t<sub>carbon black</sub>) by over 22% against 2005 baseline



Status: Behind schedule

### Water

Reduce our water withdrawal intensity (m<sup>3</sup>/t<sub>carbon black</sub>) by 50% against FY2013 baseline for our sites at high risk<sup>13</sup> for availability or accessibility of water or those reliant on groundwater



Status: Behind schedule

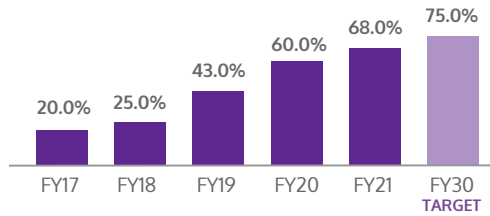
<sup>11</sup> FY2021 saw a drop in the percentage of our employees receiving Code of Ethics training due to the COVID-19 pandemic. We were unable to roll out the training to employees with no access to a computer.

<sup>12</sup> FY2021 capital spending was lower than normal due to the COVID-19 pandemic.

<sup>13</sup> KPI includes Hickok, Cubatão, Gummidipoondi, Alexandria, Weifang and Bahia.

### Waste

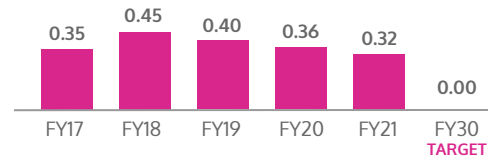
Repurpose 75% of waste



**Status**  
On track to meet target

### Safety

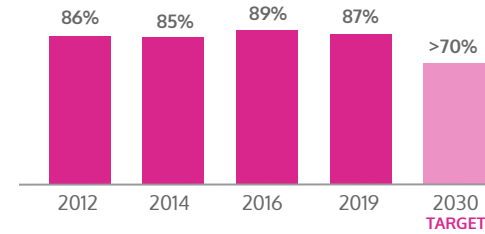
Zero recordable injuries (report on Total Recordable Incident Rate progress – TRIR)



**Status**  
On track to meet target

### Employee engagement

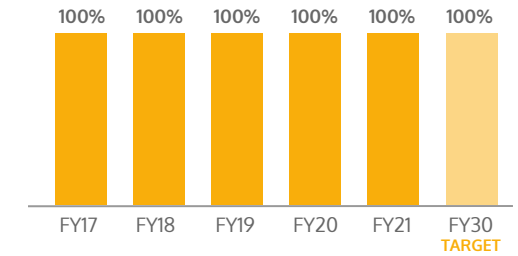
Remain above the chemical industry benchmark for employee engagement<sup>14</sup>



**Status**  
Target met and retained

### Community engagement

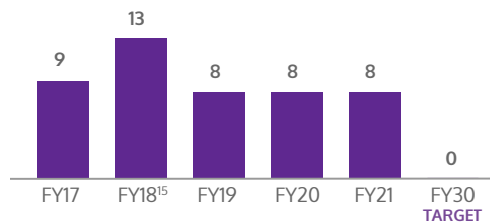
100% of our facilities to participate in community engagement



**Status**  
Target met and retained

### Environment

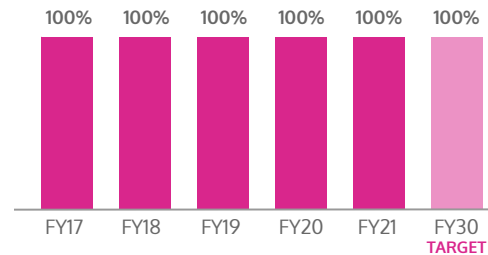
Record zero environmental releases year on year



**Status**  
On track to meet target

### Talent development

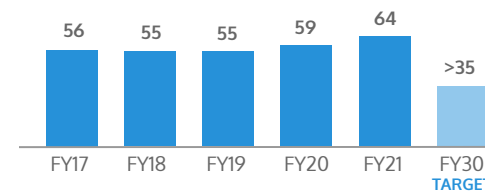
100% of Birla Carbon managers to have stated and measured goals set annually



**Status**  
Target met and retained

### Customer loyalty

Remain above the Net Promoter Score threshold of 35<sup>16</sup>



**Status**  
Target met and retained

<sup>14</sup> This KPI was amended in FY2020 to exclude the results of the Team Vibes survey. It has also been modified to show results for calendar year rather than financial year, in line with Vibes survey timings.

<sup>15</sup> In FY2018, we had two releases of carbon black/feedstock exceeding regulatory reporting limits to soil and one to air. The remaining releases were reported on a voluntary basis to regulatory authorities.

<sup>16</sup> Net Promoter Scores range from -100 to +100.

## Feedback

Feedback on our report is an essential component of our commitment to SOE. Comments are reviewed by our Sustainability Steering Committee and will, in many cases, be incorporated into future reports.

Please send your feedback to:

**Dr. Gilles Moninot**

Global Sustainability Director  
Birla Carbon

[birlacarbon.sustainability@adityabirla.com](mailto:birlacarbon.sustainability@adityabirla.com)

