

ADITYA BIRLA



BIRLA CARBON

SHARE THE STRENGTH: WORKING TOGETHER FOR A SUSTAINABLE FUTURE

BIRLA CARBON
SUSTAINABILITY REPORT 2018





OUR APPROACH



GOVERNANCE AND ETHICS



OUR PRODUCT



ENVIRONMENT



CUSTOMERS AND SUPPLIERS

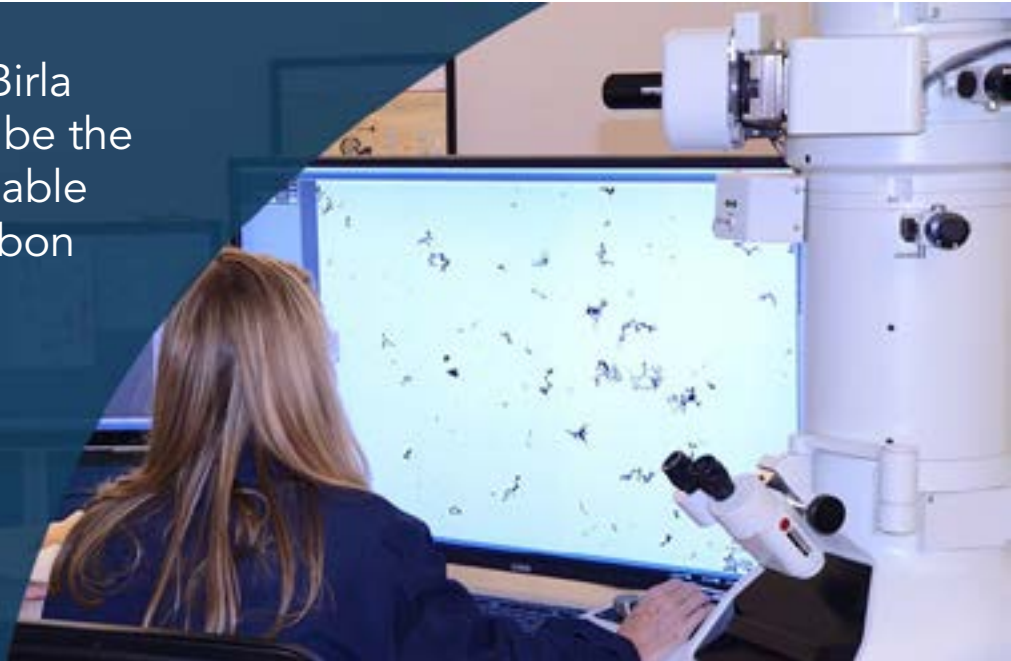


OUR PEOPLE



COMMUNITIES

Share the Strength: At Birla Carbon, our vision is to be the most respected, sustainable and dynamic global carbon black business.



DR. SANTRUPT B. MISRA
CHIEF EXECUTIVE OFFICER

“The way we see it, growth and sustainability can be interdependent in several aspects. At Birla Carbon, we have a responsibility to deliver the highest product quality while enhancing our overall impact and helping to improve the quality of life of the communities we serve. This is how we Share the Strength and this is why it is important to us. Our parent company shares this long-term view, so that we can innovate and invest in a sustainable future, together.”

We’ve been sharing our knowledge for over a century, forging new pathways and finding new solutions. From learning the true structure of carbon black to sharing best practices around the globe, we push beyond the known to create new techniques and applications.

Our aim to be the most respected, sustainable and dynamic global carbon black business is driven by our Sustainable Operational Excellence (SOE) strategy. SOE influences every decision, from designing and operating our plants to engaging with our customers, our employees and the communities where we operate.

SOE is driven by our action and influence on three key elements:



PEOPLE

We believe in supporting our employees and the communities that we interact with, enabling real and lasting social development.



PRODUCT

Our product is a key component of everyday life – it offers real social value, enabling many of the things we take for granted.



PROCESS

We embed sustainable thinking at every level to tackle increasing environmental and societal concerns and challenges.



Key highlights of our year

Only got a minute?

We are proud of our achievements in FY2018. Learn more about the milestones we have reached as we evolve our business through SOE.

Have a glance at our FY2018 key highlights.



Through a robust process of research and engagement, we have uncovered our company's purpose: to Share the Strength.



We were awarded a Gold rating from EcoVadis for the second consecutive year, noting our progress in fair business practices and sustainable procurement.



We successfully fulfilled our Water, Sanitation and Hygiene (WASH) pledge, increasing our rating from 1.77 out of 2 when we signed the pledge in 2015 to 1.93 in early 2018.



Our state-of-the-art greenfield facility began operating in Jining, China. It incorporates cutting-edge technologies and shares the strength of all that we have learned over the past decades.



We achieved a 98% response rate to our latest employee Vibes survey. Our overall employee engagement score was 92%, greatly exceeding our chemical industry annual benchmark target of 80%.



Our community engagement activities are framed by the broader work of the Aditya Birla Group. We primarily focus on good health, quality education, sustainable livelihoods and community infrastructure.



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Our Purpose: Share the Strength

At Birla Carbon, we've 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. [Read more](#)

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

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

SOE is our sustainability strategy. It influences every decision, from designing and operating our plants to interacting with our customers, our employees and the communities where we operate. As outlined in the [Birla Carbon Sustainability Policy](#), the three levers of our SOE strategy are:



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 reducing its environmental impact and ensuring that it 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 the energy generated by our manufacturing process.



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To achieve SOE, we...

engage with our stakeholders;
enable our people; and
take leadership through **action**.



At an operational level, our SOE strategy is managed through six operational focus areas:



Governance and Ethics



Our Product



Environment



Customers and Suppliers



Our People



Communities

We have [KPIs and aspirational targets to 2030](#), which measure our progress in achieving SOE for our most material issues.



How we are adapting for the future

To meet evolving regulations and increasing stakeholder expectations, we have aligned our efforts with the Aditya Birla Group's three-step agenda, which will help us continue to achieve sustainable operations over time.



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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DR. SANTRUPT B. MISRA
CHIEF EXECUTIVE OFFICER

“The past year, just like the ones before that, has been an exciting one for Birla Carbon as we completed our quest to excavate and formally embed our “Purpose” globally in the business. Perhaps we have been delivering this Purpose for generations, subconsciously.”

We will do it more consciously from now on, and in an aligned way. It’s been an insightful and inspiring process as we engaged with cross-sections of our people to deeply explore and bring to the surface who we are at the core and what drives us, so that we can all recognize, leverage and exemplify that purpose in the work we do together, every day.

Our Purpose, “Share the Strength,” describes who we have grown to be and the role we play in society – through the many strengths we’ve built and acquired so far and the new strengths we are continuously seeking and uncovering as we work with our customers, partners and employees. In doing so, we help them to discover their own strengths and reinforce the same goal.

Our history has always been about working collaboratively and building on ideas to create the next opportunity. We want to build further on that foundation by more deliberately embedding our Purpose in all our activities and interactions. A strength to us is at its relevant best when it is active, and it can be active only when it is shared with others to make others better too. Going forward, you will see an even more dynamic Birla Carbon focused on collaboration and engagement to rapidly share the strength. Our internal processes will focus to fuse our strengths that are spread in pockets in different parts of our business.

Our Purpose will also have a strong “outside-in” element. We will actively seek to learn from others’ strengths. We don’t have all the answers and we’re constantly trying to collaborate with others to find those answers. Within the carbon black industry and beyond, we share many of the same challenges. To really Share the Strength, we need to be more effective at communicating those needs to each other.

We hope to create a new magic at Birla Carbon through our Purpose to Share the Strength. People are excited and the leadership is committed. That is also our strength and we hope to share it more. We invite you all to join us in creating this new magic. Our success last year in leveraging our geographical advantage in Europe and Africa and our increased presence in China through our new world-class facility in Jining were positive signs of our new beginning.

I welcome you to our sixth Sustainability Report, covering FY2018, and invite you to see for yourselves the progress we have made.

Dr. Santrupt B. Misra
Chief Executive Officer



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JOHN LOUDERMILK CHIEF OPERATING OFFICER

“I’m very proud of the major strides we’ve taken in our sustainability journey in recent years – both across our own operations and our supply chain. This year, we celebrated the start-up of our new facility in China.”

With best-in-class processes and technologies, it complies with stringent environmental regulations that don’t come into play until 2020. We’re being held up as a model for environmental management in China – a beacon for other industrial players to visit and learn from. For me, this is a great example of our Purpose to Share the Strength.

As we’ve matured, we’ve become effective and efficient operators. Continuing to improve will require more innovative, step-change successes; we now need to step back and challenge ourselves further, to look at what’s possible, to foster innovation and experimentation at every level as we innovate new solutions with our partners and work to solve the complex challenges society faces.

Looking ahead, we’re strengthening our cross-functional collaboration. We are particularly focused on ensuring more of our customer-facing organization is constantly exploring the trends and needs of our customers and their markets, so that we can drive innovative solutions and enable our customers to meet their sustainability objectives.

To support this drive for innovation, we’re also increasing our appetite for risk in exploring new ideas and innovating. We believe that our greatest strength lies in developing a wide range of cutting-edge solutions, rather than just a few opportunities that are highly likely to succeed. In some cases, we may fail, but a challenge tested is an opportunity to learn and, ultimately, create and execute more life-changing ideas. If you look at our R&D investments, historically we have focused much of our effort on optimizing our plants and processes, and it’s delivered great results. Going forward, we’ll target a greater proportion of our investments towards research and innovation that will drive new solutions for the market, to offer a broader array of products and drive process innovation at a much higher pace.

It’s an exciting time – for our employees, our customers and their customers – and I look forward to seeing the results we can deliver when we work together to Share the Strength.

John Loudermilk
Chief Operating Officer



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JOE GAYNOR

CHIEF LEGAL, SUSTAINABILITY AND RISK OFFICER

“At its core, Birla Carbon’s business is extracting, modifying and utilizing carbon atoms to “Share the Strength” of carbon black with society. Capturing carbon comes with its challenges and we constantly test ourselves to lead the way and do it better than anyone else – both within our industry and beyond.”

What does that mean? It means ensuring we capture every single carbon atom in the process, it means finding ways to capture and use our by-products in the most valuable and sustainable way, and it means minimizing our use of natural resources to ensure we’re the most efficient operator. In short, we want to be the best stewards of carbon.

To truly be the best requires constant focus. We must continue to be innovation leaders. In 1941, we were the first company to build an industrial electron microscope and we shared that technology within our own industry and beyond. Today, we must help people understand the unique value of carbon black, and discover new ways it can be used to improve people’s lives. We continue to develop long-term relationships and strive to be the partner of choice for our customers. Going forward, we must continue to actively listen to all of our stakeholders to ensure everyone is heard, to learn together, and to build familiar bonds that foster mutual and continuous improvement.

Operating sustainably means balancing many challenges and priorities. We continue to achieve world-class safety performance, but there is even more we can do. We’re exploring innovative ways to minimize our environmental impact and making significant investments in air emission abatement equipment and energy recovery technologies. But these investments require a holistic approach. One challenge is how we deal with the waste by-products of pollution control. Another is the need to balance the water and energy consumption of new technologies. We’re investigating exciting opportunities such as pollution control equipment that utilizes the circulation of seawater in order to significantly reduce the waste by-products of air emissions control processes. We believe the potential for technology like this to reduce our environmental impact and that of our entire industry is huge. Looking to the future, we believe there are many more opportunities to Share the Strength, and we are determined to uncover them.

Joe Gaynor

Chief Legal, Sustainability and Risk Officer



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Discovering who we are

In FY2018, we worked with an independent consultant to implement a robust process to uncover Birla Carbon's core purpose. We began by carrying out an in-depth review including 27 stakeholder interviews, 539 surveys, more than 60 corporate and historic documents, and engagement of external and internal subject matter experts. We used what we learned to articulate our purpose and supporting principles.

Our Purpose: Share the Strength

Share: Our global collaborations focus on what we can do for our customers, and their 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.

The Strength: 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 our customers and communities.



Compound Knowledge

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



Beyond Durable

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



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Our key sustainability issues

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, in determining their boundaries, we consider both their internal and 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 (HSE) metrics, while qualitative analysis focuses on customer feedback and community input about the issues that matter to these groups. The SSC reviews each issue for materiality 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 Global Reporting Initiative (GRI) Principles 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 result of the process is approved by the Chief Legal, Sustainability and Risk Officer, Joe Gaynor, on behalf of Birla Carbon's [Senior Management Team \(SMT\)](#).

The issues listed on the following page 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.



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Our material issues



Governance and Ethics



Product Responsibility



Environment



Customers and Suppliers



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Major



[Ethics](#)
[Business continuity](#)



[Product stewardship](#)
[Product consistency](#)



[Energy](#)
[GHG](#)
[Water](#)



[Sustainable procurement](#)



[Safety](#)
[Employee engagement](#)

Significant



[Human rights](#)



[Innovation](#)



[Waste](#)



[Global presence](#)



[Customer engagement](#)



[Community engagement](#)

Moderate



[Governance framework](#)



[Air emissions](#)



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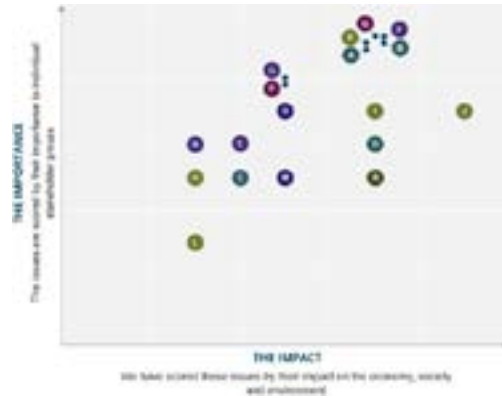
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Explore which issues are of the greatest importance to each of our stakeholder groups:

Overall average



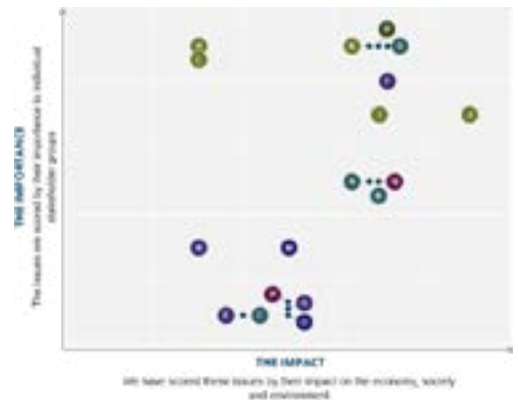
Customers and suppliers



ABG and employees



Community



NGOs and regulators



GOVERNANCE AND ETHICS

- A Business continuity
- B Ethics
- C Governance framework
- D Human rights

OUR PRODUCT

- E Innovation
- F Product stewardship
- G Product consistency

ENVIRONMENT

- H Air emissions
- I Energy
- J GHG
- K Water
- L Waste

CUSTOMERS AND SUPPLIERS

- M Customer engagement
- N Global presence
- O Sustainable procurement

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- P Employee engagement
- Q Safety

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- R Community engagement



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



Governance and Ethics



Business continuity

The ability to meet customer supply requirements, despite negative or damaging events.



Ethics

Ensuring labor and fair business practices, including anti-corruption, anti-competitive behavior, antitrust and collective bargaining, among others.



Governance framework

Our management structure, including policies, standards, compliance mechanisms and world-class manufacturing processes.



Human rights

Maintaining full respect for economic, social and cultural rights, including no child labor, fair wages and decent working conditions.



Our Product



Innovation

Developing our processes, technology and products to meet the evolving market, regulatory and societal demands.



Product stewardship

Proactive care to ensure our products reach high standards, incorporating health, safety, environmental and regulatory considerations in our product development and maintenance.



Product consistency

Our efforts to guarantee that our product continues to meet high quality standards while meeting market demands.



Environment



Air emissions

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



Energy

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



GHG

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



Water

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



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.



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Customers and Suppliers



Customer engagement

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



Global presence

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



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



Employee engagement

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



Safety

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



Communities



Community engagement

Building, nurturing and managing relationships with the communities we impact by understanding and responding to their expectations.

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 matrix.



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Sustainable Development Goals



We first mapped the United Nations' Sustainable Development Goals (SDGs) to our business in FY2016. Below, we set out the SDGs as they apply to the three key levers of our Sustainable Operational Excellence strategy, which are People, Product and Process.

PEOPLE

We support the SDGs through the direct and indirect jobs we create as a global employer. With our support, our people actively engage with local communities, helping to address needs. Our people and communities have an impact on the following SDGs:



No poverty

Through our community activities, we support inclusive and gender-sensitive approaches, including social support and education.



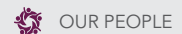
Zero hunger

Our community engagement programs in India include supporting small-scale agriculture by investing in infrastructure, financial support and training for farmers.



Good health and well-being

We provide health support through our community activities, such as providing access to vaccines where needed and access to doctors.



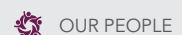
Our commitment-based safety approach encourages employees to make commitments to their own health and wellbeing, including safe driving into and out of plants.

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



Quality education

As a member of the Aditya Birla Group and its commitment to education, Birla Carbon provides education support through community activities across all regions where we operate.



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



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PEOPLE continued



Gender equality

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

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



OUR PEOPLE
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Clean water and sanitation

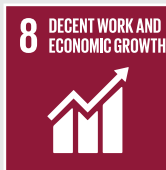
Water, Sanitation and Hygiene (WASH) is a priority for us; we signed the WASH pledge in 2015 and have been growing in our commitment year on year.

We successfully fulfilled our WASH pledge in FY2018. Birla Carbon had a WASH rating of 1.93 out of 2 in early 2018, compared to 1.77 in 2015 when we signed the pledge.

A total of 143 awareness campaigns and training sessions have been delivered at Birla Carbon plants and 53 action plans created. So far, 46 of these action plans have been completed.



OUR PEOPLE
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Decent work and economic growth

We offer employment and career development opportunities across all regions.

We believe that the educational component of our community engagement work both reduces youth unemployment and leads to productive job creation.

The health and safety of our people is a priority that underpins our work.

Our new plant in Jining, China, has created over 80 full-time positions and 70 contract positions.

Elsewhere, development opportunities are relatively limited geographically and in terms of seniority.

We must ensure that our people leave work each day as healthy as when they arrive.



OUR PEOPLE
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Reduced inequalities

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

We could open our apprenticeships to more people around the world.

Due to the nature of our business and our industry as a whole, our operations could be more diverse.



OUR PEOPLE
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Partnerships for the goals

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

We can strengthen our engagement.



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PRODUCT

Carbon black enables sustainable development through its many applications, helping make products safer and longer lasting. Carbon black and its applications have an impact on the following SDGs:



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

OUR PRODUCT



- Decent work and economic growth**
- Carbon black ensures greater resource efficiency, which in turn promotes economic growth.

OUR PRODUCT



- Industry, innovation and infrastructure**
- Our product helps by supporting the development of quality, reliable, sustainable and resilient infrastructure, and in the promotion of inclusive and sustainable industrialization.

OUR PRODUCT

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

Our aim is to support and facilitate sustainable and resilient infrastructure development in developing countries with carbon black, and support the development of local technology, research and innovation.



- Reduced inequalities**
- Carbon black plays an important role in technology, giving people greater access to transport and communication. It also ensures products that contain it last longer.

OUR PRODUCT



- 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.

OUR PRODUCT

Our product also enhances sustainable urbanization and reduces the adverse per capita impact of cities.



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Responsible consumption and production
Carbon black helps society become more efficient in its use of resources, facilitating consumption and production.

The life cycle of our product and its inherent qualities prevent its recyclability in certain products, including packaging.

OUR PRODUCT



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

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PROCESS

Our processes ensure that we minimize our impact on natural resources and produce carbon black efficiently and in an ethical manner. Through our processes, we have an impact on the following SDGs:



Clean water and sanitation
We monitor our water use and recycle and reuse as much as possible. We have recently implemented a more detailed water risk assessment approach, designed to give us a site-specific performance appraisal.

We are still developing our understanding of our impacts to devise appropriate mitigation plans.

ENVIRONMENT



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 either in our plants or sold to the grid. Globally, we are energy positive.

Our feedstock is still essentially of fossil origin.

ENVIRONMENT



Responsible consumption and production
We support responsible consumption and production by ensuring that our feedstock comes from suppliers close to our facilities, who we have started to 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. We annually report on our sustainability efforts.

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Our feedstock is a limited and non-renewable resource, which in the long term may have an impact on our consumption.

We are still in the process of developing more responsible procurement practices.



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Climate action

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

Our operations continue to generate emissions, whose reduction we are working on.

ENVIRONMENT



Peace, justice and strong institutions

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

We are still in the process of making our supply chain more robust.

GOVERNANCE AND ETHICS



Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, including our suppliers, regulators and governments.

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Responsible stewardship

Our industry leadership is built on responsible stewardship; it gives us our license to operate. That is why responsible stewardship is the first step in our sustainability strategy. We constantly analyze our operations to maximize the efficient use of resources and minimize any potentially adverse impact on the environment, our employees and local communities. The health and safety of our people is a key priority.

We have made significant progress in recent years; as we have grown, we have matured. We continue to hold ourselves to the highest standards in our work, including ensuring that our operations have a minimal impact on the environment and communities around us.

For more information on what we do, read our [Compliance](#) section.

Birla Carbon's sustainability work wins Gold

In August 2017, Birla Carbon was once again recognized by EcoVadis with a Gold rating for advanced sustainable practice for the second consecutive year.



With an overall score of 71%, which puts us in the top 1% of over 40,000 suppliers surveyed, Birla Carbon led the way in three out of four sustainability indicator areas:

- Environment – top 2%
- Labor Practices – top 1%
- Fair Business Practices – 1%

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 (SOE) 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



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Stakeholder engagement

To share the strength, we engage and collaborate across cultures and around the globe, because progress is built on the learnings of others. We are stronger when we work together, sharing our knowledge and making new experiences out of new and old ideas.

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 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. It is by engaging with our stakeholders that we can help them while creating and sharing value.

Our stakeholder groups include:

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

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

| | How we engage | Examples in FY2018 |
|------------------|--|---|
| Customers | <p>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.</p> <p>Our Global Engagement Managers (GEMs) engage with customers regularly through our Key Account Management (KAM) program.</p> | <p>We perform satisfaction surveys using the Net Promoter Score® (NPS®) methodology, through which we compare our performance with our peers.</p> <p>We hold periodic customer dialogue events, through which we align our sustainability strategy with our partners.</p> |



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| | How we engage | Examples in FY2018 |
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| Employees | Our employees provide us with feedback through biannual 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. | <p>We conducted our latest Team Vibes survey in September 2017, achieving a 98% response rate. The results show significantly increased engagement scores over FY2016 across the parameters of leadership, and manager and team effectiveness. Areas that require focus in the coming years to drive continuous improvement include recognition and communication between departments.</p> <p>We carried out our second One Voice employee survey in April 2017, covering 100% of employees.</p> <p>As of FY2018, all our employees have safe access to Water, Sanitation and Hygiene (WASH).</p> |
| Suppliers | 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. | <p>Our Code of Ethics includes contractual terms and conditions that we expect every supplier to sign up to.</p> <p>We review our global feedstock suppliers and encourage our suppliers to audit our own operations. In FY2018, we worked on a new supplier due diligence system.</p> |
| Aditya Birla Group | Our parent company, the Aditya Birla Group, follows a three-step sustainability agenda: responsible stewardship, stakeholder engagement and future-proofing. | <p>We have aligned our sustainability strategy with the Group's three-step agenda.</p> <p>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.</p> <p>We also participate in the annual ABG Sustainability Conference and Group-wide working groups such as the ABG Water Working Group, which we lead, and the ABG Waste Working Group.</p> |
| Communities | 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. | See our Communities section, where we describe our community engagement in greater detail. |



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How we engage

NGOs, civil society, academics

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 FY2018

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 \(SLF\)](#), a group representing business leaders from a range of industries who share knowledge on common sustainability issues affecting their business.

As part of the wider dialogue on how companies can help achieve global sustainability targets, we have aligned our SOE strategy to the United Nations [Sustainable Development Goals \(SDGs\)](#).

Many of our facilities are involved in local chemical industry associations. For example, in Brazil we participate in several Brazilian Chemical Industry Association (ABIQUM) committees covering topics such as health and safety, sustainability, emergency response and the environment.

Our Corporate Risk Manager participates in the [Risk Management Society \(RIMS\)](#) Atlanta Chapter in the USA and their annual conference, which provides education and engagement opportunities for risk professionals.

Our Corporate Health and Safety Managers participate in the American Society of Safety Engineers, the largest professional safety society in the world. In FY2018, we presented at the Region IV Professional Development Conference where we shared our experience around safety perception surveys. We also presented at the GDS Health, Safety and Environmental Summit.



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SHARE THE STRENGTH

Engaging employees on sustainability

In May 2018, we carried out our first survey of employees to understand how they perceive sustainability and their level of awareness of sustainability issues, in order to inform our future activities.

Around a third of colleagues globally took part in sharing their views on sustainability, with 60% of respondents being based in our production facilities – demonstrating the widespread commitment to supporting sustainability.

The results showed that, of those who completed the survey:

- 98% agree that it is important to think in terms of sustainability;
- 97% consider that they have a general understanding of sustainability;
- 84% of respondents perceive Birla Carbon as a leader in terms of sustainability; and
- 84% read the sustainability report at least selectively.

Using the insights gained through the survey, we are now in the process of preparing an e-learning module that builds understanding of our key sustainability issues among all our employees.

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Future-proofing

The third stage of our SOE journey demands that we look to the future to effectively adapt to the planetary and social megatrends and build the resilience of our global business. We use horizon scanning and scenario planning to identify the 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 NGO, 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 FY2018, 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 our operations to be sustainable for the short to medium term.

The megatrends that could affect Birla Carbon

Although our analysis of key global megatrends is at a preliminary stage, 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. The Paris Agreement committed developed nations to achieve zero net emissions by 2035, and developing nations to reach zero net emissions by 2050. This entails a massive shift in the global energy system, affecting transportation, electricity generation and heating. Governments are increasingly considering radical policy. The conventional expectation is that regulation in this area will become increasingly strict.

Any change to transportation regulations will have a real 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 ingredients that improve efficiency may be 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 is squeezed. While there is certainly strong growth potential in USA shale oil, it currently represents less than 5% of global supply and is not thought to be able to scale up to match the projected decline in conventional oil over the period.

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.



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Energy

A huge shift is underway from fossil fuels to renewables in both rich and developing nations. 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 nascent, but with increasing investment it is expected to be much more mainstream by 2030, with 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.

Water

This is a key area for all industry – 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 experience, 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, which could reduce 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 challenge for Birla Carbon.



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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 they 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, 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 push for walkable and bikeable cities, with visible efforts worldwide to reduce congestion by shifting away from 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 up until FY2030. This year, 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.

Our targets and progress

➔ On track to meet target ➘ Behind schedule N New target ✓ Target met and retained

Business Continuity/Reputation

Maintain our leadership position in terms of carbon black production capacity

No.2
Leadership position
Target: No.1

Business Continuity

Approximately double our annual capital spending against FY2012 baseline to reach \$100M

\$137M
Annual capital spending
Target: >\$100M

Ethics

100% of employees to receive Code of Ethics training

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|--------|--------|---------------|
| Value | 100% | 100% | 100% | 100% |

Air Emissions

Reduce our direct emission intensity (tCO₂/t_{carbon black}) by over 22% against 2005 baseline

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|--------|--------|---------------|
| Value | 90.2% | 90.1% | 92.9% | <78% |

Energy

Increase our absolute energy conversion efficiency to 80%

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|--------|--------|---------------|
| Value | 71.0% | 72.6% | 72.4% | 80% |

Water

Reduce our water withdrawal intensity (m³/t_{carbon black}) by 50% against FY2013 baseline² for our sites at high risk for availability or accessibility of water or those reliant on groundwater

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|--------|--------|---------------|
| Value | 108% | 94% | 94% | 50% |

Product Stewardship

Record zero environmental releases year on year

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|----------------|-----------------|---------------|
| Value | 2 | 9 ³ | 13 ³ | 0 |

Waste

Repurpose 75% of waste by 2030

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|--------|--------|---------------|
| Value | 20% | 20% | 25% | 75% |

Safety

Zero recordable injuries (report on TRIR progress)

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|--------|--------|---------------|
| Value | 0.30 | 0.35 | 0.45 | 0 |

Employee Engagement

Remain above the chemical industry benchmark for employee engagement

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|--------|--------|------------------------|
| Value | 80% | 89% | 92% | Remain above benchmark |

Customer Loyalty

Remain above the Net Promoter Score (NPS) threshold of 35

| Year | FY2016 | FY2017 | FY2018 | FY2030 target |
|-------|--------|--------|--------|---------------|
| Value | N/A | 56% | 55% | 35% |



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| | Performance | | | Progress towards target | Target FY2030 |
|--|----------------------|----------------------|-----------------|-------------------------|-------------------------|
| | FY2016 | FY2017 | FY2018 | | |
| Business Continuity/Reputation Maintain our leadership position in terms of carbon black production capacity | No. 2 | No. 2 | No. 2 | | No. 1 |
| Business Continuity Approximately double our annual capital spending against FY2012 baseline to reach \$100M | \$69.4M ¹ | \$54.9M ¹ | \$137M | | >\$100M |
| Ethics 100% of employees to receive Code of Ethics training | 100% | 100% | 100% | | 100% |
| Air Emissions Reduce our direct emission intensity (tCO ₂ /t _{carbon black}) by over 22% against 2005 baseline | 90.2% | 90.1% | 92.9% | | <78% |
| Energy Increase our absolute energy conversion efficiency to 80% | 71.0% | 72.6% | 72.4% | | 80% |
| Water Reduce our water withdrawal intensity (m ³ /t _{carbon black}) by 50% against FY2012 baseline ² for our sites at high risk for availability or accessibility of water or those reliant on groundwater | 108% | 94% | 94% | | 50% |
| Waste Repurpose 75% of waste by 2030 | 20% | 20% | 25% | | 75% |
| Product Stewardship Record zero environmental releases year on year | 2 | 9 ³ | 13 ³ | | Zero releases each year |
| Safety Zero recordable injuries (report on TRIR progress) | 0.30 | 0.35 | 0.45 | | 0 |
| Employee Engagement Remain above the chemical industry benchmark for employee engagement | 80% | 89% | 92% | | Remain above benchmark |
| Customer Loyalty Remain above the Net Promoter Score (NPS) threshold of 35 | N/A | 56 | 55 | | Remain above 35 |
| Community Engagement 100% of our facilities to participate in community engagement | 100% | 100% | 100% | | 100% each year |

1 Baseline adjusted to FY2013 instead of FY2012.

2 KPI adjusted to include Hickok, Cubatão, Gummidipoondi, Alexandria, Weifang, Bahia and Yeosu, and to exclude Anghong, Trecate, Santander, Renukoot. Baseline adjusted to FY2013 from FY2012 due to more comprehensive and validated data availability for FY2013.

3 The increase in environmental releases is due to our voluntary decision to report releases which are even below regulatory requirements for our plants with communities in close proximity. The number of releases would have been two if reported following the same methodology as FY2016.



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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.



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

Brazil



Three National Quality Circle Convention (NQCC) Awards in India

Gummidipoondi



Asia Best CSR Practices Award 2017

Gummidipoondi



Eminent Award for Outstanding Contribution in CSR awarded by NGO Ek Kaam Desh Ke Naam

Gummidipoondi



Best Welfare Practices 2017 by the Directorate, Industrial Safety and Health (DISH), Raigad district, Government of Maharashtra, India

Patalganga



Corporate Governance and Sustainability Vision Awards 2018 by Indian Chamber of Commerce

India



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

India



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

Santander



Singular Female Company Award from Local Chamber of Commerce

Trecede



Excellent Safety Management Company Award from Yeosu City

Yeosu



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

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Our sixth report draws on performance highlights from April 2017 to March 2018 (FY2018) 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, we are constantly learning. 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 and challenges in this area, 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 Comprehensive level. A GRI content index, including reference to the relevant [Sustainable Development Goals](#), can be found [here](#).

Boundary

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

| Our material aspects | Material to stakeholders | | Relevance outside the organization |
|------------------------------|--------------------------|----------|---|
| | Internal | External | |
| Governance and Ethics | | | |
| 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 | | | |
| 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. |



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| Our material aspects | Material to stakeholders | | Relevance outside the organization |
|--|--------------------------|----------|---|
| | Internal | External | |
| Environment | | | |
| 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 transport 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 it is 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 | | | |
| 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 global and regional suppliers. |
| Customer engagement | Yes | Yes | 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 | | | |
| 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 | | | |
| 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 | Yes | Providing philanthropic support is critical to the development of local community organizations around our sites, including schools and health facilities. This can positively impact local people. Our philanthropic activities also enable our employees to engage in events that give back to the communities in which they live, which can help them develop skills and pride in their work. |



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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



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It's 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.



BIRLA CARBON PURPOSE PRINCIPLE CHALLENGE TESTED

"Each day, as individuals and as a company, we rise to the challenge and deliver a better way – a better way to keep our product moving, a better way to come together for our customers and communities. That commitment to each other's growth, and to social good, is in our DNA."

We embed ethics across our entire business, preparing for adverse conditions and sharing best practices.



Full adherence to ethics

100% of active employees annually complete and sign our Code of Ethics training.



Sharing best practices

505 operational best practices implemented through the World Class Manufacturing group (FY2017: 453).



Investing more in technology

\$14.2 million invested in state-of-the-art technology to enhance our performance (FY2017: \$21 million).



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505

best practices implemented through the World Class Manufacturing group.

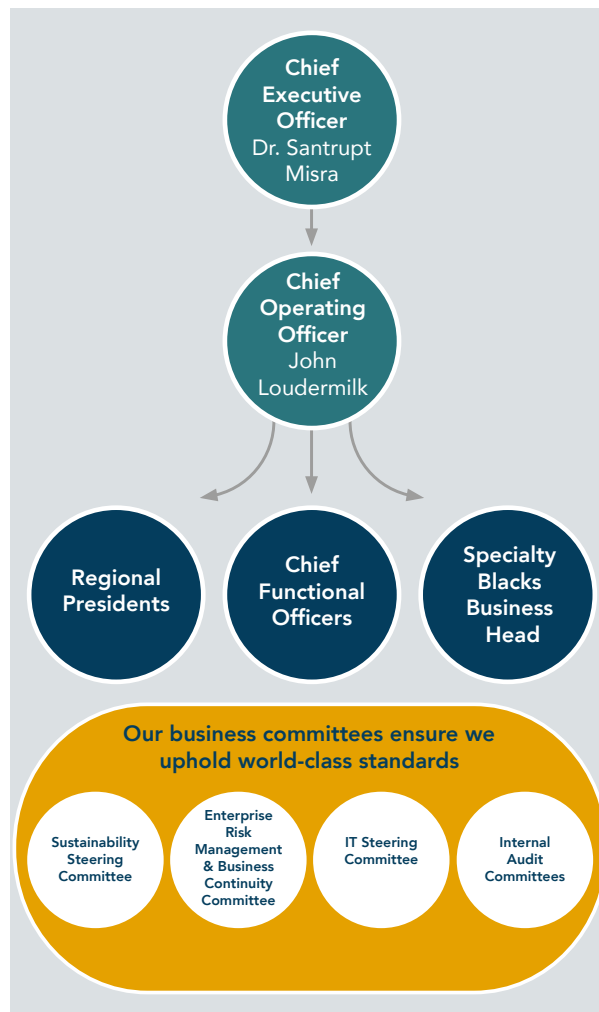
Governance

Our success depends on strong, effective and responsive management of our global operations. We support regional autonomy, which allows for efficient decision-making that is responsive to local needs and effective communication between global functional leaders. This structure also enables sharing and implementation of best practices and integration of Sustainable Operational Excellence throughout Birla Carbon.

How is our governance organized?

Our agile and streamlined governance system enables us to react quickly to challenges and build a stronger, more transparent company. Each of the legal entities that comprise Birla Carbon is 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.



Within this structure, the Chief Sustainability Officer's (CSO) role is twofold: 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 their business decisions.



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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, fulfilled through the annual Sustainability Report, quarterly meetings with the SMT, and through ad hoc communications to 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 Analyst, subject matter experts, employees with relevant expertise and occasional third-party advisors.

Through these working groups, we identify areas of opportunity for integrating sustainability further into the business and develop action plans for implementation. The working groups maintain contact throughout the year and meet 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.

| Key topics discussed by the SSC in FY2018 | Decisions made | Impact on business |
|--|---|---|
| Governance and Ethics | | |
| To review and refresh existing policies and approve new policies where relevant | Discussed and approved policies on: Sustainability; Product Stewardship; Supply Chain and Procurement; Human Rights; Energy and Carbon; Environmental Management; Health; Water Stewardship; and Transportation. | Clear and effective policies ensure everyone who works with, or on behalf of, Birla Carbon understands the standards and commitments we expect. |
| Customers and Suppliers | | |
| Customer engagement | Introduce customer satisfaction KPI based on NPS®. | We aim to develop long-term relationships with our customers. |
| Supplier risk assessment | To implement 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 | | |
| Solid waste management | Re-evaluated materiality of hazardous waste KPI. The decision was to drop it and to focus on management through implementation of HSE Waste Standard while also maintaining the KPI for the percentage of waste repurposed. | We seek to drive improvements around key stakeholder concerns. |
| Water risk assessment | Updated and developed water flow diagrams for all medium- and high-risk sites. | |
| Energy and emissions KPIs | Extended KPIs to 2030 and evaluated challenges in meeting goals. | |



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| Key topics discussed by the SSC in FY2018 | Decisions made | Impact on business |
|---|--|--|
| Our Product | | |
| 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 | | |
| 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. |

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 FY2018, 33 audits were conducted, covering both global and region perspectives. Twenty-six were global audits and focused on Sales and Marketing, Procure to Pay, Fixed Assets, IT Security Awareness, Insurance and Enterprise Risk Management (ERM) processes. The remaining seven audits were region-specific and covered Inventory, Projects and IT Controls. Results were shared with the SMT; the Risk Committee is updated quarterly on the implementation progress of the related management action plans.

Enterprise Risk Management and Business Continuity Committee

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

ERM Committee

The Enterprise Risk Management Committee (ERMC) was restructured in February 2018. It now includes the entire Senior Management Team and will meet twice annually as part of the quarterly SMT meetings. In addition to regular agenda items, each regional president will discuss two risks impacting their region, including potential impacts, mitigation strategies and business continuity planning. The ERMC approved a revised framework document during its February meeting which clearly outlines the roles and responsibilities for enterprise risk management.



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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 ISO 22301. The BCMS guides recovery strategies for our most crucial processes and activities to ensure the continuous supply of carbon black to our customers. We continue this effort through FY2018 into FY2019. Several regions held intensive business continuity planning workshops, using the information gained to standardize business continuity planning processes globally and ensure a thorough risk identification and assessment process, with each critical business risk accompanied by a comprehensive business continuity plan. 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 as part of the ERMC meetings.

IT Steering Committee

Established in FY2018, the role of the IT Steering Committee is to ensure we leverage the potential offered by the latest innovative technology and provide governance and oversight to ensure IT strategy and integration is aligned with business and sustainability goals. The IT Steering Committee 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.

World Class Manufacturing: empowering our people and sharing best practices

We expect our facilities to reach the highest standards – both externally and internally. One internal certification is the Aditya Birla Group's corporate World Class Manufacturing (WCM) standard. The WCM initiative promotes and supports the highest standards in manufacturing and production. Its framework deals with all aspects of business excellence, focusing on leadership, stakeholders, operational and financial performance, customers and markets, processes, employees and society.

WCM began in the Aditya Birla Group in 1996, and has since matured, allowing all our sites to gain a greater understanding of the significance of business excellence. Five plants were included in the Chairman's WCM award process in FY2018 and all achieved silver level certification (Patalganga, Renukoot, Weifang, Yeosu and Santander). These award-winning plants and previous award winners are working towards achieving higher levels of accomplishment, while others incorporate WCM concepts in their day-to-day operations.

Fifty-two new best practices in supply chain management and systematic improvement were implemented in FY2018, bringing the total to 505.

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



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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 a single source of truth for our global business. This means we can be confident in the information which we base our decisions on, and which we share with our customers.

From an infrastructure perspective, we must ensure a high level of performance and security, while at the same time implementing best practice standards across all our businesses and sites during the collection, analysis and sharing of data.

We have established a robust IT organization, led by the IT Steering Committee, that is focused on driving technology optimization across everything from procurement and manufacturing to logistics and customer invoicing. Managing cybersecurity is a vital priority as we strive to deliver a secure environment for our employees, our customers and all our stakeholders.

We've made some significant strides in the past five years. One of the key initiatives was to establish a single Enterprise Resource Planning (ERP) system through which we can manage our processes and function 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 our solutions by taking a step-wise view 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

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16 PEACE, JUSTICE AND STRONG INSTITUTIONS



Peace, justice and strong institutions

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



28

calls received through our hotlines.

Ethics

Achieving our purpose depends on our 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 support 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 of our employees, contracted workers and external partners to do the same.



Our five key values, aligned to the Aditya Birla Group, drive everything we do: Integrity; Commitment; Passion; Seamlessness; and Speed.

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, as well as anti-money laundering.



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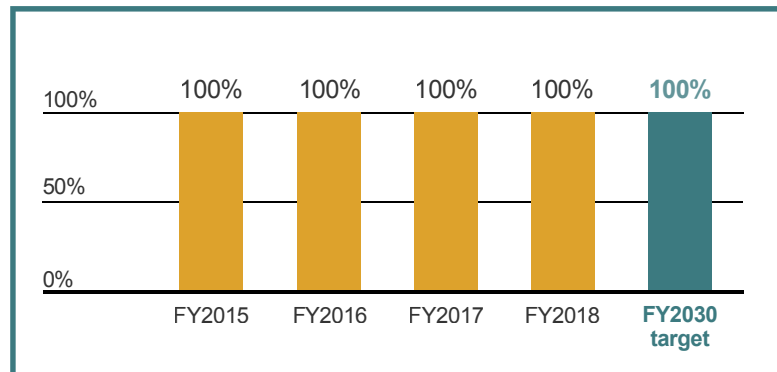
Ethics

Compliance

Progress towards target



Target: 100% of active employees to receive Combined Code of Ethics training.



| FY2015 | FY2016 | FY2017 | FY2018 | FY2030 target |
|--------|--------|--------|--------|---------------|
| 100% | 100% | 100% | 100% | 100% |

Human rights

Human rights are of increasing importance for all businesses and we recognize the valuable role we can play in the protection of human 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, including our supply chain, and 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 at every level of Birla Carbon to ensure our commitment to human rights is applied to all our business activities. We strive to comply with 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 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. It covers key issues such as due diligence, employee and stakeholder engagement, diversity and equal opportunities, and forced and child labor.

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 FY2018, no allegations of corruption were raised.



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Grievance measures

We require our employees to voice any concerns or grievances they have about our operations, our employees or our products, and we expect contractors and suppliers to do the same. To this end, we provide reporting channels to enable 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.

Grievance measures



| | FY2017 | FY2018 |
|--|--------|--------|
| Hotline calls (total) | 5 | 28 |
| Calls investigated | 4 | 19 |
| No further action needed | 4 | 14 |
| Resolved through collective bargaining | 0 | 0 |
| Disciplinary actions | 0 | 5 |
| Formal community grievances | 0 | 0 |

Labor, human rights and environment grievances



| | FY2017 | FY2018 |
|---|--------|--------|
| Labor grievances at the local level | 16 | 16 |
| Labor grievances resolved | 13 | 15 |
| Human rights grievances filed and resolved | 6 | 0 |
| Environmental grievances filed and resolved | 1 | 0 |



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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 FY2018, the number of unionized Birla Carbon sites was 75%. If conflict issues occur, we have communications and conflict resolution measures in place for our employees to make their concerns known.

Suppliers

Not only do we enjoy our company, but the company we choose to keep. 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 can demonstrate responsibility and transparency. All major suppliers receive a copy of our Code of Ethics in their own language; 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.

[Read more](#) on how we engage with our suppliers on ethical issues.



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100%

operating manufacturing plants certified to ISO 14001 and 44% to ISO 50001.

Compliance

Our license to operate is founded 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 FY2018, seven plants (44%) had received certification in the ISO 50001 standard (FY2017: seven plants). 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.

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 FY2018, we conducted seven 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 developing a new generation of facilities to support our future sustainable business growth. In FY2018, we invested \$14.2 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.



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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.

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Though invisible, carbon black plays a crucial role in all our lives, every day. At Birla Carbon, we've been sharing our knowledge and forging new techniques and applications for over a century. Today, we aim to push the industry beyond its limits to deliver limitless value. As we focus on micro matters from the plant floor to the sales floor, our passion for learning has no ceiling; we're constantly searching for a deeper understanding of our products and their applications, while ensuring that our product is safe, manufactured to the highest standards and continually innovated to maximize the value it brings to society.



DEEPAK TANDON
GLOBAL SEGMENT DIRECTOR, PLASTICS, SPECIALTY BLACKS

"We operate in a fast-paced environment and responding quickly and effectively to the needs of our customers is key. Technology enables us to leverage the opportunities and we aim to be at the cutting edge of development as we combine strong global leadership with innovation and experimentation locally."

We supply our customers with carbon black of the very highest quality, that is safe to use and responsibly manufactured.



Investing in the future

We invested 3.7% of our profit into product and technology R&D in FY2018 (FY2017: 4.8%).



Embedding product stewardship

Our global Product Stewardship Standard is active at 100% of our sites.



Talking to our customers

We sent over 1,400 letters in response to direct requests, with 99% replied to within 24 hours.



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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 different products with crucial, daily uses. From cars to computers, plumbing to agriculture and banknotes to shoes, carbon black makes our lives better. It enables us to 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.



Zero hunger

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



Decent work and economic growth

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



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 should not be confused with black carbon, more commonly known as soot.

The size of the particles and the way they are aggregated provide specific properties to the carbon black and define its use. For example, a large particle-sized, "soft" carbon black grade will contribute to the elasticity of the tire sidewalls, while a small particle-sized, "hard" carbon black grade will be essential to ensure the durability of the 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 a paint, ink or coating.



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Industry, innovation and infrastructure

Our product helps by supporting the development of quality, reliable, sustainable and resilient infrastructure, and in the promotion of inclusive and sustainable industrialization.



Reduced inequalities

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

Reinforcement

Carbon black, with its affinity for various polymers, makes rubber products safer, last longer, and save 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

Conductivity

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

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

UV Resistance

Carbon black, with its capability to absorb light, ensures that plastics and rubber products last longer despite exposure to sunlight. Examples include:

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

Pigmentation

Carbon black 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 wouldn't be able to drive farther than 1,000 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 is produced worldwide annually – some 70% of which goes into tires.



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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.



Responsible consumption and production

Carbon black helps society become more efficient in its use of resources, facilitating consumption and production.

Carbon black and you

We all interact with carbon black every day, without noticing it. It enables key aspects of our lives and continuously adds value. Consider its unnoticed role in the following:

- **Movement** – Carbon black gives us freedom to move by making tires safer and stronger for longer.
- **Society** – Carbon black has a permanent presence in our lives – from the clothes and shoes we wear to the mascara we put on our eyelashes, from flowerpots to toys, from banknotes to newspapers.
- **Health** – Carbon black plays an important role in water transportation through plastic pipes and rubber gaskets, keeping it safe to drink and preventing leaks.
- **Food** – Carbon black enables more efficient agricultural practices, from irrigating to protecting crops and facilitating farming, such as liquid retention pools and mulching.
- **Power** – Carbon black is an essential component of the wires, computers and technology that make our lives possible and connect us.

How is carbon black made?

Carbon black is produced by thermal decomposition and pyrolysis of low-value oil residues at high temperatures under controlled process 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; it is produced through the conversion of oil residue, which would otherwise have limited usage and would be disposed of.





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17 PARTNERSHIPS FOR THE GOALS

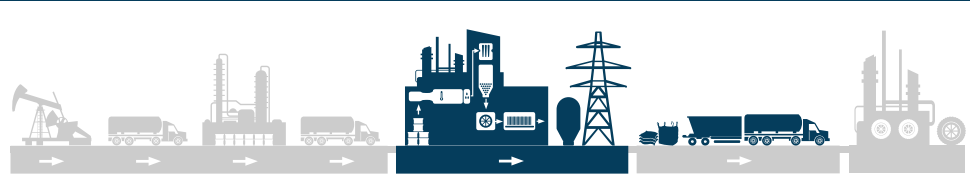


Partnerships for the goals

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

The carbon black manufacturing process

Our six step manufacturing process

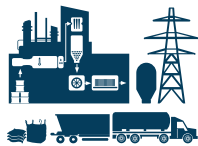


Carbon extraction, refinement and transportation

Manufacturing process

Transportation to customers

End product



Feedstock oil

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



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 0.01 of a second.



Water injection

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



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.



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.



Storage and packaging

In a 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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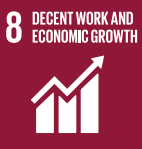
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At Birla Carbon, all growth depends on sustainability, and we believe it is our responsibility to manage product quality and reduce its impact on people and the environment. Our approach to product responsibility is divided into two key focus areas: safety and stewardship. By safety, 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 their role in its safe manufacturing. 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.



Decent work and economic growth

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



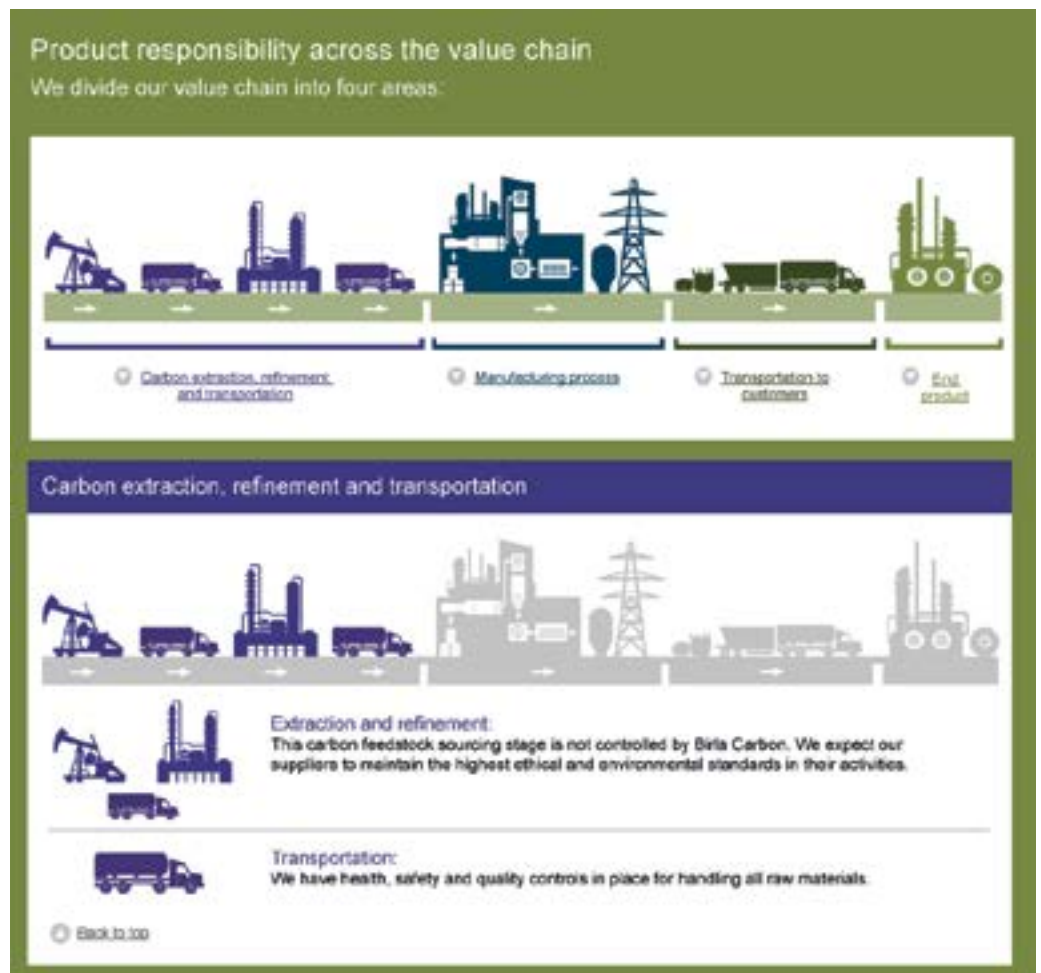
Responsible consumption and production

Carbon black helps society become more efficient in its use of resources, facilitating consumption and production.

How do we create safe products?

Our customers rely on us to produce safe carbon black for their own use. We ensure that our products meet and exceed all regulatory requirements. We also remain abreast of any regulatory or market developments, enabling us to support our customers in meeting their own regulatory obligations.

We thoroughly test our carbon black to ensure that it surpasses health, safety and environmental requirements and is a high-quality product.





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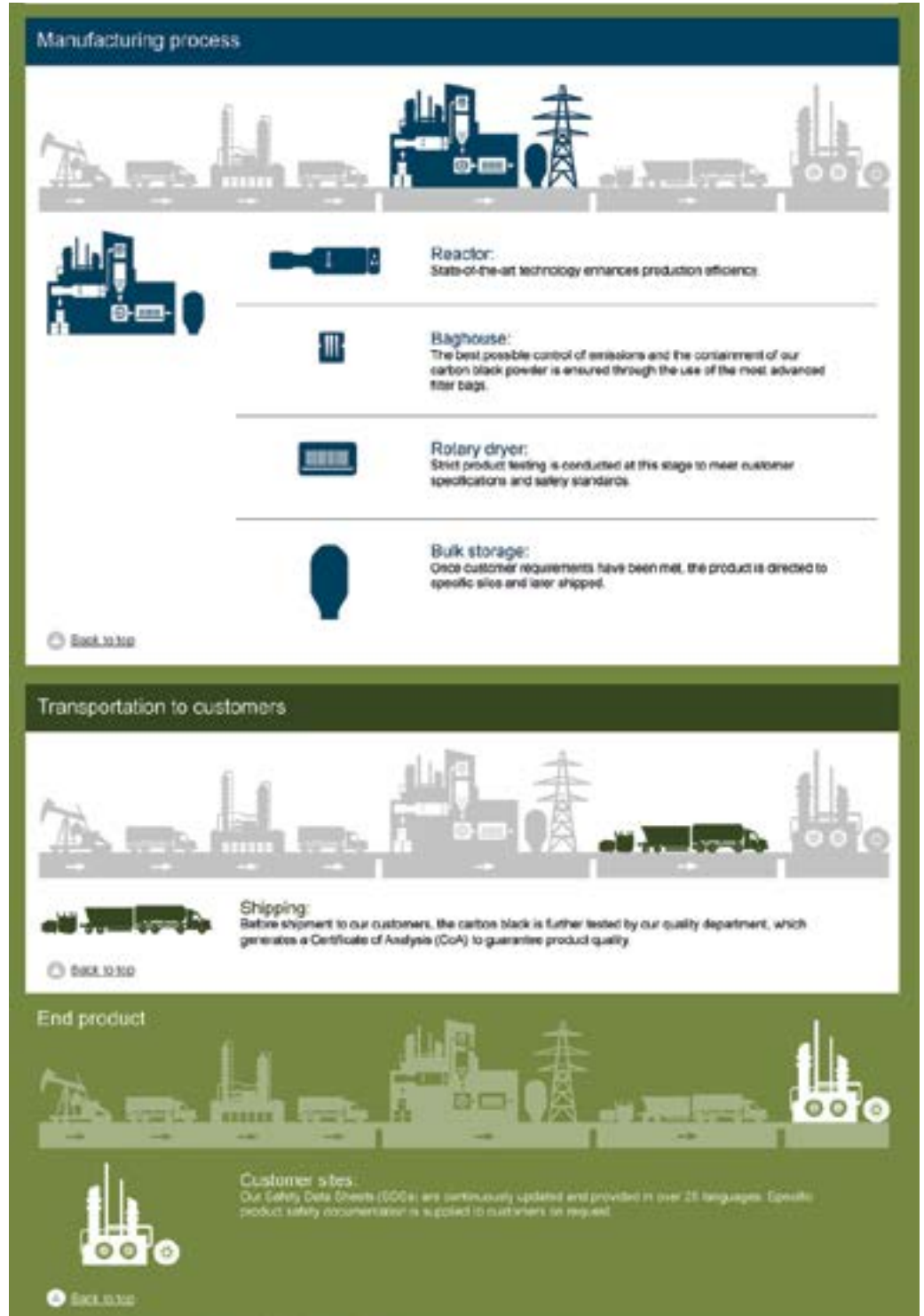
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Partnerships for the goals

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





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Investing in health and safety

We ensure that 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.

Enhancing customer understanding

Customers and end consumers want to understand more about carbon black. Our customers can access up-to-date and accurate information through safety data sheets (SDSs), labels and generic statements.

Our SDSs are publicly available [online](#). Based on feedback from internal customers, we have improved access to regulatory documents and product letters, so that more of our employees around the world can readily access the information they need. We are now looking at opportunities to provide access to these documents to our distributors.

We respond to direct queries from our stakeholders. In FY2018, Birla Carbon received over 1,400 queries related to product safety and compliance with specific environmental or food contact regulations. In 99% of cases we sent an initial response within one business day. We also continuously educate our sales and distribution network about carbon black product safety and its regulated applications. In FY2018, we conducted training for key distributors in Europe and Asia, as well as for our sales groups across the globe. The updated training was intended to help gain feedback from customers (internal and external) about what we could do to improve.

Product stewardship

We continue to build a product stewardship culture in our operations by 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're doing before and during process development and production changes.

We began rolling out our Product Stewardship Standard (the Standard) in FY2016 and it 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 trigger 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 samples are logged into the laboratory information management system (LIMS), ensuring full traceability.

The Standard is applied 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 would 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. The project will be implemented in FY2019.



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Reducing PAH content through collaboration

In recent years, the team at our Santander plant in Spain has been working in collaboration with Granada University to certify lower polycyclic aromatic hydrocarbons (PAH) grades of carbon black, in response to regulatory drivers and to meet our customers' needs. Based on current research, some PAHs are considered carcinogenic by various regulatory authorities and there is increasing regulation over their use in a wide range of finished articles.

Students from the university have been working as interns at the plant to support the project while continuing with their master's studies in rubber chemistry. To date, the team has successfully certified six grades of carbon black for low PAH content, including one destined for regulated food contact applications.

PRODUCT STEWARDSHIP



Over 2,000

tests related to food contact and other requirements performed on our product.



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For us, our compound knowledge – sharing insights and building 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 to be a cause for concern for consumers, employees and the communities where we operate. To respond to 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.



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

Because of the confusion between **black carbon** (soot formed through the incomplete combustion of fossil fuels, biofuels or biomass) and **carbon black**, the engineered material we produce is often incorrectly perceived as a polluting, dirty, air contaminating, carcinogenic black dust, which is detrimental to society and

the environment. Birla Carbon is at the forefront of industry investigations into the potential effects of carbon black, both to humans and the environment. Through our work with the [International Carbon Black Association \(ICBA\)](#), we engage closely with health, safety and environmental officials across the world to ensure that accurate, scientific-based information is utilized in the regulatory process.

What is the ICBA?

We are an active member of our industry association, the International Carbon Black Association (ICBA). Birla Carbon professionals participate in leadership positions on the Board of Directors and the Regional ICBA's Product Safety and Regulatory Committees for North America, Europe and Asia. These industry groups meet on a regular basis to address the changing regulatory landscape in their specific region. 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 our quarterly Product Stewardship newsletter, 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.



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Can carbon black cause health problems?

Black carbon is a known carcinogen; by association, our product (**carbon black**) is often erroneously linked with cancer. 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, consumers are not directly exposed to carbon black through products placed on the marketplace.



Is carbon black safe to handle?

Carbon black is not dangerous to humans. 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; it may

be 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](#).



Is carbon black harmful to the environment?

Due to the nature of our manufacturing processes, we recognize that our activities can have environmental impacts, particularly in terms of water use, greenhouse gas (GHG) emissions and waste generated. We are committed to ensuring that our production facilities do everything possible to prevent the release of carbon black into the atmosphere.

We are working to reduce GHG and other air emissions by proactively studying, experimenting and investing in pioneering air emission control technologies. 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.



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Industry, innovation and infrastructure

Our product helps by supporting the development of quality, reliable, sustainable and resilient infrastructure, and in the promotion of inclusive and sustainable industrialization.



Sustainable cities and communities

Our product enhances sustainable urbanization and reduces the adverse per capita impact of cities.

Product quality

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

Quality assurance

All our manufacturing sites are ISO 9001 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. The Quality Management System is integrated throughout the various functions within our manufacturing sites (operations, plant quality, maintenance and repair/instrumentation, warehouse/shipping) and is regularly reviewed and audited internally. As part of the Quality Management System, 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 International Automotive Task Force (IATF 16949), we started developing a system through which we can identify costs caused by poor quality. The system asks for tracking a series of items:

- Customer claims
- Complaint handling costs
- Returned material and associated freight due to complaints
- Internal standard and nonstandard inventory

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.



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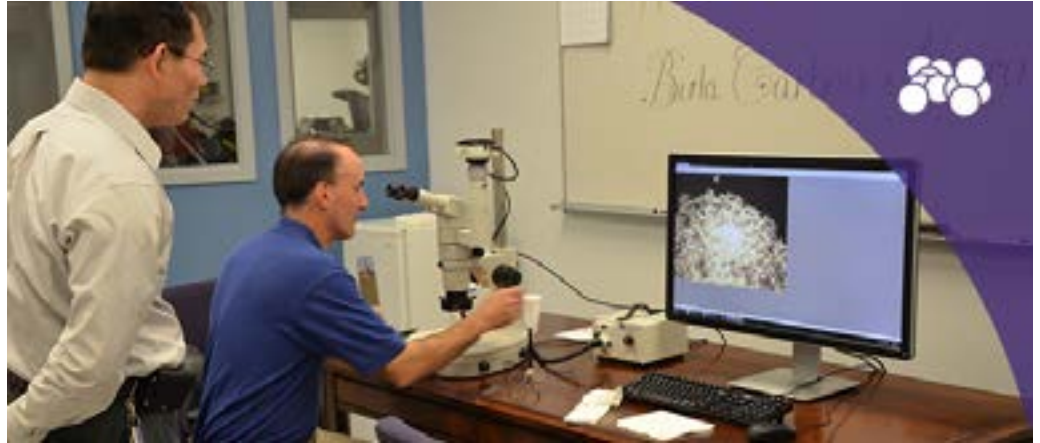
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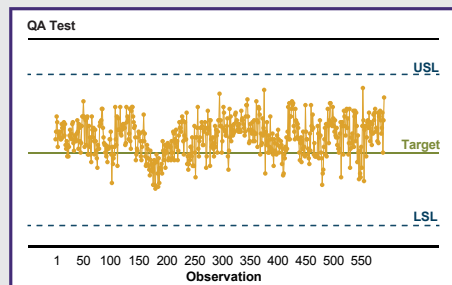
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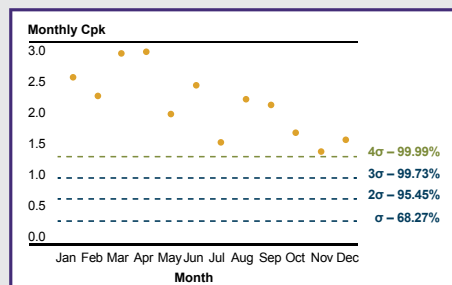
Focus on product consistency

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

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



Birla Carbon rigorously tests its carbon black through internationally recognized test procedures and processes. Based on customer requirements, and regular reviews of the correlation between our customers' laboratories and our own, we define Upper Specification Limits (USL) and Lower Specification Limits (LSL) for each test. Our products only leave our gates if all the required parameters are tested and the product is certified within these limits.



Our testing processes are validated through a process capability index (Cpk), which statistically measures their reliability. All our testing equipment in our quality departments is regularly serviced, checked and calibrated to guarantee maximum product quality.

PRODUCT CONSISTENCY



Responsible consumption and production

Carbon black helps society become more efficient in its use of resources, facilitating consumption and production.



Partnerships for the goals

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



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All 17

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

Working with ASTM

Our 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 investigations, with support from our two central laboratories. 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.

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 adopting the best available practices and technologies across Birla Carbon.



Manufacturing Systems Analysis (MSA)

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



Regional quality organization

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





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Industry, innovation and infrastructure

Our aim is to support and facilitate sustainable and resilient infrastructure development in developing countries with carbon black, and support the development of local technology, research and innovation. We also play our part by increasing efficient resources use, enabling the adoption of clean and environmentally sound technologies and by encouraging innovation and enhancing research.



3.7%

profit reinvested in research and development in FY2018.

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're 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 product sustainability – including developing more sustainable forms of carbon black.

Leading through innovation

It's been over 75 years since our historic installation of one of the world's first industrial electron microscopes – but it's 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. To ensure that we remain at the cutting edge of our industry, we depend on leading scientists, dedicated to taking us forward.

We provide these 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 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



Taloja (Maharashtra, India) R&D center



Marietta (Georgia, USA) R&D center

Our R&D centers employ more than 50 leading scientists and technological experts in material science, analytical chemistry, nanocomposites, physics and process engineering. They have access to two electron microscopes across our R&D facilities around the world.



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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.

The Product Technology group works with Technical Service teams throughout the world 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 of our customers' products. We also propose new carbon black products that are less energy demanding during the incorporation phase in rubber, plastic, ink or paint formulations.

When designing new products, we meet with partners to better understand their expectations. For instance, rolling resistance is a key focus for our tire customers. Our objective is to develop and commercialize new carbon black grades to further lower the rolling resistance for the next generation of tires. These tires will consume less energy in vehicle propulsion, resulting in greater fuel economy, thus emitting less CO₂.



Leading on product safety through innovation and collaboration

Carbon black plays an important role in many food and human contact applications and product safety is a vital part of the process. One of the key aspects is to provide robust scientific evidence that finished articles that contain 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 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's 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.

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Did you know?

- There are over one trillion aggregates in one 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 are 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 soccer ball (football) is about the same as a soccer ball 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

Growth

- 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.

Sustainability

- Utilize tail gas as fuel commercially.
- 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.

Cost and quality

- Operate a new carcass black unit to significantly increase yield and quality.
- 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.



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As a team of forward-thinking regional operators with an international impact, we aim to push the industry beyond its limits to deliver limitless value. For us, every challenge tested is an opportunity – a chance to deliver the smartest solutions, to solve a real need and to improve the way we do things. It 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.



RONALDO S. DUARTE
PRESIDENT SOUTH AMERICA

“Because we believe that growth depends on sustainability, Birla Carbon makes every decision through a lens that anticipates future needs. It is this willingness to invest in sustaining our future – not just for the next quarter, but for the next quarter century – that ensures we constantly improve our environmental stewardship.”

Our operations use natural resources such as oil, gas and water, which we manage conscientiously and responsibly.



Taking steps to a smaller footprint

Our overall carbon footprint intensity has decreased by 12% since FY2012.



Globally energy positive

60% of our facilities are energy positive with 13 of 16 plants making energy-related investments in FY2018.



Reducing our water impact

We've reduced our water withdrawal intensity at high-risk sites¹ by 6% since 2013 and we will improve on this in coming years.



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Life Cycle Assessments

We conduct Life Cycle Assessments (LCAs) to better understand the impacts of our carbon black product from manufacture to its end of use. LCA is a recognized approach that assesses all environmental impacts in a product life cycle: from raw material extraction through material processing, manufacture, distribution, use, repair and maintenance, to final disposal or recycling.

Understanding our impact: product Life Cycle Assessment

Our [Environmental Policy](#), published in FY218, includes a 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.

LCA analyzes the environmental impacts at each stage of a product life cycle: from raw material extraction through material processing, manufacture, distribution, use, repair and maintenance, to disposal or recycling.

The scope of our LCA is from “cradle to gate”: from the “birth” or extraction of raw materials to the delivery of carbon black to our customers’ gates 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](#).

We know that each stage of the manufacturing process has an impact on the overall carbon footprint of our product. Over the years, we have looked at feedstock delivery, production and product distribution data to establish a baseline and identify where we can reduce carbon emissions most effectively.



Responsible consumption and production

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. We annually report on our sustainability efforts.



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17 PARTNERSHIPS FOR THE GOALS

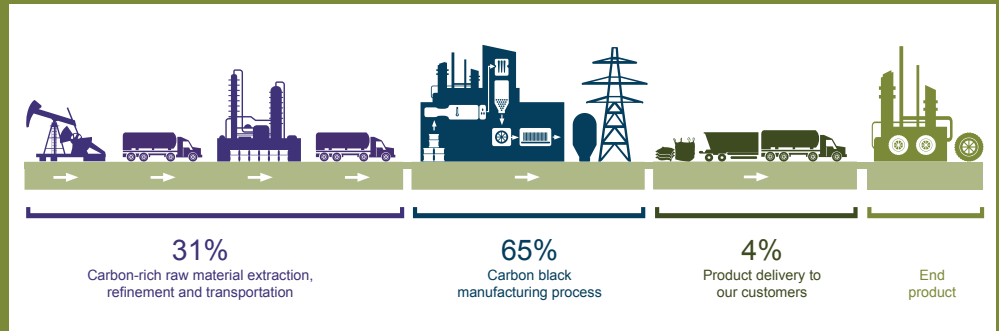


Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, including our suppliers, regulators and governments.

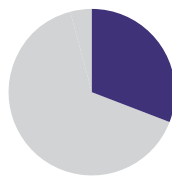
Carbon stewardship across our value chain

Our carbon footprint:



Carbon-rich raw material extraction, refinement and transportation

31%



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

10%



Extraction:

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

12%



Transport to refinery:

The crude oil is sent to refineries for processing.

8%



Refinement:

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

Birla Carbon has limited 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.



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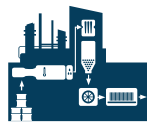
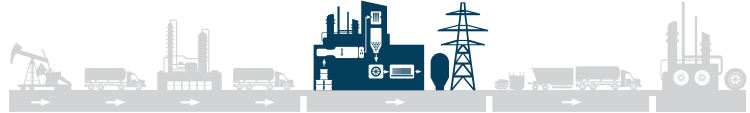
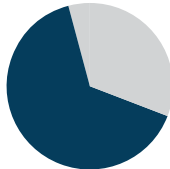
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Carbon black manufacturing process

65%



Manufacturing process:

During our manufacturing process, the feedstock oil is converted into valuable carbon black. This stage has the single largest contribution on our overall carbon footprint, and it is the stage over which we have the greatest control.

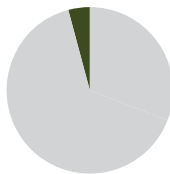


Energy management:

Through co-generation, we convert the tail gas produced into heat, steam or electricity. This recovered energy is used in our own operations, with the surplus distributed through local networks. Although any residual energy is flared, we minimize this where possible.

Product delivery to our customers

4%



Transportation:

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

End product



Carbon black is used by our customers and found in 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 better understand the carbon lifecycle of their own products.

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 a holistic approach:

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



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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 our environmental impact.

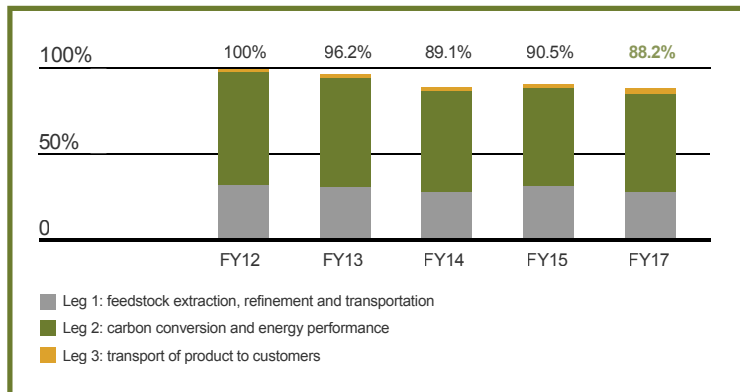
Traditionally, a large percentage of our feedstock oil has come from the US Gulf Coast in the form of Fluid Catalytic Cracker (FCC) oil. Despite the efficiency advantages of this oil due to its high carbon content, transportation costs and sulfur emission restrictions have led us to identify alternative local feedstock, especially in India and in the South East Asia and 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 minimize the impact of this process.

Global carbon footprint intensity



Target: Reduce our direct CO₂ emissions intensity by more than 22%



Global carbon footprint intensity (tCO₂-eq/t_{carbon black}) relative to FY2012 baseline

| Global | FY2012 (%) | FY2013 (%) | FY2014 (%) | FY2015 (%) | FY2017 (%) |
|--|--------------|-------------|-------------|-------------|-------------|
| Leg 1: feedstock extraction, refinement and transportation | 31.2 | 30.5 | 27.2 | 30.9 | 27.2 |
| Leg 2: carbon conversion and energy performance | 66.5 | 63.6 | 59.5 | 57.7 | 57.7 |
| Leg 3: transport of product to customers | 2.2 | 2.6 | 2.2 | 2.2 | 3.3 |
| Global average | 100.0 | 96.2 | 89.1 | 90.5 | 88.2 |

Note: FY2016 data not available.



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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 include:

- Risk to humans (both carcinogenic and noncarcinogenic)
- Land and freshwater pollution, both in terms of 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, as recorded in the 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 is not fully representative of our manufacturing process, it does represent a reasonable average approximation of impacts for carbon black production globally. The results show that our carbon black production impacts are lower than the industry averages, which is encouraging. We hope to share these results with both key customers and suppliers in the near future so that we can engage with them to further reduce our global environmental impact.

Read more granular detail on our latest [LCA assessment](#) and the ecoinvent results.

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



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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 either in our plants or sold to the grid. Globally, we are energy positive.

Carbon stewardship

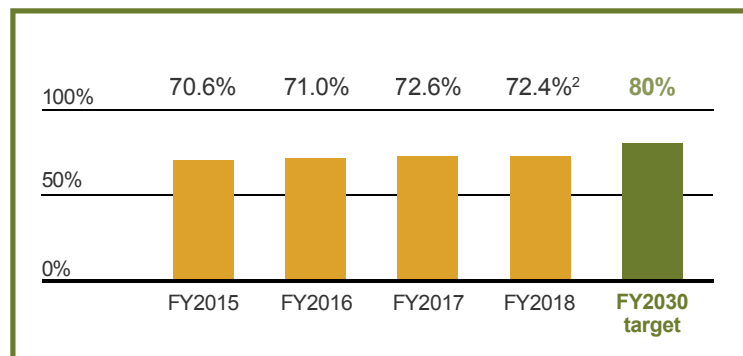
We base our carbon stewardship strategy on two approaches: the conversion of more carbon from oil into carbon black and the optimization of our energy cycle. Our product Life Cycle Assessment helps to drive actions to reduce our overall carbon footprint.

Net energy positive

Progress towards target



Target: Increase our absolute energy conversion efficiency to 80% – now extended to 2030.



| FY2015 | FY2016 | FY2017 | FY2018 | FY2030 target |
|--------|--------|--------|--------------------|---------------|
| 70.6% | 71.0% | 72.60% | 72.4% ² | 80% |

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 our absolute energy conversion efficiency to 80% by FY2020. This means that out of 100 carbon units, a minimum of 80 would be converted either to carbon black or to a useful form of energy. Our new Energy and Carbon Policy, published in July 2018, sets out our commitments to positively comply with and exceed regulations by reducing our energy intensity and carbon footprint.

In the four 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 to produce a tonne of carbon black. The recovered energy is used for our manufacturing process, while the surplus is sold to neighboring facilities and local grids in the form of electricity, steam, tail gas or hot water.

² FY2018 data from the new plant at Jining, China, is not included. FY2019 data are being collected.



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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 we 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 at the current time, we have increased our focus on investing in energy recovery projects. For example, by making use of the best available technologies, our [new plant at Jining](#) is energy positive and will make a significant contribution to both our carbon- and energy-related KPIs in the coming years.

Our energy efficiency efforts are led by Regional Energy Managers (REMs), who assess the energy cycle of each of our plants and provide local expertise and support. Knowledge gained is then shared across 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.



Responsible consumption and production

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. We annually report on our sustainability efforts.



Climate action

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



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17 PARTNERSHIPS FOR THE GOALS



Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, including our suppliers, regulators and governments.



60%

of our sites are energy positive.

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 in China with an installed capacity of 120,000 tonnes of carbon black, to expand to 240,000 tonnes in phase 2 of the project.

Health, Safety and Environment (HSE) is an important aspect of the Jining facility. From the moment feedstock enters the plant until the finished carbon black product is delivered to the customer, the plant ensures all material is handled in a safe and environmentally responsible manner. This means balancing a number of priorities.

The Jining plant has been designed based on Birla Carbon's Sustainable Operational Excellence (SOE) approach, using cutting-edge technology to ensure direct CO₂ emissions per tonne of carbon black produced is much lower than the industry benchmark. The plant is designed to operate at maximum efficiency at all times.

Birla Carbon Jining already is an "energy positive" plant, having its own energy management system generating high pressure steam and electricity to meet the energy needs of the plant as well as supplying surplus electricity to the state grid, avoiding fossil fuel usage and emissions by traditional energy providers. The Jining facility also uses state-of-the-art De-SO_x and De-NO_x boilers, which are fully compliant with the stringent Chinese environment standards to be reached by 2021. But achieving these high standards in air quality management and compliance comes at a cost in terms of the significant amounts of energy required to operate the air emission control technology. Annually, the facility consumes over 60,000 MWh of electricity to produce carbon black; electricity which is internally generated through our energy recovery systems. Some 25% of this energy consumption (around 15,000 MWh) is used to run large equipment such as fans and blowers, which enable us to comply with and exceed stringent air 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.



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Generating our own energy to reduce emissions

At Birla Carbon, increasing our energy conversion efficiency is one of the key ways we reduce our environmental footprint. It enables us to reduce our reliance on purchased energy – including electricity, steam and non-production fuels – cutting costs, improving our energy resilience and reducing CO₂ emissions. Over the past three years, we have reduced our energy purchased intensity by over 40% and reduced our boiler secondary fuel consumption by almost 77%. It has enabled us to reduce CO₂ emissions by around 45,000 tonnes, equivalent to taking over 9,700 cars off the road each year!

How have we done it? The investments we've made include:

- Installing of waste heat boilers at our Cubatão, Brazil, and Santander, Spain, plants;
- Modifying combustion air systems at our Santander, Spain, plant;
- Boiler heating and cooling cycle control at our Alexandria, Egypt, plant; and
- Reducing electricity purchased through the installation of variable frequency drives across all facilities.

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.

ENERGY **GHG**



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Reducing our direct CO₂ emission intensity

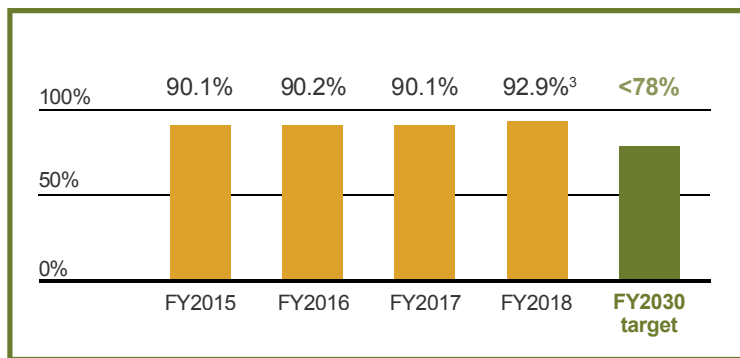
We continue to work to reduce our direct CO₂ emission intensity. Thanks to the implementation of best practices and continuous technology investments, we have achieved 32% of our CO₂ emission intensity reduction target (FY2017: 40%). These results are accomplished through a series of global, regional and local initiatives that are capital-intensive. For example, we design reactors and technology 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 the 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 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 in the coming years. For this reason, we have extended our 2020 target to 2030.

Progress towards target



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



| FY2015 | FY2016 | FY2017 | FY2018 | FY2030 target |
|--------|--------|--------|--------------------|---------------|
| 90.1% | 90.2% | 90.1% | 92.9% ³ | <78% |

Promoting transparency: the CDP

The 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. We disclosed our performance through the CDP online platform for the first time in FY2015 and we have continued to do so annually. We voluntarily respond to the Climate Change and Water questionnaires and we also respond to specific customer requests for information on our carbon footprint through our Supply Chain response.

³ FY2018 data from the new plant at Jining, China, are not included. FY2019 data are being collected.



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3 GOOD HEALTH AND WELL-BEING



Good health and well-being

We seek to prevent illnesses indirectly by reducing water pollution.

6 CLEAN WATER AND SANITATION



Clean water and sanitation

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

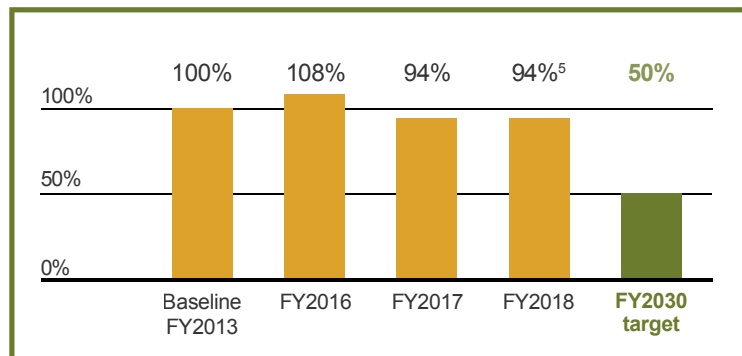
Water

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

Progress towards target



Target: Reduce by 50% our water withdrawal intensity ($m^3/t_{\text{carbon black}}$) versus FY2013⁴ baseline for our high- and medium-risk sites.



| Year | Water Withdrawal Intensity (%) |
|-----------------|--------------------------------|
| Baseline FY2013 | 100% |
| FY2016 | 108% |
| FY2017 | 94% |
| FY2018 | 94% ⁵ |
| FY2030 target | 50% |

⁴ Baseline adjusted to FY2013 from FY2012 due to more comprehensive and validated data availability for FY2013.

⁵ KPI adjusted to include Hickok, Cubatão, Gummidipoondi, Alexandria, Weifang, Bahia and Yeosu, and to exclude Angthong, Trecate, Santander and Renukoot (see explanation on following page).



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Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, including our suppliers, regulators and governments.



All

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

Assessing our water vulnerability

We have been seeking to improve our water approach since FY2015, when 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 [Aquaduct™](#) 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 appraising [risk levels](#) before devising specific water mitigation plans for our most vulnerable sites, we introduced a new water risk management approach in FY2017.

In FY2018, as a result of our assessments, we included additional sites that are considered at high risk for water availability within our KPI⁶ and removed a number of sites that were included in the original KPI but are now deemed to be of lower risk⁷. 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 our commitments to protect and conserve water resources through excellent water management practices and governance systems.

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

1. **Commitment** – Our [recognition](#) that risks must be assessed.
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 began implementing the approach at our three sites deemed to be the most water vulnerable in FY2017: Gummidipoondi, India; Hickok, US; and Patalganga, India. We also included our greenfield site in Jining, China, in order to develop a theoretical baseline to help us validate our water balance methodology. We conducted local source vulnerability assessments at Gummidipoondi, Hickok and Patalganga using a customized questionnaire that addressed current and future physical, financial, reputational and regulatory risks as perceived by site professionals. These assessments will serve as the basis for developing mitigation plans for the three sites, with the eventual aim of covering all our facilities in the coming years. In FY2018, we carried out water mapping for 14 facilities along with meter installation and repairs and other investments to support our approach.

6 Sites included: Hickok, Cubatão, Gummidipoondi, Alexandria, Weifang, Bahia and Yeosu.

7 Sites dropped that were included in the original KPI: Anghong, Trecate, Santander and Renukoot.



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Sharing best practice in water stewardship

From the plant floor to the sales floor, our passion for learning has no ceiling. We see shared insights as a vital resource, because we can achieve much more when we work together and learn together. In September 2017, sustainability professionals from Birla Carbon and eight other Aditya Birla Group (ABG) companies came together to explore opportunities and facilitate sharing of best practices and collaboration. One of the outcomes was the launch of the ABG Water Working Group, which met for the first time in December 2017. Led by **Amy Hickman** from Birla Carbon, the group meets bimonthly to promote sharing of best practices across topics including minimizing fresh water consumption, working toward zero liquid discharge, undertaking robust watershed studies and optimizing wastewater treatment. Hearing from external experts is key to developing the capabilities of the team; at the March 2018 meeting, we heard from the WBCSD about the recently released CEO Guide to Water. Going forward, the group will focus on opportunities for collaboration – creating water champions at each business and driving implementation of best practices globally.

RESOURCE CONSUMPTION | WATER



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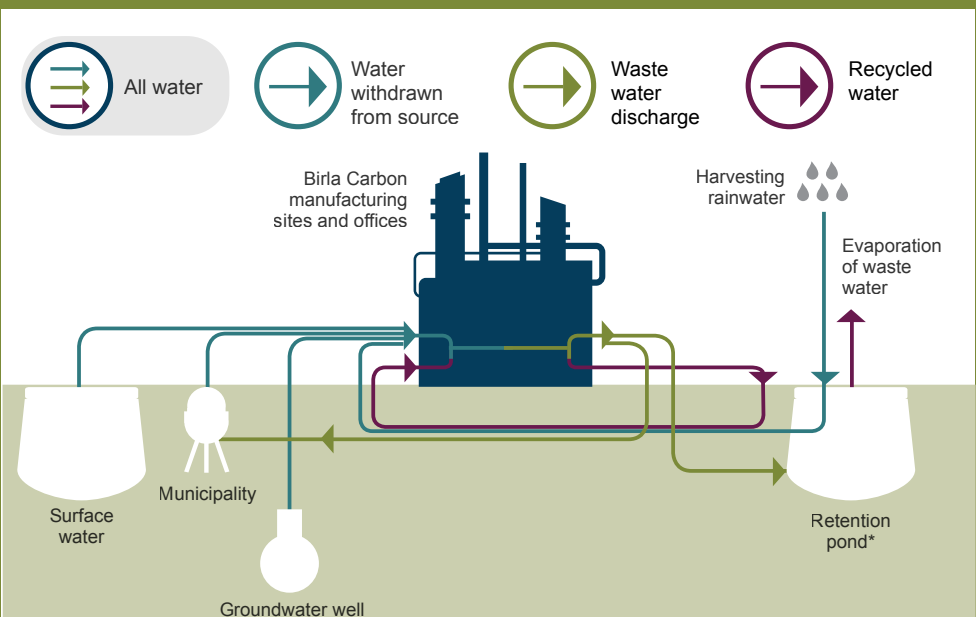
Air emissions

Water cycle at Birla Carbon sites

We minimize use, and reuse and recycle water as much as possible. For example, once water has been used in the manufacturing process at one place, it is directed into retention ponds so that it can be redirected back into another process where high-quality water is not a necessity. Our water conservation best practices are shared across all our locations as part of our Sustainable Operational Excellence (SOE) strategy.

Our water cycle

The water cycle at Birla Carbon sites



*Approximately 3,813,000 m³ (18%) reused from retention ponds in FY2018. Recycled process water and rainwater is collected in retention ponds and pumped back into the process.

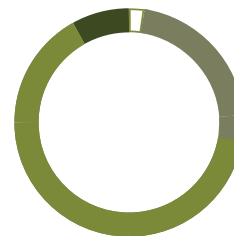
Water withdrawal by source



FY2018
17,021,916 m³

- 44% Surface water
- 26% Municipality
- 30% Groundwater well

Water discharge by destination



FY2018
4,411,298 m³

- 2% Sanitary
- 26% On-site retention pond
- 64% Surface water
- 8% Municipal waste water treatment process (WWTP)



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Delivering water savings and energy efficiency, together

We are constantly exploring and investing in the best available technology to reduce our environmental impacts, and we look for smart solutions that can deliver multiple benefits.

The water we use during carbon black manufacturing is primarily used for cooling the gas stream that is produced during our manufacturing process. Reducing this need is one of the key ways we can reduce our water consumption.

In FY2018, our plant in Thailand installed a quench boiler, an energy-efficient technology that is used to cool the gas stream, reducing the need to use water. It is the second such boiler to be installed across our facilities and it will reduce quench water demand by 1.5–2 tonnes/h. At the same time, it produces equal amounts of steam that can be sold or used to generate power for internal use or sale.

WATER



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In any industry, effective waste management and minimization are priorities; 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 implement strategies to reduce, reuse and recycle this waste.

Managing our waste

Our waste strategy aims to reduce the amount of waste we generate and ensure that our waste materials are 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 environmentally sound manner.

In FY2017, we adopted a new waste 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 people and the environment. It also drives sites to consider 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 use in guiding and tracking its implementation of the standard.

Our waste management approach has evolved over the last five years as we have improved the identification and accounting of our waste types, including cyclic wastes. As a result, in FY2017 we introduced a new KPI for the percentage of waste repurposed, whether recycled, reused or recovered. This will drive further best practices in waste management throughout our manufacturing sites.



Good health and well-being

We seek to prevent illnesses indirectly by reducing waste pollution.



Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, including our suppliers, regulators and governments.



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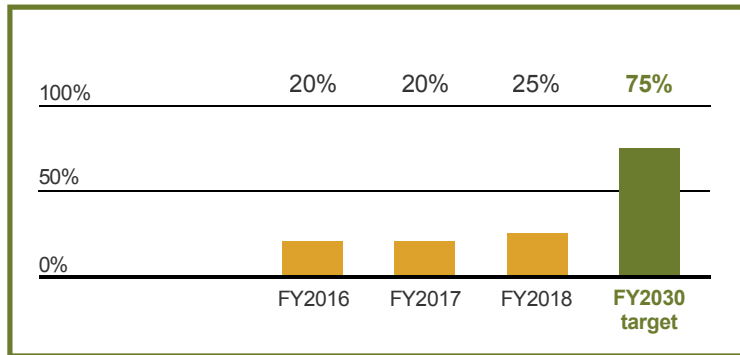
25%

of our waste is repurposed – an area where we will work harder in future.

Progress towards target



Target: 75% waste repurposed, including recycled, reused and recovered, by 2030.



| FY2016 | FY2017 | FY2018 | FY2030 target |
|--------|--------|--------|---------------|
| 20% | 20% | 25% | 75% |

Achieving this target may prove 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.



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Creating value from waste materials

One of the key ways we can reduce our waste is by repurposing materials so that they can continue to create value. One example is our partnership with Repasack® in Europe, which enables us to recycle our paper packaging. While the volume of packaging material we use is relatively limited, the partnership enabled us to recycle 4.74 tonnes of packaging material in FY2018, including paper and composite sack and bags. Our supplier and industry partnerships will be key as we explore further ways we can repurpose our waste and implement our waste management standard at all locations. For example, in India, we are currently exploring the possibility of sending tank bottom sludge and waste refractory to be reused as a fuel at nearby cement plants.

WASTE



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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 approach to reducing our emissions is guided by our commitment to Sustainable Operational Excellence, which leads 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.

3 GOOD HEALTH AND WELL-BEING



Good health and well-being

We seek to prevent illnesses indirectly by reducing air pollution.

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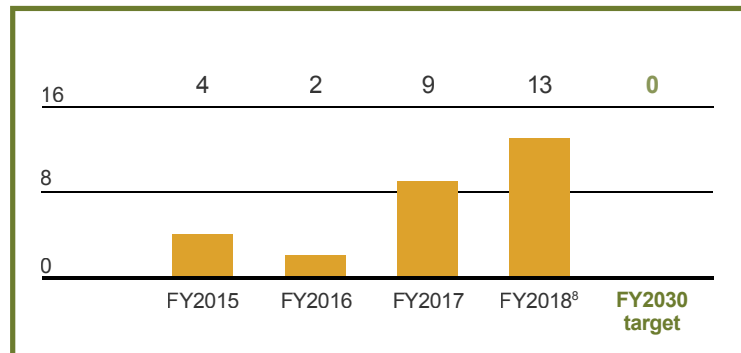
Partnerships for the goals

We help achieve the goals by working closely with our stakeholders, including our suppliers, regulators and governments.

Progress towards target



Target: Record zero environmental releases year on year.



| FY2015 | FY2016 | FY2017 | FY2018 ⁸ | FY2030 target |
|--------|--------|--------|---------------------|---------------|
| 4 | 2 | 9 | 13 | 0 |

We continue to invest in and promote technology 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 to reduce air emissions, and how they can be implemented across our operations. A balanced approach is key; technology for air emission control can have a high water and energy demand, so implementation must be considered in a holistic way 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 carbon black plants in Franklin, Louisiana, and Hickok, Kansas. As a part of the settlement, we have committed to install advanced control technologies and continuous emissions monitoring systems over the next four years at a cost of approximately \$95 million.

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



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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 major proportion of emissions at the site. As a first step, we tested solutions on a smaller combustor to ensure the technology was effective before investing in applying it to the larger industrial boilers. Once an effective solution was found, we undertook detailed modeling to test the specific solutions for each of the larger boilers. Following management approval, we began the work to install the new technology in the first boiler in 2016. Despite a very challenging timeframe the project was a great success, reducing NOx by more than 20%. In 2017, we began phase three of the project to upgrade the second steam boiler, again achieving an average 20% NOx reduction in the boiler's emissions.

As well as reducing our 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.

AIR EMISSIONS



\$14.2M

invested in process improvements related to energy efficiency and reducing GHG emissions.



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CUSTOMERS AND SUPPLIERS

Customer engagement

Supplier management

Focusing on what's now while imagining what's next on behalf of the industry and our customers is what fuels our motivation and ignites our inspiration to share the strength. We yield our best results when we're open to others' perspectives and work together to make a difference. That's why we aim to develop long-term 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.



MR. SANJEEV SOOD
REGIONAL PRESIDENT, SOUTH AND FAR EAST ASIA REGION

"Birla Carbon's leadership in the market is driven by its capability to innovate and be the most sustainable leader in the carbon black industry. Through ingenious and world-class manufacturing processes, Birla Carbon is able to ensure continuity of its operations through pathbreaking partnerships with our suppliers, along with a global distribution network which guarantees supply security to our customers. Our strong presence in five continents of the world puts us in a position to support our customers anywhere around the globe."

Our customers know they can rely on us for our dependability and stability as we consistently deliver high-quality product, excellent service and global supply security. We are also working to make our supply chain more resilient.



High customer satisfaction

Our global Net Promoter Score® is 55, demonstrating our customers' high satisfaction.



Gold standard recognition

We achieved Gold rating from EcoVadis for the second consecutive year, positioning us in the top 1% of more than 40,000 companies worldwide.



Screening our suppliers

We are developing our third-party due diligence system to ensure we only work with suppliers, service providers, distributors and sales agents that have a good track record in terms of business ethics.



CUSTOMERS AND SUPPLIERS

Customer engagement

Supplier management

17 PARTNERSHIPS FOR THE GOALS



Partnerships for the goals

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

Customer engagement

We stand strong with our customers; our unique and effective global collaboration is what enables us to share the strength with the world. We seek to nurture open, trusting relationships with all stakeholders, guided by our five values: Integrity; Commitment; Passion; Seamlessness; and Speed. We build these relationships through offering a consistently high-quality product, excellent service and global supply security. It means our customers know they can rely on us because we align our sustainability strategy with theirs.

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 our success by measuring customer loyalty and the extent to which our products are attractive to our customers. These engagements also enable us to continue developing timely new products to meet customer needs.

Measuring our customer loyalty

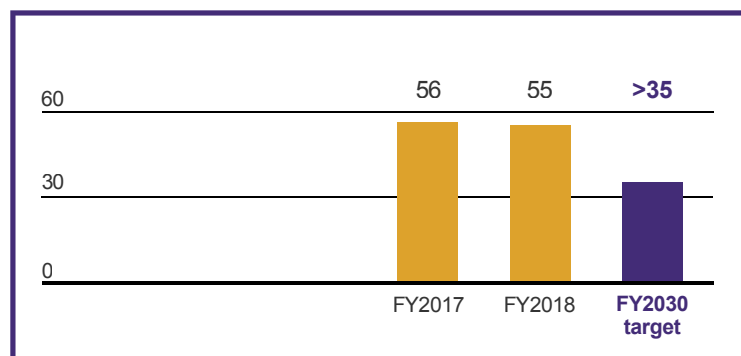
Introduced in FY2018, our customer satisfaction KPI is based on the well-established Net Promoter Score® (NPS®¹), which asks our customers around the world to rank Birla Carbon's performance against our peers.

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

Progress towards target



Target: Remain above the NPS threshold of 35.



| FY2017 | FY2018 | FY2030 target |
|--------|--------|---------------|
| 56 | 55 | <35 |

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



CUSTOMERS AND SUPPLIERS

Customer engagement

Supplier management

Through the NPS® process, our Sales representatives contact a minimum of five customers per month and the respondents are divided into three groups:

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

A company’s NPS® is calculated by subtracting the percentage score of detractors from the percentage score of promoters. In FY2018, our global NPS® was 55 on a scale of -100 to +100 (FY2017: 56) and there was good uniformity across regions. This score is considered excellent for a business-to-business company such as ourselves. Our objective is to sustain our score above 35. Although this is still considered to be a “good” score, a drop to this level would be an alert signal for us; our historical results suggest that this threshold would correspond to a 10-point drop from our quarterly low.

Turning feedback into action

We use the customer feedback we receive to drive continuous improvements. For customers providing us with high NPS® scores, we find opportunities to improve or maintain our score. For customers that give us a low rating, we respond through the appropriate department (Regional or Global Sales, Marketing or Regional Presidents).

In FY2018, we received 34 detractor ratings, 20 of which included specific comments relating to the following issues:

- Price (8)
- Supply (6)
- Lack of direct supply (1)
- Lack of regular communication (1)
- Logistics (1)
- Order processing (1)
- Poor service (1)
- Quality (1)

Our customers want to see that we respond swiftly to their feedback through robust processes and procedures. If a product-related issue is brought to our attention, scientists from our technology centers assess the problem before issuing a detailed report. All customer dissatisfaction, whether regarding products, sales or the supply chain, is reviewed thoroughly before responding to the customer.

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. Our customers highly value a secure supply, which we meet through our [Business Continuity strategy](#) and Enterprise Risk Management approach.



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OUR PEOPLE



COMMUNITIES



CUSTOMERS AND SUPPLIERS

Customer engagement

Supplier management



55%

Our Net Promoter Score® for FY2018 was 55, demonstrating our customers' high satisfaction.

Life Cycle Assessment is a growing concern among our stakeholders as they work to assess and improve the sustainability of their own products. We engaged with customers and their sustainability teams to share our carbon black [Life Cycle Assessment](#) (LCA) approach. They validated our methodology and appreciated being able to use our data 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.



Enhancing the customer journey in China

Customer Centricity ensures we make the most of our potential by understanding the needs of our customers and delivering an exceptional customer experience. China is a market with significant growth potential and with diverse customers across varied industries. In March 2018, members of the South East and Far East Asia (SEFE) leadership team came together with 20 regional, cross-functional representatives working across sales and marketing, finance, HR, quality, customer service, operations, warehouse, supply chain, IT team and regional marketing teams.

Their collective aim was to map the customer journey in China, from order to receipt of goods. Teams spent the day mapping the journey of tire customers who have the strongest levels of engagement with Birla Carbon in China. Once the journey was mapped, each team focused on a specific stage of the journey to identify and explore potential positive and negative "moments of truth" for the customer. They then presented solutions and areas of improvement resulting in a pool of initiatives and action areas which will be undertaken on a prioritized basis as we work to build the Birla Carbon brand in China.

CUSTOMER ENGAGEMENT

GLOBAL PRESENCE



CUSTOMERS AND SUPPLIERS

Customer engagement

Supplier management

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Responsible consumption and production

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

17 PARTNERSHIPS FOR THE GOALS



Partnerships for the goals

We encourage our suppliers to respect human rights through the Terms and Conditions on our contracts.

Supplier management

Birla Carbon's broad geographical base means we have a complex supply chain. Maintaining close ties with local, regional and global suppliers is crucial for managing our supply chain risks; our suppliers' behavior reflects on our own and our customers' reputation. We work together with our suppliers to meet our high ethical standards and drive improvements in our industry.

Code of Ethics

At the most basic level, our supply chain must be reliable and ethical. We have established robust internal standards and principles to guide our employees, business partners and our suppliers to meet our expectations. Our diverse business partners include vendors, service providers, consultants, contractors, distributors and agents.

We consolidated and rolled out our [Global Code of Business Ethics and Compliance Standards](#) (Code of Ethics) in 2014. It is a comprehensive document that each employee must read and sign annually. We share our Code of Ethics with our major suppliers (those identified as above a certain spend threshold) and ensure they are aware of the need to adhere to it. In addition, we have updated our Terms and Conditions to include a clause establishing the ethical principles with which we expect our business partners to comply.

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 [Supply Chain and Procurement Policy](#), published in FY2018, guides our sites to ensure supply chain compliance with the relevant legislation and the Birla Carbon Code of Conduct. Standards we expect include promoting 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.

Assessing sustainability: our suppliers and us

As we have matured through five years of sustainability integration and reporting, we have begun to explore further ways we can stimulate best practices through our supply chain. Birla Carbon's procurement process is decentralized, and managed locally or regionally. 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 supplier risk management is key.

In FY2018, through our Sustainability Steering Committee, we commenced the implementation of a new third-party due diligence system, designed to assess the profile of our suppliers and ensure we only work with those with a good track record in terms of business practices, governance and reputation. In FY2018, we used the system to screen over 90 distributors and sales agents and plan to begin screening critical suppliers in the next year. We are now assessing further improvements to our due diligence approach and systems.



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Customer engagement

Supplier management



Over 90

distributors and sales agents screened through our new due diligence system.

We are exploring a risk-based approach to supplier engagement that will target key suppliers (based on spend, criticality, reputation risk and other considerations) and encourage them to improve on their own environmental and societal impacts. We also encourage our suppliers to audit our own operations.

Response planning and preparedness

We strive to ensure that our sites and suppliers have inventories available at all times. Challenging and unexpected global circumstances can impact inventory approaches both for 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.



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Health and safety

Attracting and retaining talent

Employee engagement

Like the products we make, we believe our value is enhanced through the familiar bonds we form with each other. We support our people to reach their full potential, realizing that when we combine the best of local learning with a worldwide network, we take our expertise to global proportions. We are committed to instilling a mind-set of safety for all our people, benefiting them at work and off the job.



TIM FEDRIGON
CHIEF HUMAN RESOURCES OFFICER

“Our history has always been about working collaboratively to create the next opportunity and identify the next challenge to be tested. As we continue to leverage that approach, we want to increase our meaningful engagements and deepen our interactions to drive a culture of open, transparent communication and trust.”

We listen to what matters to our people, recognizing that attracting and retaining the best talent, and keeping them safe, is a fundamental driver of our continued success.



Changing our health and safety culture

We have now implemented Commitment Based Safety at eight facilities.



Listening to our people

98% of employees took part in internal opinion surveys.



Access to clean water

We achieved our WASH pledge to provide access to clean water, signed in 2015.



OUR PEOPLE

Health and safety

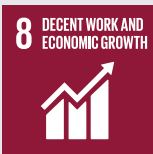
Attracting and retaining talent

Employee engagement



Good health and well-being

Our Commitment Based Safety approach encourages employees to make personal commitments to their own health and wellbeing, resulting in sustainable work practices and individual accountability.



Decent work and economic growth

The health and safety of our people is a shared value that is integrated into all of our activities.

Health and safety

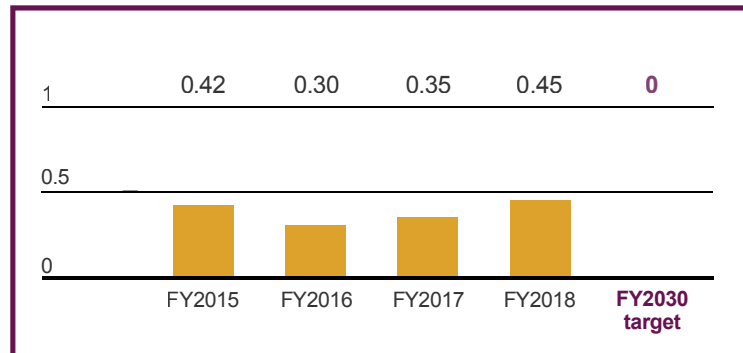
The health and safety of our people is paramount. In FY2018, we continued on our journey to establish a culture of safety excellence within Birla Carbon – steered by strong leadership and driven by the commitment of our own people to putting the safety of themselves and others first.

Building a strong safety culture takes time; we do not pretend to be at the end of our journey. We continue to make progress with our people at every level, building understanding of what it means to take responsibility for our own and each others' safety. We expect this trend to continue to mature over the coming years.

Progress towards target



Target: Achieve zero recordable injuries year on year (employee and contractor Total Recordable Incident Rate).



| FY2015 | FY2016 | FY2017 | FY2018 | FY2030 target |
|--------|--------|--------|--------|---------------|
| 0.42 | 0.30 | 0.35 | 0.45 | 0 |

We are responsible for ensuring that everyone at our facilities is safe, from the moment they arrive to when they leave. Our injury rate continues to position us as a leader in our industry; in FY2018, 14 of 19 facilities reported no recordable injuries to employees, and 11 of the 19 facilities reported no recordable contractor injuries. We can still do more as we strive for zero injuries, but our progress demonstrates that people have understood our safety expectations and are taking care in their daily work.



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17

PARTNERSHIPS FOR THE GOALS



Partnerships for the goals

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



87%

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

In FY2017, we introduced leading indicators, designed to proactively prevent incidents and injuries before they occur. These indicators focus on:

- 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 increased engagement from employees and leaders in HSE initiatives and positive change in safety culture. We expect these leading indicators to continue to drive improvements over the coming years, and we 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.

All Birla Carbon personnel are educated on their health, safety and environmental responsibilities during their induction. Expectations and capabilities are strengthened by regular training throughout the year.

We maintain robust corporate standards that exceed regulatory requirements in the countries where we operate; these are systematically implemented, considering local requirements. We also conduct corporate audits every two years to ensure that sites comply with external requirements as well as our own standards. These audits also serve to identify and share best practices.

During FY2018, we held four safety awareness weeks focused on lock-out/tag-out of hazardous energies, work permitting, mobile equipment and working safely during challenging conditions. Safety information and posters are provided to sites and these are translated and reviewed each day during the awareness week.



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Key health and safety risks



Commitment Based Safety (CBS) encourages 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 five occupational health risks, which every person working at our sites must be aware of.



Working at height

Use all prescribed personal protective equipment (PPE) 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.



Lock-out/tag-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 one-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.

Our employees are regularly trained on the standards and precautions required to work safely. Above all, they are taught and expected to stop work at any time in which they feel that risks are not being properly controlled.



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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.



1 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.



2 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.



3 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.



4 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.



5 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.

Changing our health and safety culture

At Birla Carbon, we believe a culture of safety is made up of individuals who value safety and actively manage their risks every day. We are continuing to deploy the Commitment Based Safety (CBS) process as a means for individuals to make personal commitments to managing and discussing the risks they face. Through CBS, we expect every person at every level to take responsibility and be accountable for both their safety and that of those around them. Our aim is to create a culture where all employees are aware of the risks they face and they take active care for others; when someone observes someone at risk, we want them to stop and take action to help avoid that risk.



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Specific risks and the behaviors required to manage them are identified at a site level and employees provide daily reports on their progress. This creates safe habits, both in terms of behaviors and the daily expectation to report on and be accountable for managing risks. 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 FY2018, we continued our implementation of CBS in our facilities in North America, Brazil and India, successfully introducing it across eight sites by the end of August 2018. We have also launched the approach in Egypt, Italy and Hungary. In FY2019, we will expand to cover all regions.

To gain a better understanding of our current baseline safety culture, we conducted employee perception surveys across 11 facilities in FY2017. In FY2018, we extended these surveys to four additional sites, bringing the total coverage to 75% employees. Results are categorized into major topics such as employee engagement, risk taking and recognition and are used to improve our understanding of local safety culture, including strengths and where improvements can be made. Leadership teams are asked to focus on improvement activities that will have a significant impact within their region.

Protecting our contractors

Improving our health and safety performance demands that we work closely with contractors, who may not apply the same standards or have the same safety understanding as our own employees. Since we introduced our Global Standard on Contractor Management in 2015, we have seen contractor safety performance improve significantly with the incident rate halved. In FY2018, our sites in North America contracted Browz, a third-party provider, to improve the qualification process. Browz collects information from contractors including safety incidence rates, insurance coverage, and safety and health programs, based on Birla Carbon specifications. The information is evaluated and scored, with each contractor assigned a rating. Only those that meet Birla Carbon requirements are qualified to work in the plants. The process has also saved the sites time in qualifying and selecting contractors.

Auditing our performance

We regularly audit compliance with regulations and standards across our operations. 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 FY2018, we conducted a total of 16 audits at our sites: nine for health and safety and seven for environmental performance (2017: 15 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 the central focus of our audits, which observe 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. New standards rolled out in FY2018 include Waste Management and Major Incident Prevention.



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8 DECENT WORK AND ECONOMIC GROWTH



Decent work and economic growth

We offer employment and career development opportunities across all regions.

17 PARTNERSHIPS FOR THE GOALS



Partnerships for the goals

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

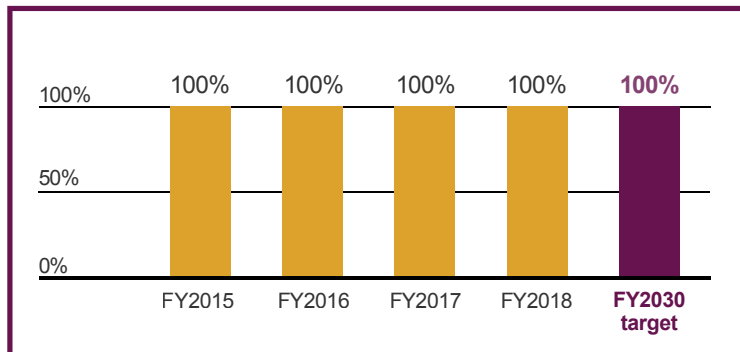
Attracting and retaining talent

We believe that we yield our 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.

Progress towards target



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



| FY2015 | FY2016 | FY2017 | FY2018 | FY2030 target |
|--------|--------|--------|--------|---------------|
| 100% | 100% | 100% | 100% | 100% |



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Health and safety

Attracting and retaining talent

Employee engagement

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 one culture of leadership, collaboration and innovation. It focuses on four key pillars:

- **Profitability** – by building a high-performing organization through a performance management system, with shared goal setting, roundtable discussions and aligned standards and ratings.
- **Leadership** – by creating an environment that builds capability, leadership and knowledge, including bringing in stronger talent, encouraging horizontal movements and focusing on diversity.
- **Engagement** – by enabling employees to think of Birla Carbon as a stronger brand and a desirable place to work through continuous engagement.
- **Culture** – by ensuring that all of our people at all levels are aware and demonstrate our vision and values.



These pillars will be supported by a modernized HR governance model that is equipped to achieve our 2020 aim. We are in the early stages of our strategy, but we have high expectations for its success.

How do we attract and retain talent?

We seek to be an employer of choice in all the regions where we operate. We place emphasis on talent development, targeted internal movement and continuous engagement.

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 FY2018, we provided over 80 internships to students.



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Over 60

interns gained work experience at Birla Carbon in FY17.

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 FY2018, 12 participants from leading schools and universities in India and Asia completed projects with Birla Carbon through this program.

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

Identifying leaders

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; and
- Each employee is responsible for sharpening their innate potential.

Our approach includes a range of initiatives:

- **Assessment of potential** – the evaluation of 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; and
- **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 – both across Birla Carbon and the Aditya Birla Group as a whole.

Developing our people

From the plant floor to the sales floor, our passion for learning has no ceiling. We believe that continuous learning sustains employability and drives us to develop a deeper understanding of our products and their applications. We encourage our people to invest in learning throughout their career by providing multiple opportunities and platforms that fit their needs, enabling them to meet their career aspirations and perform successfully.



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By combining the best of local learning with our worldwide network, we are able to take our expertise to global proportions. Our Enterprise Learning Management (ELM) system is designed to enhance employee skill levels, encourage employees to apply the knowledge gained to improving our business, and conduct all training and development from a centralized source. The platform records all learning activities and an online library of close to a thousand courses is available to all employees at no cost. Courses are provided in multiple languages, covering a broad 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

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 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 with a new e-learning course on carbon black reactor technology. Further courses in the pipeline include Commitment Based Safety, Plastics 202 and Sustainability at Birla Carbon.

In FY2017, we introduced our first eAcademy engagement sessions through which employees are engaged by leaders via webinars. The concept is that our leaders can offer expertise to the entire business. eAcademy sessions in FY18 focused on Feedstock, Fundamentals of Finance, Business in China and New Product Development and were attended by over 600 participants. In addition, our newly launched "Food 4 Thought" sessions provide an opportunity for employees to "lunch and learn" about different aspects of the business. Over 12 sessions were completed in North America in FY2018 with a global roll-out planned for early FY2019.

Core Conclave

The Aditya Birla Core Conclave is an annual event for middle and senior management – including our future leaders – which aims to build depth, broaden perspectives and foster interaction across the Aditya Birla Group. Almost 120 Birla Carbon employees have participated in the first three Core Conclaves. The Group's aim is to engage some 3,000 middle management employees in the next three to four years.



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Recognizing our people

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

Total Reward Philosophy

Our approach to rewarding and recognizing our people is designed to reinforce our commitment to be the most respected, sustainable and dynamic global carbon black business. We seek to attract and engage qualified employees through competitive total rewards in each country in which we operate. To achieve it, 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.

The PRIDE Program

We recognize exceptional individual and team performance through our PRIDE Program, which includes monetary rewards for outstanding contributions to the business. Besides being rewarded at the Business Level, our various locations supplement PRIDE with added regional recognition reflecting the traditions and cultural norms of their specific region.

Group recognition

Employees are also recognized through the Aditya Birla Group Awards for Outstanding Achievement. Exceptional performers are nominated for individual awards, including Young Professional, Distinguished Achiever, Exceptional Contributor, Outstanding Leader and Value 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 easier to determine through a more streamlined career path 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 the employees and their spouses prior to a potential relocation, ensuring that they are comfortable with the move and the role. We offer comprehensive support to relocating employees and their families, including assistance with school admissions and employment assistance for spouses.



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Focus on female employees around the world

Three employees tell us what working at Birla Carbon has meant for their career development journey in recent years.



"I joined Birla Carbon in 2014. The change that has helped me the most is the increase in the attention we pay to people and their development. "A World of Opportunities" is becoming more and more real, and new training opportunities have enabled me to extend my view of the company and my responsibilities. This year, I was involved in a regional project at our headquarters in Hannover, Germany. It completely changed my work environment and duties and gave me the opportunity to work with our Regional HR Director. This was a true eye-opener that made me more conscious of the impact of my job on my colleagues and the company. I would advise my colleagues to take all the chances they get, to be committed, to take on responsibilities and to do more than what they are asked to."

Elisabetta Ferraro is an Administrative Partner at the Trecate plant in Italy



"My time as an employee at Birla Carbon has been instrumental in my professional development, as well as my personal growth. I've been lucky to have some outstanding opportunities to work both in my home country and internationally, which has benefited me with immense learning and global exposure. The guidance I received from senior colleagues, the team spirit and the support I have received has had a great influence on my development. My advice to other young females in Birla Carbon: do not restrict yourselves, accept a challenge, venture into new areas and be prepared to take on additional accountabilities."

Priyanka Baheti is Company Secretary and Attorney at Birla Carbon in India



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“During my 10 years working at Birla Carbon, I have been lucky to be part of many changes. We have set up the Human Resources function in China and made great progress in developing training and talent management. As the Weifang plant has expanded, we have recruited many people and, by now, most of them have grown to be key personnel, both in management level and positions. They have played an integral role in setting up our new plant in Jining. More recently, we have focused on standardizing Human Resources between the three locations in China under the leadership of China Head of HR – Ben Wang – while also enhancing communication. I feel very lucky to have been part of such a strong team since my graduation. We make the Weifang plant team full of cooperation and fun. Young engineers like to work with us and we have a very low turnover we can be proud of as a result.”

Jingjing Geng is HR Manager at our Weifang Plant in China

DIVERSITY

- 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.



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4 QUALITY EDUCATION



Quality education

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

5 GENDER EQUALITY



Gender equality

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

Employee engagement

Within our company, our bond – in its elemental form – is unbreakable; because we share the same goals, we support each other to achieve them. Motivating and inspiring our global workforce 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.

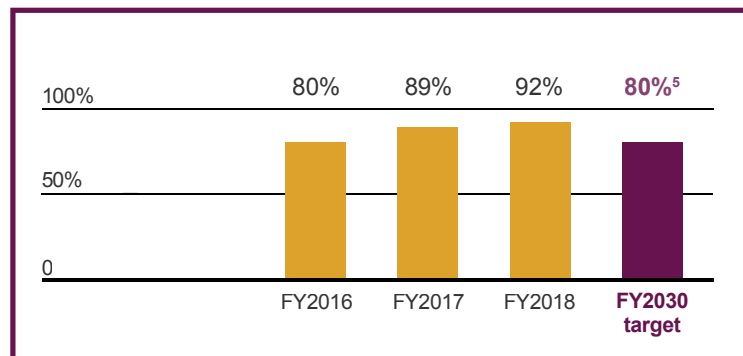
Our approach to engagement

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 Norm³ and the Global Chemical Company Norm⁴, which in FY2018 stood at 80%.

Progress towards target



Target: Remain above chemical industry annual benchmark for employee engagement.



| FY2016 | FY2017 | FY2018 | FY2030 target |
|--------|--------|--------|------------------|
| 80% | 89% | 92% | 80% ⁵ |

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

4 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.

5 The industry benchmark will evolve year on year; in FY2018, it remained at 80%.



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Clean water and sanitation

Water, Sanitation and Hygiene (WASH) is a priority for us, and we have been working to ensure that all of our sites provide safe access to WASH by FY2018.



Reduced inequalities

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

One Voice

We conducted our first survey covering all 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, 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. Although there were few areas of real concern, we performed less well in terms of development and work execution. During FY2018, we applied the lessons learned to the development of improvement action plans.

Vibes

By encouraging continuous dialogue with our employees, we gain a better understanding of their expectations and track our progress with regards 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 a local, regional and global level.

We conducted our most recent Vibes survey in FY2017, with a 98% response rate. The survey shows that we are now reaching the industry benchmark for employee engagement. We performed highly in the areas of Customer Centricity, in alignment and in openness to new ideas. Our people are proud to be a member of the Aditya Birla Group, which they consider a great brand to work for, and believe that their work is connected 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

Our Team Vibes survey takes place in alternative years to the main Vibes survey. 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 that is 10% above the industry benchmark. Engagement scores increased significantly over FY2015 across the parameters of leadership, management and team effectiveness. Areas where 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 level and progress will be tracked over the next two years using a global scorecard.

From FY2019, we will combine the Vibes and Team Vibes survey and roll it 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.



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Partnerships for the goals

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



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

Employee wellness

We want our employees to feel that we have 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 help them to lead healthy lifestyles.



Providing safe drinking water around the world

We are proud to have met the [World Business Council for Sustainable Development's \(WBCSD\) Pledge for Access to Safe Water, Sanitation and Hygiene \(WASH\) at the Workplace](#). Signed by Birla Carbon in 2015, the WASH pledge is an opportunity to contribute to the implementation of the UN Sustainability Development Goal 6 – Clean Water and Sanitation.

The WBCSD assesses progress using a scoring system which has a maximum score of 2.0. Birla Carbon's score in January 2018 was 1.93, a major step forward from our score of 1.77 when we made the commitment in FY2015.

Our key successes over the last three years include:

- All plants found creative ways of contributing to the WASH initiative, whether inside the plant or in the communities;
- All plants actively measure water use and water recycling, and established water reuse programs; and
- A total of 143 awareness campaigns and training sessions were carried out at Birla Carbon plants, with 53 action plans created and 46 of these completed.

EMPLOYEE ENGAGEMENT

Supporting diversity in the workplace

With operations in 12 countries, our diverse workforce includes many different cultural backgrounds and skills. We are strongly committed to diversity and equality, believing that all employees should be able 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.



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When we form familiar bonds, we help make people and communities more resilient. To share the strength for the long term, we engage with local groups and associations to provide targeted programs, primarily focusing on good health, quality education, sustainable livelihoods and community infrastructure, in alignment with the SDGs.



MRS. RAJASHREE BIRLA

CHAIR, ADITYA BIRLA CENTRE FOR COMMUNITY INITIATIVES AND RURAL DEVELOPMENT

“Inspired by Birla Carbon’s parent company and its foundation, our aspiration is ‘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.”

Our efforts are aligned with and form part of the work of the wider Aditya Birla Group Foundation, which focuses on the all-round development of the communities around our plants.



Global reach

The Aditya Birla Group Foundation reaches out to 7.5 million people annually, spread over 5,000 villages globally where over 60% live below the poverty line.



Targeted engagement

Each facility develops its own approach, ensuring that its activities target issues of specific relevance.



Full participation

All our facilities have community engagement strategies in place, building close ties with those impacted by our operations.



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100%

of 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 directing our resources to provide practical support and enable people to improve their own lives. At the same time as supporting charitable activities, we aim to help the communities near our operations 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, depending on their specific social issues and priorities. We apply a participatory approach, engaging with the community to better understand the issues that concern them and to target our interventions accordingly.

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

- [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.



MR. KH OH
HR MANAGER, BIRLA CARBON
KOREA CO. LTD.

“Our priority is to engage with the local community in Yeosu to understand their needs, ensuring our investments and support make a real and lasting difference in the areas and to the people who need them most.”



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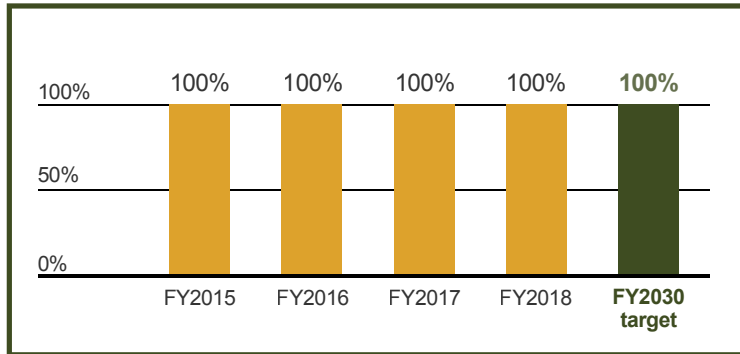
Sustainable livelihoods

Community infrastructure

Progress towards target



Target: 100% of our facilities participate in community engagement.



| FY2015 | FY2016 | FY2017 | FY2018 | FY2030 target |
|--------|--------|--------|--------|---------------|
| 100% | 100% | 100% | 100% | 100% |



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Identifying the right projects

Our approach to engaging with communities guides us to build lasting, mutually beneficial partnerships with the people impacted by our operations.





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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 targeted community engagement work can have an immediate and visible impact. Our investment adds real value by supporting strained healthcare providers in certain parts of the world.

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



Good health and well-being

We provide health support through our community activities, such as providing access to vaccines where needed and access to doctors.



Partnerships for the goals

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



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Healthcare

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

South Asia



Gummidipoondi – We supported a Pulse Polio Campaign and provided multi-specialty health camps for local villagers and students in association with the Public Health Department. We also provided infrastructure support to primary health centers, donated medical equipment to the local hospital and improved access to safe drinking water for communities through investment in a Reverse Osmosis Plant.

Patalganga – We organized a wide range of health initiatives for communities, including: dental check-up camps for primary and secondary school pupils; a blood group testing camp for college students; HIV/AIDS awareness programs to mark World AIDS Day; and support for the Pulse Polio Campaign to promote childhood polio vaccination.

Renukoot – We ran a polio immunization camp for children under five living in nearby villages as part of the fight to eliminate polio. We also supported treatment for specific conditions, including hernia surgery for some 93 beneficiaries, and ran a blood donation camp.

South East Asia



Thailand – We funded a new bathroom at Tambon Huapai hospital and arranged a mobile health clinic to provide access to health services for villagers.

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



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Spain – Birla Carbon Spain became an allied member of Amara Cantabria (the Association of Parents of Children with Cancer). We are sponsoring the production of a children’s storybook which will support conversations about cancer with children who suffer from it, and with their families and schools.

Egypt – We established primary health centers in four villages. These provide access to health services for some 300 people a month, along with medical campaigns, a lab service and access to medicines.

Hungary – We supported a blood donation clinic in the local community.



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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 target our support to enable young people in local communities to reach their full potential.

Providing education support

Effective, targeted education provides vital opportunities for young people, but the school systems in some of our local areas do not always provide the support that they need. Because we see them as our future workforce, we engage with teenagers about what our industry can offer. In some regions, we provide financial support and internships. In others, we offer assistance in building schools, as well as providing 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



Quality education

As a member of the Aditya Birla Group and its commitment to education, Birla Carbon provides education support through its community activities across all regions where we operate.



Decent work and economic growth

We believe that the educational component of our community engagement work both reduces youth unemployment and leads to productive job creation.



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Partnerships for the goals

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



Education

Educational support varies across our regions due to the autonomy and specificity of our local community engagement approach, which ensures we meet local needs.

South Asia



Gummidipoondi – We supported the upgrading of a public school and implemented a WASH project to promote access to safe water and hygiene facilities in partnership with UNICEF, along with scholarships and educational support to enhance students' learning capacity.

Renukoot – We provided free specialized coaching to help over 100 underprivileged children prepare for examinations. We also carried out a feasibility study for the renovation of a local school attended by 270 students, including to improve access to clean water and hygiene facilities.

Patalganga – 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 help raise exam results for 100 students, providing school uniforms for 450 children, and supporting cultural and educational events.

South East Asia



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

China – We restored the library at Hukeng Elementary School, located near our Jining plant. The library was redecorated and restocked with almost 100 books donated by Birla Carbon employees, along with 100 books purchased by the plant. In Weifang, we provided five scholarships to cover university fees for disadvantaged students and donated new luggage to students passing the entrance exam to university and ranking in the top 80.

Thailand – Alongside our student trainee program, we provide scholarships for employees' children and local disadvantaged students.



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Italy – We founded the not-for-profit Birla Association for Education and Promotion of Human Development, which seeks to support sustainability initiatives through education. In FY2018, the foundation supported three schools with its project “From (Carbon) Black to Light,” which aims to bring to light new ideas and technologies for a more sustainable world. We hosted 12 internships which saw our Trecate Plant awarded the “BAQ” (Bollino per l’Alternanza di Qualità – Recognition for Internship Quality), and welcomed some 280 middle school students to our plant.

Egypt – We supported classes in three government-run schools to help some 400 students secure better grades. We also provided sports, arts and computer literacy activities in village schools, benefiting some 1,300 students. Three nursery school facilities benefiting 400 children and their families have been established, along with summer courses to enhance children’s educational levels and prepare them for the next academic year.

North America



Hamilton – Every year, Mohawk College in Hamilton, Canada, selects four students from their Power Engineering program to complete a three-month training program at Birla Carbon. The training gives the students hands-on operating experience of the cogeneration power plant, and counts towards their Power Engineering certification. In FY2018, we also sponsored the Annual Beach Kids Christmas Party, which was attended by some 60 families and included an educational science-based show.

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

Marietta – 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 with Birla Carbon. We are currently exploring opportunities to extend the partnership for another five years.

South America



Camacari – We focus on supporting students at public schools in the communities around our plants to help improve their employability and career planning. Our volunteers talk about their own careers and highlight the competences that students need to enter the labor market, as well as discussing the role of chemistry in our lives. Students are invited to visit our plants through the Open Door Program.



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Sustainable livelihoods

We depend on thriving local communities to support our workforce and our supply chain. Rural communities in particular can suffer from a lack of resources and assistance, and a key aim of our community engagement activities is to empower these communities to take ownership of their own advancement. It is important that the young are educated, but it is equally important that adults – both men and women, and particularly the disadvantaged – 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 the members of local communities take the opportunities we offer to improve their own lives. We want to enable residents to become self-reliant, empowered and capable of applying our support in practice.

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



No poverty

Through our community activities, we support inclusive and gender-sensitive approaches, including social support and education.



Zero hunger

Our community engagement programs in India include supporting for small-scale agriculture by investing in infrastructure, financial support and training for farmers.



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Gender equality

We support gender equality by empowering women in the communities where we operate through vocational training and support.



Reduced inequalities

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



Sustainable livelihoods

We provide targeted training to support independent and empowered workers in communities.

South Asia



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

Renukoot – We supported 55 young people living in rural areas to improve skills and employability with training and certification through the ANYA initiative. We also provided water wheels to enable women and children to more efficiently and safely collect the water they need in rural villages, freeing up time to enable education and other activities.

Patalganga – In March 2018, we hosted more than 350 women from local villages to mark International Women's Day and forward our women's empowerment activities. 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 NGO. We also launched a new school uniform stitching project, which saw 27 women receive training in tailoring skills and make uniforms for 221 female students.

South East Asia



Korea – In Yeosu, we funded a new kitchen for the Rainbow women's shelter, an organization supporting victims of prostitution. 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.

Thailand – We supported the Pracharat Local Market scheme to promote the livelihoods of local people, and supported villagers from Huapai Community to study a new model of agriculture.



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Europe and Africa

Egypt – We equipped four tailoring centers with the equipment and materials needed to provide training to 32 women, with the aim of developing at least 20 future 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) to enhance the living conditions of around 500 to 600 people in four villages.



North America

North Bend – We supplied water bottles, toothbrushes, pedometers, hot/cold compresses and duffel bags to assist Chez Hope in its support for families in need in Franklin, Louisiana.

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Clean water and sanitation

Water, Sanitation and Hygiene (WASH) is a priority for us; we signed the WASH pledge in 2015 and have been growing in our commitment year on year. In FY2018, we successfully fulfilled our pledge and achieved a WASH rating of 1.93 out of 2, compared to 1.77 in 2015.

Community infrastructure

Some communities near to where we operate are severely under-equipped in terms of basic community infrastructure – including buildings, roads and public facilities. We believe that we have a responsibility in these areas to work in partnership with communities and to provide practical and sustainable solutions.

Structural support where needed

We identify opportunities for specific efforts in buildings and infrastructure through our ongoing engagement with local communities, focusing on their most critical requirements.

Examples of areas where we contribute include:

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



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Community infrastructure

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

South Asia



Gummidipoondi – We renovated a community health center in Billakuppam village in association with Rotary Club of Gummidipoondi Industrial City and helped to fund household toilets for villagers.

Renukoot – We provided access to safe drinking water to 2,000 people living in local villages and funded the purchase of a water tank benefiting some 3,260 people in the village of Meyorpur. We also supported the Clean India Campaign in local villages and provided clothes and blankets to people living in poverty.

South East Asia



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.

China – We support families in need through clothing donations.

Thailand – Infrastructure investments in FY2018 included the renovation of the police station in Angthong Province, a children’s playground and a local temple, as well as supporting the government with activities such as temple cleaning and road repairs.



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Egypt – Four community development centers are now up and running in Hawis, Abo Simbel 1, Abo Simbel 2 and Karnak. These include a nursery, literacy facilities, a primary health center, tailoring center, offices and other amenities.

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

North America



Hickok – We make annual donations to support the local fire department to enable them to purchase equipment and fund training. Ulysses is a very small community and the fire department is run by volunteers, including some of our Hickok employees.