

Evolving sustainably, together.

Birla Carbon Sustainability Report 2019



Innovating sustainably to bring value to our customers and lead the industry

At Birla Carbon, sustainability is our constant aspiration. We have set targets to improve our environmental stewardship, while creating a workplace where employees feel supported and encouraged to do their best. This includes promoting an attitude of collaboration, Sharing the Strength to develop innovative product solutions that address our customers' needs both now and in the future.



Every decision we make is influenced by our Sustainable Operational Excellence (SOE) strategy: from how we design and run our plants, to how we interact with our customers, our suppliers and local communities. Our strategy relies on three key elements: **people, product** and **process**.



At Birla Carbon, we have reached a maturity level where we have the tools and framework to better address sustainability and have much to share with others. It is our obligation to go to the next level by sharing the strength and involving all our partners and stakeholders to deliver even greater value."

DR. GILLES MONINOT
Global Sustainability Director



People

As a global employer, we create direct and indirect jobs all over the world. With our support, our people actively engage with local communities, helping to address their needs.



Product

Carbon black enables sustainable development through its many applications, helping make products safer and longer-lasting. Even if you do not notice it, carbon black is in many everyday objects, making life easier and more comfortable.



Process

We minimize our impact on natural resources, producing carbon black efficiently and in a socially responsible and ethical manner.



43% of waste produced in our facilities is repurposed.



We were awarded a **Gold rating** by EcoVadis for the third consecutive year.



100% of our 9,000+ suppliers screened using NAVEX Global's RiskRate® due diligence system.



We introduced our **Serious Injury and Fatality** initiative to reduce accidents in six key operation areas.



75% of our plants are now energy positive.



All 18 laboratories achieved 100% alignment with the ASTM Laboratory Proficiency Rating System.

Share the Strength

With over a century's worth of expertise in carbon black, we work to share our knowledge with our customers, employees and communities to increase value for everyone. From this desire comes our Purpose, Share the Strength, and the five Purpose Principles that guide our efforts.



Being responsible stewards

Operating in 12 countries, we aspire to reach higher standards of responsible stewardship, reducing our impact on both the planet and people. To achieve this, we have aligned Birla Carbon's operations with the [Aditya Birla Group \(ABG\) Sustainable Business Framework](#). Through ABG, whose sustainability framework has been certified as conforming to the requirements of the UN Global Compact (UNGC), Birla Carbon has also aligned our strategy, adhering to the 10 principles of the UNGC.

Our vision

At Birla Carbon, our vision is **to be the most respected, sustainable and dynamic global carbon black business**. We want to be the preferred partner for our customers and to show employees we are the best place to work. To achieve this, we are placing a stronger focus on our SOE strategy.

Our Product

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



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Product responsibility

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At Birla Carbon, we have been sharing our knowledge and forging new techniques and applications for over a century. Today, we aim to push the industry beyond its boundaries to deliver limitless value for our customers. This comes in the form of developing increasingly innovative products and strengthening relationships with our customers, working directly with them to make their own products more sustainable.

Compound Knowledge

Shared knowledge is our most important resource, helping us, and our customers, develop innovative products. By collaborating with customers, we can learn what they want in terms of a sustainable product while we can share with them our expert knowledge of carbon black and its applications.



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



Our New Product Development Team is focused on future Specialty Blacks Business products, and we will continue to drive value creation for our customers through innovative carbon black solutions. Working to solidify our reputation as an industry leader, we are focusing on continued innovation, building a pipeline of new carbon black products and providing sustainable growth for our customers."

JERRY LAI

Director, Product Development, Specialty Blacks Business

Working to create value for our customers



The social value of carbon black

Up to 70% of our carbon black goes into mobility applications, and as such we continue to develop solutions so customers can create end products that last longer and go further with improved fuel efficiency.

> [The social value of carbon black](#)

Sharing learning with customers

We invest time and resources into understanding every aspect of carbon black and our industry. We welcome every opportunity to share our findings and answer any questions customers may have.

> [The big questions](#)

Innovative solutions for customers

As a company we aspire to lead the industry with innovative solutions to customer needs. We have developed two world-class research centers to further our understanding of carbon black and potential novel areas of application for it.

> [Research and development](#)

Ensuring safe, responsible products

Product safety is of paramount importance to us and to our customers. We test our carbon black thoroughly, ensuring it surpasses health, safety and environmental requirements.

> [Product responsibility](#)

Meeting customers' needs

While our customers are experts in their fields, we encourage collaborative development, offering lab support and product testing to create products that are best in class in terms of quality, safety and social value creation.

> [Product quality](#)

Creating value from repurposing waste

Producing carbon black is an intricate process that requires highly controlled conditions. Birla Carbon's carbon black has real value, being made from oil residue that, with limited other commercial use, would otherwise need to be disposed of.

> [How carbon black is made](#)

FY2019 highlights

We established a global information sharing program for recording product quality issues and devising solutions.

> [Product quality](#)

We invested 3.5% of profits back into research and development.

> [Research and development](#)

We are expanding research into carbon black for use in the energy market and in more sustainable mobility applications.

> [Research and development](#)

Feature stories



> How is carbon black made?

Carbon black plays a key role in nearly every aspect of our lives, from car tires to shoe soles and from water pipes to power lines.



> Leading on product safety through innovation and collaboration

Birla Carbon is an industry leader when it comes to testing our carbon black to ensure it contains no impurities.

How we are supporting the SDGs

Sustainability is crucial when it comes to creating value in the long term and will continue to drive developments in our operations and technology. Whether through improving the energy and yield efficiencies of our processes or developing our products to be more resilient, we continue to innovate to address growing global demands for more sustainable products, from agriculture to mobility.

The SDGs we are supporting are:



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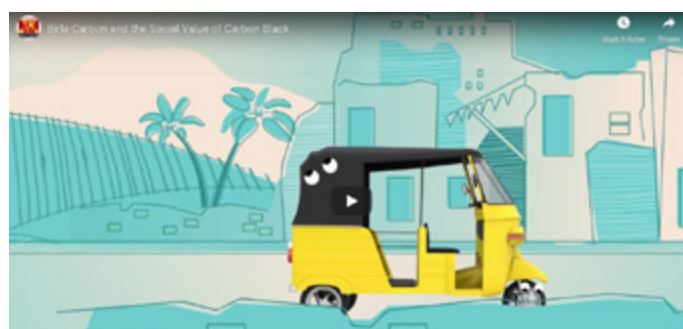
The social value of carbon black

Carbon black has been part of human life for centuries. It is a fine, black powder essentially composed of elemental carbon, a highly engineered microscopic material contained in hundreds of thousands of our most 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, to travel safely, to communicate and to access clean water for drinking and irrigation.

What is carbon black?

[Watch our video](#) to see how carbon black enables our everyday lives.



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, more commonly known as soot.

The size of the particles and the way they are aggregated determine the specific properties of the 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 everyday. It brings many 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.



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 CO₂ 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 buildup. Examples include:

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

Health and food

Carbon black, with its light-absorbing properties, ensures 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 pipes
- 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 printing newspapers, magazines, books, bank notes, etc.
- Printer cartridges
- Mascara
- Black building products
- Leather coating
- Black fibers for fabrics, carpets, woven materials, etc.

Did you know?

Vehicle tires are approximately 25% carbon black. You would not be able to drive further than 8,000 km without it.

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

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



How we are supporting the SDGs



Partnerships for the goals

Carbon black is present in nearly every area of everyday life, so we partner with a range of stakeholders, particularly our customers, to make products safer and more durable.



Zero hunger

In its use in farming, including improved irrigation, carbon black facilitates more efficient agriculture.



Decent work and economic growth

Carbon black ensures greater resource efficiency, which in turn promotes economic growth.



Industry, innovation and infrastructure

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



Reduced inequalities

Carbon black plays an important role in technology, giving more people greater access to transport and communication. It also ensures that technologies containing it last longer and are safer.



Sustainable cities and communities

Carbon black is crucial in the development of safe, affordable, accessible and sustainable cities and transport systems, particularly in terms of tire safety, durability and improved rolling resistance.



Responsible consumption and production

Carbon black facilitates responsible consumption and production through increasing the resource efficiency of products.

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How carbon black is made

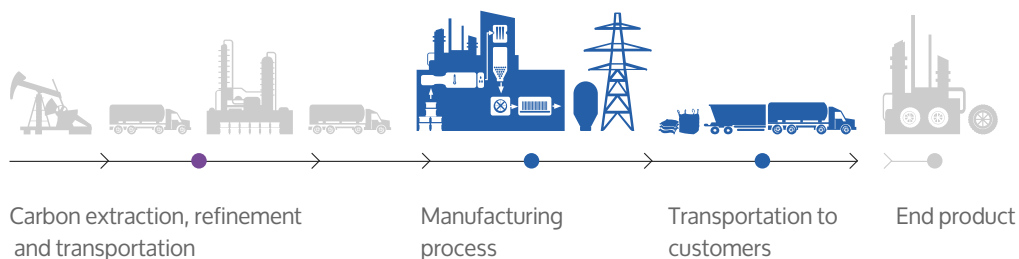
Carbon black is produced by the thermal decomposition and pyrolysis of low-value oil residues at high temperatures under controlled conditions.

At Birla Carbon, we produce carbon black in a high-temperature reactor through a tightly controlled flame-synthesis process that uses carbon-rich oil residue as feedstock and sometimes natural gas. Our carbon black has real value; the oil residue used in its production has limited usage and would otherwise be disposed of.

[Watch our video](#) to learn how carbon black is made.



The carbon black manufacturing process



Our six-step carbon black manufacturing process



1. Feedstock oil

To begin the process, preheated air and oil (and sometimes natural gas) are fed to the reactor in tightly controlled amounts.



2. Reactor

Inside the reactor, the air and hydrocarbons undergo a complex set of reactions – partial combustion, thermal decomposition, particle nucleation and particle growth/aggregation. These reactions occur in temperatures up to 1,800 degrees Celsius and can take less than one hundredth of a second.



3. Water injection

Water is then injected to stop the reactions by reducing the temperature of the carbon black “smoke” stream leaving the reactor.



4. Separation

This “smoke” stream is then routed to a baghouse that separates the carbon black from the reactor tail gas using hundreds of fabric filter bags. The carbon black is a light, fluffy powder as it exits the baghouse and is transported to an accumulator tank.



5. Pellet formation

The carbon black powder is mixed with a binding agent and water in a pelletizer to form pellets, which are then dried in a rotary drier. This process increases its bulk density by up to five times, allowing for more efficient transportation to our customers.



6. Storage and packaging

In the final step, the carbon black pellets are packaged in a variety of containers, ranging from 10 kg paper bags to 60 tonne railroad cars for transportation to our customers.

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Over 1,900 tests related to food contact and other regulatory requirements performed on our products.

Product responsibility

Sustainability is at the core of our growth strategy, and we recognize our responsibility to produce a high-quality product while mitigating any potential effects it may have on people and the environment.

Our approach to product responsibility is divided into two key areas: safety and stewardship. We understand that it is of utmost importance that our carbon black is made safely for our customers' specific use. At the same time, product stewardship ensures all our people understand exactly how our carbon black is made and the role they play in manufacturing safety. It is important that we help our customers handle and use carbon black effectively and safely and that we act responsibly across the entire value chain.

How do we create safe products?

Our customers rely on us to develop safe carbon black that they can incorporate into their products. We ensure that our carbon black not only meets but exceeds regulatory requirements. We remain abreast of any regulatory or market developments, enabling us to support our customers in meeting their own regulatory obligations and ensuring an uninterrupted supply of carbon black.

We thoroughly test our carbon black to ensure that it surpasses regulatory health, safety and environmental requirements and that it is of the highest quality. 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 to handle our carbon black product safely and minimize any potential environmental impact. This includes ensuring we have the correct infrastructure in place throughout the supply chain to prevent the release of carbon black dust into the open air.



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. A key aspect of this is

providing robust scientific evidence that finished articles containing carbon black do not release carcinogenic compounds related to poly-aromatic hydrocarbons (PAH).

There are many methods for testing for impurities in carbon black, but there is only one approach for testing for PAH with the sensitivity and selectivity needed. Birla Carbon has led the way in developing better 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 leads the ASTM D24.66 Technical Committee dealing with the health, safety and environment (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 led the development of a series of internationally recognized test methods specific to carbon black and validated using scientific processes. It is an example of how we Share the Strength by using our experts and research capabilities to support the industry and customers in developing better test standards and safer products to benefit society.

› [Sustainable Development Goals](#)

Investing in health and safety

We ensure that all our internal and external customers are fully informed about the safety of our products, focusing on product characteristics, safe, effective and approved uses, and health and environmental risks. Any information gaps are proactively identified for each product through our testing program.

All business areas contribute to continuing 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 since its inception over 10 years ago of the CB4REACH consortium, which is addressing the regulatory issues of our carbon black product related to the REACH regulations (Registration, Evaluation, Authorisation and Restriction of Chemicals). For instance, we are diligently preparing for the substance evaluation process due to be carried out in 2021 by the French Agency for Food, Environmental and Occupational Health and Safety (ANSES) as part of the European Chemicals Agency's Community Rolling Action Plan (CoRAP) to determine whether any health or safety risks exist with carbon black.

[CB4REACH](#)

Enhancing customer understanding

Customers and end consumers want to understand more about carbon black. They can find up-to-date and accurate information through Safety Data Sheets (SDSs), labels and product stewardship statements.

We respond to direct queries from our stakeholders. In FY2019, Birla Carbon received over 1,200 queries related to product safety and compliance with specific environmental or food contact regulations. In 100% of cases we sent an initial response within one business day. We continuously educate our sales and distribution network about carbon black product safety and its regulated applications.

In FY2019, we conducted training for key distributors in Europe and Asia as well as for our sales and technical service teams across the globe. Our Product Stewardship (PS) manager also held direct meetings with customers more frequently to present our approach to product safety and stewardship. To further enhance customer understanding of our product, we made all PS statements publicly available on our website.

All product stewardship statements can now be found on our HSE page under Form Letters.

[Statements on Product Stewardship](#)

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 process development and production changes.

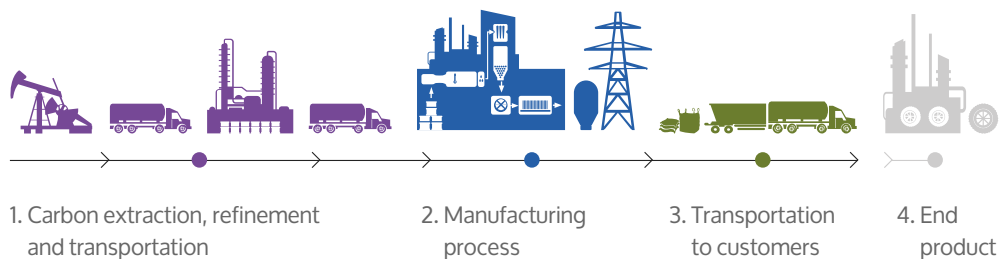
In FY2016, we rolled out our Product Stewardship Standard (the Standard), which is now active in 100% of our sites. The Standard requires enhanced testing intervals for all products and provides a robust description of which actions will prompt product retesting at a manufacturing site. Each site is 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 self-assessments. The Stewards participate in regional Product Stewardship Committees, which report to a Global Product Stewardship Steering Committee. To effectively benefit from the Standard, our Management of Change Standard ensures we formally document any changes that could potentially impact our product.

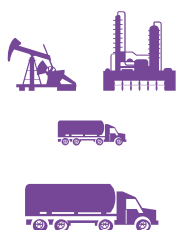
In FY2018, we approved a project to automate SDS distribution, which will help to ensure continued compliance and increased efficiency across our global operations. This project was implemented in FY2019, and we are currently in the process of evaluating the systems for this to ensure effective communication with our existing data management systems.

Product responsibility across the value chain

We divide our value chain into four areas:



1. Carbon extraction, refinement and transportation



Extraction and refinement

This carbon feedstock sourcing stage is not controlled by Birla Carbon. We expect our suppliers to maintain the highest ethical and environmental standards in their activities.

Transportation

We have health, safety and quality controls in place for handling all raw materials.

2. Manufacturing process



Reactor

State-of-the-art technology enhances production efficiency.



Baghouse

The best possible control of emissions and the containment of our carbon black powder is ensured through the use of the most advanced filter bags.



Rotary dryer

Strict product testing is conducted at this stage to meet customer specifications and safety standards.



Bulk storage

Once customer requirements have been met, the product is directed to specific silos and later shipped.

3. Transportation to customers



Shipping

Before shipment to our customers, the carbon black is further tested by our quality department, which generates a Certificate of Analysis (CoA) to guarantee product quality.

4. End product



Customer sites

Our SDSs are continuously updated and provided in over 25 languages. Specific product safety documentation is supplied to customers on request.

How we are supporting the SDGs



Good health and well-being

We are leading the industry in terms of product safety through our active involvement in our international industry association.



Responsible consumption and production

Our Product Stewardship Standard ensures we are producing our carbon black in a safe and responsible way and that all of our employees take ownership for the quality of our product.



Partnerships for the goals

We work with trusted third-party institutes to test our carbon black, ensuring it passes health, safety and environmental regulations.

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

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 time and effort over several decades in robust scientific studies to understand the potential health, safety and environmental risks associated with our product. We welcome every opportunity to share what we have learned about carbon black with our stakeholders.

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



A. 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 International Carbon Black Association, we engage closely with health, safety and environmental officials across the world to ensure that accurate, scientific-based information is utilized during regulatory processes.

Q. What is the ICBA?

A. The [International Carbon Black Association \(ICBA\)](#) 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 health, safety and environmental 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.

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

[↓ Carbon Black Product Safety Studies](#)

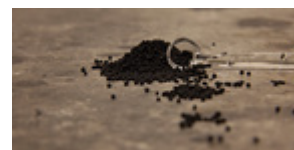
Q. Can carbon black cause health problems?

A. Peer-reviewed scientific studies have shown that carbon black is neither a toxin nor a carcinogen, and there is no evidence of any adverse health effects on our employees. 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 marketplace. Black carbon is a known carcinogen; by association, our product (carbon black) is often also, mistakenly, linked with cancer.



Q. Is carbon black safe to handle?

A. Carbon black does not pose any risk to humans, and there is no evidence to suggest that exposure to carbon black results in life-threatening injury or illness. Although carbon black is not defined as a respiratory irritant, carbon black dust spreads easily in air and therefore should be stored 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.



For more information on handling carbon black, please see our [Safety Data Sheets](#) and the [ICBA](#).

[Safety Data Sheets](#)

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

Q. Is carbon black harmful to the environment?

A. 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 proactively studying, experimenting and 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.



Q. Is carbon black a nanomaterial?

A. 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). These agglomerates do not break down into smaller components (e.g. aggregates) because of the effect of van der Waals forces unless adequate force is applied (i.e. shear force). Thus, as placed on the market, carbon black products are not nanoparticles.

Q. How does Birla Carbon address customer concerns regarding product end-of-life?

A. We are looking into ways to divert end-of-life products from landfill, collaborating with other organizations to improve reclamation of materials from used tires. In the midterm, we aim to determine what proportion of oil, gas, steel and carbonaceous material could be given a second life in our production process. Reclaimed carbon black has different characteristics and properties to those of the original material, and so we are taking the time to understand the market and how and when this reclaimed material could be used in substantial quantities.

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All 18 laboratories achieved 100% alignment with the ASTM Laboratory Proficiency Rating System.

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 business focused on carbon black manufacture, we are in a strong position to supply our customers with innovative materials that are consistently of the very highest quality.

Quality assurance

All our manufacturing sites are ISO 9001 or International Automotive Task Force (IATF) 16949 certified, which provides a sound basis for our sustainable development initiative. This system helps us to continuously 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.

Improving our processes

We continuously seek to make our manufacturing processes better. In FY2017, following the requirements set by the IATF 16949, we started developing a system through which we can identify costs caused by poor quality. The system tracks these costs through several elements:

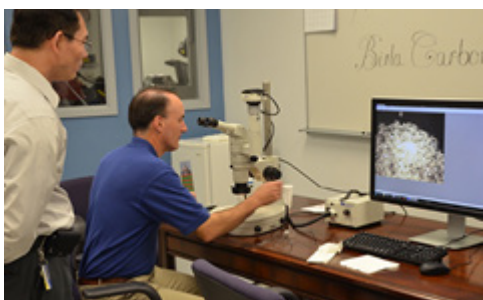
- Customer claims
- Complaint handling costs
- Returned material and associated freight due to complaints
- Nonstandard production

Information on each of these is gathered from the relevant internal functions, including Accounting, Customer Service, Supply Chain and Operations, and 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 FY2019, we continued to improve quality assurance processes, establishing an information-sharing program for quality issues and for devising solutions. The goal of this program is to prevent reoccurrence of quality issues at the same, or other, manufacturing facilities and to improve communication and awareness of quality initiatives and improvements to the benefit of all manufacturing sites.

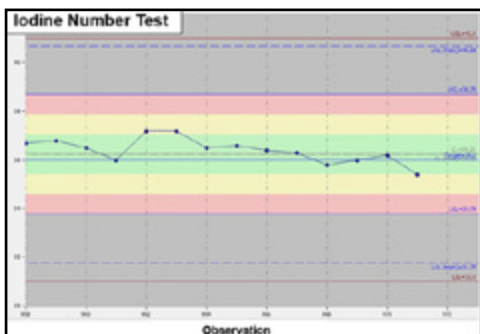
Our Global Quality Group, in collaboration with Plant Quality Managers, determines what information should be shared and how best to distribute it. All information is shared throughout our facilities in the form of a Quality Bulletin, which is maintained for employee reference on our SharePoint.



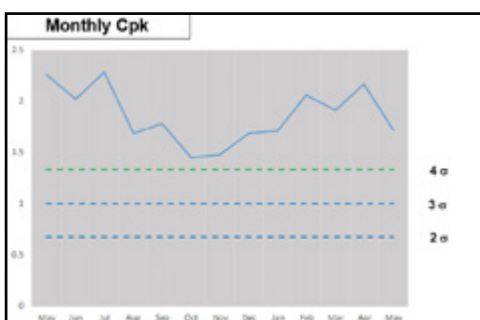
Focus on product consistency

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, physical form and cleanliness.

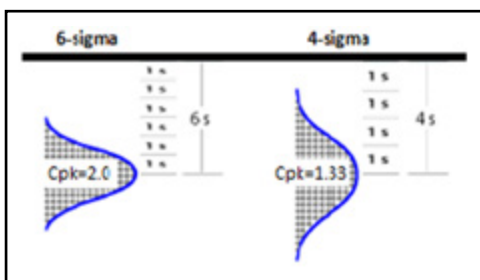
- **Colloidal properties** – or those related to the carbon black morphology (microscopic physical characteristics)
- **Physical form** – referring to the bead quality (size and hardness) of carbon black
- **Cleanliness** – in terms of the purity of our product



Birla Carbon rigorously tests its carbon black through internationally recognized test procedures and participates in the development of international testing standards. All Birla Carbon laboratories participate in industry-wide proficiency testing to ensure standards are aligned, checks are performed daily to ensure 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 are 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 the American Society for Testing and Materials International (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 sharing 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 quality assurance.

- > [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 continuously 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.



Regional quality organization

Regular meetings are held between the regional quality leadership, the Quality Managers from each plant within the region and the Technical Services Managers to discuss and implement best practices in the Quality area.



How we are supporting the SDGs



Partnerships for the goals

We work with our customers, as well as external organizations such as the IATF, ASTM International and ISO, to improve our quality management processes.



Industry, innovation and infrastructure

Our product helps by supporting the development of quality, reliable, sustainable and resilient infrastructure, and we perform rigorous testing to ensure our product is consistently of the highest quality.



Sustainable cities and communities

Our product enhances sustainable urbanization, and we have global systems in place to ensure it meets both our own standards and the expectations of our customers.

Our Product

The social value of carbon black

How carbon black is made

Product responsibility

The big questions

Product quality

Research and development

3.5% profit reinvested
in research and
development in
FY2019.

Research and development

When our ancestors painted on cave walls, they used carbon from fires to share stories. Sharing that fire lit 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.

Our development and use of the best available technology enables us to improve our product, progress new opportunities for carbon black applications and closely assess our sustainability efforts – including developing more sustainable forms of carbon black. We are committed to investing more into new research channels, and our teams are always working to design products that address the problems our customers may face in the future rather than waiting for them to come to us.

Leading through innovation

It has been over 75 years since our historic installation of one of the world's first industrial electron microscopes – but it is an invention that keeps innovating. Decades later, 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. We continuously investigate and develop new approaches to how we make carbon black and improve its performance as well as how this performance is measured. To ensure we remain at the cutting edge of our industry, we depend on leading scientists, dedicated to taking us forward.

To facilitate innovation, we provide our scientists with state-of-the-art research facilities. Our two principal research and development (R&D) centers are in Taloja (Maharashtra, India) and Marietta (Georgia, USA). They are supported by two regional satellite laboratories in South Korea and Brazil.

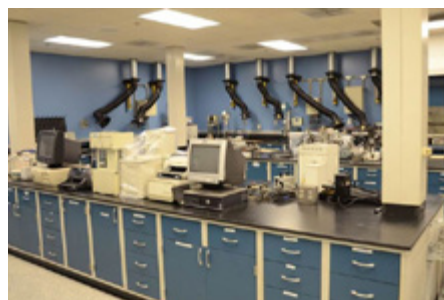
Our R&D centers are dedicated to five areas of expertise:

- 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 have access to two transmission electron microscopes across our R&D facilities around the world.



Taloja (Maharashtra, India) R&D center



Marietta (Georgia, USA) R&D center

Meeting customer needs

The Product Technology group works with global Technical Service teams and engages daily with customers to ensure their needs are understood and met. 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 jetness levels, superior performance and improved formulation costs.

Enabling sustainable mobility

Rolling resistance is a key focus for our tire customers who are concerned with sustainable mobility. Our objective is to develop new carbon black grades to further lower the rolling resistance for the next generation of tires, and in the past four years we have commercialized two new grades created with this goal in mind. These tires will consume less energy in vehicle propulsion, resulting in greater fuel economy and thus lower CO₂ emissions.

We encourage innovation from any area of our organization – not just R&D. We know that to build on our Share the Strength ethos we must look for innovative ideas from every department, and we are making sure we spread this message widely to create an open culture of innovation.

New areas of development

Over the years, our research into carbon black and improving it for our existing customers have remained priorities. However, we are also dedicated to expanding into R&D in 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 highly qualified 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.

A collaboration with GranBio (formerly American Process Inc.) is working to improve the strength of tires. The development would include combining nanocellulose components from renewable biomass sources such as woodchips with our carbon black into tires, making them stronger and longer-lasting.

Did you know?

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

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!

There is over 65,000 m² of carbon black surface area in a typical passenger tire tread.

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

Directing our technology

Our Technology Roadmap is designed to coordinate and reinforce our approach to technology and product development by focusing on three main drivers: growth, sustainability, and cost and quality.

The three drivers of our technology roadmap



- Introduce a standard engineering design package to ensure we build and maintain industry-leading facilities.
- Establish strong relationships with engineering and construction firms in all our locations globally.
- Increase capacity for production of Specialty Black grades.



- Operate high-temperature and -pressure co-generation units to maximize energy recovery.
- Increase commercialization of low-rolling-resistance tread material.
- Proactively exceed all environmental regulatory requirements ahead of time.



- Commercially utilize alternative feedstock routes.
- Ensure all our plants meet a yield and energy recovery benchmark.
- Highlight our global product capability and consistency as a competitive advantage.

How we are supporting the SDGs



Industry, innovation and infrastructure

Our aim is to support and facilitate sustainable and resilient infrastructure development with carbon black, supporting the development of new technologies and innovations. This includes increasing efficient resource use, and we are currently researching the potential for carbon black use in energy storage.



Sustainable cities and communities

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



Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, particularly our customers.

Environment

Evolving to reduce our environmental footprint



Environment

Life Cycle Assessments

Carbon stewardship

Water

Waste

Air emissions

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 continuously adapting and investing in our environmental stewardship to use resources more efficiently and minimize our adverse impacts.

Beyond Durable

Carbon black has been a part of human life for centuries and will continue to be integral to our lives for centuries to come. 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](#)



Environmental stewardship enables us to minimize the impact of our activities, products and services. We strictly comply with all laws, train our people and continuously seek to reduce our risks. Preserving the environment is intrinsic to our relationship with local communities and all stakeholders, contributing to everyone's capacity to enjoy a healthy life."

UNGDAE LIM

General Manager, Birla Carbon Korea

Reducing our environmental footprint at every step of our process



Understanding our impact

We are committed to continually improving our environmental performance and perform regular Life Cycle Assessments (LCAs) to measure the impacts of every step of our carbon black production process, from sourcing feedstock to transporting the final product to our customers.

- > [Life Cycle Assessments](#)

Reducing our carbon footprint

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 plant energy use efficiency, sourcing local feedstock oil to reduce transport emissions and recovering energy from our processes to be recycled back into our operations or sold on to neighboring facilities.

- > [Carbon stewardship](#)

Responsible water use

Working in areas where water scarcity is an issue, we have developed a water strategy that identifies areas where we can improve water use and where we can reduce the strain we place on potable water sources.

- > [Water](#)

Innovative waste solutions

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.

- > [Waste](#)

Cutting air emissions

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.

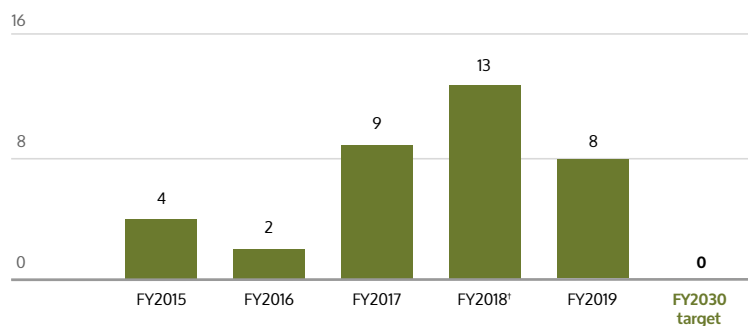
- > [Air emissions](#)



Environment: progress towards our target

Record zero environmental releases year on year.

† 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.



Feature stories



> Birla Carbon Korea receives excellence award for climate change response

Our Birla Carbon Korea plant was recently recognized for excellent efforts with regard to climate change actions.



> Switching to biodegradable packaging

We partnered up with Pharos University in Alexandria, Egypt, to explore the possibility of using biodegradable bags for carbon black transportation.

How we are supporting the SDGs

To support the UN Sustainable Development Goals, we have aligned our approach to sustainability with the Aditya Birla Group Responsible Stewardship Framework and, through this, the UN Global Compact. We are taking steps to ensure we use resources such as water, energy and raw materials efficiently and responsibly while mitigating the impacts of our operations on climate change.

The SDGs we are supporting are:



Environment

Life Cycle Assessments

Carbon stewardship

Water

Waste

Air emissions

Life Cycle Assessments

To better understand the impacts of our carbon black product from manufacture to end of use, we regularly conduct Life Cycle Assessments (LCAs).

LCAs are a recognized approach that evaluates all environmental impacts in a product life cycle: from raw material extraction through processing, manufacture, distribution, use, repair and maintenance, to product end-of-life by way of final disposal, recycling or reuse.

Understanding our impact

Our Environmental Policy, published in FY2018, outlines our commitment to continually improve the environmental performance of our current and future products and services. We have used LCA to measure the impacts of our feedstock and carbon black for the past five years.

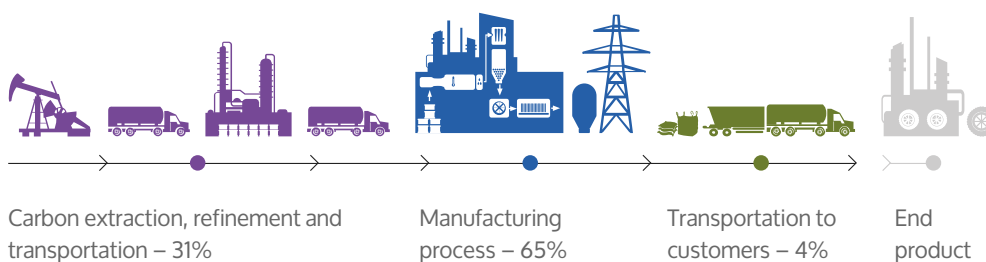
The scope of our LCA is from “cradle to gate”: from the moment the raw materials are extracted to the moment the carbon black is delivered to our customers following the International Organization for Standardization (ISO) 14040 guidelines. This enables us to better understand our impact with regard to CO₂ emissions and identify opportunities to reduce our overall carbon footprint.

Over the years, we have looked at feedstock delivery, production and product distribution data to establish a baseline and identify areas where we can reduce carbon emissions most effectively.

- ↓ Environmental Policy
- > Carbon stewardship

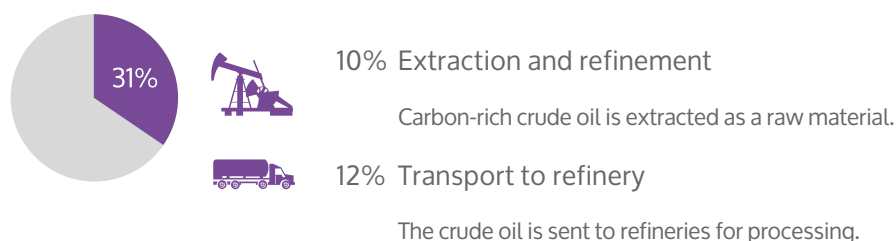
Carbon stewardship across our value chain

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.





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.

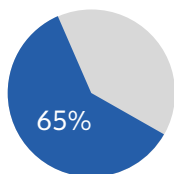
Birla Carbon has some control over the transportation stage.



1% Transport to Birla Carbon

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



Manufacturing process

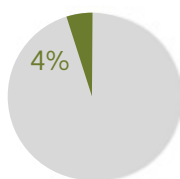
During our manufacturing process, the feedstock oil is converted into valuable carbon black. This stage comprises the single largest contribution to our overall carbon footprint, and it is also the stage at which we have the greatest ability to reduce our footprint.



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



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, 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.

Reducing our footprint

The results of our most recent LCA, carried out in FY2017, indicate that our overall carbon footprint per tonne of carbon black has decreased by 12% relative to the FY2012 baseline.

We have been able to achieve this result through taking a holistic approach.

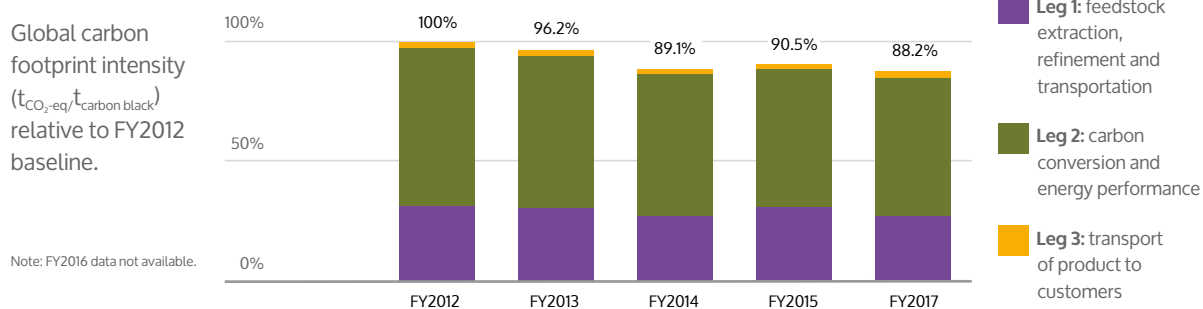
- Greater efficiency in:
 - Converting carbon into carbon black; and
 - Optimizing our energy performance.
- Increasing the proportion of our feedstock that is sourced locally.

The intelligent and efficient use of raw materials and feedstock, such as natural gas and oil, is crucial to our long-term viability as it reduces our carbon footprint and environmental impact.

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 identify alternative local feedstock, especially in India, South East Asia and the Far East region.

Though the transport of our carbon black products to our customers represents just 4% of our carbon footprint, we are working to further minimize the impact of this process.

Global carbon footprint intensity



In FY2017, we expanded our LCA to include other environmental indicators. These were estimated for each of our facilities, based on the energy imported and exported¹.

The impact categories assessed comprise:

- Risk to humans (both carcinogenic and noncarcinogenic)
- Land and freshwater pollution, in terms of both chemical run-off and toxicity
- Mineral, fossil and renewable resources depletion
- Ozone layer depletion and smog generation
- Ocean acidification
- Particulates
- Land use

We have compared our LCA results with those of the general carbon black industry, which are recorded in a [database](#) maintained by [ecoinvent](#), an external company that specializes in developing LCA methodology and compiling data. 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 a reasonable approximation of impacts for carbon black production globally. The results show that our carbon black production impacts are lower than industry averages. We are sharing these results with both key customers and suppliers to further reduce our global environmental impact.

Read more granular detail on our latest Life Cycle Assessment and the ecoinvent results.

↓ [Life Cycle Assessment](#)

¹ Feedstock input levels were excluded due to limitations of the LCA model.

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 also interested in what happens to our product once it is with our customers, including how we can work with them to reduce waste generation.

We are currently researching the benefits of switching from paper packaging to plastic. While this may sound counterintuitive, a large proportion of our European customers can feed polymer-based materials, such as plastic packaging, directly into their products, reducing the amount of waste generated. We are industry leaders when it comes to sustainability and want to help our customers develop their own sustainability practices. That is why we are constantly collaborating with interested customers to share best practices in developing recycling options and reducing waste emissions for a more environmentally sound business.

Recycling carbon black


When we produce off-grade carbon black, rather than disposing of it, we can segregate it and put it through the manufacturing process again until we have a product that is up to standard. As carbon black has a long shelf life, customers are also able to return unused carbon black to us so it can be recycled. 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.

How we are supporting the SDGs



Responsible consumption and production

We strive to reduce our carbon footprint, which includes being more efficient in our energy cycle; we have been net energy positive since at least FY2016. We perform regular LCAs to track our emissions progress.



Partnerships for the goals

We are working with our customers to explore how we can reduce waste generation in our production processes.

Environment

Life Cycle Assessments

Carbon stewardship

Water

Waste

Air emissions



75% of our plants are energy positive.

Carbon stewardship

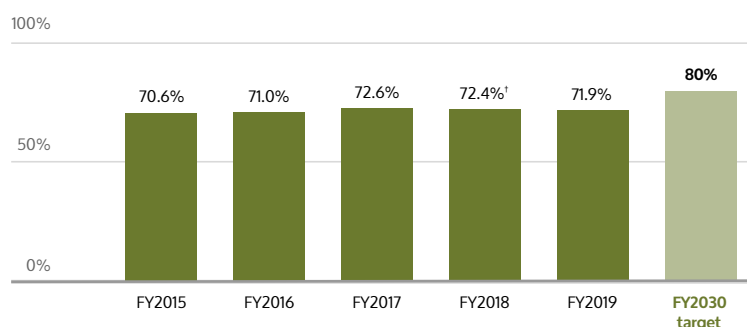
Our carbon stewardship strategy relies on two key factors: the conversion of more carbon from oil into carbon black and the optimization of our energy cycle. Our product Life Cycle Assessment helps to identify actions we can take to reduce our overall carbon footprint.



Energy: progress towards our target

Increase our absolute energy conversion efficiency to 80%.

† FY2018 data from the new plant at Jining, China, are not included.



Net energy positive

Our overall energy consumption is improving year on year. However, based on the results for this KPI alone, it appears as if our energy conversion efforts are going in the wrong direction. In order to comply with more stringent global air emission control regulations, in certain plants we are having to utilize more energy and electricity to run large equipment such as fans and blowers. This accounts for the apparent decrease in energy conversion efficiency.

As an example, annually, the Jining plant consumes over 60,000 MWh of electricity to produce carbon black; electricity that is internally generated through our energy recovery systems. Some 25% of this consumption (around 15,000 MWh) is used to run large equipment such as fans and blowers, which enable us to comply with, and outperform, emission control limits. This is equivalent to the electricity requirement of more than 1,200 homes. It demonstrates the challenges we can face in balancing different priorities when managing our environmental impact.



Our plant at Jining

Efficient energy use and recovery is critical to our business. We have been tracking our 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. Our Energy and Carbon Policy, published in July 2018, sets out our commitments to not only comply with but to exceed regulations by reducing our energy intensity and carbon footprint.

In the five years since we implemented 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 the energy we recover 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.

Globally, Birla Carbon is energy positive, selling more energy than we buy. We take a long-term view when it comes to making decisions about energy investments and have a range of projects in the pipeline that will further increase our energy conversion rates in the coming years. Due to market factors, including the relatively low price of oil currently, we have increased investments in energy recovery projects. For example, by making use of the best available technologies, our plant at Jining is energy positive and is already making a significant contribution to both our carbon- and energy-related KPIs.

Our energy efficiency efforts are led by Regional Energy Managers, who assess the energy cycle of each of our plants and provide 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 Aditya Birla Group's Corporate Technical and Energy Services team for knowledge-sharing purposes.

↓ [Energy and Carbon Policy](#)

> [World-Class Manufacturing group](#)



Reaching world-class standards in China

Pushing our industry beyond its limits is in our nature. In September 2017, our new greenfield facility began operating in Jining, China. This world-class plant caters to customers throughout China with an installed capacity of 120,000 tonnes of carbon black, to expand to 240,000 tonnes in phase 2 of the project.

Birla Carbon Jining already is an "energy positive" plant, with an energy management system that generates high-pressure steam and electricity to meet the energy needs of the plant. The surplus energy that is produced is supplied to the state grid, reducing usage of raw fossil fuels and emissions associated with traditional energy providers. While Jining is already designed to world-class standards, we continue to implement best practices for energy efficiency. In FY2019, the plant determined that it could reduce steam consumption and increase steam available for power generation and export by adopting regenerative feed heating.

The Jining facility also uses state-of-the-art De-SO_x and De-NO_x boilers, which are fully compliant with stringent Chinese environmental standards to be reached by 2021. However, achieving these high air quality management and compliance standards comes at a cost in terms of the levels of energy required to operate the air emission control technology.

> [Sustainable Development Goals](#)



Cubatão and Santander: Generating our own energy to reduce emissions

At Birla Carbon, increasing our energy conversion efficiency is one of the main ways in which we reduce our environmental footprint. It allows us to be less reliant on purchased energy – including electricity, steam and non-production fuels – while cutting costs, improving our energy resilience and reducing CO₂ emissions. Over the past four years, we have reduced our energy purchased intensity by almost 25% and reduced our boiler secondary fuel consumption by more than 73%. As a result, we have reduced our CO₂ emissions by around 48,000 tonnes, equivalent to taking over 10,000 cars off the road each year!

To achieve such dramatic reductions, we continually optimize the performance and efficiency of our energy systems worldwide. For example, in FY2019, our plant in Cubatão, Brazil invested in an upgrade of its cogeneration unit, resulting in a boiler performance improvement of 9.8% and a turbine performance improvement of 14%. This has a direct positive impact on our energy conversion efficiency KPI as we are able to make more steam and electricity per unit of waste heat from our process. In addition to improving the efficiency of the cogeneration system, our Maintenance team made improvements to the preventative maintenance program for the boiler, while our Engineering team made equipment modifications for the safety of employees who work with the boilers.

At our plant in Santander, Spain, our Engineering and Operations teams redesigned and upgraded key boiler components (radiant shield, super heaters and vaporizer) to improve the efficiency and reliability of our system there in order to provide steam to our nearby customers. These improvements allowed us to reduce the natural gas consumption required to operate our boilers and more efficiently convert tail gas to steam.

We also focus on education and best practice sharing at our plants; a significant portion of the non-production fuel reduction we have achieved has come through comparing plant data, establishing internal benchmarks, conducting gap analyses and improvement feasibility studies, and educating plant teams.

> Sustainable Development Goals



Birla Carbon Korea receives excellence award for climate change response

In 2018, Birla Carbon Korea was officially recognized as an excellent climate change response and GHG emission management company. The award was presented to the facility by the Korean Ministry of Trade, Industry and Energy at its 2018 Energy Efficiency Grand Prize event in South Korea.

This annual event, which is hosted in collaboration with the Korea Energy Agency, serves to discover and reward individuals and organizations who make significant contributions towards conserving energy and reducing emissions. The event also serves as an opportunity for companies to share energy conservation best practices and technology seminars.

Sharing his thoughts on this achievement, Ungdae Lim, General Manager, Birla Carbon Korea, said, "At Birla Carbon Korea, we will continue to explore ways in which we can improve our energy efficiency standards. And what we will discover, we will share with our partners. Birla Carbon Korea thanks the ministry and the energy agency for having recognized our efforts and would like to express gratitude to all businesses and individuals who are leading energy conservation practitioners."

> Sustainable Development Goals

Reducing our direct CO₂ emission intensity

We continue to work to reduce our direct CO₂ emission intensity. Through the implementation of best practices and continuous technology investments, we have already achieved 42% of our CO₂ emission intensity reduction target (FY2018: 32%). These results are accomplished through a series of capital-intensive global, regional and local initiatives. For example, we design reactors and technologies that enable us to optimize temperatures and gas flows, improving the conversion of carbon into carbon black.

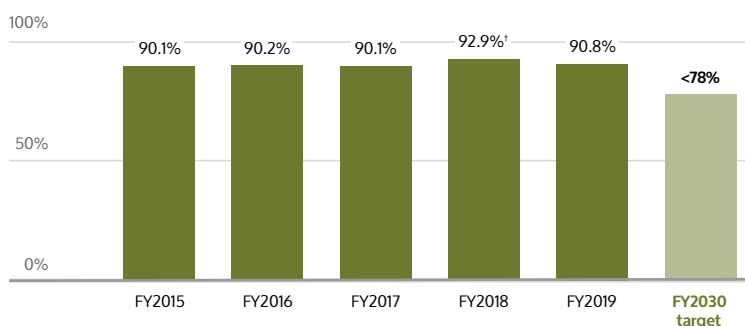
Some of the challenges we face in achieving our carbon intensity target include the current low price of oil and a market demand for low-yield grades of carbon black. In the long term, these can help our customers reduce their carbon footprint through, for example, extending the life of tires or reducing 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.



Direct CO₂ emissions: progress towards our target

Reduce our direct CO₂ emissions intensity by more than 22% against the 2005 baseline.

† FY2018 data from the new plant at Jining, China, are not included.



Promoting transparency

CDP (formerly the Carbon Disclosure Project) 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 the CDP online platform, something we continue to do annually. In FY2019, we voluntarily responded to their Climate Change questionnaire and replied to specific customer requests for information on our carbon footprint through our Supply Chain response.

How we are supporting the SDGs



Affordable and clean energy

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



Responsible consumption and production

We strive to reduce our carbon footprint, which includes being more efficient about the energy we consume; we invest in cutting-edge technologies to keep our CO₂ emissions below the industry benchmark.



Climate action

We focus on carbon stewardship, being net energy positive and reducing our GHG emissions, and our facilities are externally recognized for these efforts.



Partnerships for the goals

We work with CDP to disclose our carbon emissions performance and voluntarily respond to questionnaires and customer information requests regarding our carbon footprint.

Environment

Life Cycle Assessments

Carbon stewardship

Water

Waste

Air emissions



All manufacturing locations use recycled process water and/or rainwater in their operations.

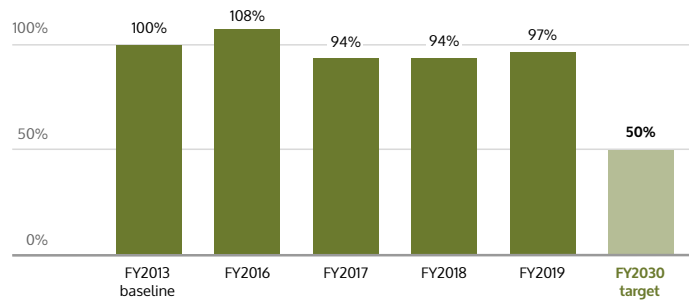
Water

Effective water stewardship is a key priority, especially in locations where water is scarce or where it is predicted to become scarce in the future. Our water strategy considers short-, medium- and long-term scenarios to further develop our understanding of our water cycle and identify areas in which we can improve and mitigate water risks at our facilities.



Water: 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.



Assessing our water vulnerability

In FY2015, we partnered with the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) 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 specific India Water Tool. This approach provided us with an informative, high-level and generic assessment for all our sites. However, recognizing the need for a more localized approach to evaluating risk levels before devising mitigation plans for our most vulnerable sites, we introduced a new water risk management approach in FY2017.

- [World Business Council for Sustainable Development \(WBCSD\)](#)
- [World Resources Institute \(WRI\)](#)
- [Aqueduct™](#)
- [India Water Tool](#)
- > [Governance](#)

In FY2018, as a result of our assessments, we included additional sites that are considered at high risk for water availability within our KPI¹ and removed several sites that were included in the original KPI but are now deemed to be of lower risk². We also adjusted the baseline to FY2013 and extended the target from 2020 to 2030.

Our water risk management approach

In FY2018, we published a new [Water Stewardship Policy](#). It sets out the commitments we are making to protect and conserve water resources through management practices and governance systems.

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

¹ Sites comprised Hickok, Cubatão, Gummidipoodi, Alexandria, Weifang and Bahia.

² Sites dropped that were included in the original KPI: Anghthong, Trecate, Santander, Yeosu and Renukoot.

1. Commitment

Our recognition that risks must be assessed.

↓ [Water Stewardship Policy](#)

2. Water inventory

Our experts collate site-specific water balance data, an inventory of water challenges and an understanding of water conveyance and treatment systems.

3. Water risk assessment

We carry out a generic water risk assessment, coupled with a detailed local source vulnerability assessment.

4. Water risk mitigation plans (WRMPs)

We develop the plans required for both internal and external mitigation.

5. Implement and monitor WRMPs

We deploy the plans, including internal actions and external engagement, tracking progress.

6. Communicate performance

We report on our progress, both internally and externally.

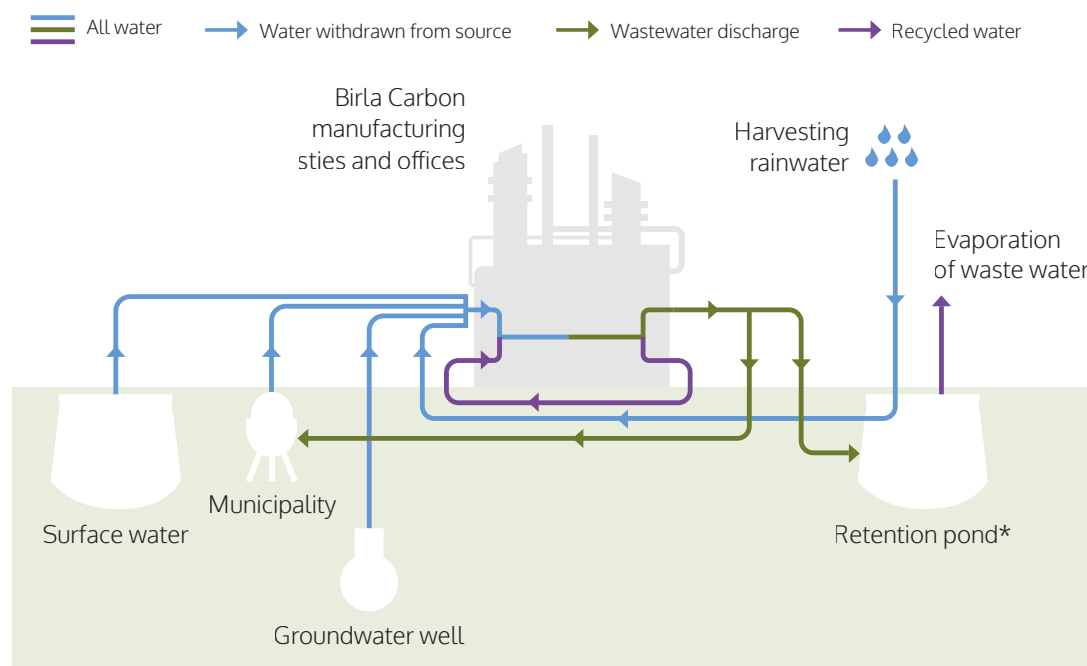
We have recently integrated our water risk management approach into our wider [enterprise risk management](#) (ERM) strategy, while high-risk sites are now incorporating WRMPs into their Business Continuity Plans. These mitigation plans identify both existing and additional strategies for managing critical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

Water cycle at Birla Carbon sites

We try to limit our use of potable water, reusing and recycling it where feasible. Once water has been used in the manufacturing process, it is directed into retention ponds from where it will be redirected back into other processes. Our water conservation best practices are shared across all our locations as part of our Sustainable Operational Excellence strategy.

Our water cycle

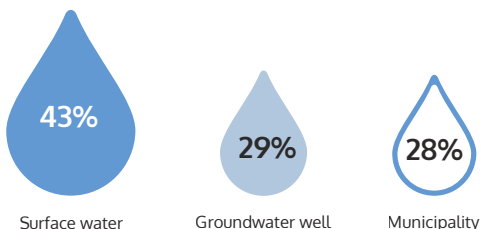
The water cycle at Birla Carbon sites



† Approximately 3,328,000 m³ (18%) reused from retention ponds in FY2019. Recycled process water and rainwater is collected in retention ponds and pumped back into the process.

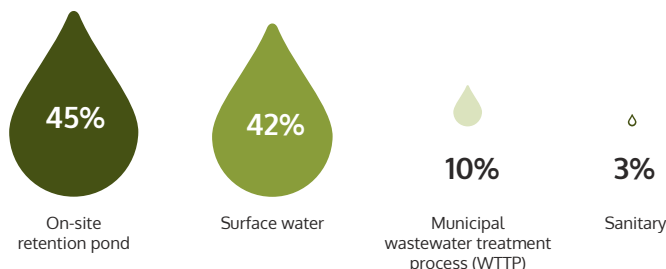
Water withdrawal by source

FY2019
17,562,077 m³



Water discharge by destination

FY2019
4,334,581 m³



Maximizing resource reuse through creative solutions

We are constantly exploring, and investing in, the best available technology to reduce 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 that is produced during our manufacturing process. Reducing the need for this is key to reducing our water consumption.

In Egypt, we continue to identify ways to optimize waste water 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 settling pond to offsite areas and water must be reused at an appropriate rate to maintain the pond level to 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 redirecting water in this way, the Egypt facility was able to decrease the amount of water in the settling pond and decreased freshwater requirements by approximately 270 m³/day. Ongoing improvements in water reuse systems have helped reduce water withdrawal in Egypt by 35% over the last three years.

> [Sustainable Development Goals](#)

How we are supporting the SDGs

3 GOOD HEALTH AND WELL-BEING

Good health and well-being

We seek to prevent illnesses indirectly by reducing water pollution and to minimize our impact on water scarcity through assessing water vulnerability in the areas where we operate.

6 CLEAN WATER AND SANITATION

Responsible consumption and production

We monitor our water use and recycle and reuse as much as possible to limit the stress on potable water sources.

17 PARTNERSHIPS FOR THE GOALS

Partnerships for the goals

We look to other organizations to influence our water risk management approach and to increase our knowledge of best practice.

Environment

Life Cycle Assessments

Carbon stewardship

Water

Waste

Air emissions



43% of our waste is repurposed – a commendable improvement over previous years.

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, from manufacturing to packaging, and we are implementing strategies to reduce, reuse and recycle this waste.

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 ensure waste materials are sent for disposal in the most sustainable manner.

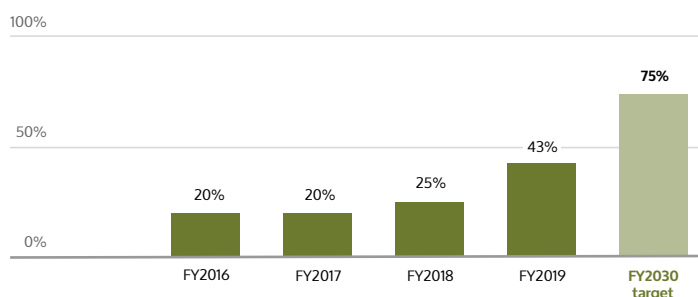
In FY2017, we adopted a new standard for the proper accounting, handling, transfer, storage, transport and disposal of solid and hazardous wastes generated during operation and construction of our facilities. It sets minimum requirements, roles and responsibilities for the management of solid and hazardous waste at our facilities to protect both people and the environment. It also encourages sites to consider new and updated waste minimization options at least annually. In FY2018, we rolled out the new standard to all sites following its introduction to site Health, Safety and Environment (HSE) leaders at the Global HSE Conference in 2017. A Global Action Plan was established for each site to guide and track implementation of the standard.

Our waste management approach has evolved over the last five years as we have improved identification and accounting of our waste. As a result, in FY2017 we introduced a new KPI to repurpose 75% of waste, whether it is recycled, reused or recovered, by 2030. This will drive further best practices in waste management throughout our manufacturing sites.



Waste: progress towards our target

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



Achieving this target will be challenging. We expect the repurposing of gypsum to make a significant contribution to our performance, but there are currently limited outlets available for repurposing gypsum in some locations. We are exploring solutions to this challenge with our Aditya Birla Group peers. Recent stronger focus on waste management in our facilities globally and repurposing waste carbon black in several of our plants may account for the marked increase in progress seen in FY2019.



Reduce waste in our facilities

The canteen in our Italian facility is taking a range of steps to drive progress towards sending zero waste to landfill. In a bid to reduce food waste, Vincenzo De Bortoli, a colleague at the Italian plant, has volunteered to collect leftover bread from the facility and deliver it to a local kitchen, where it is used to make free dinners and lunch boxes 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](#)



Switching to biodegradable packaging

As the life cycle of plastics becomes a bigger concern for members of the public, Birla Carbon Egypt has commissioned a study with the Faculty of Engineering at Pharos University in Alexandria (PUA) to investigate the feasibility of converting to biodegradable plastic bags for carbon black transportation. Our current big bags, some of which can be used up to five times, others only once, are made from polypropylene to ensure mechanical strength and effective moisture resistance, and so any alternative material must have the same properties.

The study will investigate the decomposition rates of the proposed bags as well as exploring what can be done with the resulting products once the bags have biodegraded. In addition to being of environmental significance, this study is the latest in a partnership with PUA that has spanned several years, encouraging engagement with students and fostering a stronger partnership with the university.

> [Sustainable Development Goals](#)

How we are supporting the SDGs

3 GOOD HEALTH AND WELL-BEING

Good health and well-being

We seek to prevent illnesses indirectly by reducing waste pollution and by improving handling of hazardous waste materials.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Responsible consumption and production

We strive to consume and produce responsibly by implementing robust strategies to reduce, reuse and recycle any waste we produce.

17 PARTNERSHIPS FOR THE GOALS

Partnerships for the goals

Through working with a local university, we are assessing the possibility of replacing existing packaging with a biodegradable alternative.

Environment

Life Cycle Assessments

Carbon stewardship

Water

Waste

Air emissions



Approximately \$17M invested in process improvements related to energy efficiency and reducing greenhouse gas emissions.

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 Sustainable Operational Excellence 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 proactively evaluate innovative technologies that can help reduce air emissions, and 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 U.S. Environmental Protection Agency (EPA) to further reduce emissions of nitrogen oxide (NOx), sulfur dioxide (SO₂) and particulate matter (PM) from our plants in Franklin, Louisiana and Hickok, Kansas. As a part of the agreement, we have committed to installing advanced control technologies and continuous emissions monitoring systems over the next four years at a cost of approximately \$95 million.



Reducing NOx emissions through investment and cooperation

In 2016, we launched a project at our plant in Hungary to investigate solutions for reducing NOx from the stack emissions created by two high-pressure boilers, which account for the

majority of emissions at the site. To begin this process, we tested solutions on a smaller combustor to ensure the technology was effective before investing in applying it to the larger industrial boilers.

As well as reducing environmental impacts, the investment has enabled us to reduce the regulatory costs for emitting NOx into the atmosphere. This success would not have been possible without close cooperation and sharing of information between head office and on-site teams – a great example of how we can do more when we make the most of our Compound Knowledge and the Familiar Bonds within our global company.

➤ [Sustainable Development Goals](#)

How we are supporting the SDGs



Good health and well-being

We seek to prevent illnesses indirectly by reducing air pollution and have invested in technologies to decrease stack emissions from our plants.

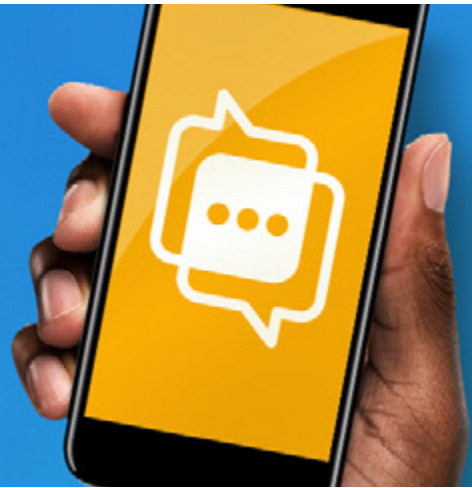


Partnerships for the goals

We have entered into agreements with environmental organizations to reduce emissions from our facilities in Louisiana and Kansas.

Customers and Suppliers

Engaging with customers and suppliers to perfect our business



Customers and Suppliers

Customer engagement

Supplier management

Focusing on what’s now while imagining what’s 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](#)



Micro Matters means acting global but behaving local. It’s about having teams that surround customers locally but that can draw on global resources. There can be a tradeoff between getting things done quickly and efficiently for the benefit of the region and going a little slower to produce global change, but when it comes to our customers this is the important Purpose Principle. It’s about knowing our customers inside and out and knowing what they want now and in three, four, five years’ time.”

JOHN DAVIDSON
President, Europe, Middle East and Africa

Working to create value for our customers



Building strong customer relationships

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.

- > [Customer engagement](#)

Creating a sustainable supply chain

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 ethics and compliance standards.

- > [Supplier management](#)

FY2019 highlights

We were awarded a gold rating by EcoVadis for the third consecutive year for our advanced sustainable practices.

- > [Global recognition](#)

Our Net Promoter Score (NPS) was 55 in FY2019 (FY2018: 55).

- > [Customer engagement](#)

We hosted our first Birla Carbon Global Purchasing Symposium in February 2019.

- > [Supplier management](#)

Feature stories



> [Sharing the knowledge with our customers](#)

Strong partnerships with our customers have enabled sharing of knowledge to strengthen both our operations and theirs.



> [Our journey towards a Global Purchasing Program](#)

In an effort to align our global processes, in February 2019 we hosted our first Birla Carbon Global Purchasing Symposium.

How we are supporting the SDGs

Through working closely with our supply chain, as well as with all of our employees worldwide, we promote the responsible consumption of raw materials and ensure measures are in place to improve the sustainability of our production processes. Through partnering with our customers, we are learning what we need to do to better address sustainability targets that protect both people and the environment alike.

The SDGs we are supporting are:



Customers and Suppliers

Customer engagement

Supplier management



55 was our Net Promotor Score for FY2019, demonstrating our customers' high satisfaction.

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 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 business, 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 the customer's organization 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

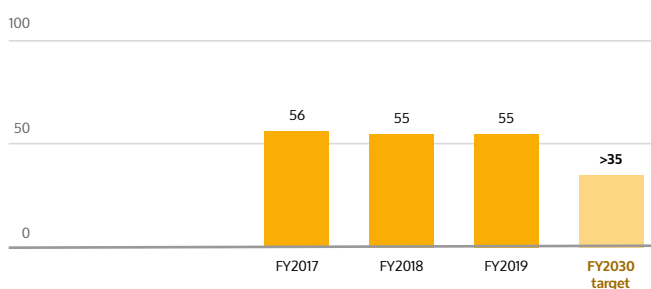
Introduced in FY2017, our customer satisfaction KPI is based on the well-established Net Promoter Score® (NPS®¹), which asks our customers around the world to rank Birla Carbon's performance against that of our peers.

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?"



Customer loyalty: progress towards our target

Remain above the NPS threshold of 35.



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 continued 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.

¹ The NPS model, developed by and registered to Fred Reichheld, Bain & Company and Satmetrix, measures customer loyalty by asking for direct feedback.

A company's NPS is calculated by subtracting the percentage score of Detractors from the percentage score of Promoters. In FY2019, our global NPS was 55 on a scale of -100 to +100 (FY2018: 55), and there was good uniformity across regions. This score is considered excellent for a business-to-business company such as ours. Our objective is to sustain our score above 35. Although this is still considered to be a "good" score, dropping to this value would alert to us the need to improve our performance; our historical results suggest that this threshold would correspond to a 10-point drop from our quarterly low.

Turning feedback into action

We use customer feedback to drive continuous 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 (Regional or Global Sales, Marketing or Regional Presidents).

In FY2019, approximately 5% of our ratings were from Detractors and included specific comments relating to the following issues:

- Price
- Quality
- Supply
- Service
- Communication
- Documentation

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 review all customer dissatisfaction, whether it regards products, sales or the supply chain, thoroughly before responding to the customer.



Together for Sustainability

Together for Sustainability (TfS) is an initiative that brings together chemical and pharmaceutical companies to monitor the sustainability performance of all their business partners and to integrate sustainability into their procurement processes.

One of Birla Carbon's customers who is a member of TfS requested our participation in a formal audit at our Hungary plant. The audit was conducted and validated by an independent third party, with results made available to all TfS members.

The audit process is composed of five sets of criteria considering the Environment, Health & Safety, Labor & Human Rights, Management and Governance. The overall score of 96% for our Hungarian facility demonstrates the positive work we are doing here with a very limited number of issues identified, all of which are easy to correct. Only three recommendations were highlighted, two minor and one major. The main recommendation arising from the audit was to ensure that our business ethics clause is included in all contracts with suppliers, and this is already being implemented through our global efforts standardizing our Terms & Conditions of Purchase. We are pleased that our plant received such a positive outcome: confirmation of our commitment to embedding sustainability in our practices.

Developing our customer complaint resolution methodology

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.

Sharing sustainability strategies

Transparency is key to building joint strategic sustainability approaches with our customers and other stakeholders. Our customers increasingly look to us to supply data on our own sustainability performance to aid transparency in their 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 Life Cycle Assessment (LCA) approach, something that they concur with and appreciate having access to support their own product LCAs. When designing new products, we meet with partners to better understand their expectations and consider the sustainability attributes of our carbon black within their products.

- > [Business Continuity Plans](#)
- > [Life Cycle Assessments](#)



Sharing the knowledge with our customers

In 2018, Birla Carbon partnered with some of our customers to host a series of discussions, presentations and debates about carbon black and its value in the tire industry. The conversations focused on ways in which our partners can improve tread wear along with enhanced performance grades for their tires.

In addition to the above discussions, executives from our customers visited Birla Carbon's plants to learn more about the production of carbon black. They engaged the plant leadership in understanding the manufacturing processes, quality control and supply chain management that eventually ensures quality output and timely deliveries of carbon black.

Over several years of collaboration, Birla Carbon has extended support and continuous supply of carbon black to its customers. These partnerships have also been beneficial to Birla Carbon, leading to increased production of certain grades and the introduction of other grades that are sold widely today.

- > [Sustainable Development Goals](#)



Our Product



Environment



Customers and Suppliers



Our People



Communities



Governance and Ethics



Our Approach

How we are supporting the SDGs



Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, particularly our customers. In FY2019, we continued to work with our customers to expand their knowledge of our product base.



Our Product



Environment



Customers and Suppliers



Our People



Communities



Governance and Ethics



Our Approach

Customers and Suppliers

Customer engagement

Supplier management



All 9,000+ Birla Carbon vendors and suppliers screened using NAVEX Global's RiskRate due diligence system, with **over 96% receiving green ratings.**

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, and our customers', reputation. We work together with our suppliers to ensure they meet our high ethical standards and to drive improvements in our supply chain.

Evolving towards a Global Purchasing Program

Code of Ethics

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 work hard to develop an environment of strong ethical compliance within each of our facilities. In FY2014, we consolidated and rolled out our Global Code of Business Ethics and Compliance Standards (Code of Ethics). It is a comprehensive document that we formally train each employee on and that they must read and sign annually.

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

> [Ethics](#)

Performing due diligence

We see procurement as being central to business, legal and regulatory risks, and sustainability considerations. Between FY2015 and FY2016, we reviewed and analyzed 100 key distributors and agents through NAVEX Global's RiskRate® to identify any potential risks posed. In FY2019, we extended the process to 9,366 – our entire supplier base.

RiskRate is an automated and continuous screening program, which performs efficient and reliable due diligence checks on companies, identifying any history 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 FY2019, 96% of our suppliers were highlighted by RiskRate as being green. It marked 3.3% as yellow suppliers, while fewer than 0.7% were flagged as red. We are now working with those marked as yellow and red, or medium- to high-risk, suppliers to improve their compliance measures. Enhanced due diligence is being performed for these suppliers through our legal department. 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.

Ensuring a sustainable supply chain

As we have developed our sustainability integration and reporting over six years, we have continued to explore further ways to encourage best practices through 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.

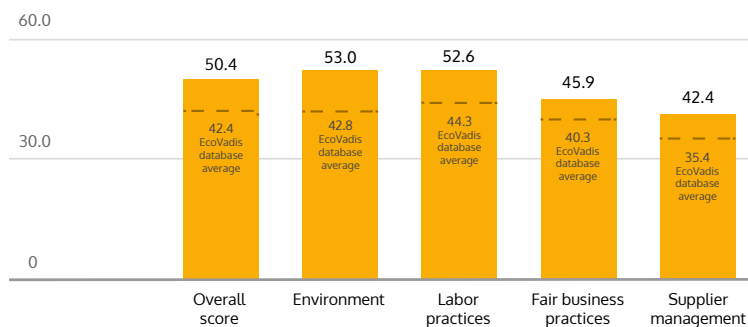
Assessing our key suppliers for sustainability through EcoVadis is an ongoing and lengthy process, and something on which we will show progress in the following years. EcoVadis screening is a voluntary program for our suppliers, and many have already shared their scores, which are split into four categories (environment, labor practices, fair business practices and supplier management). Our average supplier sustainability score is 50.4, significantly higher than the average of 42.4 throughout the EcoVadis database, which comprises over 55,000 companies worldwide. This suggests that, globally, our key suppliers are already performing above average in the four criteria areas. For instance, over 70% of our critical suppliers report on health and safety issues as well as on energy consumption and CO₂ emissions; 60% have a policy on corruption and are ISO 14001 certified. This suggests that, globally, our key suppliers are already performing above average in the four criteria areas. For instance, over 70% of our critical suppliers report on health and safety issues as well as on energy consumption and CO₂ emissions; 60% have a policy on corruption and are ISO 14001 certified.

However, fewer than half are disclosing their carbon footprint through the CDP platform or have active whistleblowing procedures in place. 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.

Results based on the limited but statistically significant number of assessed suppliers.



Birla Carbon's first Global Purchasing Symposium

In an effort to align our purchasing processes on a global scale, in February 2019 the first Birla Carbon Global Purchasing Symposium was hosted at our headquarters in Marietta, USA. During the three-day event, best practices were shared among our purchasing managers and key stakeholders globally and three key goals were highlighted:

- To ensure all our suppliers were screened for compliance through the due diligence software NAVEX Global's RiskRate.
- To foster sustainable procurement practices and profiling of our suppliers through the EcoVadis platform.
- To drive consistency in our Standard Purchase Terms and Conditions, which we share with our vendors worldwide.

> [Sustainable Development Goals](#)

Making compliance more comprehensive

In FY2017, we worked with legal advisors in various regions to customize our Terms and Conditions (T&Cs) of Purchase to address the different local legal requirements. In FY2018, we began a similar process with our T&Cs of Sale. Our T&Cs of Purchase have now been translated into several languages, making them more comprehensive in all our operating locations.

Our Supply Chain and Procurement Policy, published in FY2018, guides each of our sites to ensure supply chain compliance with the relevant legislation and the Birla Carbon Code of Ethics. Standards we expect include promotion of resource conservation, use of alternative materials and renewable energy, water stewardship, safety, health, respect for human rights and elimination of child and forced labor across the supply chain. This policy is part of our wider Sustainable Procurement management system, which is deployed across all our buyers and our supplier base worldwide.

[Supply Chain and Procurement Policy](#)

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](#)

How we are supporting the SDGs



Responsible consumption and production

We support responsible consumption and production by ensuring that our feedstock comes from suppliers close to our facilities, which we are now screening for risk management purposes.



Peace, justice and strong institutions

Through our internal governance mechanisms, we prevent corruption and bribery from taking place in our business. This reinforces our own institutional accountability and transparency as well as that of our customers.



Partnerships for the goals

We encourage our suppliers to respect human rights through the Terms and Conditions on our contracts, which we have now translated into several languages.

Our People

Bringing out the best in our people to bring out the best in our business



Our People

Health and safety

Attracting and retaining talent

Employee engagement

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 to our employees across the globe as well as ensuring their safety and wellbeing so they feel inspired to continue making great products.

Familiar Bonds

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.



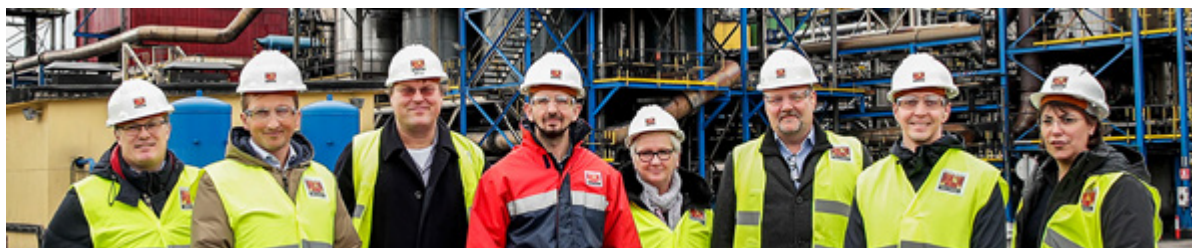
> Find out more about our five [Purpose Principles](#)



A business is only as strong as its people. Supporting our employees is therefore essential to our success as a company. By ensuring our people enjoy a workplace that is safe and enhances their wellbeing, and by empowering them to become the best they can be, we not only provide fulfilling careers but build a company that will thrive now and in the future."

ZHONG WANG
Vice President, Birla Carbon China

Becoming an employer of choice



Ensuring safe work environments

The health and safety of our employees is paramount at Birla Carbon. We encourage our people to take responsibility for their own safety and that of their colleagues through our Commitment Based Safety approach.

> [Health and safety](#)

Attracting the brightest minds

We believe that to be the best we can be, we must have an engaged and diverse workforce. We seek to attract the best people to Birla Carbon and offer many opportunities for them to learn, develop their skills and progress within the industry.

> [Attracting and retaining talent](#)

Inspiring our workforce

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

> [Employee engagement](#)



FY2019 highlights

We introduced our Serious Injury and Fatality initiative to prevent injury or fatality in six key areas of our operations.

> [Health and safety](#)

We combined our Vibes survey and Team Vibes employee satisfaction survey to allow more time for action planning and for changes to be implemented between assessments.

> [Employee engagement](#)

We rolled out our Commitment Based Safety process to Italy, Hungary and Egypt.

> [Health and safety](#)

Feature stories



> Developing our female leaders

Our employees talk to us about their experiences at Birla Carbon and how their careers have developed in recent years.



> World of Women at Birla Carbon Thailand

Tim, Fedrigo, our Chief Human Resources Officer, visited Birla Carbon Thailand to meet the female employees at the plant and to discuss the importance of a diverse workplace.

How we are supporting the SDGs

Through our operations we seek to promote the wellbeing of our employees and to build a strong and just institution. But caring for our people is more than just how we develop the workplace; we are also working to ensure clean water and energy for all and to safeguard our planet for future generations.

The SDGs we are supporting are:



Our People

Health and safety

Attracting and retaining talent

Employee engagement



87% of employees believe that safety is a priority for their immediate supervisor – testament to our strong safety culture.

Health and safety

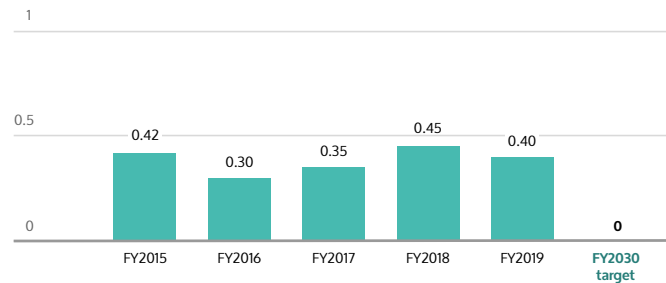
The health and safety of our people is paramount. In FY2019, we have continued to establish a culture of safety excellence within Birla Carbon – steered by strong leadership and driven by the commitment of our own people to setting as a priority their own safety and the safety of others.

Building a strong safety culture takes time; we do not pretend to be at the end of our journey. There is continually 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.



Safety: 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 the moment they leave. Our injury rate continues to position us as a leader in our industry; in FY2019, 11 sites completed the year without a recordable injury either to an employee or 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.

In FY2017, we introduced leading 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.

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 intend to refine them as our culture matures.

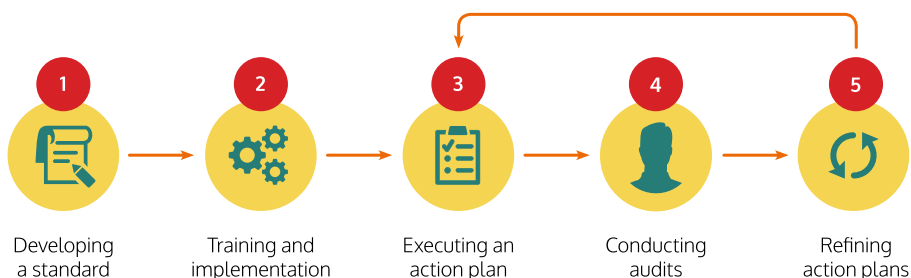
Our health and safety programs

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, work permitting processes, 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.



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 continuous improvement and safety excellence.

Serious Injury and Fatality initiative

In FY2019, we rolled out our Serious Injury and Fatality (SIF) focus initiative. This program focuses on higher-risk tasks and situations. Central to this initiative is a re-emphasis on the Safe Six: key areas where high precision is essential to prevent a serious injury or fatality. These areas are lockout-tagout (LOTO), working at heights, mobile equipment, electrical, hot work and confined space.

The focus on SIF is based on the fact that although globally many companies have made great strides to reduce the overall frequency of injuries, there has not been a proportional decline in the number of serious incidents and fatalities. SIF events are caused by different work factors and situations. Our focus on the Safe Six is intended to emphasize the tasks and situations within our business that present a higher risk of accidents.

A critical element of this initiative is the focus on near-miss reporting. According to the National Safety Council Campbell Institute, 85% of all serious injuries and fatalities are preceded by near-miss events, and so we also aim to improve near-miss reporting. The SIF program and the Safe Six will be emphasized throughout the fiscal year through individual promotional campaigns, focus during audits, quarterly networking calls and sharing of best practices, while incentives are being offered at several plants to increase reporting of near misses.

The Safe Six: key health and safety risks



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 personal protective equipment for the task, including fall protection where work is performed at heights of above 2 meters.



Hot work

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



Control of hazardous energies/lock-out

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 1-meter rule, for operating or working around mobile equipment such as forklift trucks.



Confined spaces

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 of our employees receive regular training and education related to these six critical areas, we believe that this dedicated campaign to increase awareness and reinforce these requirements will help us achieve flawless execution of these principles on a daily basis.

Changing our health and safety culture

At Birla Carbon, we believe a culture of safety is created and maintained by engaged individuals who actively manage their risks every day. We are continuing to deploy the Commitment Based Safety (CBS) process, through which individuals make personal commitments to manage and discuss the individual risks they face.

Through CBS, we expect every person at every level to take responsibility and be accountable for both their own safety and the safety of those around them. 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.

Specific risks and the behaviors required to manage them are identified at a site level and 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 and that, once employees can manage their own commitments, they will be more effective at looking after others. During FY2019, we continued our implementation of CBS in our facilities, rolling it out to Egypt, Italy and Hungary.

Protecting our contractors

Improving our health and safety performance demands that we work closely with contractors, who may not work to the same standards that we expect from all 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. From FY2018 to FY2019, we saw a slight increase in injuries, from 10 to 13. In response to this rise, we are placing a global focus on site contractor quality and management processes.

In FY2018, our sites in North America contracted Browz, a third-party risk management provider, to improve the qualification process. Browz collected information from contractors including safety incidence rates, insurance coverage, and safety and health 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 Browz contractor qualification process to our facilities in other regions.



Industry-wide safety recognition

In FY2019, 11 Birla Carbon plants, as well as our research and development laboratory in Marietta, received gold awards from the International Carbon Black Association (ICBA) for achieving levels of safety performance above the industry average. One further plant received a bronze award.

The ICBA developed its Safety Recognition Program as a way to officially acknowledge the outstanding safety efforts of global carbon black manufacturers. It also serves as a platform through which to educate policymakers and members of the public on the industry's commitment to employee safety.

Awards are presented based on certified safety performance data from the previous year, which is submitted by participating companies. Gold awards are presented to sites that achieve zero lost work day cases and zero medical aid or Occupational Safety and Health Administration recordable incidents (or showed a 50% improvement on the previous year) as well as zero fires or damages with a financial impact greater than \$100,000. In addition to these criteria, a gold site must have received external safety or environmental management system certification recognition.

"At Birla Carbon, safety is a key component of everything we do. Our policies and processes are written and implemented, keeping in mind the safety of our people, safe handling of carbon black and safe management of the manufacturing facilities. I want to congratulate the Birla Carbon plants who have given so much emphasis on building a culture of safety within the organization."

JOE GAYNOR

Chief Legal, Risk and Sustainability Officer

> Sustainable Development Goals

Auditing our performance

We regularly perform audits across our operations to determine compliance with our regulations and standards. Enablon, our integrated sustainability management system, facilitates data tracking and supports the development of a better understanding of specific issues. It also provides a platform for devising and tracking action plans, ensuring their completion and reinforcing accountability for sites and individuals. In FY2019, we conducted 18 audits at our sites: nine for health and safety and nine for environmental performance (2018: 16 audits).

We revised our auditing process in FY2018 to meet regulatory and global standards compliance requirements and introduced a scoring process to assist local management in prioritizing findings when improvements are needed and measuring future progress. Regional Presidents will now report quarterly on the results of audits at Senior Leadership Team meetings.

Since FY2015, we have developed or revised 13 standards and three guidance documents to strengthen our HSE programs. These standards are central to our audits, which analyze working practices and evaluate standard effectiveness on-site, reporting monthly. Each standard also includes a self-assessment section, which requires site leaders to monitor and track improvements.

How we are supporting the SDGs



Good health and well-being

We encourage individual accountability for the health, safety and wellbeing of our employees through our Commitment Based Safety process and a range of health and safety programs.



Decent work and economic growth

The health and safety of our people is a shared value that is integrated into all of our activities. We want our employees to look out for not only their own safety but also the safety of their colleagues.



Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, including community groups, universities, nongovernmental organizations and the Aditya Birla Group. This extends to ensuring our contractors adhere to our safety standards.

Our People

Health and safety

Attracting and retaining talent

Employee engagement



Over 90 interns gained work experience at Birla Carbon in FY2019.

Attracting and retaining talent

We believe that we achieve the best results when we are open to others' 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.

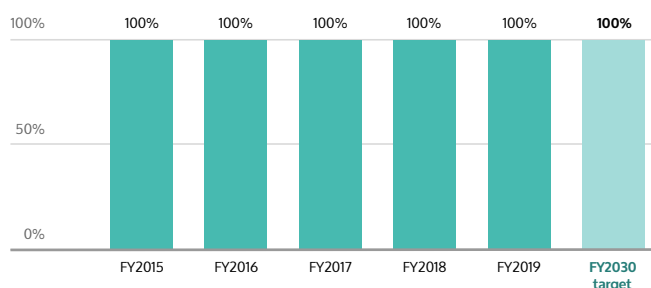
We enable our employees to develop their skills and potential, offering exciting opportunities for career development, learning, recognition and wellbeing, in alignment with A World of Opportunities, the Aditya Birla Group's Employee Value Proposition.

[Our Group employee value proposition](#)



Talent development: progress towards our target

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



Our HR vision and strategy

Our 2020 Human Resources (HR) Strategy aims to build a high-performing organization by engaging the hearts and minds of all employees in a culture of leadership, collaboration and innovation. It focuses on four key pillars:

- **Profitability** – building a high-performing organization through a performance management system, with shared goal setting, roundtable discussions and aligned standards and ratings.
- **Leadership** – creating an environment that builds capability, leadership and knowledge, including bringing in stronger talent, encouraging horizontal movements and focusing on diversity.
- **Engagement and culture** – building engagement through Inclusion and Leadership Connect and driving the One Birla Carbon culture through a common purpose.
- **Employer brand** – recognition as a strong employer brand, both internally and externally.

These pillars will be supported by a modernized HR governance model that is equipped to achieve our 2020 aim, and we have high expectations for our strategy's success.

How do we attract and retain talent?

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

Our progress as a company is driven by both the expertise of our seasoned carbon black professionals and the continuous 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. In FY2019, we provided over 90 internships to students.

Participants on the Aditya Birla Group Leadership Program are offered global project opportunities in varied business functions, such as operations, marketing, finance and human resources. In FY2019, 10 participants from leading schools and universities in India and wider Asia completed projects with Birla Carbon through this program.

We also launched our Leader Connect Series, through which Birla Carbon leaders share memorable career moments with the rest of the organization. The initiative was developed in response to employee feedback through the last Vibes survey, and our aim is that employees will get to know their leaders better while gaining insights of the opportunities they can harness through proactive career development and mobility.

Identifying leaders through our talent management system

Our talent management process aims to build a community of competent and highly engaged global leaders. Our talent management philosophy encompasses the following tenets:

- Leaders can be developed.
- Leaders are responsible for identifying, building and nurturing future leaders.
- Development is best achieved through multiple, diverse experiences.
- Each employee is responsible for sharpening their innate potential.

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 development.
- **Development centers** – applying a rigorous process to assessing and creating a development plan for each individual based on their strengths and opportunities.

Cyclic assessment and review of individual potential is a fundamental part of our talent management and leadership development process – across both Birla Carbon and the Aditya Birla Group as a whole.

Developing our people at all levels

From the plant floor to the sales floor, our passion for learning has no ceiling. We believe that continuous learning drives us to develop a deeper understanding of our products and their applications. As part of each employee's annual performance review, relevant learning needs are identified and documented in their personal development plan. We encourage our people to continue to learn throughout their career 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 proportions. Our enterprise learning management system is designed to enhance employee skill levels, encourage employees to apply the knowledge gained to real-world situations to improve our business and conduct all training and development from a centralized source. The platform records all learning activities, and an online library of nearly 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
- Health, safety and environment
- Wellness
- Communication to influence and engage

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 with employees and to simplify key aspects of the business. We are in the process of developing a series of courses specific to Birla Carbon to institutionalize the knowledge accumulated by our subject matter experts through our long history.

Our first e-learning course, Carbon Black 101, presented our product and our manufacturing process. This was followed in FY2018 by a new e-learning course on carbon black reactor technology. In FY2019, we introduced a course that focuses on Commitment Based Safety.

In FY2017, we introduced our first eAcademy engagement sessions, through which webinars are held by leaders for interested employees, developing expertise throughout the entire business. eAcademy sessions in FY19 focused on Commitment Based Safety and our Total Reward Philosophy and were attended by about 200 participants.

In addition, our "Food 4 Thought" sessions provide an opportunity for employees to "lunch and learn" about different aspects of the business. Sessions completed in North America in FY2019 included Sustainability, Recycling Best Practices, Specialty Blacks Strategy Rollout, Processing and Data Quality, and Materials Focus.

Sharing knowledge through our mentorship program

Birla Carbon rolled out a mentorship program in FY2019 aimed at providing opportunities for selected employees to develop core skills in their focus areas and facilitating knowledge transfer and career development through deep personal relationships with senior management.

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 Aditya Birla Group. 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.

Our Total Reward Philosophy

Our approach to rewarding and recognizing our people is designed to reinforce the commitment we have to being the most respected, sustainable and dynamic global carbon black business. We seek to attract and engage qualified employees through offering competitive rewards in each country in which we operate. We operate a global framework that enables regions and business units in 12 countries across five regions to create programs that meet their business and legal requirements while being consistent with Aditya Birla Group's Employee Value Proposition, [A World of Opportunities](#).

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
- Create and maintain a rewarding and appreciative working environment, providing global exposure and offering flexible work options where possible.

Acknowledging employee excellence

Recognition programs at Birla Carbon are designed to acknowledge the extraordinary efforts of our employees towards fulfilling the goals, values and mission of the organization. We strive to identify, motivate and retain employees who are significantly and consistently exceeding expectations.

Our Quarterly Rewards program is designed to reward individuals and teams who go beyond the scope of their defined roles with focus on one of the following areas: innovation, cost savings, customer centricity, technical/functional excellence resulting in tangible benefits, or completion of special projects.

We recognize exceptional individual and team performance through our Performance Recognition in Delivering Excellence (PRIDE) program, which includes monetary rewards for outstanding contributions to the business. Besides these rewards at the business level, our various locations supplement PRIDE with added regional recognition reflecting the traditions and cultural norms of their specific region.

Receiving Group recognition

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

In addition, business-level awards recognize excellence in a company, area or unit where specific initiatives have enhanced shareholder value and business sustainability.

Career movements with Birla Carbon

We have continued to make internal career paths clearer through a more streamlined framework for the Technology, Engineering and Operations areas. We encourage intra- and interregional movements of qualified employees as well as transfers from other businesses within the Aditya Birla Group. For example, 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.



Developing our female leaders

Damaris Varrese and Rikki Ministre

We want to create supportive workplaces at Birla Carbon which encourage growth. This includes developing our female leaders. Damaris and Rikki discuss how Birla has supported their progress through the company.

Damaris Varrese

Damaris Varrese joined Birla Carbon in 2013 and is currently an Internal Sales Representative, based in Brazil. In 2018, Damaris was nominated for the Emerging Professional accolade at the Aditya Birla Awards.

"In the six years since I joined Birla Carbon, I've seen changes that have really helped me to grow professionally. During the implementation of our SAP system I was able to participate in the testing phase, which gave me the opportunity to connect with colleagues worldwide. This enabled me to learn a lot more about Birla Carbon globally. Gaining this experience over the past years has been a big influence on my career development.

Being nominated for the Aditya Birla Awards was an amazing opportunity to recognize the Group's awareness on sustainability, social and community services, and our focus on female leaders – and that really motivates me to give my best every day so I can become a leader too. My advice for other young females is simply focus on Birla Carbon's values and give your best every day!"

DAMARIS VARRESE

Internal Sales Representative

Rikki Ministre

Having been with Birla Carbon for nearly five years, Manager of Regional Sales Rikki Ministre appreciates the resources that have been available to her, helping her grow her career and to develop independently.

For Rikki, Birla Carbon has created an atmosphere that encourages personal development and growth, something that she encourages other young women to make the most of as they advance through the company.

“Transitioning between my many roles has been an enjoyable challenge. Having the opportunity to make decisions that impact Birla encourages me to remain confident. Working with different leaders within the organization, and within different departments, has increased my knowledge and heightened my experience at Birla Carbon.

Young women should not be afraid to make changes, speak up, be confident in their abilities. Get to know your colleagues, explore Birla and always remain involved.”

RIKKI MINISTRE

Manager of Regional Sales

How we are supporting the SDGs



Quality education

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



Decent work and economic growth

We support our employees' career progression across all regions and offer a range of employment and career development opportunities.



Partnerships for the goals

We want the achievements of our employees to be recognized, not just within Birla Carbon, but throughout the entire Aditya Birla Group.

Our People

Health and safety

Attracting and retaining talent

Employee engagement



We have fulfilled the WBCSD Pledge for Access to Safe Water, Sanitation and Hygiene (WASH) at the Workplace.

Employee engagement

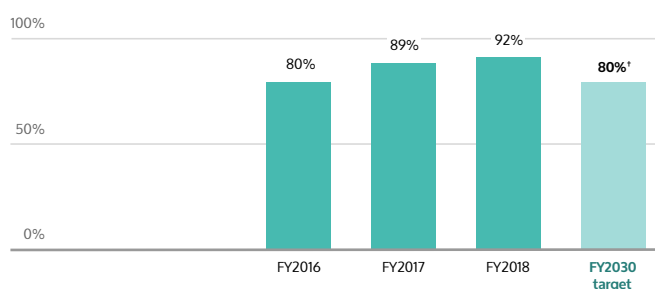
We share an unbreakable bond throughout our company; because we share the same goals, we support each other to achieve them.

Maintaining a global workforce that is motivated and inspired is instrumental to our success, and learning how our employees feel is crucial for understanding how we are 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.

Employee engagement: progress against our target

Remain above the chemical industry annual benchmark for employee engagement.

[†] The industry benchmark will evolve year on year. In FY2018 it remained at 80%.



Our approach to engagement

We have introduced a new KPI to track employee engagement across Birla Carbon globally. Engagement is assessed through Vibes and Team Vibes surveys and results are compared with both the Global High Performance Norm¹ and the Global Chemical Company Norm², which in FY2018 stood at 80%.

One Voice

We conducted our first survey of all our employees in FY2017. Called One Voice, the survey was accessible at all levels, with questions prepared in 12 different languages, and implemented across 15 plants and four regional offices.

One Voice achieved an outstanding response rate, with 96% of employees participating. The results showed that our people are willing to give extra effort to achieve our goals (94%) and most are proud to work for Birla Carbon (89%). A notable result was that most respondents (87%) believe that safety is a priority for their immediate supervisor – which counts as a real step forward for our safety culture. We also scored well in engagement and alignment. There were a small number of areas, such as development and work execution, where we performed less well. However, during FY2018, we took these areas and used them as the basis for developing improvement action plans.

Vibes

By maintaining open and continuous dialogue with our employees, we gain a better understanding of their expectations and can track our progress with regard to employee engagement. The Vibes survey is conducted at management level by an external provider every two years. It provides valuable feedback, which helps us develop and execute action plans in specific areas that are tracked at local, regional and global levels.

¹ Results compared against other companies meeting two criteria: (1) Above-industry-average financial performance for at least three years; (2) Above-average engagement scores.

² Results from a cross-section of chemical companies engaged in the manufacturing/distribution of chemicals for use in industry, agriculture, household and non-pharmaceutical personal use.

We conducted our most recent Vibes survey in FY2017, with a 98% response rate. The survey shows that we are now achieving the industry benchmark for employee engagement. We performed highly in the areas of customer centricity, alignment and openness to new ideas. Our people are proud to be a member of the Aditya Birla Group and believe that their work contributes to our overall business goals. Most of our people also believe that Birla Carbon is socially and environmentally responsible.

In terms of areas for further improvement, we could still do more to attract the best talent, offer varied career opportunities and provide a vibrant, energetic and diverse workplace for young people.

The results have been distilled into action plans in each region, and we continued to track progress through scorecards during FY2018.

Team Vibes

Team Vibes is a feedback mechanism through which managers with five or more dependent employees can gain actionable insights into what prevents employees from performing at their best.

We held our most recent Team Vibes survey in FY2018. The results show that we are reaching an excellent level of employee engagement, 10% above the industry benchmark. Engagement scores increased significantly over those achieved in FY2015 across the parameters of leadership, management and team effectiveness. Areas on which we will focus in the coming years to drive continuous improvement include interdepartmental communication and generating excitement for the future of our business. To address these areas of improvement, action plans will be prepared at the manager, unit and business levels, with progress tracked over the next two years using a global scorecard.

From FY2019, we are combining the Vibes and Team Vibes surveys and rolling the resulting survey out once every two years at the Group level to allow more time for action planning and change to take place between surveys. Our next business-wide engagement scores will be in FY2020.

Employee wellness

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.

In FY2015, we signed the World Business Council for Sustainable Development's (WBCSD) Pledge for Access to Safe Water, Sanitation and Hygiene (WASH) at the Workplace. We have fulfilled this pledge, and in FY2019 we upgraded the maintenance efforts of drinking water infrastructure and office connections to sanitary treatment plants and improved signage in washrooms at our Indian plants.



World of Women at Birla Carbon Thailand

In March 2019, Tim Fedrigo, our Chief Human Resources Officer, visited Birla Carbon Thailand (BCT) to meet the female employees of the plant. Setting diversity as a plant priority, BCT's employees have developed several initiatives that align with the company-wide Diversity agenda, driving the site's performance to the next level.

During Tim's visit, the first of its kind across any Birla Carbon plant, he shared his perspective on diversity and how it plays into Birla Carbon's wider strategy to be an excellent company to work in, highlighting the importance of female employees. The discussion focused on the need for female employees to take control of their career progression, pushing their personal development forward.

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.

How we are supporting the SDGs



Gender equality

We support gender equality by offering equal opportunities within Birla Carbon, without discrimination, and by empowering women to take control of their personal career progression within Birla Carbon.



Clean water and sanitation

Water, Sanitation and Hygiene (WASH) is a priority for us, and we worked to ensure that all of our sites were providing safe access to WASH by FY2018.



Reduced inequalities

Taking into consideration our global presence, we seek to reduce inequalities and to build a workforce diverse in ethnicity, sexuality and social background.



Partnerships for the goals

We share the results of our employee engagement surveys with other businesses in the chemicals industry to compare results and determine areas where we can improve.

Communities

Collaborating with our communities to grow stronger, together



Communities

Community engagement

Access to healthcare

Quality education

Sustainable livelihoods

Community infrastructure

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**



We endeavour to actively contribute to the social and economic development of the communities in which we operate. In doing so, we can help build a better, sustainable way of life for the weaker sections of society and raise the human development index of our country."

MRS. RAJASHREE BIRLA

Chairperson, Aditya Birla Centre for Community Initiatives and Rural Development

Delivering benefits to communities

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.



Improving access to healthcare

As a global company, 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.

- > [Access to healthcare](#)

Supporting young people

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 building schools and provision of learning resources.

- > [Quality education](#)

Enabling communities to grow

We want to empower people in our communities to take ownership of their own advancement. By 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.

- > [Sustainable livelihoods](#)

Building resilient infrastructure

As a responsible member of our communities, we believe it is our duty to partner with local people and organizations to provide practical and sustainable infrastructure solutions. In doing so, we help our neighbors access essential services and facilities.

- > [Community infrastructure](#)

FY2019 highlights

80 students in China received "Sail the Life" awards for excellent performance in college entrance exams.

- > [Quality education](#)

In North Bend, Louisiana, 1,000 people received free skin cancer screenings.

- > [Access to healthcare](#)

Four centers in Egypt were equipped to train 32 women in valuable tailoring skills.

- > [Sustainable livelihoods](#)



> Meeting our neighbors' needs

Birla Carbon works with communities, businesses and other stakeholders to address community issues.

How we are supporting the SDGs

Our community interactions support the SDGs in several ways. We have developed a range of initiatives that are designed to promote improvements in education, health, access to clean water and sufficient food, and fair opportunities for all. Through these programs, we are partnering with others to ensure we address the global goals in ways that best support the growth of both our local communities and our business.

The SDGs we are supporting are:



Communities

Community engagement

Access to healthcare

Quality education

Sustainable livelihoods

Community infrastructure



100% of our facilities participate in community engagement.

Community engagement

As a member of the Aditya Birla Group, our commitment to social good is in our DNA. We believe in using our resources to provide communities with support and 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 Aditya Birla Group 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](#)

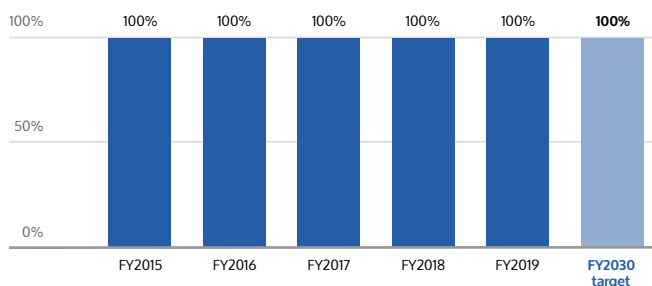
In FY2018, we published the Birla Carbon Stakeholder Engagement Policy, which includes clear standards for our sites to aim for when it comes to engaging with their local stakeholders, including embedding the principles of inclusiveness, transparency, materiality, completeness and cultural appropriateness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

[Birla Carbon Stakeholder Engagement Policy](#)



Community engagement: progress towards our target

100% of our facilities participate in community engagement.



Identifying the right projects

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

Our approach to communities

Partnerships are the foundation of our community strategy



Our 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 do 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.

Communities

Community engagement

Access to healthcare

Quality education

Sustainable livelihoods

Community infrastructure

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.



North Asia

Yeosu, South Korea

We provided flu vaccines for employees and families and organized a blood donation drive for the Korean Red Cross. We also provided financial support to the Namsan sanitarium, which provides care services and accommodation for the elderly.



South Asia

Gummidipoondi, India

We supported a 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. We also improved access to safe drinking water for communities through investment in a reverse osmosis plant. Through the Swachh Bharat (Clean India) program, 100 homes were identified for the construction of individual household toilets.

To strengthen six local health centers and one government hospital, we funded the purchase of a range of medical machines to reduce maternal and infant mortality. A cancer screening program was organized, during which 113 women were screened for uterus and breast cancer.

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, HIV/AIDS awareness programs to mark World AIDS Day, installation of sanitary napkin vending machines at three schools for female students and support for the Pulse Polio Campaign.

Renukoot, India

We ran a polio immunization camp for children under five living in nearby villages as part of the fight to eradicate the disease as well as running a blood donation camp. Through a safe drinking water project, we supplied clean water to 2,000 villagers, while a medical camp organized in the nearby Parsoi village provided free medical care and medicines to 321 patients.

Angthong, Thailand

We funded a new bathroom at Tambon Huapai hospital and arranged a mobile health clinic to provide access to health services for villagers. We also launched our "Be Happy and Smile" project for the Huapai community to strengthen the relationship between our Angthong plant and our neighbors. During the event, around 50 local children were taught about the negative impacts of drugs.



Europe, Middle East and Africa

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.

Hannover, Germany

Our team in Germany recently promoted community health through sponsoring wheelchair basketball team Hannover United, who were playing in the German National league.

Tiszaújváros, Hungary

Having raised funds through two charity sports matches in 2018, Birla Carbon Hungary donated 48 chairs to the children’s surgery division of the Regional Children’s Hospital in Miskolc. Employees also provided children at the hospital with toys and chocolates.

Santander, Spain

Birla Carbon Spain became an allied member of Amara Cantabria (the Association of Parents of Children with Cancer). In April 2019, an illustrated children’s book was launched through this partnership, which will help to support discussions about cancer with children who are diagnosed, their families and schools.



North America

Hickok, USA

We supported a range of health and safety organizations, including cancer research and awareness programs, the volunteer fire department and emergency medical services. We also donated food and financial support to the Loaves and Fishes food bank for families in need.

Marietta, USA

In line with our wellness initiative, Marietta initiated an early-morning yoga program at the office twice a week.

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 benefited from sun protection and early detection education.

How we are supporting the SDGs



Good health and well-being

We provide health support through a range of community activities, including facilitating access to vaccines and doctors.



Partnerships for the goals

We collaborate with several organizations to achieve the goals and increase access to health and medical support.

Communities

Community engagement

Access to healthcare

Quality education

Sustainable livelihoods

Community infrastructure

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 the 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.



North Asia

Weifang, China

In August 2018, Birla Carbon Weifang (BCW) hosted its second "Sail the Life" award ceremony, at which 80 students were presented with awards for excellent performance in college entrance examinations. Five students were further rewarded donations for their studies. Following the ceremony, 22 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.

Yeosu, South Korea

We donated classroom equipment to the Yeosu Multicultural Welfare Center, an organization that provides social adaptation support and promotes self-reliance to help multicultural families settle into Korean society.



South Asia

Jining, China

We conducted holiday safety training at a local primary school for students and donated school bags.

Gummidipoondi, India

We implemented a WASH (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. We also funded a range of scholarships and educational support to enhance students' learning capacity. In partnership with AID INDIA, we established the Eureka Super Kids After School Program in five local villages to provide 200 children from the poorest families with extra educational support. We funded the construction of several educational facilities, including a computer lab and two primary schools.

Patalganga, India

We support local primary and secondary school pupils and provide access to quality education for rural students. Activities in FY2018 included funding special coaching to improve exam results for 100 students, providing school uniforms for 450 children and supporting cultural and educational events.

Renukoot, India

We carried out a feasibility study for the renovation of a local school attended by 270 students, including improving access to clean water and hygiene facilities, and aided the construction of a new classroom for pre-nursery students in a nearby village. We also adopted a local school that provides educational and medical services to female students to reduce the number who drop out of school. FY2019 marked the inauguration of an extension of the Aditya Bal Vidya Mandir school, during which Birla Carbon leaders planted saplings to promote a greener environment.

Angthong, Thailand

We donated 10 computer sets to students in seven schools in local communities to aid student career development and prepare them for the world of technology.



Europe, Middle East and Africa

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. A two-month educational program, "LEARN", prepared 70 schoolchildren for the next academic year through a range of scouting, arts and crafts, and healthy habits classes. It also provided college students with the opportunity to gain experience teaching the younger children.

Birla Carbon Egypt's (BCE's) "Towards a Sustainable Tomorrow" competition for graduating students of the Faculty of Engineering at Pharos University, Alexandria, Egypt encouraged them to relate their graduation projects to sustainability in creative ways. Eight projects were presented to a board of professors and a BCE representative, with the top three students receiving awards for their ideas.

Trecate, Italy

In September 2018, we began sponsorship of the Rodari Primary School in Trecate. A space was designated as a new open-air theatre for the school and decorated using digitized artwork created by the pupils. The theatre's new seating was made from repurposed tires, using a donation from Pirelli, our customer, of tires unsuitable for use on vehicles. Birla Carbon's Senior Management Team also visited the school, with the pupils making a presentation to them illustrating the school's progress and achievements.

We also sponsor an annual children's summer camp in Trecate. Each year, 30 children live together for a week, learning how to take care of themselves and others – from making their beds and cleaning their living spaces, to learning about risks, safety and how to react in emergencies. And, of course, they get to play together too, developing valuable teamwork, social and communication skills. For one afternoon during the week, they also visit our nearby plant, where they find out how we handle our own risks and safety procedures.

Santander, Spain

Through community meetings we met a local man who is working hard to improve fishing eagle numbers in the local area. We are now providing funds to support efforts to build habitats that will attract the eagles. Twenty-six pairs have been introduced to the area in the hope that they will breed. A program has also been established in which the gentleman visits local schools to educate children on the importance of protecting the environment through acting sustainably.



North America

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 cogeneration power plant and counts towards their Power Engineering certification. In FY2019, we also sponsored the Annual Beach Kids Christmas Party, which was attended by some 60 families and included an educational science-based show.

Hickok, USA

In addition to providing school scholarships, we supported Tigers in Action, a community organization that provides families with glasses, dental care, school supplies and learning programs to help students succeed.

Marietta, USA

Now in its fourth year, our five-year partnership with Kennesaw State University in Georgia comprises a total contribution of \$250,000, which supports 10 students a year. As part of our partnership, we also provide internships and employment opportunities at Birla Carbon. We are currently exploring opportunities to extend the partnership for another five years. In 2017, Birla Carbon began working with the Salvation Army's Youth Summer Camp in Marietta. For the second year in a row, a group of employees from the Marietta office delivered over 100 school backpacks, filled with an assortment of school supplies, to the young campers.



South America

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 230 students need to enter the labor market, as well as discussing the role of chemistry in our lives. Students, aged between 13 and 18 years old, are invited to visit our plants through the Open Door Program. In FY2019, 140 students visited the plant, learning about the production and applications of carbon black and about Birla Carbon's safety and environmental initiatives.

How we are supporting the SDGs



Quality education

As a member of the Aditya Birla Group, which is strongly committed to education, Birla Carbon provides learning support to communities where we operate.



Decent work and economic growth

We offer work experience and opportunities to young people in an attempt to reduce unemployment.



Partnerships for the goals

We help achieve the goals by working closely with local community members and educational facilities.

Communities

Community engagement

Access to healthcare

Quality education

Sustainable livelihoods

Community infrastructure

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 – both men and women – are given the tools they need to progress.

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 micro-financing (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.



North Asia

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 and their children who have been victims of domestic violence. To address the issue of hunger, rice was provided to people in need in local communities.



South Asia

Gummidipoondi, India

We support the Kaushalya Project, a skills training center for unemployed rural youth that provides instruction in three trades – fitting, welding and hairdressing – with 360 students becoming certified and 232 participants subsequently securing placements. We also train local women through the Women Economic Empowerment Initiative (ANYA) in 11 skills, including tailoring, embroidery, gardening and liquid soap making.

Patalganga, India

In March 2018, we hosted more than 350 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 launched a new school uniform stitching project, which provided training in tailoring skills to 27 women who then made uniforms for 221 female students.

Renukoot, India

We provided water wheels to enable women and children in rural villages to collect water more efficiently and safely, freeing up time for education and other activities. Solar lights were provided for students and poorer villagers who lived in areas where electricity is not readily available, while through the "One Man – One Tree" project nearly 1,000 fruit plants were given to beneficiaries.

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.



Europe, Middle East and Africa

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, fish trade, tailoring and sewing, vegetable supply and 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.



North America

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.


Marietta, USA

We conducted a four-part series workshop for Work Source Georgia to connect job seekers with careers in the state's leading industries. The four sessions, each of which lasted three hours, included marketing tips and strategies for conducting job searches. The sessions also covered preparation, creating a résumé, interview boot camp and interview role play.

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.

How we are supporting the SDGs




No poverty

We promote inclusivity and gender sensitivity through a range of community activities, including social support and education. This includes offering services to connect job seekers with work opportunities.



Zero hunger

Our global community engagement programs include supporting farmers and contributing donations of food to those in need.



Gender equality

We support gender equality by offering equal opportunities within Birla Carbon, without discrimination, and by empowering women to take control of their personal career progression within Birla Carbon.



Reduced inequalities

Following in the path of the Aditya Birla Group, we seek to reduce inequalities through a range of approaches, from employing equality policies to creating programs to support the poorest and most vulnerable members of society.



Partnerships for the goals

We help achieve the goals by working closely with local charities, community groups and training centers.

Communities

Community engagement

Access to healthcare

Quality education

Sustainable livelihoods

Community infrastructure

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
- Irrigation and water storage facilities
- Sanitation



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.



North Asia

Weifang, China

We support families in need through clothing donations.

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.



South Asia

Gummidipoondi, India

We renovated a community health center in Billakuppam 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

Birla Carbon Patalganga supported the local revenue department in the construction of a community resource center where local villagers can gain different government certification. We also supported the building of classrooms at two nearby schools.

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.

Angthong, Thailand

Infrastructure investments in FY2018 included the renovation of the police station in Angthong Province, a children's playground and a local temple. We also supported the government through activities such as temple cleaning and road repairs.



Europe, Middle East and Africa

Alexandria, Egypt

Four community development centers are now up and running: one in Hawis, two in Abu Simbel and one in Karnak. The centers house a nursery, literacy facilities, a primary health center, tailoring center, offices and other amenities.

Tiszaújváros, Hungary

We supported the planting of new trees in the parks of Tiszaújváros. We also sponsored a marathon hosted in Tiszaújváros to celebrate Hungary's International Triathlon Week. Over 900 people participated, including several of our own employees.

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. In FY2019, Birla Carbon also provided the team with new jerseys that sport our logo and Share the Strength purpose statement.



North America

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.

How we are supporting the SDGs



Clean water and sanitation

Ensuring clean water and sanitation is a priority for us and we invest in infrastructure programs to provide clean and safe water to villages in regions where we operate.



Reduced inequalities

We fund the building of various community centers, ensuring everyone in the communities where we operate has access to basic services.



Sustainable cities and communities

By investing in infrastructure projects, as well as those which promote community learning, we are helping to build safe, sustainable communities.

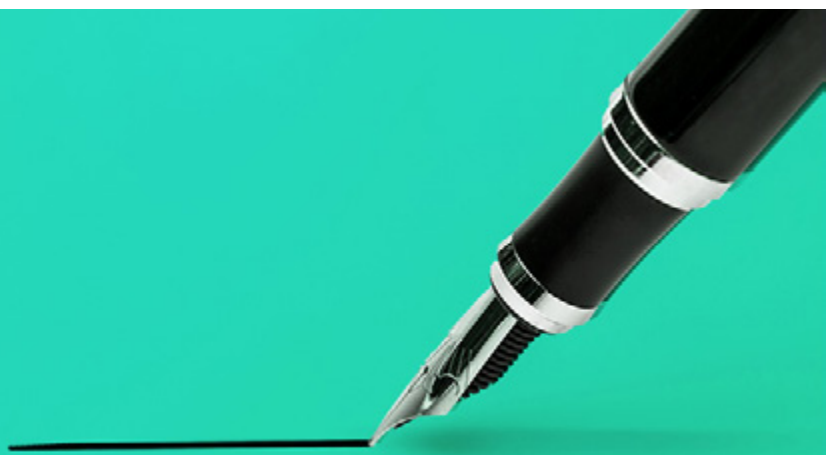


Partnerships for the goals

We work with governments, as well as various community groups, to fund local infrastructure development projects.

Governance and Ethics

Building an ethical company that customers can trust



Governance and Ethics

Governance

Ethics

Compliance

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.

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](#)



Compliance is a pillar of our company. We are committed to conducting our business in an ethical way and have built a compliance program that helps our employees do the right thing, thus ensuring that Birla Carbon is a good corporate citizen and an organization that will be around for years to come."

RICHARD PARIS

Deputy General Counsel, Director of Compliance

Working to the highest standards of compliance

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.



Our approach to governance

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 [Aditya Birla Group's Responsible Stewardship Framework](#), through which we are aligned with the UN Global Compact.

> [Governance](#)

Building ethical operations

To deliver the service we aspire to, we must strive for the highest ethical standards with regards to human rights, fair business and labor. We expect our employees and our extended network of suppliers to adhere to these standards as well.

> [Ethics](#)

Industry-leading compliance

We can only continue to innovate our products if we comply with international laws, standards and codes of conduct with regard to safety and environmental stewardship. We aim not only to comply but to be an industry leader in best practice.

> [Compliance](#)



FY2019 performance highlights

Nearly 300 risks identified and managed since our enterprise risk management approach was updated.

> [Governance](#)

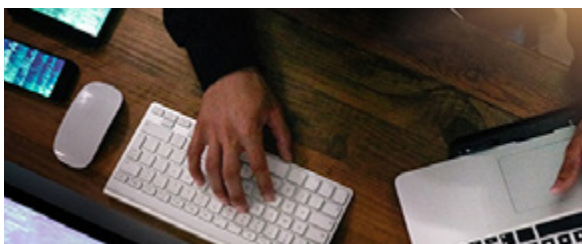
Six plants had received certification in the ISO 50001 energy management standard.

> [Compliance](#)

Due diligence screenings completed for all 9,000+ active Birla Carbon vendors.

> [Ethics](#)

Feature stories



> Implementing risk management software

Discover how we are improving risk management in our facilities with the use of new, global risk management tools.



> Ensuring high standards of data privacy globally

In line with the 2018 EU enactment of the General Data Protection Regular (GDPR), we have rolled out new data protection policies to safeguard the privacy rights of all individuals.

Governance and Ethics

Governance

Ethics

Compliance



505 best practices implemented through the World Class Manufacturing group to date.

Governance

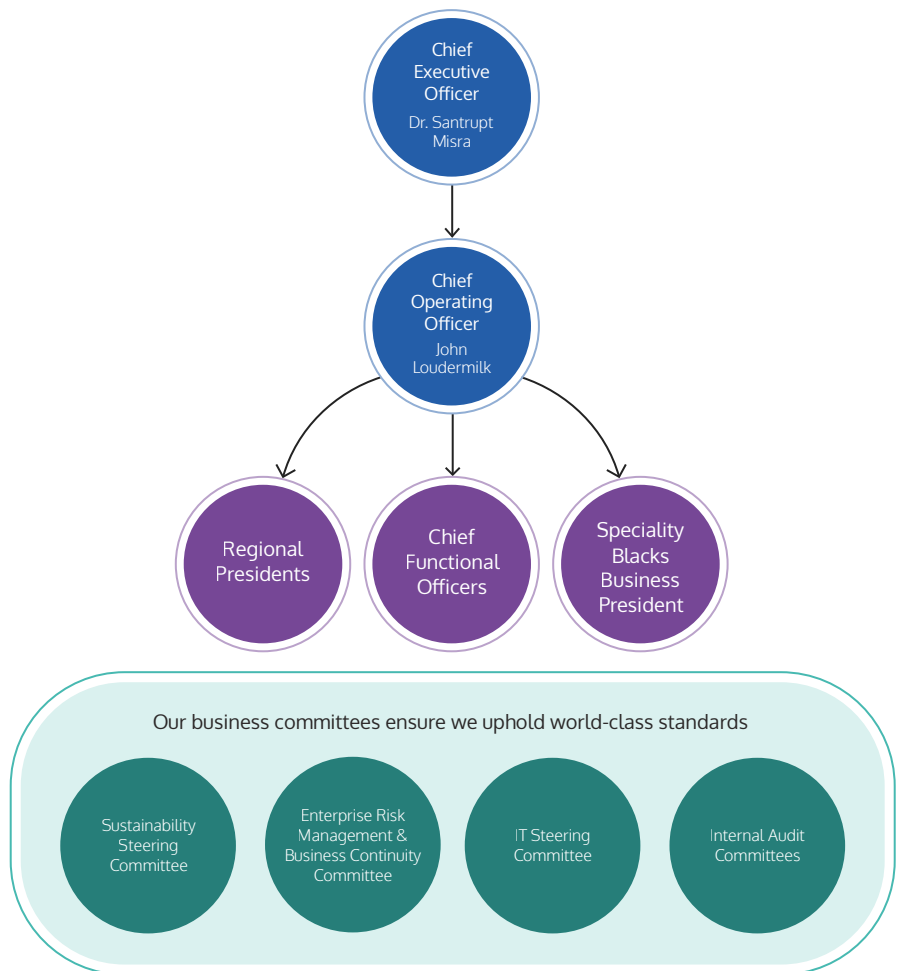
Our success depends on strong, effective and responsive management of all our global operations. We support regional autonomy, which allows for efficient decision-making that is responsive to local needs but also promotes effective communication between global functional leaders.

This structure enables sharing and implementation of best practices and integration of Sustainable Operational Excellence throughout Birla Carbon.

How is our governance organized?

We have designed an agile and streamlined governance system that enables us to react quickly to challenges and to build a stronger, more transparent company. 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 Dr. Sanrupt Misra, Chief Executive Officer; John Loudermilk, Chief Operating Officer; five Regional Presidents; Chief Functional Officers; and a Specialty Blacks Business President.

The diagram below illustrates how we organize our governance.



Governance structure

The role of the Chief Sustainability Officer is defined by two elements: firstly, communicating the work of the Sustainability Steering Committee to the SMT; and secondly, acting as the guardian of sustainability principles and best practices and supporting the SMT to adopt them within its business decisions.

Sustainability Steering Committee

Our sustainability strategy is directed by the Sustainability Steering Committee (SSC), which ensures it is aligned with the sustainability vision and approach of our parent company, the Aditya Birla Group.

The SSC is responsible for reporting, 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 working group is made up of the Global Sustainability Director, the Sustainability Manager, subject matter experts, 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. The groups maintain contact throughout the year, meeting when needed. 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.

- ↓ [Birla Carbon Sustainability Policy](#)
- > [Focusing on what matters](#)

Governance and Ethics – key topics discussed in FY2019		
Key topics	Decisions made	Impact on business
Sustainable procurement strategy	Global Purchasing/ Sustainable Procurement initiative authorized.	Standardized purchasing principles, policies and practices to ensure Birla Carbon manages its procurement functions and activities in an ethical, legal and sustainable manner.

Customers and Suppliers – key topics discussed in FY2019		
Key topics	Decisions made	Impact on business
Customer engagement	Increase direct engagement with customers on sustainability.	Aligning our sustainability initiatives and goals with our customers’ to remain a strategic partner.
Supplier risk assessment	Implemented a sustainability risk-based supplier engagement system in addition to legal, third-party due diligence screening.	A more resilient and ethical supply chain will enable us to achieve business continuity.

Environment – key topics discussed in FY2019

Key topics	Decisions made	Impact on business
Solid waste management	Continued focus on reducing and repurposing waste to achieve KPI. Focus on partnerships to achieve goals.	
Water risk assessment	Integration of water risk management into our enterprise risk management (ERM) process.	We seek to drive improvements around key stakeholder concerns.
Energy and emissions KPIs	Continue to evaluate challenges in meeting goals.	

Our Product – key topics discussed in FY2019

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 discussed in FY2019

Key topics	Decisions made	Impact on business
Engaging our employees	Ensured that all sites have safe access to water, sanitation and hygiene (WASH) by the end of FY2018.	A motivated workforce is instrumental to business success. We seek to engage our people and support them and their lifestyles.

Community – key topics discussed in FY2019

Key topics	Decisions made	Impact on business
Global program	Benchmark our global CSR 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.

Internal audit committees

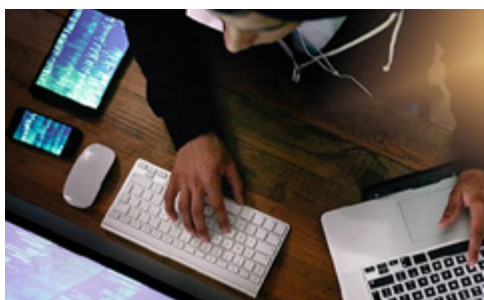
Under the guidance of our Internal Audit Department, we carry out regular audits and investigations across the business, covering financial, compliance and operational reviews.

In FY2019, 22 audits were conducted, covering both global and regional perspectives. Nine were global audits and focused on plant operations and inbound and outbound logistics processes. The remaining 13 audits were region-specific and covered inventory, scrap management, procure to pay (excluding carbon black feedstock), human resources and payroll processes. Results were shared with the SMT; the Risk Committee is updated biannually on the implementation progress of the related management action plans.

Enterprise Risk Management and Business Continuity Committee

One of our top priorities is maintaining uninterrupted operations and ensuring a constant supply of carbon black to our customers. Our ERM system helps us identify and anticipate business risks, enabling preparation for possible disruptions to ensure resilience.

To improve management of risks on a business-wide level, we are switching our ERM approach from being top-down to having representatives at the individual site level. Regional risk officers (RROs) oversee the implementation of risk management measures, while site-based subject matter experts (SMEs) identify and manage risks as they arise. Three hundred individual site risks have been identified and actively managed. Records of these incidents were then shared globally to help other plants mitigate risks before they arise.



Implementing risk management software

In FY2019, we began rolling out Origami, our new software system designed to record and configure all risk management information company-wide. The 300 risks identified by SMEs are now available on the system, along with their Risk Registers and Business Continuity Plans (BCPs), reviews, schedules and owners.

RROs will be trained on how to input risks and how to manage entries within the system. They will then be responsible for introducing this

software to other employees at the plant level. The system will ultimately be rolled out to all site SMEs as well, facilitating easy and accurate identification, assessment and management of risks and transfer of information between sites.

Following a three-day business continuity planning workshop, three manufacturing sites in India each assigned a member of the team to coordinate their BCP development process. Each site identified a minimum of 20 risks that had the potential to impact business operations. Through these risk assessments the sites were able to implement additional measures, reducing the likelihood and impact of risk events. Within four months, comprehensive BCPs had been developed for each of the three sites.

Using the Origami system, the three sites then shared information on the risks they identified. This allows each facility to ensure that operations are resilient to a range of internal and external risks, which will safeguard our business, and that of our customers, from disruption.

To help site leadership teams respond appropriately during crises, we have also developed a new "In Case of Crisis" app. The application, designed for improving emergency response, outlines crucial information such as local numbers, contacts and procedures on users' smartphones. This app places information at the fingertips of site leaders, which is crucial during the initial phase of an emergency.

> [Sustainable Development Goals](#)

ERM Committee

The Enterprise Risk Management Committee (ERMC) was restructured in February 2018 to include the entire SMT and meets twice a year as part of the quarterly SMT meetings. In addition to regular agenda items, each Regional President presents two risks impacting their region, including potential impacts, mitigation strategies and business continuity planning.

Business continuity planning

Each of Birla Carbon's locations has a comprehensive Disaster Recovery and Business Continuity Plan (BCP) to ensure it is prepared for interruptions due to natural disasters or disruptions. Read more in our BCP statement.

Since FY2015, we have been rolling out a business continuity management system (BCMS) based on the ISO 22301 standard. The BCMS guides recovery strategies for our most crucial processes and activities to ensure the continuous supply of carbon black to our customers. We have continued this effort in FY2019.

Several regions have held intensive BCP workshops, using the information gained to standardize business continuity planning processes globally. This includes ensuring a thorough risk identification and assessment process, with each critical business risk accompanied by a comprehensive BCP. Information on material risks identified at the site and regional level is captured on a risk register that is maintained at the enterprise level and reviewed during ERMC meetings.\

[↓ BCP statement](#)

IT Steering Committee

Established in FY2018, the IT Steering Committee ensures we leverage the latest innovative technology and provide 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 includes a Regional President and 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 mindsets and quality processes

Our sites continuously work towards building Operational Excellence and World-Class Manufacturing practices into day-to-day activities through regular self- and external 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. Best practices are internally developed and incorporated into various checklists and inspection and cleaning standards and are periodically reviewed.

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



Striving for world-class standards in information technology

At Birla Carbon, we strive to leverage world-class information technology (IT) standards and infrastructure to provide consistent support and advice across our entire global business. This means we can be confident in the information we base our decisions on and that we share with our customers.

The evolution of IT is integral to our business, requiring an internal IT organization fit to support our business strategy. Since a realignment in May 2018, our IT organization has been designed to encourage deeper engagement with business requirements and priorities. It focuses on driving technology optimization across everything from procurement and manufacturing to logistics and customer invoicing. Managing cybersecurity is a top priority as we strive to deliver a secure environment for all our stakeholders.

Through our IT organization three pillars have been established: Enterprise Systems, Information Security and Infrastructure Services and Operations. These pillars are designed to help us utilize technological innovation, seize opportunities quickly and implement business strategies successfully, including maximizing end user productivity and protecting our information assets. We have made some significant strides in the past five years.

One of our key initiatives involved establishing a single enterprise resource planning system through which all processes and functions are managed globally. It plays a key role in ensuring business continuity and provides a robust foundation upon which we can grow and enable more value-added capabilities in the future.

As we continue to evolve, we are working to enhance and develop solutions step by step and looking across our processes to identify opportunities. One example is the work we are doing to present quality, real-time information to the control rooms in manufacturing facilities so that they can make effective and timely interventions and we are able to provide the assurances and information our customers require.



Leveraging the opportunities of digitization is central to advancing corporate sustainability and driving positive change at Birla Carbon. By investing in our technology infrastructure and capabilities, our aim is to be the most agile, responsive and innovative in the industry."

ROBYN HOOKER-MCCALL
Chief Information Officer

Governance and Ethics

Governance

Ethics

Compliance



10 calls received through our employee grievance hotline in FY2019.

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.

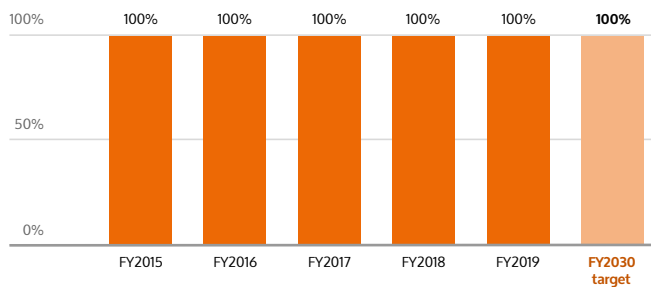
To embed high ethical standards across our entire operations, we formally train every employee, who must then sign a document confirming their compliance with our Code of Global Business Ethics and Compliance Standards (Code of Ethics). The Code of Ethics covers our policies on fair competition, antitrust, 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 Colombian Chemicals and the need for a more coordinated approach to ethics and compliance. Having reevaluated 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.



Ethics: progress towards our target

100% of active employees to receive Code of Ethics training.



Human rights

Human rights are of increasing importance for all businesses. We recognize the valuable role we can play in the protection of these rights. It is crucial to our reputation and our license to operate that respect for human rights 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. As a global business, it is a complex challenge, requiring collaboration and investment of resources and time.

We engage with employees at every level of our operations to ensure our commitment to human rights is 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 rights of the people we employ, do business with or interact with.

In FY2018, we published a new Human Rights Policy, setting out our commitments to upholding human rights in line with the UN Global Compact principles. 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 FY2019, no allegations of corruption were raised.

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 noncompliant 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 human resources professionals. The hotline is available at all our plants and offices.

Grievances received

Grievance measures	FY2018	FY2019
Hotline calls (total)	28	10
Calls investigated	19	10
No further action needed	14	3
Resolved through collective bargaining	0	0
Disciplinary actions	5	7
Formal community grievances	-	0

Labor, human rights and environment

Labor, human rights and environment grievances	FY2018	FY2019
Labor grievances at the local level	16	14
Labor grievances resolved	15	12
Human rights grievances filed and resolved	0	0
Environmental grievances filed and resolved	0	3

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 FY2019, the percentage of unionized Birla Carbon sites was 75%. If conflicts occur, we have communications and conflict resolution measures in place for our employees to make their concerns known.

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.

- In **FY2016**, we reviewed the contractual Terms and Conditions that we expect our suppliers to agree to.
- In **FY2017**, we worked with legal advisors in each region to tailor our standard Terms and Conditions of Purchase to local requirements.
- In **FY2018**, we followed this by conducting a similar process for our Terms and Conditions of Sale.
- In **FY2019**, we standardized our Terms and Conditions for all of our suppliers. While these terms may be negotiated subsequently, this standardization provides a baseline from which to begin discussions with potential new vendors.

We have also expanded the license of NAVEX Global's RiskRate®, our third-party due diligence screening program, to vet distributors and agents worldwide. Through this program we have completed due diligence screenings for all 9,300 Birla Carbon vendors. To ensure their sustainability goals align with those of Birla Carbon, we recently partnered with EcoVadis to screen our key suppliers and rate them based on sustainability performance. The surveys take environmental, social, ethical and supply chain reliability parameters into consideration. This screening process is a key element of the International Automotive Task Force (IATF) certification process, which requires our plants to manage the risks associated with their critical suppliers. It allows us to better understand the sustainability efforts of critical suppliers and encourages best practice.

↓ [Terms and Conditions](#)

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

How we are supporting the SDGs



Peace, justice and strong institutions

Through our internal governance mechanisms, we prevent corruption and bribery from taking place in our business. This reinforces our own institutional accountability and transparency as well as that of our customers.



Our Product



Environment



Customers and Suppliers



Our People



Communities



Governance and Ethics



Our Approach

Governance and Ethics

Governance

Ethics

Compliance



100% operating manufacturing plants certified to ISO 14001 (environmental) and 38% to ISO 50001 (energy) management standards.

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 ISO 14001 environmental management standard. By FY2019, six plants (38%) had received certification in the ISO 50001 standard. ISO 50001 stimulates organizations to establish systems and procedures necessary to improve their energy efficiency, use and consumption. We expect all our sites to attain ISO 50001 in the coming years. We are currently in the process of certifying all our sites to the IATF 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 Health, Safety and Environment (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 FY2019, we conducted nine audits of our environmental performance and nine of our health and safety performance.

Investing in world-class facilities

To improve efficiency, we continuously invest in and enhance our older plants while also developing a new generation of facilities to support future sustainable business growth. In FY2019, we invested approximately \$17 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 the employees and the 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.

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 Europe.

> [Sustainable Development Goals](#)

Our Approach

Driven by our purpose, vision and strategy

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Our purpose: Share the Strength

At Birla Carbon, we have been sharing our knowledge for over a century, forging new pathways and finding new solutions that help to bring dependability and resiliency to our employees, customers and communities.

> [Focusing on what matters](#)

Our vision: To be the most respected, sustainable and dynamic global carbon black business

We aim to be the partner of choice for customers and the best place to work for employees. We achieve this through our Sustainable Operational Excellence (SOE) strategy.

Our strategy: Sustainable Operational Excellence

SOE is our sustainability strategy. It influences every decision we make, from designing and operating our plants to interacting with our customers, our employees and the communities in which we operate.

↓ [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.



Product

We are committed to producing a consistent supply of world-class carbon black for our customers while also working to reduce our environmental impact and ensuring our product generates real social value.

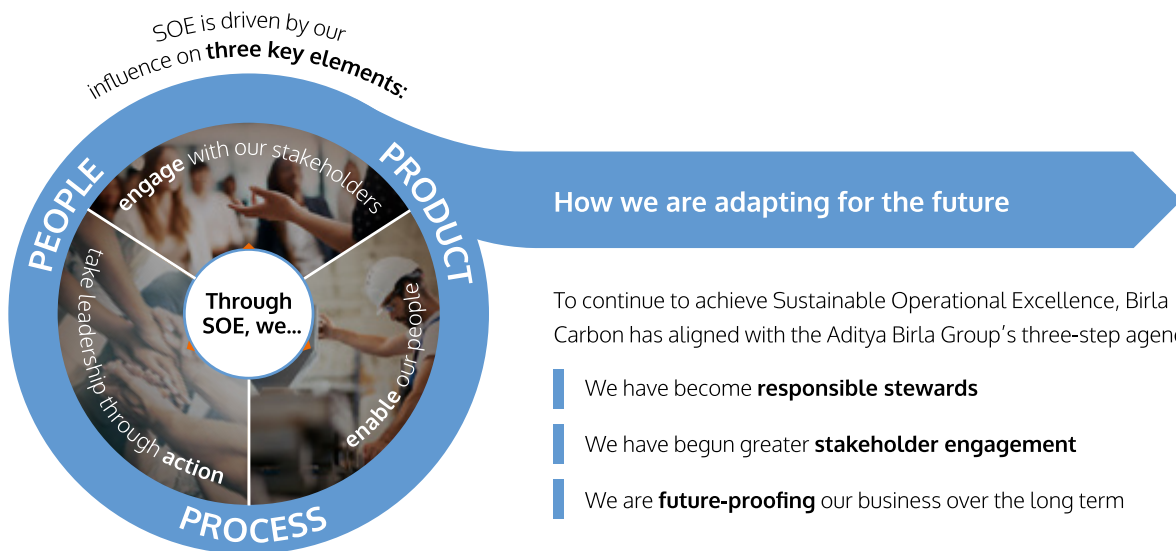


Process

We strive to be a responsible steward of the environment by optimizing the conversion of carbon to carbon black, minimizing our carbon dioxide (CO₂) emissions and maximizing the recovery of energy generated during our manufacturing process.

Our Sustainable Operational Excellence (SOE) strategy

Our vision is to be the most **respected, sustainable** and **dynamic** global carbon black business. By embedding sustainable thinking at every level, we meet the ever-changing needs of our stakeholders regardless of economic volatility, increasing environmental and societal concerns, and challenges such as stricter regulatory requirements and evolving customer requirements for better products and processes.



To continue to achieve Sustainable Operational Excellence, Birla Carbon has aligned with the Aditya Birla Group's three-step agenda:

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

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The ever-growing volatility and uncertainty in the global economic and investment environment makes all of us ever more aware of the relevance of sustainability and its related practices.

DR. SANTRUPT B. MISRA
Chief Executive Officer

In sustainability, Birla Carbon sees an anchor of stability. We also realize that sustainability, while being home-grown and underpinned by regulatory stipulations, can only be furthered and realized through partnership with our customers, addressing their emerging needs and concerns.

Birla Carbon’s sustainability movement has been anchored in three key pillars: collaboration, culture and continuous investment. We have partnered with our customers, technology suppliers and academic institutions to continuously improve our performance and to create products and services that deliver value through sustainable practices. This collaborative approach has taken many forms and has attained different levels of maturity. Internal collaboration between different parts of the business globally has also taken deep root through knowledge dissemination, best practice sharing and leveraging collaborative platforms and technologies.

Our Purpose – Share the Strength – which was launched in 2018, has given us a framework and a set of principles to live by and realize our full potential. This articulated Purpose, coupled with our Values, has promoted a culture of long-term thinking, frugal innovation, idea generation and a natural orientation to learn, observe, serve and create. I am personally very excited about the promise and prospect that our Purpose presents to us going forward. Our continuous investment in learning and training our employees, positive leadership messaging, continuous communications and well-aligned performance matrices are likely to lead to the critical breakthrough that our stakeholders are seeking.

In terms of concrete investment, I am proud to say that this year we continued to expand our focus on sustainability, whether that be in the form of investigating new and more efficient products, harnessing analytics to make our plants more efficient, reducing water and energy consumption, or monitoring and re-evaluating solid waste disposal. The progress we made during 2019 has almost positioned us as the “Lighthouse of Sustainability” within the Aditya Birla Group. Creating, acquiring and investing in new technologies, new facilities and new solutions are all part of our endeavor to further the progress on our well-established leadership position in sustainability.

Looking forward, while keeping sustainability at the heart of the Birla Carbon business model, we will leverage the innovation capacity that is inherent in our people to further progress our customer centricity through partnerships and collaboration. Not every innovation will come from within Birla Carbon. We will be equally nurturing an ecosystem around our business to stimulate innovation of a different kind. We have made systematic efforts to reach out to a wider community of professionals, scientists, researchers, academics and others to create a platform of open innovation. Such an approach also enlivens our Purpose statement – Share the Strength.

I invite you to our 2019 Sustainability Report, our seventh report, to understand our progress and our sense of purpose. Thank you for being our inspiration and our partners in this journey.”



Sustainability is not only about compliance – it is a necessity for us to modify our business sustainably to improve and deliver value opportunities. It is driving a lot of our innovation investments.

JOHN LOUDERMILK
Chief Operating Officer

For us, our Purpose Principles have been a way of exploring who we are as a company. We can then leverage this identity, and the recognition that comes with it, to help us develop our business for the future.

We want to use our sales organization, along with marketing, as the central point for identifying new development opportunities, which we can then funnel into our research and development efforts. We want to get downstream in our customers' organizations to create direct connections with key players from whom we can identify product and service opportunities that are less visible from an outsider's viewpoint.

This year, we have invested a great deal in both marketing and customer knowledge but also throughout the rest of our organization, increasing the resourcing of technology to focus more on the future. This includes looking into developments such as the circular economy as well as exploring new materials that we don't currently use or develop but that could drive value for our customers.

We want to be the clear leader in our industry, and this involves being seen as sustainable as well as innovative, respected and dynamic. Being respected is driven by those on the outside – consumers, communities and customers – and how they view us. Being sustainable is an internal effort, considering how we're contributing to, and protecting, the world as well as our long-term investments. We are using sustainability as a lens through which to determine which products and relationships we pursue, with a focus on developments that will drive efficiency and optimize our footprint.

Now that we have a clear idea of our own sustainability, the next step is to broaden the discourse with customers to increase our mutual understanding of sustainable practices through the value chain and to share our learning. Through strengthening our customer relationships, we will enable an open conversation about their goals and how we can help them achieve those goals.

To achieve our sustainability aspirations, we need to engage not only with our customers but also with our employees. Indeed, our most important performance indicator is concerned with how engaged our people feel with our Purpose. When they feel engaged, employees are more likely to be empowered to proactively drive our sustainability strategy, demonstrating clear ownership for their actions along with our overall business.

This coming year will see us changing how we work with our customers, and our employees, to understand their needs and wishes. We look forward to harnessing our resources and partnerships to find products and programs that will create more value for customers."



Our search for purpose is continuous, not just a set point in time. We want to get closer to our customers and lead through innovation.

JOE GAYNOR

Chief Legal, Sustainability and Risk Officer

In FY2019, we have been refining our approach to innovation with the aim of being the most dynamic and sustainable company we can be. We are exploring what innovation means at all levels of Birla Carbon and in all functions. This includes new products and services but also better ways of interacting with our customers and employees. In part, it has meant continuing to develop an environment where the most innovative people want to work and where they feel supported. This is helping us to stay ahead of the sustainability curve.

We are placing increased focus on supporting our employees in all areas, including enhancing programs and systems to reduce potential injuries and fatalities. In the last year, we rolled out a new initiative for reporting incidents with a focus on the Safe Six – lockout-tagout (LOTO), working at heights, mobile equipment, electrical, hot work and confined space – and increasing near-miss reporting. We are sharing best practices not only within Birla Carbon but with other companies within the Aditya Birla Group and with the broader carbon black industry.

Safety is of the utmost importance to us, but we are also emphasizing the professional development of individuals, with personalized development plans for high-potential employees. We are ensuring the necessary tools are available to employees and have systems in place to recognize when our people are advancing and to encourage them to continue to grow. In the past year, we introduced a mentoring program in which senior management members guide two to three employees, with monthly meetings to encourage face-to-face engagement. Attracting and supporting the right people who will bring good ideas to Birla Carbon is helping to develop our culture of innovation, so we can offer our customers cutting-edge solutions to their needs.

To ensure we are offering our customers the most reliable supply chain in the carbon black industry, we have introduced third-party due diligence testing for all our suppliers. Through our RiskRate® system, we can be certain that the suppliers we partner with are reputable and are companies in which we, and our customers, can feel confident. For our most significant suppliers we have also introduced a sustainability assessment tool, EcoVadis, to ensure our sustainability and ethical standards are met and upheld throughout our supply chain. We are working with, and will continue to work with, the World Business Council for Sustainable Development (WBCSD) to discover further ways to future-proof our business and to stay ahead of the industry. We realize that one of the greatest values we can provide our customers is a reliable source of supply, and we are committed to being the best in the business.

As we go forward into FY2020, we will continue to increase our focus on continuing to provide the most secure and reliable carbon black supply chain for our customers. Furthermore, we will continue to expand and improve our efforts in sustainability and innovation in order to maintain our leadership position within the carbon black industry."

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Discovering who we are

In FY2018, we worked with an independent consultant on a robust process to uncover Birla Carbon’s core purpose. The process started with an in-depth review of our institution, including 27 stakeholder interviews, 539 surveys, more than 60 corporate and historic documents, and engagement with external and internal subject matter experts. Based on our findings, we defined our Purpose and supporting Principles.

Our Purpose: Share the Strength



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.

Purpose Principles



Familiar Bonds

Like the products we make, our value is enhanced through the bonds we form with each other.



Micro Matters

We are a team of forward-thinking regional operators making an international impact. We push the industry beyond its limits to deliver limitless value.



Challenge Tested

We rise to the challenge and deliver a better way – a better way to keep our product moving and a better way to come together for customers and communities.



Compound Knowledge

From the plant floor to the sales floor, our passion for learning has no ceiling. We are constantly searching for a deeper understanding of our products and their applications.



Beyond Durable

Carbon black has been a part of human life for centuries. Knowing that, Birla Carbon makes every decision through a lens that anticipates future needs.

Assessing sustainability

Our sustainability strategy is fundamental to our Purpose. It is shaped by what matters to our stakeholders, along with the areas that have a material impact on our business. We continually review these issues and consider both their internal and their external impact.

Our Sustainability Steering Committee (SSC) uses quantitative and qualitative analysis to determine the materiality of each issue. Quantitative analysis looks at data sources such as employee surveys and Health, Safety and Environmental metrics, while qualitative analysis focuses on customer feedback and community input on the issues that matter most to these groups. The SSC reviews the materiality of each issue by considering the influence of stakeholder assessments and decisions on our business and the significance of our economic, environmental and social impacts.

To validate our assessment and ensure our reporting achieves the Global Reporting Initiative (GRI) principle of completeness, we regularly evaluate the scope and boundaries of our material issues and the timescale considered. The SSC attributes each material issue to a relevant material topic – be it internal or external to the organization – as per the GRI Standards. The results are approved by the Chief Legal, Sustainability and Risk Officer, Joe Gaynor, on behalf of Birla Carbon’s Senior Management Team.

> Governance

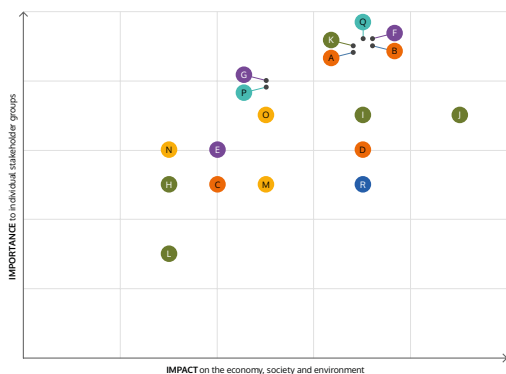
The issues listed below were reviewed in FY2017 and confirmed as the most relevant and significant for Birla Carbon and our key stakeholders. They are ranked according to the level of interest to stakeholders and business impact.



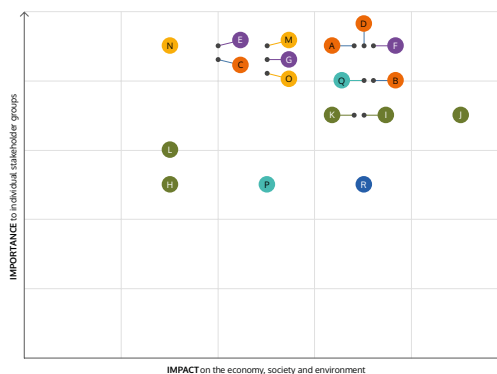
Our materiality matrix

As a result of a formal materiality assessment, described above, we have identified the key issues to Birla Carbon, as defined by our major stakeholder groups.

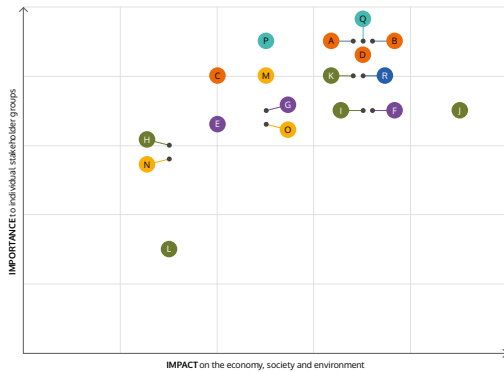
Overall Average



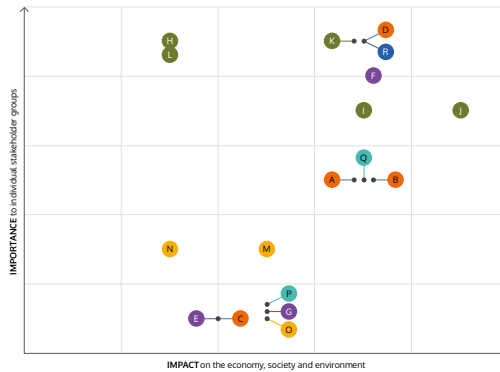
Customers and Suppliers



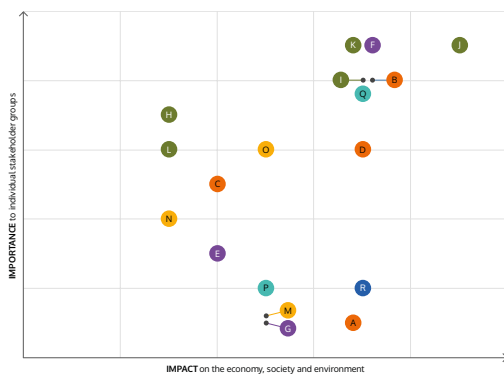
ABG and Employees



Community



NGOs and Regulators



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

Our key sustainability issues

For clarity we explain below our interpretation of each issue, grouped into six focus areas: Governance and Ethics, Our Product, Environment, Customers and Suppliers, Our People, and Communities.

Governance and Ethics

- A Business continuity**
The ability to meet customer supply requirements, despite negative or damaging events.
- B Ethics**
Ensuring fair labor and business practices, including anti-corruption, anti-competitive behavior, antitrust and collective bargaining.
- C Governance framework**
Our management structure, including policies, standards, compliance mechanisms and world-class manufacturing processes.
- D Human rights**
Maintaining full respect for economic, social and cultural rights, including no child labor, fair wages and decent working conditions.

Our Product

- E Innovation**
Developing our processes, technology and products to meet an evolving market and regulatory and societal demands.
- F Product stewardship**
Taking proactive care to ensure our products reach high standards, incorporating health, safety, environmental and regulatory considerations into our product development and maintenance.
- G Product consistency**
Our efforts to guarantee that our product continues to meet high quality standards while meeting market demands.

Environment



H Air emissions

Non-greenhouse gas (GHG) emissions from our operations, including sulfur oxides (SOx), nitrogen oxides (NOx) and particulate matter.

I Energy

The efficient use of energy resources, including consumption, recovery and generation.

J GHG

Direct and indirect GHG emissions, focusing on CO₂ as other GHGs emitted by our operations are negligible.

K Water

Our water supply, water collection and wastewater management practices and governance systems.

L Waste

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.

Customers and Suppliers



M Customer engagement

How we build, nurture and manage relationships with customers, including aligning our sustainability agenda with theirs.

N Global presence

Our manufacturing and distribution footprint, relevant to customer locations, resources and suppliers.

O Sustainable procurement

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.

Our People



P Employee engagement

How we build, nurture and manage relationships with our people through training and development, recognition and feedback mechanisms.

Q Safety

The health and safety of our employees, from the moment they arrive at work each day to the moment they leave.

Communities



R Customer engagement

Building, nurturing and managing relationships with the communities where we have a presence by understanding and responding to their expectations.

Future issues and trends

A crucial aspect of our materiality process is monitoring and predicting the development of future issues and trends. Through horizon scanning, we aim to identify the wider impact that external factors could have on our business – and that our business could have on them. This process, which we describe as future-proofing, enables us to plan scenarios for the long term by developing our future materiality mapping.

- > Future-proofing

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Sustainable Development Goals

Following the roll-out of the United Nations Sustainable Development Goals (SDGs) in 2015, we first mapped them to our business strategy in FY2016. Below, we set out the SDGs as they apply to three key areas of focus for Birla Carbon: economy, society and environment.

Below, we set out the SDGs as they apply to three key areas of focus for Birla Carbon: **Economy, Society, and Environment.**



Economy

SDG 8 – Decent work and economic growth

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

- > Hamilton, Canada



Society

SDG 3 – Good health and well-being

We provide health support 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.

- > Reducing NOx emissions through investment and cooperation



Environment

SDG 12 – Responsible consumption and production

We support 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, 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 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.

- > Reaching world-class standards in China



Less applicable



Our Product



Environment



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Stakeholder engagement

We are stronger when we work together, sharing our knowledge and innovating new solutions by bringing together old and new ideas. We engage and collaborate with a variety of stakeholders across cultures and around the globe, building on the knowledge of others to progress our operations.

As we have reached a level of maturity in our responsible stewardship, we are engaging with key stakeholders to align our sustainability strategy and approach more closely with theirs. We have built strong relationships and improved our understanding of the externalities and trends that could affect us in the future by engaging with our stakeholders, conducting Life Cycle Assessments of our products and sharing information with peers.

We seek to better understand the material issues that affect our stakeholders, which is why we are constantly working to improve our engagement processes. Our engagements with interested parties allow us to benefit them by creating and sharing value.

Our stakeholder groups include:

- Customers
- Employees
- Suppliers
- [Aditya Birla Group](#)
- Communities
- Nongovernmental organizations (NGOs), civil society and academics
- Regulators and government
- Competitors
- [International Carbon Black Association \(ICBA\)](#)
- Banks and lenders

We have identified several sub-groups of stakeholders that have the greatest impact on our business. Our engagement with these groups is important for our success and we are shaping our strategy based on what is material to them.

Customers

How we engage

Our objective is to develop long-term relationships with customers and become the carbon black provider of choice, based on excellent service and a high-quality product. One way in which we achieve this is by engaging with customers about 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 FY2019

We perform satisfaction surveys using the Net Promoter Score® methodology, through which we [compare our performance with our peers](#).

We hold periodic customer dialogue events, through which we align our sustainability strategy with our partners. We also surveyed our customer-facing employees to determine which sustainability issues are most salient for them.

Our technical services, sales and product development teams participate in a range of technical conferences as an opportunity to interact with our customers, such as the Tire Technology Expo, Feiplastic International Plastic Fair, the European Coatings Show, Carbon Black World, DKT German Rubber Conference, NPE2018: The Plastics Show, the American Coatings Show and Movin'On Summit.

Employees

How we engage

Our employees provide us with feedback through biennial surveys. We encourage continuous dialogue between managers and employees, and we also provide a hotline through which our people can anonymously report grievances and concerns.

Examples in FY2019

To encourage sharing of best practice and to stimulate progress on our sustainability KPIs, in FY2019 we began issuing an internal KPI report quarterly. The results of this report are presented and discussed at regular internal meetings as well as to employees in a Food 4 Thought presentation.

We conducted an internal survey of customer-facing employees on sustainability material for customer engagement to gain a better understanding of how we can help them better engage with customers on sustainability.

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; we work with them to ensure they uphold our high ethical standards.

Examples in FY2019

Our [Code of Ethics](#) includes contractual terms and conditions that we expect every supplier to sign up to.

We review our global feedstock suppliers and encourage our suppliers to audit our own operations. In FY2019, we implemented our supplier compliance and sustainability screening and assessment systems through NAVEX Global's RiskRate® and EcoVadis. We also ensure our suppliers adhere with our Code of Ethics through our revised supplier Terms and Conditions, which they must read and sign.

We presented on our sustainability journey at the North American 4C Conference in FY2019, which was an opportunity to engage with many of our feedstock suppliers on sustainability.

Aditya Birla Group

How we engage

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

Examples in FY2019

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

We participate in a weekly sustainability webinar across the Group, during which a business unit presents their progress and initiatives. We regularly communicate our progress through this channel.

We also participate in the annual ABG Sustainability Conference.

Communities

How we engage

Our approach to building community relationships is led locally to ensure the best understanding of social and cultural priorities. We focus on delivering long-term socioeconomic benefits through our engagement with communities, namely health, education, social support and charitable giving.

Examples in FY2019

See our [Communities](#) section, where we describe our community engagement in greater detail.

NGOs, civil society, academics

How we engage

We continue to interact with NGOs and wider social institutions that are particularly relevant for our business.

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

Examples in FY2019

Through the Aditya Birla Group, we have engaged with Forum for the Future, with current work focused on defining how we future-proof our business.

We participate in the Sustainability Leadership Forum, a group representing business leaders from a range of industries who share knowledge on common salient sustainability issues.

As part of the wider dialogue on how companies can help achieve global sustainability targets, we have aligned our Sustainable Operational Excellence strategy to the United Nations Sustainable Development Goals.

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, emergency response and the environment.

Our Corporate Risk Manager participates in the Atlanta Chapter of RIMS, the risk management society in the USA and its annual conference, which provides education and engagement opportunities for risk professionals.

Our Corporate Health and Safety Managers participate in the American Society of Safety Professionals, the largest professional safety society in the world. In FY2019, we presented at the Region IV Professional Development Conference, where we shared our experience around safety perception surveys.



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. Addressing this, we took the lead in 1998, sharing 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.

> [Sustainable Development Goals](#)



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Future-proofing

The third stage of our Sustainable Operational Excellence journey demands that we look to the future to effectively adapt to global and social megatrends and build 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.

In FY2017, we engaged *Forum for the Future*, a specialized nongovernmental organization, to help us identify the external factors that could impact our business in the years to come. While we have successfully responded to many issues over the last 170 years, we believe it is time to provide more structure to our thinking in this area. In FY2019, we continue to apply the findings from Forum for the Future where relevant.

We continue to invest in people and technology, making strong progress on our key performance indicators, which in turn enables sustainable operations in the short to medium term.

The megatrends that could affect Birla Carbon

Although our analysis of key global megatrends is still in its preliminary stages, we present here several external factors that may impact the global carbon black industry between now and 2030.

Climate change

The atmospheric threshold of 400 parts per million of carbon dioxide was permanently crossed in 2016. Through the Paris Agreement, developed nations committed to achieving zero net emissions by 2035 and developing nations to reaching zero net emissions by 2050. This will require a massive shift in the global energy system, affecting transportation, electricity generation and heating. Governments are increasingly considering radical policy changes. The conventional expectation is that regulation in this area will become progressively stricter.

Any change to transportation regulations will have a marked impact on our business. For example, climate change policy could profoundly shift transport away from cars by 2030. Potential carbon taxes could affect oil prices, which in turn would affect the availability of our feedstock. On the other hand, as a material impact there could be more demand for carbon black, as tire components that improve efficiency are prioritized.

Resource scarcity

Oil and gas

There is an expectation of increased oil price volatility in the next decade as conventional oil fields decline and supply becomes limited. While there is certainly strong growth potential in USA shale oil, it currently represents 10% of global supply (in June 2019, global production was approximately 82 million barrels per day, US production around 8.5 million barrels per day). Increasing this proportion of supply to match the projected decline in conventional oil over the period is not thought to be possible.

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

Energy

A huge shift is underway from fossil fuels to renewables all across the world. This change is partially policy-driven, but increasingly now due to the economics of solar power, which is undergoing exponential growth. This transition may impact oil demand, supply and pricing and affect electricity generation or transport. The rate of the transition is uncertain.

Any change from traditional energy and transport systems represents both challenges and opportunities for Birla Carbon in terms of resilience and adaptation.

Circular economy

The circular economy is still emerging, but with increasing investment it is expected to be much more mainstream by 2030, with developments of tracking methods such as materials passports to enable proper reuse and recycling. Waste legislation is expected to tighten over this same period across the world.

This represents a future challenge for Birla Carbon if used tires cannot be landfilled or combusted. There is an increased preference for renewable, recyclable and "closed loop" materials. Companies are already applying various technologies to recover low-grade carbon black from old tires for use in low-end applications, something that we have also begun to research in collaboration with other material producers.

Water

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

Demographic shifts

Growing middle class

The popular definition of a growing middle class implies more consumption in emerging economies. However, it is important to note that this consumption may involve a significant divergence from the current Western model; premature deindustrialization is already visible in some African and Asian countries. These changes may be boosted further by automation and reshoring, leading to a different, less affluent model of "middle class" that is much more frugal and prioritizes access over possession, for example, access to a car on demand, rather than ownership.

For Birla Carbon, the fact that a rising middle class may not mean a rise in consumption is a challenge. Innovation could favor the design of low-tech and durable consumer goods, reducing the need for carbon black.

Millennial consumption patterns

A new model of living that prioritizes access over ownership is emerging. This lifestyle is driven strongly by the millennial generation, who are at ease with technology, have more sustainability-centered values and are to some extent unable to access the prosperity of previous generations. A key indicator of this is in 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.

Disruptive innovation

Future of mobility

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

Smart cities and urban mobility

Technology is increasingly being designed to lower carbon emissions while improving infrastructure services, public health and wellbeing outcomes. There is a growing demand for walkable and bikeable cities, with visible efforts worldwide to reduce congestion through reduced car use. 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.

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To meet our vision, we have reviewed and adapted our key performance indicators (KPIs) and extended our targets to FY2030.

In FY2018, we revised our waste KPI, added new KPIs for employee engagement and customer satisfaction and extended our safety KPI to include contractors as well as permanent employees.

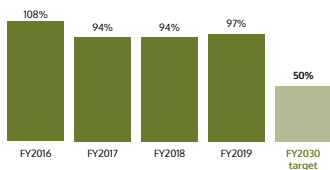
In FY2019, we continue to work to meet the targets we set in relation to these updated KPIs.

Our targets and progress



Water

Reduce our water withdrawal intensity ($m^3/t_{\text{carbon black}}$) by 50% against FY2013 baseline for our sites at high risk¹ for availability or accessibility of water or those reliant on groundwater

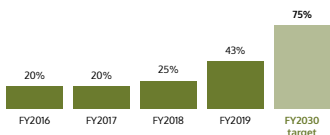


Behind schedule

¹ KPI includes Hickok, Cubatão, Gummidipoondi, Alexandria, Weifang and Bahia.

Water

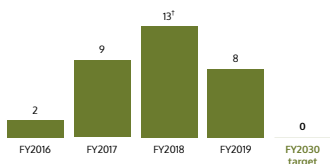
Repurpose 75% of waste



On track to meet target

Environment

Record zero environmental releases year on year

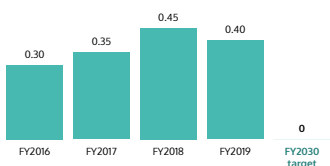


On track to meet target

¹ 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.

Safety

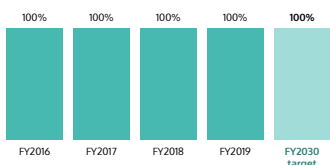
Zero recordable injuries (report on Total Recordable Incident Rate progress – TRIR)



On track to meet target

Talent development

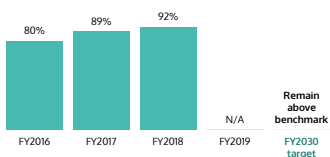
100% of Birla Carbon managers to have stated and measured goals set annually



Target met and retained

Employee engagement

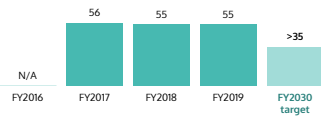
Remain above the chemical industry benchmark for employee engagement



Target met and retained

Customer loyalty

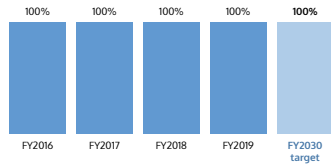
Remain above the Net Promoter Score threshold of 35



Target met and retained

Community engagement

100% of our facilities to participate in community engagement



Target met and retained

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We take pride in the recognition we receive for our achievements on our journey towards Sustainable Operational Excellence. Here are some of the awards Birla Carbon has received.



Global

EcoVadis recognized Birla Carbon with a Gold rating for advanced sustainable practice

ICBA awarded gold awards to 11 Birla Carbon plants and one R&D laboratory for industry-leading safety levels



Brazil

Top Rubber Award from *Borracha Atual* magazine (as voted for by readers)



India

Corporate Governance and Sustainability Vision Award 2018 from Indian Chamber of Commerce

Certificate of Appreciation at the Prestigious BML Munjal Awards for Learning and Development to achieve Business Excellence



Gummidipoondi, India

Three National Quality Circle Convention Awards in India

Eminent Award for Outstanding Contribution in Corporate Social Responsibility from nongovernmental organization Ek Kaam Desh Ke Naam



Santander, Spain

Best Energy Improvement Project 1st Place Winner in ABG STRIDE (Successful Transformation & Recognition of Inspiring Development in Energy Efficiency) competition

FEIQUE 2018 Safety Award



Yeosu, South Korea

Excellent Safety Management Company Award from Yeosu City

Excellent Climate Change Response and Greenhouse Gas Emission Management Company 2018 Award from the Korean Ministry of Trade, Industry and Energy



Alexandria, Egypt

Pioneer Business for Sustainability Development 2018 Award from the Federation of Egyptian Industries/Environmental Compliance Office and Sustainable Development



Trecate, Italy

Singular Female Company Award for Local Chamber of Commerce



Birla Carbon's sustainability work wins Gold

Corporate Social Responsibility Rating 2018: Gold

In FY2019, Birla Carbon was once again recognized by EcoVadis with a Gold rating for advanced sustainable practice for the third consecutive year.

With an overall score of 71, which puts us in the top 1% of over 55,000 suppliers surveyed, Birla Carbon led the way in three out of four sustainability indicator areas:

- Environment – top 3%
- Labor & Human Rights – top 2%
- Ethics – top 2%

Our score on Sustainable Procurement has room for improvement, and this is one of our primary focus areas for the coming months.

We believe that we have achieved this success through dedication, hard work and perseverance; the Gold rating is recognition of the success of our Sustainable Operational Excellence strategy.



At Birla Carbon, sustainability is a forward-looking exercise where we are continually looking into the future to evaluate what sustainability means to us and our partners in the long term. The EcoVadis recognition goes to show that our actions are on the right path of this evolution. The Gold rating and the improvement in our score with EcoVadis reflects our continued commitment to sustainability.

JOE GAYNOR

Chief Legal, Sustainability and Risk Officer

> [Sustainable Development Goals](#)



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Our seventh report draws on performance highlights from April 2018 to March 2019 (FY2019) and covers the full scope of our global operations. It contains a detailed analysis of our sustainability performance over the past year and highlights specific targets for the future.

As we strive to improve our sustainability efforts, we are constantly learning and developing. We welcome all suggestions and feedback from our stakeholders – including customers, employees and suppliers – as we work to fully embed sustainability at the heart of our business.

Sustainable Operational Excellence drives our continued progress across all aspects of sustainability and corporate responsibility. We produce our annual Sustainability Report to document our progress, successes and challenges in these areas, promote transparency and drive continuous improvement.

This report was approved by Birla Carbon’s Senior Management Team.

It has been produced in accordance with the Global Reporting Initiative (GRI) Standards at Comprehensive level. A GRI content index, including reference to the relevant Sustainable Development Goals, can be found here.

[↓ GRI Index](#)

Boundary

We have attributed each of our material issues to a relevant material topic outlined in the GRI Standards. Below we have outlined the boundaries for each of our topics. 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.

Governance and Ethics

Our material aspects	Material to stakeholders		Relevance outside the organization
	Internal	External	
Human rights performance	Yes	Yes	Human rights issues can occur along the supply chain, especially in countries identified as high risk.
Ethics	Yes	Yes	Ethical issues can occur along the supply chain and in the communities around our operations.
Governance framework	Yes	No	Not applicable.
Business continuity	Yes	Yes	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.
Global presence	Yes	Yes	Manufacturing and distribution footprint relative to customer locations, resources, suppliers, etc.

Our Product

Our material aspects	Material to stakeholders		Relevance outside the organization
	Internal	External	
Innovation	Yes	Yes	Innovating processes, technology and products to meet evolving market, regulatory and societal demands.
Product stewardship	Yes	Yes	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.

Environment

Our material aspects	Material to stakeholders		Relevance outside the organization
	Internal	External	
Energy	Yes	Yes	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.
GHG emissions and air emissions	Yes	Yes	Greenhouse gas (GHG) and other air emissions can be produced during extraction and transportation of raw materials from our suppliers and during distribution to customers.
Water	Yes	Yes	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.
Waste	Yes	Yes	Waste from our operations has the potential to impact the communities and environment around our operations if not managed appropriately.
Resource consumption	Yes	Yes	We use non-renewable feedstock from fossil origin, which has potential environmental impacts. These impacts can occur along the supply chain, from extraction to refinery and delivery to our production facilities.

Customers and Suppliers

Our material aspects	Material to stakeholders		Relevance outside the organization
	Internal	External	
Sustainable procurement	Yes	Yes	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.
Customer engagement	Yes	Yes	We aim to align with our customers' sustainability initiatives and goals.
Product consistency	Yes	Yes	Our customers require consistent quality from our products as this has an impact on their own operations and end products.

Our People

Our material aspects	Material to stakeholders		Relevance outside the organization
	Internal	External	
Health and safety	Yes	Yes	The safety of all people visiting our sites is of high priority. This includes guests such as customers, contractors and third-party partners.
Employee wellness	Yes	No	Not applicable.
Employee engagement	Yes	No	Not applicable.

Communities

Our material aspects	Material to stakeholders		Relevance outside the organization
	Internal	External	
Engagement	Yes	Yes	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.
Investments	Yes	No	Providing philanthropic support is critical to the development of local community organizations around our sites, including schools and health facilities. Our philanthropic activities also enable our employees to engage in events that give back to the communities in which they live, helping them develop skills and pride in their work.

Feedback

Feedback on our report is an essential component of our commitment to Sustainable Operational Excellence. 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