What is the science behind building a better tomorrow together?
How do you transform challenges into opportunities, redefine what's possible and help create a more efficient, sustainable world at the same time? It takes collaboration, science and technology, and a belief that, together, we can work to positively impact the planet. At Dow, we’re partnering with our customers and other stakeholders to take on the challenges of a constantly changing world. We’re innovating to discover new, beneficial solutions in materials science. We are working continuously to improve our operational performance in ways that respect people, their safety and our environment. And we’re applying our employees’ passions and skills to help build thriving, resilient communities.

Can the nature of business be good for nature and society?

What happens when a company believes that science can do a world of good?

Can solving customers’ needs also help address the world’s needs?

How can business and society collaborate for a better world?

How does embracing inclusion help promote the success of our people and planet?

Governance and Additional Information

GRI Content Index

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Welcome to the 2018 Dow Sustainability Report, Dow’s 16th annual report. This report reflects the Company’s performance for the calendar year ended December 31, 2018. 2018 was a year of significant change in preparation for Dow’s separation from DowDuPont and gearing up for our ambition to be the most innovative, customer-centric, inclusive and sustainable materials science company in the world. Our Dow colleagues have maintained focus on many important sustainability initiatives so that the new Dow will be on strong footing toward realization of the sustainability ambition. You will hear about many of those initiatives and the Dow team members who have made them happen in the pages of this report. We welcome your engagement on any of the topics presented. Together, we can positively impact society and the planet.

This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards Comprehensive option. The Comprehensive option requires that the Company report all of the General Disclosures described in the GRI Standards as well as all of the Specific Disclosures related to issues material to us. Mary Draves, chief sustainability officer and corporate vice president, Environment, Health & Safety, provides formal internal review of the report. We have also sought independent assurance to verify compliance with the GRI standards. See page 112 of this report for the Independent Assurance Statement. This document also serves as Dow’s UN Global Compact Communication on Progress for 2018.

Additional reporting that may be of interest to the reader can be found at https://corporate.dow.com:
• Downloadable version of this report, including additional interactive information
• The Dow Chemical Company’s most recent previous report, covering the year ending December 31, 2017, and archive of earlier annual sustainability reports
• 2018 The Dow Chemical Company Form 10-K
• Dow Final Form 10 Information Statement effective March 12, 2019

Thank you for your interest in our report. We welcome your questions, comments and feedback. You may contact us at:
Jennifer Princing
Dow Sustainability Reporting
j.l.princing@dow.com | 989-496-7154

UN SDG ALIGNMENT
Target 12.6: "Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting. Dow has prepared annual sustainability reports for 16 years and continues to expand the scope of reporting. The Company contributes to the global discussion on effective sustainability reporting, with participation on the Task Force for Climate-Related Financial Disclosures, the Global Sustainability Standards Board and others."

Effective August 31, 2017, pursuant to the merger of equals transaction contemplated by the Agreement and Plan of Merger, dated as of December 11, 2015, as amended on March 31, 2017, The Dow Chemical Company (“TDCC”) and E. I. du Pont de Nemours and Company (“DuPont”) each merged with subsidiaries of DowDuPont Inc. (“DowDuPont”) and, as a result, TDCC and DuPont became subsidiaries of DowDuPont (the “Merger”). Subsequent to the Merger, TDCC and DuPont engaged in a series of internal reorganization steps to realign their businesses into three subgroups: agriculture, materials science and specialty products. Dow Inc. (“Dow”) was formed as a wholly owned subsidiary of DowDuPont to serve as the holding company for the materials science business. On April 1, 2019, DowDuPont completed the separation of its materials science business and Dow became the direct parent company of TDCC (the “Separation”).

DowDuPont completed the separation and distribution of Corteva, Inc., the holding company for the agriculture business, on June 1, 2019. Following the separation, DowDuPont holds the specialty products business and changed its corporate name to DuPont de Nemours Inc. and is known as DuPont.

For the purposes of this report, “the Company” is intended to refer to the businesses of TDCC as they existed before Separation. There are situations where internal reorganization and business realignment activities have impacted the scope of data collection and reporting; these are explained as needed in the text of the report. Effective with the Merger and during 2018, TDCC’s business activities, including the assessment of aspects of sustainability policies and performance, ultimately were reviewed and managed by DowDuPont. As a result of this governance structure, certain information in the report is presented for DowDuPont.
There’s no company in business today that can design their next generation of products without thinking about sustainability. At Dow, as we focus on creating, making, and delivering the most sustainable materials science company in the world, we must ask our customers and ourselves how we can continue to provide new and innovative products – products that are designed to meet the needs and wants of our customers and keep the planet healthy, while also protecting the planet. The needs of our customers and the world are converging on sustainability. As we work with those customers and to differentiate ourselves from a sustainability standpoint, we believe there’s a definite advantage for the new Dow.

We have set some high standards – and stretch goals – for the new Dow. We’ve set aggressive growth targets. And we have coupled those with a higher sense of purpose.

We have the talent and tools in place and have made significant strides in the past year. Among the 2018 highlights:

• Expanded our industry-leading Product Stewardship Academy, which provides hands-on training and mentoring for customers to ensure our products are handled and used responsibly.
• Continued growth of our collaboration with H&S Anlagentechnik in Germany to recycle post-consumer mattresses into the raw materials needed to make new mattresses.
• More than 25 percent of the way toward the goal of being the first company to achieve $1 billion in value primarily through avoided costs from projects that are good for business and better for ecosystems.
• Pulling Our Weight cleanup campaign is the largest single employee sustainability initiative in the Company’s history. Employees removed 54,000 pounds of trash from beaches, waterways and green spaces while raising awareness about the benefits of a circular economy. Our volunteerism and partnerships allow us to build a stronger, more resilient future for the communities where we live and work.
• Signed a memorandum of understanding with the China Ministry of Environmental Protection to develop advanced, risk-based safety-assessment approaches for stakeholders in Southeast Asia, the United States, and Africa to build durable with recycled plastics.
• Recognized lasting change starts with partnerships. When we developed our 2025 Sustainability Goals, we realized that if we were going to truly use our science, expertise and global reach to help shape a more sustainable world, we needed to strengthen our partnerships and operations. As the new Dow, we continue to collaborate with others to come up with fresh ideas and scalable solutions to societal challenges. By asking the right questions and seeking the right answers with our partners, we believe the potential for creatively and positively change is huge.

Among the questions we are asking:

• How can we move the world without waste possible? In 2018, we announced a number of new actions to tackle plastic waste. We invested in the World Economic Forum’s Global Plastic Action Partnership and Circulate Capital’s $100 million effort to finance infrastructure that prevents waste from becoming waste. We also work with government agencies to unlock the potential of nature-based solutions.

• How can adopting a nature lens be good for Dow and the environment? More and more, nature is becoming part of our everyday decision-making. In less than three years, we have identified 57 nature-based projects that help achieve clean water, clean air, healthy soil or healthy ecosystems. Through the end of 2018, we have achieved more than 25 percent toward our goal of delivering $1 billion in value through nature-based efforts. Just as important, we are sharing what we’ve learned and the tools we’ve developed with the Nature Conservancy, so other businesses can adopt similar practices at their sites.

• How can we activate the passion of our employees for positive impact? Through our R&D, and innovations such as our ECOFAST™ Pure Sustainable Textile Treatment, we’re helping to make the products that touch our everyday lives – like cotton T-shirts – more sustainable. In addition, we’re helping to develop the sustainability leaders of tomorrow through collaborations with the globe with schools and non-profits. By sharing their theme and enthusiasm with underserved youth, our people are building a culture of inclusion and lifestyle in learning about science and technology.

As we seek those solutions, we have a philosophy to guide us.

First, sustainability must be more than a top-down corporate initiative. It must be a fundamental part of our business strategy and customer partnerships.

Second, we are led by our 2025 Sustainability Goals. These are our third and arguably most progressive set of 10-year goals organized around a few key concepts that align directly with the UN Sustainable Development Goals.

• Advancing the circular economy
• Developing safer materials
• Maintaining world-leading operations performance
• Delivering breakthrough innovations
• Valuing nature

Finally, we must continue to develop social and societal impacts with all our partners and stakeholders with a sustainable focus for success: public policy, science and technology, and values chain innovation.

We have the talent and tools in place and have made significant strides in the past year. Among the 2018 highlights:

• Joined $100 million effort with finance and infrastructure companies to prevent plastic waste in oceans.
• Signed a memorandum of understanding with the China Ministry of Environmental Protection to develop advanced, risk-based safety-assessment approaches for environmental protection.
• Employees removed 54,000 pounds of trash from beaches, waterways and green spaces while raising awareness about the benefits of a circular economy. Our volunteerism and partnerships allow us to build a stronger, more resilient future for the communities where we live and work.
• People removed 54,000 pounds of trash from beaches, waterways and green spaces while raising awareness about the benefits of a circular economy. Our volunteerism and partnerships allow us to build a stronger, more resilient future for the communities where we live and work.
• Continued growth of our collaboration with H&S Anlagentechnik in Germany to recycle post-consumer mattresses into the raw materials needed to make new mattresses and thermal insulation.
• Expanded our industry-leading Product Stewardship Academy, which provides hands-on training and mentoring for customers to ensure our products are handled and used responsibly.
• The initiative was awarded an ACC Responsible Care® Award in 2018.

These were a few examples of how we are leading the way at Dow.

We have set some high standards – and stretch goals – for the new Dow. We’ve set aggressive growth targets. And we have coupled those with a higher sense of purpose. Through collaboration and science-based solutions, we can raise the bar and be the industry leader in creating a more sustainable planet.

Can science and collaboration create a more sustainable planet? We believe so. Whether it is working with our customers to design and make circular products or working across our value chain to drive new and innovative products – products that are designed to meet the needs of our customers and the world – while also protecting the planet. The needs of our customers and the world are converging on sustainability. As we work with those customers and to differentiate ourselves from a sustainability standpoint, we believe there’s a definite advantage for the new Dow.

To achieve this goal, we are working across our value chains with all stakeholders to incorporate their sustainability needs into our business strategy. That means integrating customer growth, consumers, trends, policy and science and technology into the very heart of our business.

In addition, to achieve a truly sustainable business, we must build an accountable and inclusive organization. At Dow, Inclusion & Diversity is a business imperative. Our people are at the heart of our solutions and their diversity makes us stronger as a company and as a world.

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• Maintaining world-leading operations performance
• Delivering breakthrough innovations
• Valuing nature
We tend to think big. We take on the toughest challenges, and we stand ready to partner with our customers and the broader community to find the solutions that the world is seeking. Today the new Dow is a more focused company with the ambition of becoming the most innovative, customer-centric, inclusive and sustainable materials science company. We have a streamlined portfolio, with three market segments focused on consumer goods, packaging and infrastructure. Because our portfolio is more focused, we have the agility to apply the strengths of our operations and innovation engine to act on new opportunities and be catalysts for change. In everything we do, we strive for positive impact on society and the planet.

Company Profile

Dow (NYSE: DOW) combines one of the broadest technology sets in the industry with asset integration, focused innovation and global scale to achieve profitable growth and become the most innovative, customer-centric, inclusive and sustainable materials science company. Dow’s portfolio of performance materials, industrial intermediates and plastics businesses delivers a broad range of differentiated science-based products and solutions for our customers in high-growth segments, such as packaging, infrastructure and consumer care.

Throughout 2018, as a result of the Merger, DowDuPont owned all of the outstanding common stock of The Dow Chemical Company. The Dow Chemical Company’s business activities, including the assessment of performance and allocation of resources, ultimately were reviewed and managed by DowDuPont. Refer to the GRI Index on pages 114-119 to locate additional governance disclosures.

Since April 1, 2019, Dow is a publicly traded company with 748,824,164 shares of common stock outstanding at April 30, 2019.

In homes and offices, paints with FORMASHIELD™ Binders are actively removing formaldehyde to improve indoor air quality. On the road, our FASTRACK™ Quick-Dry Technology is enabling conversion from solvent-borne to waterborne road paints, helping dramatically reduce volatile organic compound emissions that can contribute to smog. In factories, EVOQUE™ Polymer Technology is helping formulators improve the performance of paints while also improving raw material efficiency and lowering their carbon footprint. It is market-defining innovations like these that resulted in our Dow Coating Materials research team receiving a 2019 BIG Innovation Award by the Business Intelligence Group. The R&D group was recognized for its expertise in bringing new ideas to coating needs of all kinds, including technologies that advance sustainability. As a result, the paints we use not only look good and last, but, in many cases, offer an advantaged environmental profile.
The Dow Chemical Company

Location of Operations

With global headquarters in Midland, Michigan, The Dow Chemical Company operated 164 manufacturing sites in 35 countries as of December 31, 2018. Since April 1, 2019, Dow operates 113 manufacturing sites in 31 countries. The following table includes the number of manufacturing sites by geographic region.

<table>
<thead>
<tr>
<th>Geographic Region</th>
<th>Number of Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. and Canada</td>
<td>57</td>
</tr>
<tr>
<td>Europe, Middle East, and Africa</td>
<td>44</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>42</td>
</tr>
<tr>
<td>Latin America</td>
<td>21</td>
</tr>
<tr>
<td>TOTAL</td>
<td>164</td>
</tr>
</tbody>
</table>

2018 Taxes (Payments to Governments)

<table>
<thead>
<tr>
<th>Geographic Region</th>
<th>Millions of Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>721</td>
</tr>
<tr>
<td>Europe/Middle East/Africa</td>
<td>414</td>
</tr>
<tr>
<td>Latin America</td>
<td>401</td>
</tr>
<tr>
<td>Asia/Pacific</td>
<td>248</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,724</td>
</tr>
</tbody>
</table>

Financial Highlights

In 2018, The Dow Chemical Company’s net sales were $60.3 billion, up 9 percent from $55.5 billion in 2017, driven by higher sales volume, reflecting additional capacity from U.S. Gulf Coast growth projects and increased supply from Sadara Chemical Company (“Sadara”), increased local price and the favorable impact of currency. The Dow Chemical Company employed approximately 54,000 people at December 31, 2018, down from approximately 56,000 people at December 31, 2016, primarily due to restructuring programs.

Financial data reported references The Dow Chemical Company 10-K for the fiscal year ended December 31, 2018. Investors may refer to the Dow Form 10 Information Statement issued in March 2019 that includes pro forma financial data.
Dow’s Deep Roots in Sustainability

A sustainability mindset is nothing new at Dow. For more than 120 years, we have continually searched for better products for society, better ways to make them and a better understanding of the chemistry that makes them possible.

Saving Energy

In the 1900s, founder H.H. Dow teamed with electrical pioneer George Westinghouse to develop industrial cogeneration, a process that provides steam and electricity for manufacturing. Cogeneration remains one of the most efficient ways of extracting energy from fossil fuels and is widely used in our operations today.

H.H. Dow believed in getting the most out of resources and used inexpensive and local materials to build his first chlorine plant in the late 1800s. This helped the Company lower production costs and survive price wars from competitors. In 1986, we established the Waste Reduction Always Pays (WRAP) program, which unified our waste reduction programs and resulted in significant savings.

In 1934, we established our own toxicology lab to enhance our chemical safety testing capabilities – decades before the U.S. EPA existed. As part of Dow’s 2015 Sustainability Goals, we were the first chemical company to provide online public summaries of our product safety assessments.

We are one of the largest industrial buyers of renewable energy, which is used to help power our manufacturing sites and reduce our carbon footprint. In Brazil, renewable biomass and hydropower are used as energy sources. In Texas, we have entered into long-term wind power purchase agreements for our operations.

Cutting Waste

H.H. Dow believed in getting the most out of resources and used inexpensive and local materials to build his first chlorine plant in the late 1800s. This helped the Company lower production costs and survive price wars from competitors. In 1986, we established the Waste Reduction Always Pays (WRAP) program, which unified our waste reduction programs and resulted in significant savings.

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Cutting Waste

Our Advancing a Circular Economy Sustainability Goal is focused on optimizing the use and reuse of resources. Today, we are collaborating in water-stressed regions to reuse municipal water for our operations. We also are working with municipalities to collect non-recycled plastic items and convert them into energy resources – helping keep more waste from landfills.

Advancing Product Stewardship

In 1934, we established our own toxicology lab to enhance our chemical safety testing capabilities – decades before the U.S. EPA existed. As part of Dow’s 2015 Sustainability Goals, we were the first chemical company to provide online public summaries of our product safety assessments.

As part of our Safe Materials for a Sustainable Planet Goal, we are collaborating across the value chain to promote product safety and transparency. Our Product Stewardship Academy was awarded a 2018 American Chemistry Council Responsible Care Award for helping to increase awareness of safe behavior, use of personal protective equipment and emergency response procedures in Africa.

We aim to pioneer new solutions for sustainable development while continuing to shape our business responsibly.
By understanding the sustainability needs of our customers and customers’ customers, we can accelerate development of new, more sustainable products and solutions. As a science and technology company, we develop premier materials science solutions that are essential to human progress. We have one of the strongest and broadest toolkits in the industry, with robust technology, asset integration, scale and competitive capabilities that enable us to address complex global issues. By listening to our customers and understanding their needs, we are innovating and bringing value to the products used in everyday life – from cosmetics and pharmaceuticals to cleaning products and clothing. Our products help make the world’s infrastructure more sustainable and durable, and our packaging innovations help improve food safety, extend freshness and reduce waste.

*See page 5 for discussion of business separations

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The Dow Chemical Company
Principal Product Groups Aligned with the Materials Science Business

Coatings and Performance Monomers

Coatings and Performance Monomers makes critical ingredients and additives that help advance the performance of paints and coatings. The product grouping offers innovative and sustainable products to accelerate paint and coatings performance across diverse market segments, including architectural paints and coatings, as well as industrial coatings applications used in maintenance and protection industries, wood, metal packaging, traffic markings, thermal paper and leather. These products enhance coatings by improving hiding and coverage characteristics, enhancing durability against nature and the elements, reducing volatile organic compounds (VOC) content, reducing maintenance and improving ease of application. Coatings and Performance Monomers also manufactures critical building blocks based on acrylics needed for the production of coatings, textiles, and home and personal care products.

Consumer Solutions

Consumer Solutions uses innovative, versatile silicone-based technology to provide ingredients and solutions to customers in high-performance building, consumer goods, elastomeric applications and the pressure-sensitive adhesives industry. Our technology helps Dow customers create modern consumer preferences in attributes such as texture, feel, scent, durability and consistency; and provides a wide array of silicone-based products and solutions that enable customers to increase the appeal of their products, external shell life, improve performance of products under a wider range of conditions and provide a more sustainable offering. Consumer Solutions also provides standalone silicone materials that are used as intermediaries in a wide range of applications including adhesion promoters, coupling agents, crosslinkers, dispersing agents and surface modifiers. It also collaborates closely with global and regional brand owners to deliver innovative solutions for creating new and unvalued consumer benefits and experiences in cleaning, laundry and skin and hair care applications, among others.

Hydrocarbons and Energy

Hydrocarbons and Energy is the largest global producer of ethylene, an internal feedstock, and a leading producer of propylene and aromatics products that are used to manufacture materials consumers use every day. It also produces and procures the power and feedstocks used by the Company’s manufacturing sites.

Packaging and Specialty Plastics

Packaging and Specialty Plastics serves growing, high-value sectors using world-class technology, both existing product lines and a rich product pipeline that creates competitive advantages for the entire packaging value chain. Dow is also a leader in polyolefin elastomers and ethylene propylene diene monomer (EPDM) rubber serving automotive, consumer, wire and cable, and construction markets. Market growth is expected to be driven by major shifts in population demographics; improving environmental awareness; consumer and brand owner demand for increased functionality; global efforts to reduce food waste; growth in telecommunications networks; global development of electrical transmission and distribution infrastructure; and renewable energy applications.

Industrial Solutions

Industrial Solutions is the world’s largest producer of purified ethylene oxide. It provides a broad portfolio of solutions that address world needs by enabling and improving the manufacture of consumer and industrial goods and services, including products and innovations that minimize friction and heat in mechanical processes, manage the oil and water interface, deliver ingredients for maximum effectiveness, facilitate deodorability, enable product identification and provide the foundational building blocks for the development of chemical technologies. Industrial Solutions supports manufacturers associated with a large variety of end markets, notably, crop protection offerings in agriculture; coatings, detergents and cleaners; and solvents for electronics processing, inks and textiles.

Polyurethanes and CAV

Polyurethanes and Chlor-Alkali & Vinyl (CAV) is the world’s largest producer of propylene oxide, polyethylene glycol and polyolefin polysters, and a leading producer of aromatics intermediates and fully formulated polyurethane systems for rigid, semi-rigid and flexible foams, and coatings, adhesives, sealants, elastomers and composites that serve energy efficiency, consumer comfort, industrial and enhanced mobility market sectors. Polyurethanes and CAV provides cost advantaged chlorine and caustic soda supply and markets caustic soda, a valuable co-product of the chlorine-manufacturing process. It also produces ethylene dichloride and vinyl chloride monomer, which is used to make polyvinyl chloride (PVC). The product grouping also provides essential, reproducible latex powders, silicones and acrylic emulsions used as key building blocks for differentiated building and construction materials across many market segments and applications, ranging from roofing and flooring to gypsum-, cement-, concrete- or dispersion-based building materials.

The Dow Chemical Company
dow.com/sustainability
Principal Product Groups Aligned with the Specialty Products Business

**Electronics and Imaging**
Electronics and Imaging is a leading global supplier of differentiated materials and systems for a broad range of consumer electronics including mobile devices, television monitors, personal computers and electronics used in a variety of industries. This product line includes a broad portfolio of semiconductor and advanced packaging materials including chemical mechanical planarization (CMP) pads and slurries, photoresists and advanced coatings for lithography, metallization solutions for back-end-of-line advanced chip packaging, and silicones for light emitting diode (LED) packaging and semiconductor applications. This product line also includes innovative metallization processes for metal finishing, decorative and industrial applications, and cutting-edge materials for the manufacturing of rigid and flexible displays for liquid crystal displays and quantum dot applications.

**Industrial Biosciences**
Industrial Biosciences is an innovator that works with customers to improve the performance, productivity and sustainability of their products and processes through advanced microbial control technologies such as advanced diagnostics and biocides, ozone delivery technology and biological microbial control.

**Nutrition and Health**
Nutrition and Health uses cellulosics and other technologies to improve the functionality and delivery of food and the safety and performance of pharmaceutical products.

**Safety and Construction**
Safety and Construction unites market-driven science with the strength of highly regarded brands such as STYROFOAM™ brand insulation products, GREAT STUFF™ insulating foam sealants and adhesives, and FILMTEC™ reverse osmosis and nanofiltration elements to deliver products to a broad array of markets including industrial, building and construction, and water processing. Safety and Construction is a leader in the construction space, delivering insulation, air sealing and weatherization systems to improve energy efficiency, reduce energy costs and provide more sustainable buildings. Safety and Construction is also a leading provider of purification and separation technologies including reverse osmosis membranes and ion exchange resins to help customers with a broad array of separation and purification needs such as reusing waste water streams and making more potable drinking water.

**Transportation and Advanced Polymers**
Transportation and Advanced Polymers provides high-performance adhesives, lubricants and fluids to engineers and designers in the transportation, electronics and consumer end markets. Key products include MOLYKOTE® lubricants, silicone solutions for healthcare, MULTIBASE™ TPSiV™ silicones for thermoplastics, and BETASEAL™, BETAMATE™ and BETAFORCE™ structural and elastic adhesives.

Principal Product Groups Aligned with the Agriculture Business

**Crop Protection**
Crop Protection serves the global production agriculture industry with crop protection products for field crops such as wheat, corn, soybean and rice, and specialty crops such as trees, fruits and vegetables. Principal crop protection products are weed control, disease control and insect control offerings for bunter or soil application or as a seed treatment.

**Seed**
Seed provides seed/plant biotechnology products and technologies to improve the productivity and profitability of its customers. Seed develops, produces and markets canola, corn, cotton, rice, soybean and sunflower seeds.
2025 Sustainability Goals

In 2015, Dow announced its 2025 Sustainability Goals, a set of strategic goals designed to redefine the role of business in society. These goals, the Company’s third set of sustainability-related goals since 1995, build upon its previous two decades of goals. Dow’s 2005 Environment, Health & Safety Goals resulted in $5 billion in safety, waste, water and energy savings. Dow’s 2015 Sustainability Goals provided more sustainable products and solutions addressing global challenges in food, energy, sustainable water supply and improved personal health.

Dow’s 2025 Sustainability Goals aim to expand the Company’s impact around the world, driving unprecedented collaborations to develop societal blueprints that will facilitate the transition to a sustainable planet and society. To achieve these bold and aggressive sustainability targets, Dow is harnessing its innovation strengths, global reach and dedicated employee population.

To further prioritize the sustainability goals, in 2018 each goal was assigned an executive sponsor in a business or functional leadership role most aligned to the aims of the goal. Goal implementation leaders reviewed and assessed metrics and targets associated with each goal, taking into account changes in global conditions since introduction of the goals, as well as the scope and scale of the new Dow. Throughout 2018, the 2025 Sustainability Goal teams continued to focus on maintaining momentum toward achievement of the goals.
2025 Sustainability Goals

Leading the Blueprint
Collaboration in new and deeper ways across the public and private sectors is essential for the transition to a sustainable planet and society. Dow seeks to lead in developing societal blueprints that integrate public policy solutions, science and technology, and value chain innovation to facilitate that transition. Dow’s blueprints will align to the United Nations Sustainable Development Goals (SDGs) to ensure significance and relevance to solving societal challenges and transitioning to a sustainable planet and society. The blueprints will draw on the best practices of existing collaborations and, in partnership with the other Dow 2025 Sustainability Goals teams and businesses, forge new collaborations for greater impact.

Delivering Breakthrough Innovations
Dow delivers breakthrough sustainable chemistry innovations that advance the well-being of humanity. In 2018, Dow released two blueprints – Sustainable Watershed Management and Unlocking Carbon Reductions – that tell the story of Dow’s collaborations and chart a path forward for the private sector.

Valuing Nature
Dow advances a Circular Economy by delivering value to business solutions to close resource loops. In 2018, Dow delivered business value through capital value through greater good for business solutions for ecosystems.

Safe Materials for a Sustainable Planet
We envision a future where every material we bring to market is sustainable for our people and our planet.

Engaging for Impact: Communities, Employees, Customers
Dow people worldwide drive impact and expertise to advance the well-being of people and the planet.

World-Leading Operations Performance
Dow maintains world-leading operations and balances natural resource efficiency, environmental, health and safety.

Sustainable 2025 Progress

In 2018, Dow released two blueprints – Sustainable Watershed Management and Unlocking Carbon Reductions – that tell the story of Dow’s collaborations and chart a path forward for the private sector. The Sustainable Watershed Management blueprint was launched at World Water Week in Brazil in March 2018 in preparation for a full launch at the UN High Level Panel for Water in July 2018. The blueprint shares case studies and Unlocking Carbon Reductions – that tell the story of Dow’s collaborations and chart the path forward for broader impact.

Delivering Breakthrough Innovations
Global collaborations such as the Dow-IOC partnership amplify valuable sustainable change and are key to Dow’s blueprint thinking. In addition to the two blueprints already implemented, we have Product Safety and Valuing Nature blueprints in the pipeline to be launched in 2019 and are tracking ideas for blueprints to prioritize for development in future years. Building internal capacity with more employees applying blueprint thinking is a key factor in identifying collaborations that will drive a step change in solving issues.

The Unlocking Carbon Reductions blueprint was launched in July 2018 at the UN Global Compact Cities Programme’s Local 2030 Day. It is centered on Dow’s learnings and experience in successfully developing carbon-saving projects for the Olympic Winter Games Sochi 2014 and Olympic Games Rio 2016. The blueprint thinking internally and externally.

Executive Director Darren Nichols, who visited our Terneuzen site in The Netherlands in spring 2019. We will further integrate and expand the water strategy with Great Lakes Commission and chart the path forward for broader impact.

Life Cycle Thinking
Determined Contributions (NDCs) under the Paris Agreement.

Delivering Breakthrough Innovations
Our Delivering Breakthrough Innovations Goal is designed to deliver breakthrough sustainable chemistry innovations that advance the well-being of humanity. The core belief behind this goal is that collaborations of passionate and creative people at the intersections of the sciences will solve our challenges. In addition, the design, manufacture and use of efficient, effective, safe and environmentally benign products and processes will move us toward a more sustainable future.

2025 Sustainability Goal Updates

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Dyeing to Save Water in the Textile Industry

In 2018, Dow products and processes again were acknowledged by awards recognizing sustainability. In fact, all of our 100 awards were for sustainability-related products, such as ENGAGE™ Polyethylene Elastomers that enable expansion of plastic to power production, and ECOPAST™ Pure Sustainable Textile Treatment that reduces the chemicals and water used to dye cotton fabric. The goal uses five targets to track progress:

- **Dye will be a leader in energy and GHG life-cycle management to ensure the ratio of benefits of our product portfolio to burdens is at 3:1.** As of the end of 2018, the aggregate result is near 3:1, exceeding the target. This aggregate value has already been updated to reflect the product portfolio of new Dow, post-spin from DowDuPont. This is an exception to the stated boundaries of this report. Calculating the benefit to burden ratio of several product groups has been completed by project teams participating in the Sustainability Academy (see page 66 for additional detail).

- **Dye will innovate to increase the positive net impact of products across all markets such that the benefit to global sustainable development exceeds burdens by 4X.** We have not yet assessed enough of our innovation portfolio to report a value for this metric. In 2019, the goal implementation team is committed to focusing on assessing the innovation portfolio.

- **Dye will continue to improve its sustainable chemistry performance and reporting rigor externally.** The Sustainability Index (SCI), an internally developed assessment tool, has provided an internal benchmark to inspire and track business engagement and progress on sustainable chemistry. One business unit has set a goal to move from average to top-quartile performance and become the leader, clear pursuit of all aspects of their sustainability strategy, increased external recognition and excellent analysis of the benefits and fates of their products. The SCI helps drive friendly competition to improve. See page 56 for more discussion of the Sustainable Chemistry Index and reporting on aggregate values from the SCI.

- **Dye businesses will set and achieve their own business-specific sustainability goals.** We track business-specific sustainability goals using the SCI. In 2018, we completed reporting the existence of go goals. Continuing work will be to track progress toward meeting the goals and communicate the benefits of the activities. Calculating the benefit to burden goes to create.

- **Dye will increase use of life-cycle assessment (LCA) to guide decision-making while meeting business and customer needs.** LCA is used to better understand and analyze concepts for or exclusion from the circular economy. Application of LCA is also measured as part of the SCI. Each business reports the number of LCAs completed each year and how the results are used to advance business strategies. In early 2019, identification of resources and training began to address the increasing demand for LCA.

It takes nearly 700 gallons of water to make your favorite T-shirt and another 2,108 gallons to pull up your perfectly worn-in jeans. What if one product could reduce those numbers? A winner of a 2018 R&D 100 Award, our ECOFAST™ LED technology allows for process innovation in the Textile Industry. Pure Sustainable Textile Treatment has the potential to help the textile industry tackle sustainability challenges by reducing water and dye use by up to 50 percent, and chemical use up to 90 percent in the cotton dyeing process. How does it work? ECOPAST Pure is added as a pre-treatment, which converts wet, bulkier cotton fabric to a more dense, tightly packed, negatively charged cotton fabric. This allows the fabric to pick up dyes more efficiently and without the use of additional processing chemicals. The result is long-lasting color fabrics using fewer resources.

Advancing a Circular Economy

Dye will participate in a global collaboration. Dow will help facilitate the world’s transition to a circular economy, where waste and pollution are designed out of new products and services. Our goal is to deliver a circular economy by delivering solutions to close the resource loops in key markets. We have measured success by projects that have translated into desired value through waste and emission reduction and by meeting customer demand for products with recycled or bio-based content.

In 2018, circular economy projects included:

- **Continued growth of a program to recycle used mattress foam into polyols.** Dow has entered into a collaboration with development partner H&I Anlagenstechnik in Germany to economically recycle post-consumer mattresses. The goal of this project is to develop a new business eco- system by implementing the first industrial-scale reactor, which would convert end-of-life mattresses back to their main chemical building block (i.e., polyol). This “circular” polyol then would be used as a high-value, constituent of new polyurethane foam formulations for different applications, such as new mattresses or thermal insulation.

- **Addressing global recycling challenges with a commercial leadership mindset.** New business models, infrastructure and waste management systems are needed around the world to create a global circular economy for plastic. In 2018, Dow’s Packaging and Specialty Plastics business appointed two senior commercial leaders to evaluate current plastics waste streams and identify innovations in ecological recycling technology that will contribute to a global circular economy for plastic. In North America and Europe, the focus is primarily on advancing the circular economy of plastic through new product offerings via polyethylene terephthalate (PET) plastic waste to recover valuable resources. In Latin America and Asia Pacific, where recycling infrastructure is less advanced and plastic waste continues to increase, we will focus on resource recycling, collection platforms for Dow and its local value chain partners that keep plastics out of the environment.

- **Bio-based feedstocks for renewable plastics.** As a result of collaboration between product innovation and supply chain, product management and the hydrocarbons team, Dow is able to deliver renewable low-density polyethylene (LDPE) to specific customers. This renewable LDPE is a product based on renewable feedstocks through a “mass balance system.” This is required because our crackers cannot specifically allocate renewable feedstock for LDPE only. In order to ensure the LDPE is genuinely renewable, Dow has achieved critical external certification, namely International Sustainability & Carbon Certification (ISCC) PLUS certification. This provides full transparency of the renewable material throughout the entire supply chain.

- **Successful application of end-of-life plastics in road construction.** Value-added markets and applications for product re-use are essential in a circular economy. Dow continues to expand our geographic scope of projects that transform end-of-life plastics into value-added markets in road construction when asphalt roads are mixed with plastic waste. Road projects have been completed in India, Indonesia, Thailand and the United States. Research conducted at Chulalongkorn University found that the asphalt-plastic roads are 15-33 percent more durable and lead to 6 percent higher skid resistance versus standard asphalt roads.
Dow applies a business decision process that values nature, which will deliver business value and natural capital through projects that are good for the Company and better for nature. In 2018, the Valuing Nature Goal achieved $104.8 million in business value from 29 projects, primarily through avoided costs. From the announcement of the goal through the end of 2018, we have achieved more than 20 percent toward our goal of $1 billion. Critically, 2018 was a turning point for the Valuing Nature Goal, where we see that we have moved past the early adopters and low-hanging opportunities and are becoming more ingrained in how we approach valuing nature in our operations. In the early phases of the goal, Dow’s leadership in sustainable environmental remediation gave us an advantage and enabled us to seamlessly incorporate engineered natural technologies. However, a major component of the Valuing Nature Goal is to incorporate nature into all of our business decisions via bottom-up culture change throughout our Company’s core: our operations footprint.

By working with our engineers, our operators and our project managers, we were able to apply a nature lens to our operations, finding value from projects that benefitted clean air, clean water, healthy soil and healthy ecosystems. Our Nature Screen, which asks pointed questions about the aforementioned pillars of nature, is fully integrated into our capital allocation process.

To provide more detail about the Valuing Nature process, we published a paper in the journal Science of the Total Environment: “From Ash Pond to Riverside: Wetlands: Making the business case for engineered natural technologies,” which demonstrates the Valuing Nature methodology. The paper showcases how the Ecosystem Services Identification & Inventory (ESII) Tool was used to define the optimal restoration plan for a 23-acre site adjacent to Dow’s Michigan Operations. Dow’s leadership in sustainable environmental remediation gave us an advantage and enabled us to seamlessly incorporate engineered natural technologies. However, a major component of the Valuing Nature Goal is to incorporate nature into all of our business decisions via bottom-up culture change throughout our Company’s core: our operations footprint.

Wetlands: Making the business case for engineered natural technologies, “From Ash Pond to Riverside” in the journal Science of the Total Environment

Valuing Nature

Safe Materials for a Sustainable Planet

We envision a future where every material we bring to market is sustainable. Dow has already delivered 4.3 million tonnes of carbon dioxide equivalent (CO₂e) emission reductions. A new portfolio of similar projects is currently being developed by Dow to reflect its closer relationship with the International Olympic Committee (IOC). It’s a partnership that Dow estimates will help mitigate 6 million tonnes of carbon emissions by 2026. For example, multiple Dow solutions have been incorporated into the IOC’s new headquarters building — Olympic House — in Lausanne, Switzerland, to enhance its energy efficiency and carbon emissions by 2026. For instance, multiple Dow solutions have been incorporated into the IOC’s new headquarters building — Olympic House — in Lausanne, Switzerland, to enhance its energy efficiency and carbon emissions by 2026.

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Engaging for Impact

Each day, Dow people are seeking solutions to the complex environmental, economic and social challenges facing our world. Through global citizenship and by engaging for impact, we put in action our commitment to advance human progress by helping to create sustainable communities.

As part of our efforts, we look for solutions to enable economic development, sustainability and education that lead to socially healthy and resilient communities, while also supporting and furthering business success. Our holistic approach promotes relevant, long-term change for communities by applying integrated solutions and cross-sector collaborations.

The passion and expertise of our people are the heart and soul of our work. In support of our goal to positively impact the lives of 1 billion people across the globe by 2025, Dow people are committing their time and talents to make a difference.

UN SDG ALIGNMENT

In 2018, highlights included:

- Seventy-one percent of employees stated they had volunteered their time and/or skill sets, outside of daily work responsibilities, in support of community and/or global challenges in 2018, according to our annual Global Employees Opinion and Action Survey (GEOAS), which had a 76 percent response rate.
- More than 2,300 STEM Ambassadors supported more than 4,500 teachers and enhanced STEM opportunities for approximately 260,000 students in and outside the classroom.
- The Dow Business Impact Fund provided approximately $1.3 million in seed funding to seven projects across the globe. 2018 projects included the Public-Private Partnership for Sustainable Plastic & Waste Management project in Thailand, expansion of the Hefty® EnergyBag Program in Canada, waste collection and recycling in Jordan, safer and sustainable fashion industry practices in Ethiopia, an enhanced waste collection structure in Brazil, green bike lanes in the United States, and addressing a circular economy and plastic waste in South Africa.
- Through innovative leadership development programming conducted in partnership with PYXERA Global, 50 Dow leaders from around the world applied their professional skills and expertise to community-based problems by working virtually and in-country with 12 non-governmental organizations (NGOs) in India, Rwanda and Senegal. The result is exceptional training for the employees, resolution of long-term issues for the NGOs, and business penetration into new markets for Dow. In total, nearly 10,000 hours of pro bono consulting service was provided by Dow employees.

Engaging for Impact activities support Dow’s overall strategy to achieve top-quartile scores for employee engagement, and 100 percent of core leadership development programs include sustainability impact exposure and opportunity to help build a culture of volunteering.

We believe the power of innovation is a fundamental driver of economic well-being, competitive advantage and sustainability. The power of our innovation portfolio translates directly into success for our Company, our customers and for society as a whole.

A.N. Sreeram, Dow’s senior vice president and chief technology officer
Dow ended 2018 with a 5 percent performance improvement over the prior year in process safety events. For our significant process safety event reporting, we count Level 1 and Level 2 events within our metrics system. Level 1 and 2 events are based on the API 521 definition of Tier 1 and Tier 2 process safety events but include operations that are covered as research facilities and pipeline operations that are beyond the scope of API's metric. Our Safe Conditions team, which allocates dedicated corporate capital funds for high-priority safety projects, focused on process safety elimination or reduction. In 2018, we had 147 personal safety improvement projects across all areas and regions that Dow operates. Main targets were reducing risk and addressing gaps in achieving Dow’s Life Critical Standards and worker exposure guidelines. The total annual spend in 2018 was the highest level since the high-priority-program was established in 2012. Very notable is the fact that we had no severe Worker Health accidents (injuries with long-term impact) and injuries that had the potential to have life-altering impact in Dow operations. These are tasks that are covered under Dow's Life Critical Standards – the critical few, most important rules and guidelines.

We piloted a novel approach to reduce the risk of forklift (FLT) and heavy equipment interfaces with humans. This area has been one of the high-priority programs since the launch of the World-Leading Operations Performance Goal target is to grow globally over the next 10 years while meeting our World-Leading Operations Performance environmental targets. Areas of focus in 2019 will be focused on further understanding the technology-enabled improvements also are available to meet Dow's environmental targets in light of our overall growth plans.

Transportation Stewardship

By 2025, Dow has committed to achieving a 50 percent improvement in the Transportation Stewardship Index and eliminating severe transportation incidents that impact the communities through which our products, raw materials and intermediates flow. In 2018, we made significant progress with our Transportation Stewardship program, which is defined by three categories: 1) incident performance; 2) leading-edge programs; and 3) transportation risk across the value chain.

For more information on Transportation Stewardship and the global program driving our positive results, see the Supply Chain Sustainability section of the report on pages 96-103.

Environmental Stewardship

In 2018, Dow further reduced our freshwater intake intensity at our on-stress sites, with the next 10 years while meeting our World-Leading Operations Performance environmental targets. Areas of focus in 2019 will be focused on further understanding the technology-enabled improvements also are available to meet Dow's environmental targets in light of our overall growth plans.

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GRI 102-16, 102-17

At Dow, our commitment to sustainability is integral to Dow's Vision, Mission and Values – which continue to drive change that is good for the environment, good for people and good for business.

Taken together, the essential elements of Dow’s Vision, Mission, Values and strategy describe why the Company exists, who we are, what we intend to do and how we intend to do it. This critical framework provides insight, offers motivation and determines our path forward as we seek to grow and achieve our goals.

Dow’s Code of Conduct (Code) summarizes the ethical principles and policies intended to deter and prevent corrupt activity such as bribery, and models appropriate ethical conduct. It also provides Dow’s position on a wide array of topics including equal employment opportunity, respect in the workplace and environment, health and safety. All of us at Dow, no matter where we happen to live, are expected to apply these principles in the daily performance of our job responsibilities. Dow’s policy is to be lawful, highly principled and socially responsible in all of its business activities. Dow’s Code sets the ethical standard for Dow and our employees. We are all expected to understand and comply with all Company policies and applicable laws, and to adhere to the guiding principles outlined in the Code. Dow employees must certify compliance with the Code annually.

In September 1998, Dow established its Office of Ethics and Compliance (OEC) to reinforce the Company’s long-standing commitment to ethical business conduct. The OEC communicates the Company’s standards, provides guidance on issues related to ethical conduct and has oversight over mechanisms for action. Staff in this critical area are responsible for administering the Code and promoting practices that maintain an environment in which the Company businesses and workforce are in full compliance with the Code, accepted business practices and internal standards. This includes promoting lawful activity everywhere we do business, as well as helping the Company to manage risk, maintain a positive reputation and avoid litigation. The OEC is expected to stay abreast of the Company’s business goals and cultural climate, as well as facilitate sound and ethical business dealings through education and the establishment of practices that enable the highest possible level of compliance.

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No one company, no one government or no one organization can forge the sustainable future we seek. The challenges we face as a society – from climate change to ocean waste – cross boundaries and require systemic changes beyond the capabilities of one company or even one industry. But together, we can find answers. By collaborating with diverse stakeholders, we can expand the impact of our actions. We can find new answers by listening to diverse perspectives. And we can achieve new value and adopt new models for a sustainable economy by moving beyond business as usual. Guided by our Dow value to protect our planet, we are committed to going beyond our current capabilities and the reach of our products and solutions to pursue game-changing collaborations that will help lead the transition to a sustainable society.

WHY WE DO IT

Values, Principles, Standards and Norms of Behavior GRI 102-16, 102-17

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The Dow Chemical Company

Harvesting the Sun

Scientists estimate that more than enough solar energy strikes the Earth every hour to power our whole society for an entire year. Dow is helping improve the efficiency and long-term reliability of capturing solar energy with innovations such as ENGAGE™ PV Polyolefin Elastomers (POEs). ENGAGE™ PV POEs are high-performance resins that enable lower system costs, greater power generation and extend the service life of global photovoltaic systems. Selected in 2019 as an Edison Award and R&D 100 Award winner, this technology helps our customers to develop encapsulant films that protect solar cells from degradation, making renewable energy increasingly affordable. It also features superior electrical resistivity and weathering stability, offering exceptional long-term performance and lowering overall energy costs.

Reports and other data about alleged violations of the Code, its underlying policies or the law are provided to the Audit Committee of the Dow Board of Directors quarterly. In 2018, 544 matters were reported to the OEC, 430 of which warranted an investigation. One hundred fifty-eight (37 percent) of the 430 matters were substantiated, 231 (51 percent) matters were unsubstantiated; and the remaining 51 (12 percent) are pending. Types of issues reported included conflicts of interest; environmental, health and safety; human resource; misuse of assets and others. All issues that require corrective action are appropriately addressed.

Determination of Report Content and Boundaries

Our process for determining materiality is a continual four-step cycle of identification, prioritization, validation and review. Defining our material aspects and boundaries for reporting relies on the continuous process that we have used to develop three generations of corporate Sustainability Goals. The process assumes 1) we are addressing material topics, 2) they are aligned with external concepts of sustainability and global challenges, and 3) we have included all of the actions taken throughout the scope of our impact, both internally through our operations and externally through interactions with suppliers, customers, consumers, communities, the environment and others. Identification

A critical element in the development of the 2025 Sustainability Goals was extensive dialogue with stakeholders on a wide range of topics, which later became the key components of the goals. One of the external stakeholders was the Sustainability External Advisory Committee (SEAC) which since 1995 has been an essential part of Dow’s strategy and decision-making processes. In 2013, as part of building Dow’s next-generation approach to sustainability, we conducted a stakeholder survey to identify the issues that are the most important to our stakeholders and most relevant for Dow. More than 300 one-on-one and small group interviews were conducted across the globe with stakeholders, including individuals from non-governmental organizations, academia and governments, as well as environmental and sustainability communities. Key customers, consumer-facing companies and Community Advisory Panels (CAPs) were also surveyed. The survey results were conducted to help understand and prioritize environmental, social and economic needs in the communities in which Dow has significant operations. Further, individual conversations were conducted with SEAC members and leadership and employee groups in focus areas. Robust analytics and text mining were applied to analyze the survey results to support the identification of the key issues which we have defined as material to Dow.

Policy Management Council drives alignment of global issues and policy management strategies, setting priorities, and coordinating efforts and resources.

In addition, part of our stakeholder engagement is through our annual Public Policy and Corporate Citizenship Council, Federal Government Affairs, Public Policy, Regulatory Affairs and Issue Management teams, Dow’s Issue & Policy Management Council drives alignment of global issues and policy management strategies, setting priorities, and coordinating efforts and resources.

In 2013, as part of building Dow’s next-generation approach to sustainability, we conducted an extensive stakeholder and corporate interview process to identify the issues that are the most important to our stakeholders and most relevant for Dow. More than 300 one-on-one and small group interviews were conducted across the globe with stakeholders, including individuals from non-governmental organizations, academia and governments, as well as the environmental and sustainability communities. Key customers, consumer-facing companies and Community Advisory Panels (CAPs) were also surveyed. The survey results were conducted to help understand and prioritize environmental, social and economic needs in the communities in which Dow has significant operations. Further, individual conversations were conducted with SEAC members and leadership and employee groups in focus areas. Robust analytics and text mining were applied to analyze the survey results to support the identification of the key issues which we have defined as material to Dow.

Policy Management Council drives alignment of global issues and policy management strategies, setting priorities, and coordinating efforts and resources.
Impact on Stakeholders’ Decisions

The horizontal axis shows the significance of Dow’s economic, environmental and social impacts.

Materiality of Sustainability Topics

Connecting with external and internal stakeholders helps Dow identify and appropriately manage the economic, social and environmental issues that can potentially impact the company’s ability to create value over time.

Significance of Dow’s Economic, Environmental and Social Impacts

Materiality assessment is mapped out below. The vertical axis maps the relative importance of the topics to our stakeholders; the horizontal axis shows the significance of Dow’s economic, environmental and social impacts. GRI 103-17

Key Impacts, Risks and Opportunities GRI 102-27, GRI 102-15, GRI 102-30

Dow’s impact through the products we produce is far-reaching. The company’s research and development efforts are essential to Company growth and future success. The company is engaged in a continuous program of basic and applied research to develop new products and processes, to improve and refine existing products and processes, and to develop new applications for existing products. Research and development (R&D) expenses were $1.536 billion in 2018. As of December 31, 2018, the company employed 87,720 people in R&D activities.

Risk management is considered to be a strategic activity within Dow and our ability to manage risk creates opportunity as well. Corporate-level identification and management of risk is systematically accomplished using an Enterprise Risk Management approach. The Board of Directors is responsible for overseeing the overall risk management process. Committees of the Board and the Board as a whole participate in the oversight of the process. The Audit Committee ensures there is a risk management process and it is being followed. Responsibility for managing risk rests with executive management. Examples include the potential impact of weather-related events, access to credit, effect of foreign currency exchange rate movements, and volatility in purchased feedstock and energy costs. Risk management results are regularly communicated to the chief financial officer with a formal annual review with the Board of Directors and the Audit Committee.

Global Economic Considerations: The company operates in a global, competitive environment, which gives rise to operating and market risk exposure. The company sells its broad range of products and services in a competitive, global environment, and competes worldwide for sales on the basis of product quality, price, technology and customer service. Increased levels of competition could result in lower prices or lower sales volume, which could have a negative impact on the company’s results from operations. Sales of Dow’s products are also subject to extensive federal, state, local and foreign laws and regulations, trade agreements, import and export controls.
and duties and tariffs. The imposition of additional regulations, controls, fees and duties and tariffs on raw materials, fuel and feedstock costs could negatively impact the Company’s results from operations.

Economic conditions around the world, and in certain industries in which the Company does business, also impact sales price and volume. As a result, market uncertainty or an economic downturn in the geographic regions or industries in which Dow sells its products could reduce demand for these products and result in decreased sales volume, which could have a negative impact on the Company’s results from operations.

In addition, volatility and disruption of financial markets could limit customers’ ability to obtain financing to maintain operations, which could result in decreased demand for the Company’s products and a negative impact on the Company’s results from operations. Dow’s global business operations and results of operations are subject to exchange rate changes in foreign exchange rates, interest rates, commodity process and other market factors, such as equity prices. To manage such risks, Dow enters into hedging transactions pursuant to established guidelines and policies. If Dow fails to effectively manage such risks, it could have a negative impact on the Company’s results of operations.

Raw Materials: Availability of purchased feedstock and energy, and the costs involved, could have a direct impact on the costs and profitability of operations.

Purchased feedstock and energy costs account for a substantial portion of the Company's production costs. Feedstock and energy costs are dependent on market conditions. Feedstock and energy costs decline, selling prices generally decline as well. As a result, in those circumstances where feedstock costs are volatile, Dow’s ability to pass on underlying cost increases is dependent on market conditions. Conversely, when feedstock and energy costs increase, Dow’s results are impacted. The costs of complying with evolving environmental, health and safety regulations could negatively impact the Company’s financial results. Actual or alleged violations of environmental laws or permit requirements could result in restrictions or prohibitions on plant operations, increased environmental liabilities, increased environmental, health and safety regulatory matters could result in significant unanticipated costs or liabilities.

Health and Safety: Increased concerns regarding the safety of chemicals and plastics in consumer products and their potential impact on the environment, as well as perceived impacts of plant biotechnology on health and the environment, have resulted in more restrictive regulations and could lead to new regulations. Dow is subject to extensive federal, state, local and international laws, regulations and standards that are designed to protect human health and the environment from changes in the chemical production and distribution. These laws, regulations and standards could result in increased compliance, liabilities and costs.

The Company is subject to extensive federal, state, local and foreign laws, regulations and rules related to the regulation of pollution, protection of the environment, greenhouse gas emissions, and the generation, storage, handling, transportation, treatment, disposal and remediation of hazardous substances and waste materials. In addition, the Company may have costs related to the reclassification of waste substances and possible violations for their use. It is reasonably possible that the Company’s ultimate cost with respect to these matters could be significantly higher, which could negatively impact the Company’s financial condition and results of operations. Costs and capital expenditures relating to environmental, health or safety matters are subject to evolving regulatory requirements and depend on the timing and enforcement of specific standards that impose the necessary costs or capital expenditures to prohibit or interrupt the Company’s operations, or require modifications to its facilities. Additional or enhanced environmental, health or safety regulatory matters could result in significant unanticipated costs or liabilities.

Cyber Threat: The risk of loss of the Company’s intellectual property, trade secrets or other sensitive business information, or disruption of operations could negatively impact the Company’s financial results. Cyberattacks or security breaches could compromise confidential, business- critical information, cause a disruption in the Company’s operations or harm the Company’s reputation. The Company has attractive information assets, including intellectual property, trade secrets and other sensitive, business-critical information. The Company has a comprehensive information security program that is continuously reviewed, maintained and upgraded, a significant cyberattack could result in a loss of business-critical information and/or could negatively impact operations, which could have a negative impact on the Company’s financial results.
It has become increasingly clear that meeting the challenges of the United Nations Sustainable Development Goals will be the most important business opportunity of our generation, and Dow has an important role in this process.

Jim Fitterling, chief executive officer, Dow

Alignment to UN Sustainable Development Goals

Dow’s 2025 Sustainability Goals were developed at the same time and with an awareness of the process for defining the UN Sustainable Development Goals (SDGs). At some level, our 2025 Sustainability Goals will impact each of the 17 UN SDGs. We strive to understand our potential to contribute to a more sustainable society by identifying several different ways that we are aligned and how that alignment can support business goals and our ambition to be the most sustainable materials science company in the world. High-level alignments to the SDGs are described here, and the more important connections to individual sub-goals are identified throughout the report.

SDGs that Dow is an opportunity to lead

There are a few goals that Dow and the chemical industry have the ability to make a large impact on or lead. Dow has the global reach, expertise and connections to drive significant solutions. Dow’s assessment of the SDGs in this category aligns well with the World Business Council for Sustainable Development’s chemical sector SDG roadmap.

SDGs that Dow is an opportunity to engage and contribute

The second category of SDG alignment are those goals where Dow is not able or expected to take the lead, but where we can engage and make positive contributions. An example is Goal 5 – Gender Equality. Dow engages through our Inclusion & Diversity efforts and has a strong record of providing equal opportunities to women and men.

SDGs that Dow has a current negative impact on

Finally, there are a few of the SDGs that highlight where the current impact of Dow’s products or operations could be seen as inconsistent with the achievement of the goal. The clearest example of this is Goal 12 – Responsible Consumption and Production. Dow, as one of the world’s largest plastics producers, has chosen to take the lead in efforts to solve the significant challenge of plastic waste in the environment.

Business Opportunity

- SDGs that present business opportunities and risks
- Business Risk

Some of the goals present either a business opportunity or a business risk. It is important that our commercial teams understand the sustainable development-driven changes coming in the markets that they serve. In some cases, these changes might lead to product deselection. In others, new and growing markets present opportunities for innovative Dow products to enable sustainable development.
Plastics in the Environment

Extremely versatile and lightweight, plastics have helped improve living standards, hygiene and nutrition around the world. Plastic packaging, for example, greatly extends the shelf life of food and reduces spoilage from farm to table. By introducing light but durable plastic materials, vehicles now are more efficient, producing fewer carbon dioxide emissions and making travel more comfortable. However, used plastics have become an environmental challenge, especially in our oceans. In fact, Ocean Conservancy estimates that as much as 150 million metric tons of plastics are circulating in our oceans right now – and humans are adding another 8 million metric tons of plastics to the ocean every year. As one of the world’s largest producers of plastics in packaging, Dow is working on several fronts to help bring solutions to this challenge.

Our strategy to address plastic waste has circular economy solutions at its center, driven by our strong belief that plastic is simply too valuable to be lost as waste. It is aligned around three pillars:

- Products that can be easily recycled
- Innovations in recycling technology
- Compatibilizers that offer the recycling of non-compatible material combinations

Improving roads with recycled plastic: Dow is helping pave the way to a more sustainable future by working with governments and value chain collaborators to construct polymer-modified asphalt (PMA) roads with post-consumer recycled plastic. The roads reduce plastic in the environment while supporting improved performance and reduced materials costs. In addition, the greenhouse gas emissions are lower compared to traditional paving processes. With projects in Indonesia, India, Thailand and North America, Dow already has laid more than 26 miles of PMA pavement – diverting more than 220,000 pounds of waste from landfills.

Enhancing waste management while helping create jobs: Citizens in South Africa are being offered an opportunity to preserve plastic waste as well as make a valuable resource and potential source of income. Through collaborations with non-profit organizations and local communities, Dow is working to inspire better waste management through education, clean-ups and innovation-focused initiatives. Through our Business Impact Fund, we work with an NGO to launch Clean My City, a project aimed at helping empower local entrepreneurs (“wastepreneurs”) to generate income by collecting, sorting and recycling waste. This program enables plastic waste that is expected to be repurposed, promotes a cleaner environment and engages communities in proper waste management.

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Delivering Circular Economy Solutions

To help advance a circular economy, Dow is committed to sustainable innovation to meet the demand for more recyclable options. Our portfolio and activities include:

- Products that can be easily recycled
- Compatibilizers that offer the recycling of non-compatible material combinations
- Innovative resins to allow combinations with recycled content without losing functional performance or significantly increasing weight
- Incorporating recycled content in the products we sell to customers
- Helping to develop options for improving the quality of recyclate from flexible packaging

Working to Keep Plastic Waste Out of the Environment

We are collaborating with governments, NGOs, value chain partners, customers and other stakeholders to help make all stages of the plastics life cycle work more effectively.

Implementing Operation Clean Sweep (OCS): Dow is a pledging partner in the American Chemistry Council’s Operation Clean Sweep, an international program designed to prevent and help keep plastic litter materials out of the marine environment. To protect the environment and save valuable resources, Dow is embedding audit-ready zero-pellet loss principles in manufacturing and logistics projects through OCS Blue qualification at all Dow sites. We will begin reporting, pellets loss into the environment in our annual sustainability report in 2020.

Creating classrooms from recycled plastic bricks: Students need the right environment to learn, and this is especially important in developing countries where classrooms are inadequate in size, temperature or materials that are falling apart, or are wearing out. In collaboration with the start-up and technology owner, Conceptos Plasticos, Dow is helping to build sustainable classrooms using self-assembling bricks made out of recycled plastic. This innovative process tackles two global issues – plastic waste and a lack of adequate classrooms – while creating a more circular economy.

As a founding partner of the Sustainable Packaging Coalition, Dow has helped initiate a store drop-off program for hard-to-recycle plastics in 2017. Today, more than 30,000 products carry the How2Recycle logo. Increasing Impact Through Collaboration

Dow is playing a lead role in the formation of global alliances to advance solutions that eliminate plastic waste in the environment, especially in the ocean.

- Dow is a founding member of the Alliance to End Plastic Waste, a newly formed organization committing more than $1 billion in capital and raising $1.5 billion over the next five years to develop and scale solutions that manage plastic waste and promote post-use solutions of plastic. The Alliance, currently comprised of nearly 30 companies, will develop and bring to scale solutions that will minimize and manage plastic waste and promote solutions by transitioning to a circular economic environment.

- In 2018, Dow became a founding investor in Circulate Capital’s $100 million effort to incubate and finance companies and infrastructure that prevent waste in oceans. Circulate Capital’s mission is to demonstrate the viability of investment in the waste management and recycling sectors.

- The goal is to attract the institutional investment capital needed to scale integrated recycling and waste management infrastructure across South and Southeast Asia.

- Dow intends to donate an additional $1 million to Ocean Conservation over the next two years to support waste collection and recycling solutions in Southeast Asian countries. This money would be used for projects that build the capacity of local NGOs and partnerships with city leaders to develop, scale and replicate waste management solutions. Dow’s latest $1 million donation to Ocean Conservation builds upon the long-standing 30-year relationship between the organizations.

- Dow continues to engage with existing NGO partners such as The Nature Conservancy, the Ellen MacArthur Foundation, Keep America Beautiful and others to help drive circular economy solutions.
Climate Change GRI 201-2

Governance
At Dow, the Sustainability Team is charged to identify material sustainability risks and opportunities, including climate-related issues, and reports to the Board every quarter. The Executive Sustainability Team also monitors the progress made on the Company’s 2025 Sustainability Goals, which include the following climate-related goals:

- Dow will obtain 750 MW of its power demand from renewable sources by 2025.
- Though we will grow globally over the next 10 years, Dow’s absolute greenhouse gas emissions will not exceed our 2006 baseline.

During 2018, the Carbon Envelope was formed to proactively drive all aspects of the Company’s initiatives around carbon and emissions ensuring global competitiveness and our continued industry leadership in a lower-carbon future.

The Carbon Envelope is an initiative that has a close collaboration across all of our businesses, functions and geographies. The Carbon Envelope has been tasked with key deliverables that include integrating a carbon outlook into the Company’s growth strategy, evaluating technologies to reduce absolute CO2 emissions, reducing carbon intensity, developing and implementing a global advocacy framework on a regional basis, and integration with long-term business and site-specific strategies. Alignment to Dow’s 2025 Sustainability Goals and the UN Sustainable Development Goals are important to this effort.

To help meet our goals, a working group analyzed the various climate change scenarios and developed implementation strategies. These scenarios then were reviewed with the Carbon Envelope in conjunction with the Executive Sustainability Team. The working group is in charge of deploying our strategies based on the implementation scenarios. Four boundary scenarios were considered, and the impacts to Dow were evaluated at a high level (see chart on the left).

Strategy
Dow’s Hydrocarbons & Energy business, Public Affairs and Sustainability functions are tasked with developing and implementing a comprehensive strategy that addresses the potential challenges of energy security and GHG emissions for the Company. At Dow, we believe all solutions in Energy (whether technology-based or policy-based) must address five areas: 1) sustainability (environmental impact), 2) societal demands – including political realities, 3) chemistry and physics (what is possible with existing technologies until we innovate better ones), 4) reliability including infrastructure limitations and grid design, and 5) affordability.

Dow’s Hydrocarbons & Energy business and Carbon Envelope are deliberately staffed to synthesize expertise from all five areas. We are convinced that meaningful solutions and true progress can only be achieved by addressing each.
Climate-Related Risks and Opportunities

<table>
<thead>
<tr>
<th>Potential Impacts to Operations</th>
<th>Financial Impacts</th>
<th>Potential opportunities</th>
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<tbody>
<tr>
<td>Reduced sales</td>
<td>Decreased margins</td>
<td>New markets and technologies</td>
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<tr>
<td>Increased costs</td>
<td>Reduced profitability</td>
<td>Cost savings</td>
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<tr>
<td>Reduced asset values</td>
<td>Decreased share price</td>
<td>Increased brand value</td>
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<tr>
<td>Increased operating costs</td>
<td>Decreased cash flows</td>
<td>Improved operational efficiency</td>
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<tr>
<td>Reduced demand</td>
<td>Lower revenues</td>
<td>Increased demand for sustainable products</td>
</tr>
<tr>
<td>Reduced market share</td>
<td>Lower market share</td>
<td>Increased market share</td>
</tr>
</tbody>
</table>

The risks matrix above is an overview of the identified climate-related risks and opportunities and their potential financial impact on Dow, over the short, medium and long term.

Risk Management

Climate change is an important matter for Dow. We understand that changes will be driven by regulations, public policy and physical climate parameters.

Regulatory Matters: Today, 36 countries representing around 25 percent of global GHG emissions are subject to carbon pricing. The implementation of regulatory frameworks to reduce carbon emissions generally revolves around three concepts: an emissions trading system (ETS) or a carbon tax. The potential implications of these issues are all very similar, including increased cost of purchased energy, additional capital costs for installation or modification of GHG-emitting equipment, and additional direct costs associated with GHG emissions, which are primarily related to energy use. It is difficult to estimate the potential impact of these regulatory matters on energy prices.

Reducing Dow’s overall energy usage and GHG emissions through new and unfurling projects will decrease the potential impact of these regulatory matters. Dow also has a dedicated commercial group to handle energy contracts and purchases, including managing emissions trading. The Company has not experienced any material impact related to regulated GHG emissions to date but continues to evaluate and monitor this area for future developments.

Physical Climate Parameters: Dow believes in the scientific consensus that climate change is occurring and has serious consequences for the planet and society if left unaddressed. We support the Paris Agreement and are committed to achieving its goal of keeping global temperature rise below 2°C. At this point, it is difficult to predict and assess the probability of potential risks related to climate change trends on Dow’s performance. Concerns have been raised that climate change may result in more frequent incidents of severe weather and the potential for rising sea levels. In the past, major hurricanes have caused significant disruption in our operations on the U.S. Gulf Coast, logistics across the region, and the supply of certain raw materials, which had an adverse impact on volumes for some of Dow’s products. To mitigate risks associated with severe weather, we have engineered the facilities to better withstand these events. Additionally, these sites have specific emergency preparedness plans that detail actions to take in the event of severe weather. Historically, these activities and associated costs are driven by normal operational preparedness. Dow continues to study the long-term implications of changing climate parameters on water availability, plant siting issues, and impacts and opportunities for products.

Although we may face risks associated with climate change, opportunities also arise. Despite having no federal regulatory price on carbon in the U.S., Dow is one of the pioneer companies incorporating a carbon price into its business planning and risk management strategies. The price of carbon is included in the Company’s internal calculations used for prioritizing capital projects. In addition, it also offers opportunities to develop solutions for climate adaptation.

Climate Adaptation Market: A large part of our product portfolio helps address global challenges: food availability; energy supply; climate change and energy efficiency; water availability and quality; nature, natural capital, ecosystem services and biodiversity; and human health.

Dow innovations are already at work improving people’s lives around the world — making clothes fresher, foods healthier, water cleaner, medicines more effective and homes more energy-efficient. And that’s just the beginning of our growing portfolio of solutions. As part of our 2025 Sustainability Goals, Dow will maintain GHG emissions below 2006 levels on an absolute basis and will reduce the price of carbon. The widespread impact of climate change extends well beyond energy production. It creates huge markets for Dow’s products and solutions. Through our science and technology capabilities, we are committed to bringing solutions to enable a sustainable energy future by producing products that help reduce GHG emissions.

• DOWTHERM™ A heat transfer fluid is used in more than 40 large, concentrating solar power plants, with a total capacity of more than 700 megawatts. These plants will provide enough electrical generation capacity to meet the needs of more than 1 million homes at a savings of close to 4 million metric tons of carbon dioxide emissions per year.
• Dow Packaging and Performance Plastics launched in 2018 a renewable energy-made polyethylene in the United States that has 13.8 percent fewer GHG emissions per pound of product than the industry-average polyethylene; this helps reduce Scope 3 emissions for our customers.
• Buildings account for 17-40 percent of total energy consumption. DOWSIL™ silicone sealants and structural glazing products contribute to building the reduction of energy usage and carbon emissions from buildings and achievement of LEED certification. Flexible anchors provided by DOWSIL™ silicone structural glazing systems minimize maintenance and installation, resulting in the potential for more energy-efficient performance. Thermal management demonstrated with Dow bonding technology in residential window manufacturing. With longer life cycles and application durability than their petroleum-based organic counterparts, siloxane-based sealants OEMs, fabricators, designers & specifiers bushing materials for the HVAC/R industry. USA and Canada

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dow.com/sustainability
Building a low-carbon future – delivering impact through the partnership of sports and science

Dow is delivering technologies and solutions that are more energy-, resource- or carbon-efficient for different end markets. The Company is well-positioned to collaborate with businesses in the value chain to support sustainability goals. Given its Worldwide Partnership with the International Olympic Committee (IOC) and Dow’s more than three decades of Sustainability Goals experience, the global stage of the Olympic Movement is a natural stage to help drive a transition to a low carbon economy.

Dow’s carbon mitigation program with the Olympic Movement started with the programs implemented by Dow and the Organizing Committees of the Olympic Games of 2012 and 2014. In late 2017, we built on the success of these programs and extended the reach and influence of our collaboration to a global scale with the appointment of Dow as the Official Carbon Partner of the IOC.

Through these combined efforts, the programs have already delivered greenhouse gas (GHG) reductions of 4.3 million metric tons of carbon dioxide equivalent (CO2e). By 2024, the reductions from these projects are projected to exceed 6 million metric tons of CO2e. Many of these projects also have delivered new efficiencies and value for participating businesses as well as reduced carbon emissions along industry value chains. Dow published its third-Party verified 2018 Carbon Report in September 2018, detailing the successes and lessons learned from implementing carbon-mitigation projects.

The Carbon partnership with the IOC has the goal to deliver third-party verified greenhouse gas reductions (i) to balance the operational carbon footprint of the IOC from 2017-2020, and (ii) to deliver a positive carbon legacy by encouraging the adoption of low-carbon solutions in a broad industry value chain. Already 320,000 MT of CO2e carbon savings have been delivered from the first project implemented. One year after the announcement of Dow-IOC Carbon Partnership, the IOC’s estimated operational carbon footprint is expected to be balanced by Dow initiatives.

Collaborations in the Construction Value Chain

In 2018, Dow had success engaging the construction value chain, with a focus on exploring carbon-mitigation projects within the built environment. Building and construction together still account for 36 percent of global final energy use and 39 percent of energy-related CO2 emissions when upstream power generation is included. Over the next 40 years, the world is expected to build 230 billion square meters in new construction. This is roughly equivalent to adding another Paris to the planet every single week. This rapid growth in the building market and catalyzing real-world application of innovative design and construction practices.

Mattresses Find a New Life

Every year, 30 million mattresses are disposed of in the European Union alone, and the vast majority are either landfilled or incinerated. That’s enough mattresses to fill Wembley Stadium in London 25 times. One reason more mattresses aren’t recycled is it is expensive to do so. To help put a dent in this mountain of mattress waste, we are working with H&S Anlagentechnik in Europe to develop a commercially viable method for recycling polyurethane mattresses. In addition to working with collaborators to put in place collection and processing stations, Dow and H&S are seeking to convert flexible polyurethane foam to polyols that can form REACH standards, have consistent properties between batches and can be processed like existing materials. These attractively priced polyols then turn into other products. By working alongside partners that share our resolve to advance a circular economy, we can help free up landfill space and sleep better for it.
Stakeholder Engagement

Stakeholder Engagement analysis helps identify and evaluate stakeholders that can significantly impact Dow’s sustainability strategy and reputation, as well as contribute to identification of material risks and opportunities. The intentional effort is to identify stakeholders who can drive, block or shape the discourse around sustainability. In addition, those who are affected by Dow’s business and who can contribute to identification of material risks and opportunities. The overall purpose of engagement is to advance the most appropriate business objectives while building Dow’s reputation. The engagements described were not undertaken specifically as part of the report preparation process but as part of our ongoing engagements.

Some examples of intentional and purposeful listening to stakeholders occur through the following:

- Meetings, social media
- Monthly: progress on Dow's 2025 Sustainability Goals
- Daily: news, social media

Advocacy and Advisory Groups

- GRI 102-40, GRI 102-42, GRI 102-43, GRI 102-44
- Stakeholder engagement takes place in a variety of other ways throughout the year. The fundamental principles of Dow’s ongoing sustainability stakeholder engagement strategy focus on three areas: 1) information sharing and disclosure; 2) participating in active dialogues; and 3) collaborating on issues of mutual interest. The overall purpose of engagement is to advance the most appropriate business objectives while building Dow’s reputation. The engagements described were not undertaken specifically as part of the report preparation process but as part of our ongoing engagements.

Stakeholder Engagement GRI 102-40, GRI 102-42, GRI 102-43, GRI 102-44

Stakeholder Engagement

The Dow Chemical Company

Housing and Hope for Hurricane Harvey Survivors

When natural disasters strike, they can leave destruction behind within minutes. But it can take communities an even longer time to fully recover. Recognizing the need for long-term support in many Texas communities impacted by Hurricane Harvey, Dow saw an unique opportunity in 2018 to make a difference for residents who still were without permanent homes. Immediately after the hurricane hit in 2017, Dow purchased trailers for displaced employees to live in while their homes were being rebuilt. As the water receded and their homes were repaired, these employees began to move back home and returned the trailers to the Company. Working with Good360 and the Redbal Texas Fund, Dow donated 57 trailers to communities hit by the hurricane and in need of housing. The donation, valued at more than $800,000, was among the most complex in the Company’s history, as it required funds to refurbish the trailers, locating recipients in need of housing and parks in which the trailers could be installed. For the communities and the families that received the trailers, it helped them recover and rebuild. As one hurricane survivor put it, the trailer “changes everything” for their family, enabling them to fully recover.

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Feedback from CAPs enables Dow to be responsive in addressing a community’s quality of life needs and help identify where the Company can have the greatest impact. Dow continually refreshes its CAPs to maximize value for both Dow and the community. To find new ways to expand their reach, CAP members also engage other community residents by inviting them to Dow-hosted events. This results in greater feedback by residents and more awareness-building about Dow within the community.

Dow also measures its impact as a corporate citizen and identifies opportunities for periodic community assessment surveys at select sites. These surveys generate feedback related to quality-of-life issues, identify Dow’s “rightful role” in a community and also provide direct feedback by residents and more awareness-building about Dow within the community.

In 2018, Dow’s commercial leadership recognized that customer-interfacing roles are in position to understand the needs of our customers relating to Dow’s success. In 2018, Dow’s commercial leadership recognized the need to strengthen the alignment of customer-facing roles to Dow’s sustainability strategy and provide the private metric of performance results.

The survey is administered globally to all employees of Dow, with minimal parameters, ensuring any employee who is full-time, not on a leave of absence, and has been with Dow for at least three months is eligible. This includes bargained-for employees. Survey confidentiality is also protected, and the survey is implemented by a third-party vendor. GEOAS is designed to measure employee satisfaction, commitment, and engagement via questions about the job, leadership, work environment, career development, and communications. The GEOAS survey is quarterly and is a third-party vendor. GEOAS results are key inputs into the corporate and HR strategy and provide the private metric of performance results.

In 2018, Dow showcased in numerous categories, including showing interest in the well-being of its employees, providing a supportive work environment that encourages healthy behaviors, and showing a clear link between employee work and company objectives. As opportunities, Dow intends to put a renewed focus on leadership effectiveness by refining training and tools for development. Finally, Dow has committed to gathering regular employee feedback throughout the year to respond in real time, not just annually, and will deploy new listening strategies such as pulse surveys in 2020.

Dow’s global survey program has existed since 1995 and utilizes an annual survey called the Global Employee Opinion and Action Survey (GEOAS). The GEOAS is designed to motivate, engage and lead them to success. Their interactions with individuals on their team are in their journey toward superior leadership.

Ten Employee Resource Groups (ERGs) – each with a senior executive sponsor – bring together people with a common interest to share experiences, find mentors, and gain access to senior leadership.

- Asian Diversity Network
- Disability Employee Network
- GLAD
- Global African Affinity Network
- Hispanic Latin Network
- Middle East/North Africa Intercultural Network
- PRIME
- RISE
- Women’s Innovation Network
- Veterans’ Network

Employee Resource Groups

Employee Resource Groups (ERGs) – each with a senior executive sponsor – bring together people with a common interest to share experiences, find mentors, and gain access to senior leadership.

- Asian Diversity Network
- Disability Employee Network
- GLAD
- Global African Affinity Network
- Hispanic Latin Network
- Middle East/North Africa Intercultural Network
- PRIME
- RISE
- Women’s Innovation Network
- Veterans’ Network

What if employees saw their differences as an advantage? With two new ERGs, participants are finding that employees who are new to the company and employees over 50 are creating an opportunity for those of different generations to share their knowledge with each other. For over 25 years, Employee Resource Groups (ERGs) have helped drive culture change and advance business results. In 2018, we expanded the number of ERGs from 8 to 10 with the additions of RISE and PRIME. Developed to promote meaningful employee relationships, RISE acknowledges the contributions of new employees who are less than 35 years old, while PRIME values employees over age 50. Participants of RISE represent the evolution of Dow at a big way: in the past five years, more than half of our 22,000 new hires were younger than age 32. Together, these two groups share their respective knowledge of technology and career development skills in a way that supports culture change and mutual improvement.
The ERGs serve as an internal resource to help cultivate a multicultural competency within Dow, partner with businesses/functions to develop people and influence culture; engage employees for impact on sustainability goals; and work collaboratively to maximize local and national inclusion and diversity partnerships.

They also serve as critical links to career development resources and opportunities, as well as networking connections through an inclusive community highlighted by respect, collaboration, and open and honest communication. All employees are eligible to join any of the networks at any time in their career.

Job Candidates
Candidates are increasingly behaving like consumers when choosing an employer. As a result, companies are adjusting how they source and engage with talent through the use of digital hiring strategies. Through collaboration between Dow Human Resources and Public Affairs, we have made significant progress toward meeting the Company's hiring needs through the innovative use of multi-channel digital and social media.

Enabling Dow's success begins with having a diverse workforce that represents the demographics of the markets we play in. This aligns with our ambition to meet current and future business needs while fueling Dow's growth. Digital hiring offers Dow the ability to target and attract qualified talent to fill strategic roles anywhere around the globe, faster and at lower cost than via traditional recruiting methods. To ensure we are targeting top talent interested in Dow, we apply a combination of recruiting methods and channels to reach these diverse candidates.

Dow has participated in external benchmarking studies that rank the digital recruiting performance of premier companies. The benchmarking studies evaluate Dow's overall online talent communications across digital and social channels, our use of social media to connect with prospective employees (e.g., LinkedIn, Facebook, Twitter, YouTube, Glassdoor), our desktop and mobile-enabled careers website, our Talent Community and our online application process. Dow has been ranked more favorably than other premier companies including our competitors for talent, and also ranked higher than leading global technology companies.

Academia
In alignment with Dow's 2015 Sustainability Goals, the Sustainability Innovation Student Challenge Award (SISCA) program was launched in 2009. To promote forward thinking in social and environmental responsibility, SISCA acknowledges the energy, commitment and enthusiasm of the students and their university professors, sponsors and facilitators who support their sustainability innovations and efforts in continued excellence.

NGOs
NGOs raise awareness in the public and advocate for many issues that impact Dow and its reputation. In some cases, the Company engages NGOs by providing public information about historical issues and challenges such as Agent Orange, asbestos, Bhopal and dioxin. Dow engages select NGOs directly through collaboration. Examples of NGO collaborations can be found on pages 42-43, page 48 and throughout the report.

Regulators
The actions and proposed actions of regulators can impact Dow’s operations and reputation. Regulators were engaged on several topics in 2018, including:

• Cyclic olefins
• Microplastics
• Chemical safety

How are we helping to make products greener and more sustainable? It is a frequent question from our customers, and Dow is answering it with renewable energy. Brands are searching for solutions that help them meet their carbon footprint reduction commitments and differentiate them from competitors. Renewable Energy Certificates (RECs) certify that a component of a product was made using renewable energy – and Dow is earning RECs by using renewable energy from Texas wind farms to produce polyethylene. Wind energy enables Dow to convert ethane to polyethylene in our plants, which is tracked and reported to the Electric Reliability Council of Texas. By using wind power to manufacture polyethylene, carbon emissions are greatly reduced. When customers choose to purchase polyethylene produced using renewable energy, they are able to report reduced Scopa 3 greenhouse gas emissions and promote the use of renewable-energy-made plastic directly on their packaging to differentiate their products. It’s a win for customers and for the environment.

Crediting the Wind for Reduced Carbon

The Dow Chemical Company
Below are some of the data insights we gained in the 2017 cycle (reviewing sustainability and economic performance together. The SCI process has provide a way to analyze the Company's portfolio that incorporates progress. Each business is provided feedback in the form of scorecards, by the corporate team, which reviews the results with each business and subject matter experts who respond to the survey. Scoring is done annually by each of our business units. The 2025 SCI questions are grouped Chemistry Index (SCI). The SCI is a series of questions to be answered company in the world. As one of the metrics for our Delivering Breakthrough "Sustainable Chemistry and address world challenges are from products that more than 65% of R&D examples of involvement in the storage, distribution, supply and use steps of product at customer facilities, and recycle, reuse or disposal. Risk mitigation measures are identified and implemented as a direct result of the Business Risk Review work process. Various product stewardship efforts as such distributor and customer qualifications and industry advocacy work are just a couple involvement in the downstream, storage, distribution, use and supply steps of product. As a responsible corporate citizen, Dow continues to use a well-defined process for assessing and managing risks in the face of uncertainty. This process is science-based, ensuring decision-making includes an appropriate evaluation of risk and benefits of our products as well as those being contemplated for development. We view the precautionary principle as an application of the principles of risk assessment and risk management. Risk assessment includes identification, characterization, threat assessment and risk assessment. Risk management encompasses the identification, selection and implementation of alternative actions for addressing risk through the control of identified hazard(s) and/or exposure.

Collaborations
Dow recognizes that the actions of one company alone cannot achieve the scope of change required to address the challenges each company faces to protect the environment from plastic waste. As a global industry leader committed to advanced science and sustainability, Dow openly collaborates with customers, suppliers, academics, service providers and others, to support mutually beneficial initiatives. This collaboration, we can help spur innovation, solve some of society's greatest challenges, and lead the transition to a more sustainable planet and society by championing a more inclusive model of business. Over the years, we have nurtured our collaborative approach with dozens of institutions and partnerships around the world in pursuit of shared goals.
**Employment**

**The Future Is ... Inclusive and Better for Everyone**

At Dow, we believe science and humanity can change the world. While engaging with both internal and external stakeholders, Dow keeps sustainability at the forefront of everything we do. Internal work processes, how we treat people, even the products we create, inspire our people to deliver sustainable solutions, business growth and optimal customer experience. Through Dow’s 2025 Sustainability Goals, we are committed to protecting our planet by utilizing our diverse and talented employees’ passion, creativity and expertise to accomplish our Engaging for Impact Sustainability Goal to positively impact more than 1 billion lives. Our employees are able to align passion to purpose through a portfolio of volunteer opportunities, ranging from our STEM Ambassador Program and Habitat for Humanity builds to Leadership in Action, Global Health Corporate Champions and nonprofit board service.

Our world is changing at a pace never seen before. To continue to compete and lead, we need to think and act in new ways. A successful future for Dow and our employees will be built on learning. With a strong continuous improvement and learning culture, and in alignment with the Company’s focus on technology and innovation, digital platforms are continuing to be incorporated and expanded - beginning with a stronger digital hiring presence.

Throughout an employee’s career, the Company supports people in their personal development through a mix of online and digital learning platforms, on-the-job training and a series of leadership development academies. Employees are encouraged to invest in themselves, and the technologies

**New Employee Hires and Employee Turnover GRI 401-1**

**NEW EMPLOYEE HIRES - Gender by Job Category**

<table>
<thead>
<tr>
<th>Job Category</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>86%</td>
<td>14%</td>
</tr>
<tr>
<td>Technical Employees</td>
<td>69%</td>
<td>31%</td>
</tr>
<tr>
<td>Professionals &amp; Managers</td>
<td>57%</td>
<td>43%</td>
</tr>
</tbody>
</table>

The workforce data is gathered through a centralized database containing all employee information. The employee data is updated by Human Resources and managers when employee information changes occur. The data represents the global employee population as of December 31, 2018 and includes all permanent, full-time and part-time employees. Temporary employees, contractors, and manual additions are excluded unless otherwise stated.

If science provides us with the ability to create, use and evolve technology to build a better world, then we need diverse voices and backgrounds to help us arrive at the best solutions possible. We also need committed employees who are willing to apply their passion and expertise to advance the well-being of people and the planet. Through their work and volunteer activities, our employees are helping us lead the transition to a more sustainable planet and build stronger, more resilient communities at the intersection of sustainability, innovation and citizenship.
we deliver enable employees to access resources in real time through mobile applications. Every Dow story starts with our people. Dow drives a performance culture through continuous feedback, feedforward, and frequent and diverse development opportunities. We measure and benchmark culture and employee engagement on an annual basis, and take action on corporate priority areas for improvement. Dow’s efforts and commitment to creating a workplace that fosters innovation, collaboration, inclusion, safety and well-being for all Dow employees is reflected through 2018’s Top Employer accolades in 17 countries.

Employee statistics are consistent with the total number of employees reported in the Dow 10-K issued February 2019. Investors may refer to the subsequent Form 10 issued March 12, 2019, which includes pro forma data reported in the Dow 10-K issued February 2019. Investors may refer to the Dow 10-K issued February 2019.

Corporate culture is focused on financials and employment.

**Employee statistics are consistent with the total number of employees reported in the Dow 10-K issued February 2019. Investors may refer to the subsequent Form 10 issued March 12, 2019, which includes pro forma data reported in the Dow 10-K issued February 2019. Investors may refer to the Dow 10-K issued February 2019.**

**Personal benefits**

- Parental Leave GRI 401-3
- Voluntary Leave by Age Group
- Return from Leave Rates
- Parental Leave GRI 401-3
- Dow's Global Parental Leave Policy is intended to provide greater flexibility and work-life balance for mothers and fathers. Birthing parents have a minimum of 12 weeks of paid leave and the non-birthing parent has two weeks of paid leave, which can be taken during the 12 months following the birth of a child.

**Involuntary attrition**

- Involuntary Attrition by Region GRI 401-1
- Involuntary Attrition by Gender
- Involuntary Attrition by Age Group
- Involuntary Attrition includes the impact of closures.

**Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations GRI 401-2**

Regular full-time and less-than-full-time employees are provided a wide variety of benefits while only temporary employees are not eligible to receive these benefits. Dow’s benefit plans are designed to build on the social security benefits provided by each country and, as a result, vary by country. In all significant Dow locations, we offer the following benefits to employees:

- Pension plans, either defined benefit or defined contribution plans
- Medical plans, often including prescription drug coverage and dental
- Life insurance
- Disability protection
- Accident insurance
- Paid vacation, holiday and leave programs
- Business travel accident

**Voluntary Attrition**

- Voluntary Attrition by Region
- Voluntary Attrition by Gender
- Voluntary Attrition by Age Group
- Voluntary Attrition includes the impact of closures.

**New Hire Diversity Indicators GRI 401-1**

**Return from Leave Rates**

**Parental Leave GRI 401-3**

Dow’s Global Parental Leave Policy is intended to provide greater flexibility and work-life balance for mothers and fathers. Birthing parents have a minimum of 12 weeks of paid leave and the non-birthing parent has two weeks of paid leave, which can be taken during the 12 months following the birth of a child.
To promote our digitally enhanced employee experience, Dow invested in a formal recognition tool that can be used to validate performance: Accelerate Great is the formal recognition tool that drives employee engagement, retention and skill development. Engaging employees for impact will in turn improve the quality of life for millions of people each year, positively impact Dow’s reputation and have a lasting effect for current and future generations.

In 2018, our leaders focused on using our Accelerate Great Recognition Tool to drive employee engagement and say "thank you" to our employees for a job well done. Accelerate Great is the formal recognition tool and has been used to acknowledge and value employee contribution (leader approval required)

- Cash awards – point-based awards of $100 to $1,000
- Platinum Awards – cash awards for higher-level impact, contribution and innovation (leader approval required)
- Diamond Keepsake Awards – used to recognize everyday heroes

This recognition program is currently available, from internal content to our learning experience diverse and engaging.

- Employee worksheets exploring personal and career values, preferences and orientations
- Form and guidelines to prepare for employee career development discussions
- Global Educational Assistance that supports employees in pursuing external training/educational opportunities for career development
- Access to HR and outplacement counseling services

Programs for skills management and development are designed to support the continued employability of employees and assist them in managing career endings.

- Benefits counseling for employee retirement planning
- Financial planning seminars for all employees
- Employee Resource Groups that support a variety of development opportunities
- A learning management system, Diamond Learning, for tailored learning curricula aligning to role responsibilities and personal development
- Total health, nutrition and wellness centers and associated programs and services
- Career transition assistance benefits including placement counseling services

Percentage of employees receiving regular performance and career development reviews by gender on a 0-3 scale

<table>
<thead>
<tr>
<th>Region</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>108</td>
<td>332</td>
<td>246</td>
<td>232</td>
</tr>
<tr>
<td>Latin America</td>
<td>118</td>
<td>254</td>
<td>210</td>
<td>256</td>
</tr>
<tr>
<td>North America</td>
<td>124</td>
<td>297</td>
<td>190</td>
<td>203</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>127</td>
<td>282</td>
<td>193</td>
<td>214</td>
</tr>
<tr>
<td>Global</td>
<td>112</td>
<td>292</td>
<td>208</td>
<td>194</td>
</tr>
</tbody>
</table>

Dow cares about employee engagement and supports it through My HR Connection, an online portal that employees can access to materials that supported their personal and professional development interests. Dow can also ensure compliance on any necessary safety training. Diamond Learning has improved our ability to make learning more relevant, engaging as we continue to leverage more of the system’s capabilities. Over 40,000 courses are currently available, from internal content to Harvard Business Leadership courses, keeping our learning experience diverse and engaging.

In 2018, Dow employees had unlimited access to available development resources including:

- Access to HR and retiree service call centers
- Career transition assistance benefits including placement counseling services
- Global Educational Assistance that supports employees in pursuing external training/educational opportunities for career development
- Access to HR and retiree service call centers for personalized answers to HR questions

Workforce Representation – Temporary and Permanently by Geography

Europe

<table>
<thead>
<tr>
<th>Region</th>
<th>Permanent</th>
<th>Temporary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>37,449</td>
<td>14,645</td>
</tr>
<tr>
<td>Latin America</td>
<td>23,760</td>
<td>6,845</td>
</tr>
<tr>
<td>North America</td>
<td>38,463</td>
<td>15,209</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>6,002</td>
<td>2,832</td>
</tr>
<tr>
<td>Global</td>
<td>70,016</td>
<td>23,722</td>
</tr>
</tbody>
</table>

The Dow Chemical Company
The PM cycle concludes with an annual review. This discussion features recognition for contributions and feedback on areas for development for the future. In preparation, leaders gather multi-rater feedback throughout the year to enhance the quality of the discussion and ensure multiple inputs to performance ratings.

In 2018, 96.3 percent of employees were eligible to receive an Annual Performance Review and have a performance rating in the system. There is no difference in eligibility by gender. There were 3.7 percent of employees who were ineligible including students, interns, co-ops, those who were part of divestitures and specific joint ventures, and other Dow employees based on local contractual agreements.

All employees are encouraged to have continuous development discussions and develop a plan for continued growth. This information is helpful for global Talent Management to understand and improve the effectiveness of our Performance Culture.

### Percentage of Employees Receiving Regular Performance and Career Development Reviews

<table>
<thead>
<tr>
<th>Administrative</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100%</td>
<td>99.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professionals &amp; Managers</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>95.2%</td>
<td>95.4%</td>
</tr>
</tbody>
</table>

### Compensation Equity GRI 405-2

Global pay equity studies have been conducted at Dow over the last 20 years to assess fair treatment and ensure our pay practices are being implemented appropriately. The most recent analysis was conducted for 2018, following our annual global pay planning cycle. The impact of gender on pay decisions is examined globally, and the impact of ethnicity is examined in the United States. Dow’s three components of compensation are reviewed (base pay, annual performance award and long-term incentives). The study examines impact on pay differences that cannot be explained by legitimate factors (e.g., performance ratings, job level, education, years of service, time since promotion, age, and/or geography).

The 2018 pay equity study found no meaningful difference in base pay, performance award or long-term incentives between genders or between U.S. minorities and non-minorities. Pay differences were attributable to the legitimate factors listed above and were not related to gender or ethnicity. These results demonstrate that pay equity exists across Dow following the 2018 increases and that global pay-planning guidelines are being applied appropriately.

### 2018 Pay Equity Summary

<table>
<thead>
<tr>
<th>Results</th>
<th>Base Pay 1</th>
<th>Performance Award 2</th>
<th>Long-Term Incentives 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Female Pay as Percent of Male Pay</td>
<td>100.5%</td>
<td>100.0%</td>
<td>100.3%</td>
</tr>
<tr>
<td>U.S. Minority Pay as Percent of Non-Minority Pay</td>
<td>100.5%</td>
<td>99.9%</td>
<td>99.6%</td>
</tr>
</tbody>
</table>

1 The reported ratios are based on the standardized mean differences when controlling for legitimate business reasons for the differences (e.g., geography, job level) in accordance with the applicable laws.

2 Base pay is calculated based on average position in the pay range.

3 Performance award is calculated based on the actual value granted.

4 Long-Term Incentives (LTI) analysis includes only those eligible, and excludes other roles. LTI is calculated based on the actual value granted.

As a continued commitment to pay equity, Dow signed the White House Equal Pay Pledge in June 2016. Beginning in 2019, Dow moved to conducting annual pay equity analyses across the full population, and is expanding the scope to include promotions, hiring and other activities.
Investing in Sustainability Leaders of the Future

To address global challenges, the world needs leaders who understand the value of sustainability and collaborative, blueprint-style thinking to drive change. At Dow, we are investing in employees and students to help develop the sustainability leaders of the future.

Sustainability Academy

Since its 2017 launch, the Sustainability Academy has provided 116 Dow employees in three cohorts with the hands-on experience and tools needed to improve sustainability in their jobs. A partnership with the University of Michigan’s Erb Institute, the program has been popular with employees and yielded long-lasting business results. Employee participants are selected through a competitive nomination process to participate in a six-month experience that includes:

- An immersive four days on the University of Michigan’s campus learning the fundamentals of sustainability from professors in the field
- Completion of a team project aligned with a Dow 2025 Sustainability Goal and supported by an expert mentor
- An opportunity to present project results and network with Dow leaders at a forum to close the cohort

The program is currently under consideration for expansion to other geographies, so more Dow employees can benefit from this unique experience.

Dow Sustainability Fellows Program at the University of Michigan

The Dow Sustainability Fellows Program is supported by funding from The Dow Chemical Company Foundation and engagement of Dow professionals. During the six years of this collaboration with the University of Michigan, 315 graduate students (master’s and doctoral) and postdoctoral professionals have completed the program. A key driver of the Dow Sustainability Fellows Program is to prepare future leaders to make a difference in organizations and communities worldwide.

Master’s students comprise the core of program, and approximately 265 master’s/professional students have been named Dow Sustainability Fellows. Master’s fellows form interdisciplinary teams of 4-6 fellows and work directly with a client or community. Each fellow team analyzes options and develop actionable recommendations on sustainability challenges. Student-led teams have addressed significant projects in Michigan (Detroit, Benton Harbor, regionally (Great Lakes) or globally (Brazil, Africa, India). Dow Company professionals serve as consultants to project teams, provide resources and expertise, and have led skill sessions focusing on sustainability-related content. University of Michigan faculty serve as academic advisors to teams, overseeing research methods.

Program Analysis: Program evaluation efforts initiated in 2018 focused primarily on an analysis of 200 master’s fellows alumni and the clients with whom fellows previously engaged in team-based projects. The Dow Fellows Program experience met or exceeded expectations for 96 percent of alumni. When alumni were asked about the program’s impact on their career, 98 percent of respondents noted that it had a positive effect, with 20 percent sharing that it significantly impacted their career path. Several Dow Fellows specifically noted that meeting other students focused on sustainability was inspiring and helped shape their career goals. For others, the program was transformational for their careers, and several mentioned that their current job opportunities happened as a result of their team projects. Others noted that learning about sustainability in practice, and in the business world, in particular, helped prepare them for their career.

Business Sustainability Internships

In the summer of 2018, six MBA students worked within a Dow business to uncover and accelerate opportunities to build brand or product value through sustainability. Interns had a senior sustainability expert personally mentor them and attended various events to learn from Dow’s leaders on a variety of business sustainability topics. In addition, a summer post-graduate Sustainability Technology intern conducted a project designed to improve the Company’s understanding of the use and fate of Dow materials, especially as it relates to the 2025 Sustainability Goal of Delivering Breakthrough Innovation.

Sustainability also is woven into career development within Dow:

- 2025 Sustainability Goal leadership and implementation
- Business Sustainability Internships
- Leadership opportunities at Dow
- Sustainability Academy

See the Dow Fellows Program website: http://sustainability.dow.com/dow-fellows-program/See the Dow Global Impact Series (sustainability project summaries):

Read the Dow Global Impact Series (sustainability project summaries):

Not only did the direct tasks of my job revolve around sustainability, but I was working for an organization that was asking the toughest questions. I can only hope the next step in my career has a similar experience.

Matt Purdumon, Dow business sustainability intern

Dow Sustainability also is woven into career development within Dow.

Business Sustainability Internships

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Inclusion and Diversity

At Dow, global inclusion and diversity (I&D) is rooted in our culture and core values. We believe that a diverse and inclusive culture that values and embraces differences is key to our Company’s success. It contributes to making Dow a great place to work, enhances our innovation and customer experience, and strengthens our understanding of the communities we serve. It is also a contributor to sustainable business growth.

As we move forward following the separation from DowDuPont in 2017, we are accelerating our actions and ensuring our company’s commitment to strengthening inclusion and diversity. In 2017, we appointed our first chief inclusion officer, Karen S. Carter, and implemented a focused and holistic I&D strategy that is now part of Dow’s business strategy with a governance structure, holistic I&D strategy that is now part of Dow’s business strategy, seven foundational pillars that encompass all dimensions of Dow’s business strategy. The pillars are:

- **Governance:** Institutionalize an inclusive culture.
- **Customers:** Deliver an unparalleled customer experience.
- **Talent:** Increase employee engagement and create an environment where everyone can thrive.
- **People leaders:** Cultivate an inclusive culture.
- **Suppliers:** Achieve top benchmark performance in supplier diversity.
- **Communities:** Strengthen communities where we live, work and do business.
- **Reputation:** Establish a leadership position and be recognized as a great place to work.

We have identified five areas in which we intend to achieve concrete, visible and meaningful results globally by 2020:

- Achieve targeted premier recognition globally.
- Address diversity dimension gaps in employee perceptions of equal opportunity and valued diverse perspectives.
- Advance representation globally and across multiple dimensions of diversity.
- Achieve targeted premier recognition globally.
- Establish a leadership position and be recognized as a great place to work.

For other employee categories, please refer to disclosure 102-8. To learn more about our Board, see disclosure 102-22, Composition of the Highest Governance Body and Its Committees.

Diversity of Governance Bodies and Employees GRI 405-1

The Dow Board of the Separation on April 1, 2019, is comprised of 9 independent directors and chief executive officer Jim Fitterling with diverse experience and credentials, selected for their acumen and ability to challenge and add value to management.

For information about the DowDuPont Board as it existed prior to April 1, 2019, and throughout the 2018 calendar year, refer to the 2018 DowDuPont Annual Proxy Statement, which can be found at http://www.dow-duPont.com/investors/dowdupont-filings-and-reports/default.aspx.

Gender and Age Composition of Board of Directors

<table>
<thead>
<tr>
<th>Board of Directors</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>35%</td>
<td>65%</td>
<td>100%</td>
</tr>
<tr>
<td>White</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Gen X</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Baby Boomer</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Corporate Citizenship

Engaging for Impact at the Intersection of Sustainability, Innovation and Citizenship

Global Citizenship at Dow

Each day, Dow people are seeking solutions to the complex environmental, economic and social challenges facing our world. Through global citizenship, we put into action the Company’s commitment to advance human progress by driving to create sustainable communities.

As part of our efforts, we look for solutions to enable economic development, sustainability and education that lead to socially healthy and resilient communities, while also supporting and furthering business success, in alignment with the Company’s 2025 Sustainability Goals. Our holistic approach promotes relevant, long-term change for communities by applying integrated solutions and cross-sector collaborations.
The passion and expertise of our people are the heart and soul of our work. In support of our goal to positively impact the lives of 1 billion people across the globe by 2035, Dow people are committing their time and talents to make a difference.

In fact, according to Dow’s 2018 Global Employee Opinion and Action Survey, 71 percent of employees stated that they had volunteered their time and/or skill sets, outside of daily work responsibilities, in support of community and/or global challenges.

All IN: Building Engagement Through Inclusion and Halftone Education

Our employees are the face and story of diversity at Dow, and together we aim to create inclusive places to work and communities to call home. Their different perspectives reflect the rich diversity of the places to work and communities to call home. As a world leader in science and technology, and a partner in solving some of the world’s most pressing issues, we want our employees to feel that their time and/or skill sets, outside of daily work responsibilities, in support of community and/or global challenges.

This campaign gave youth across the globe an opportunity to apply science and chemistry to make life-changing impacts on today’s major issues.

More Than Robots: Through Dow’s strategic partnership with FIRST Robotics, Dow STEM Ambassadors mentor youth teams by building science, engineering and technology skills that inspire innovation and foster self-confidence, communication and inclusion. In 2018, nearly 200 teams in six countries were sponsored by Dow.

Each year, high school students from all over the world meet for a new edition of the FIRST Robotics Competition. In 2018, there were more than 3,000 teams worldwide, from which about 100 are formed by Dow students. Two of these teams, the Pink Hawks, the first 100-percent Mexican women-registered team, as well as the WX Team, which ranks in the regional top 10, have been supported by Dow since 2017.

DOw Leadership Academy in Louisiana: Thirteen male students from White Castle High School in White Castle, Louisiana, are in the second of three years of an intensive leadership school in White Castle, Louisiana. These students are in the Dow Leadership Academy in Louisiana: Thirteen male students from White Castle High School in White Castle, Louisiana, are in the second of three years of an intensive leadership school in White Castle, Louisiana. These students are in the Dow Leadership Academy. Thirteen male students from White Castle High School in White Castle, Louisiana, are in the second of three years of an intensive leadership school in White Castle, Louisiana. These students are in the Dow Leadership Academy.

Dow employees are committing their time and talents to make a difference. Across the globe, they are working with military training – and so do communities in need. That's why in 2018 we sent three of our VETNET employee volunteers to join Operations Silver Sun, Team Rubicon's response to Hurricane Florence's devastation in North Carolina. These employees joined 60 other U.S. veterans for a week, helping mud-caked flood victims and making fallen trees. "Helping homeless veterans who have faced some of the most challenging issues and rewarding experience," said Tim Mueller, a marine veteran and instrument engineer at the Houston Dow Center.

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This activity is an example of Dow contributing to sub-goal 4.4: "By 2030, substantially increase the number of youth who obtain vocational and technical training, including for employment, decent jobs and entrepreneurship."
In 2018, the Ghana Recycling Initiative by Private Enterprise (GRIPE) launched a school recycling program in collaboration with NGO Environment 360 to support Fan Milk “Pick-It” Project in Ghana. GRIPE is an industry-led coalition formed under the Association of Ghana Industries (AGI) with a stake in the plastics sector to integrate sustainable waste management solutions, particularly around plastics. GRIPE was founded in November 2017 by eight multinational companies with varied products with proven track records of involvement in sustainability actions concerning plastics in other countries. The founding members are Coca-Cola Bottling Company of Ghana; Dow Chemical West Africa Limited; Fan Milk Ghana Limited; Nestlé Ghana Limited; PZ Cussons Ghana Limited; Unilever Ghana and Voltic (GH) Limited.

The main aim of the school recycling program is to increase plastics collection rates, thereby decreasing plastics sent to landfills and pollution.

Engaging Partnership to Purpose Through Engagement

Building the Workforce of Tomorrow: Every day around the world, Dow STEM Ambassadors share their passion and expertise with students, educators and their local communities through career talks, hands-on activities, professional development and much more. In total, there are 2,300+ Dow STEM Ambassadors who in 2018, visited approximately 1,000 classrooms, engaged 200,000+ students inside and outside the classroom, and supported 4,500 educators through STEM outreach.

Developing Skills Through Global Pro Bono: Through innovative leadership development programming conducted in partnership with PYXERA Global, 50 Dow leaders from around the world applied their skills and expertise to community-based problems by working virtually and in-country with 12 non-governmental organizations (NGOs) in India, Rwanda and Senegal. The result is exceptional challenges related to new markets for Dow. In total, nearly $1.5 million USD of pro bono consulting service was provided by Dow employees.

Forty-three Dow employees participated in the sixth annual Leadership in Action Program, held in Mumbai, India. This year’s program was designed to address pressing local challenges related to sustainability, environmental cleanup, diversity and inclusion, circular economy, and education and career readiness.

Leadership in Action has engaged more than 280 employees who have worked with approximately 50 NGOs to benefit communities in the Philippines, Ghana, Ethiopia, Indonesia, Vietnam and India.

A New Day. A New Dow. Developing an Engaging for Impact Volunteer Blueprint for the New Dow

Volunteers play a critical role in our company ambition and act as an extension of our brand by helping us build more resilient communities, engage our employees and contribute to our business performance. It also helps build the career skills and personal development of our employees. Leveraging employee and non-profit partner insights and industry best practices, Dow is partnering with Points of Light, the world’s largest organization dedicated to volunteer service, to develop a blueprint that supports the new Dow, our businesses and communities, and the employees that make us great. This blueprint will be the foundation of our volunteer strategy for the new Dow and will ensure that we maximize future impact – aligning employee passion with purpose while delivering social and business value.

Dow is committed to sustainability and continues to work towards solutions for global challenges through collaboration with relevant organizations. Our work with the Ghana Recycling Initiative by Private Enterprise is an example of such collaboration and it features a future active project which we intend to see multiply the positive impact in the world by creating a blueprint solution for global application.

Craig Arnold, president, Sub-Saharan Africa

*These four weeks have had the purpose of adjusting the lenses through which I view the world. Teamwork was key for project development. It was very rewarding to be able to apply my expertise in the health sector, a completely different industry, and generate positive impact.

Roberta Lopes de Costa Issa, Olefins & Aromatics supply chain director for EMEAI, and a participant in Global Leadership in Action Program in Mumbai, India. This year’s program was designed to address pressing local challenges related to sustainability, environmental cleanup, diversity and inclusion, circular economy, and education and career readiness.

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Employee Health and Safety

GRI 403-1 Worker protection has been a priority at Dow since the Company’s earliest days. Dow’s continuous improvement mindset, the most comprehensive management system, and the training and development delivered to employees have greater than 50 percent ownership (i.e., operational control). Dow’s health and safety processes meet or exceed the requirements of most countries in which we operate. All Dow processes meet or exceed the requirements of ISO-14001, ISO-9001 and Responsible Care standards and are independently audited and found to meet all Dow premises and JV locations where we have greater than 50 percent ownership (i.e., operational control). The management system is designed and implemented by professionals employed or contracted by Dow (e.g., Health Services, Industrial Hygiene, EH&S Delivery). The Company management system covers Dow’s 200 sites and interim areas, whether they are working on or off Dow premises, and all contracted workers performing work managed by a work group, normalized to work managed by a work group, normalized to work managed by a work group. Dow’s codes of conduct are implemented by professionals employed or off Dow premises, and all contracted workers regardless, whether they are working on or off Dow premises. The management system is designed and implemented by professionals employed or contracted by Dow (e.g., Health Services, Industrial Hygiene, EH&S Delivery). The Company management system covers Dow’s 200 sites and interim areas, whether they are working on or off Dow premises, and all contracted workers performing work managed by a work group, normalized to work managed by a work group.

Four Pounds: That’s the amount of waste per person on Earth produces in a day. In 2018, we challenged not only employees, but our friends and families, to participate in cleanup events around the world. In a few short months, we participated in 171 cleanups and removed 54,000 pounds of waste from waterways – making it our largest volunteer effort in Company history. In 2019, we plan to double that with a goal of collecting more than 100,000 pounds of trash from more than 100 sites around the world. By continuing to collaborate with NGOs and industry partners, we can find new solutions to reduce plastic waste in our oceans and other waterways.

Prevent unsafe acts and conditions
• Foster communications on health and safety related external standards. Within this system, we lay the foundational expectations of hazard assessment and risk mitigation, aligned to responsible Care. At the highest level, we expect each organizational expectation of hazard assessment and risk mitigation to be implemented and valued in the local Health and Safety programs: • Identify, assess, and eliminate or mitigate hazards.

The Dow Chemical Company 2019.
Dow's efforts to reduce risk have been instrumental in driving fundamental change in the service industries that support our operations. Over the last 10 years, Dow's influence on the hydrazination industry has led to the elimination of more than 670,000 hours of high-risk Life-Critical work (e.g., confined space, high pressure, high temperature, high-voltage, high-potential).

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As part of our Total Worker Health program, we are developing wearable technology that would track vital signs and head positioning for night shift workers who operate motor vehicles or heavy equipment. When we have people monitoring critical processes, we want them to be at a high state of alertness.

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To prevent access to such materials, we work with and promote the availability of new well-being aspirations for Dow employees and make best use of our available resources. We recognize that health is multifaceted, so we provide support across the following dimensions: emotional, financial, social, purpose, occupational, systemic (vs. programmatic) approach to support the well-being of all Dow employees. Our commitment to employee health and safety is reflected in our strong performance on key indicators.

- **Health with Speed**
- **Safety with Speed**
- **Quality with Speed**
- **Innovation with Speed**
- **Responsibility with Speed**

Safety with Speed

We are introducing electronic safe work permits – eSWPs – instead of paper versions. This streamlined, digital format improves the quality of safety conversations around the world and increases efficiency on critical tasks. Fundamental to this electronic system is the ability to provide input from any employee via the Environment, Health and Safety delivery system. Each standard that is part of Dow’s health and safety management system has one or more standard owners who accept continuous improvement plans and project ownership.

GRI 403-5 We provide health and safety training at no cost to workers. Training is role-based and assigned to workers when they take on a specific role (e.g., Safe Work Permits Issuer, Red Tag Lock-out Isolator). For workers who are not employees but whose work and/or workplace is controlled by Dow, access to training is provided free of charge within the constraints of co-employment limitations. Where co-employment concerns are present access to such materials, we work with and promote the availability of new well-being aspirations for Dow employees and make best use of our available resources. We recognize that health is multifaceted, so we provide support across the following dimensions: emotional, financial, social, purpose, occupational, systemic (vs. programmatic) approach to support the well-being of all Dow employees. Our commitment to employee health and safety is reflected in our strong performance on key indicators.

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Health and safety training effectiveness is evaluated periodically via participant feedback and purposeful evaluation of training content against commonly defined adult learning principles. A variety of training is developed centrally, translated into local languages and deployed globally to ensure consistency of understanding and application.

In addition to formal training, informal safety training is part of our safety culture, every team and every meeting across Dow. Safety moments, tailgates, on-the-spot training and safety stand-downs reinforce the culture of safety and the role every employee has to support each other’s health and safety.

New well-being aspiration: 100% of Dow employees are their BEST SELF at work, home and play.

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Dow's Injury System consists of local policies that are based on regional and global requirements. Auditors are trained and certified in each topic area they audit against. Gaps identified in these internal audits are addressed via corrective or preventative actions captured in our global CAPA action repository, with gap closure encouraged within 12 months of the audit.

More than 85 percent of our manufacturing sites globally receive some periodic external audit. The frequency varies depending on specific governmental requirements. For example, more than 85 percent of large manufacturing sites in North America are either OSHA VPP or COR certified. More than 50 percent of external audits globally are broad in nature, covering most topics within the Responsible Care Code or ISO-14001.

Work Related Injury and Illness: GRI 403-5, GRI 403-10

In 2018 the Company saw two loss-of-life incidents. Both incidents triggered global response and management system change. The first incident involved a truck-rail collision in a crossing at one of our sites. This led to significant adjustments to our rail crossing warning and barrier systems, and the application of technology to monitor and improve traffic behaviors on our rail crossing. In the second incident, our machine-guarding risk-assessment methodology was improved and redeployed globally. There were no other high-consequence injuries in 2018.

At Dow, demonstration of our commitment to elimination of high-consequence injuries occurs at all levels. In 2018, the top 40 leaders of our Company traveled to individual facilities in the third year of our Global Leadership Team visit initiative. In each case, a global leader spends two days at a location focused on observation and dialogue with the work group. The goal of this year’s visit was to elevate the three focus areas of health, inclusion and ethics to achieve excellence in EH&S performance.

It core to our injury measurement and prevention efforts that we classify incidents by their POTENTIAL to result in LIFE-altering consequences. This allows us to see and focus prevention efforts that pose a greater likelihood of a high-consequence injury.

We have a very robust, globally tracked near-miss program for situations that did not result in an result but could have had high consequence had something been slightly different. This non-injury potential LIFE event (non-LIFE) data is reviewed weekly at the corporate level to ensure adequate investigation and to identify broadly leveragable learnings. This data is visible to all employees and built into dashboards along with actual injury information for every site, region and business across the Company.

Our Corrective and Preventative Action program ensures that each incident investigated (including all that have a high-consequence potential) has robust corrective and preventative actions applied.

Integrated approaches to both protect health and optimize health are linked at Dow. Our systems and processes support each other’s objectives as the Company approaches health in our annual employee opinion survey. Results indicated high confidence in Dow’s approach.
Environmental

Dow is committed to world-class environmental, health and safety (EH&S) performance, and demonstrated by industry-leading performance, a long-standing commitment to Responsible Care and a desire to leave a better world for the next generation. Dow’s 2025 Sustainability Goals – goals that set the standard for sustainability in the chemical industry by focusing on improvements in Dow’s local corporate citizenship and product stewardship, and by actively pursuing methods to reduce the Company’s environmental impact.

To meet the Company’s public commitments, as well as the stringent regulatory and self-imposed requirements and regulations related to environmental protection and remediation to which its global operations are subject, Dow has well-defined policies, requirements and a management system in place. Dow’s EH&S Management System (EMS) defines the “who, what, when and how” needed for the business to manage the Company’s operations, requirements, performance objectives, leadership expectations, and specific goals. The EMS is an effective tool to implement the Company’s policies, and to ensure Dow’s corporate EH&S management hierarchy that minimizes the impact of wastes and emissions on the environment.

Dow works to eliminate or reduce the generation of waste and emissions at the source through research, process improvements and maintenance. Second, Dow finds ways to reuse and recycle materials. Finally, unusable or non-recyclable hazardous waste is treated before disposal to eliminate or reduce the hazardous nature of the waste. Treatment may include destruction by chemical, physical, biological or thermal means. Disposal of waste materials in landfills is considered only after all other options have been thoroughly evaluated.

Dow has specific requirements for waste that is transferred to non-Dow facilities. These requirements consider the periodic auditing and verification by third party auditors. Dow believes third-party verification and transparent public reporting are cornerstones of the Responsible Care model.

Dow’s EH&S policies support Responsible Care, a global corporate citizenship and product stewardship movement in the chemical industry by focusing on improvements in Dow’s local corporate citizenship and product stewardship, and by actively pursuing methods that lead to progress on circular economy opportunities.

Dow continues to be a global champion of Responsible Care and has made a specific commitment to develop and operate the Global Environmental Information (GEI) tool. Improvements to the GEI tool reduce the effort and improve the clarity of the annual report. Dow has specific requirements for waste that is transferred to non-Dow facilities. These requirements consider the periodic auditing and verification by third party auditors. Dow believes third-party verification and transparent public reporting are cornerstones of the Responsible Care model. Dow’s EH&S policy adheres to a waste minimization through equipment reliability improvements, propylene, and so on, to supplement internal production. The Company purchases natural gas, primarily to supplement internal generation. The Company purchases natural gas, primarily to supplement internal production.

The Dow Chemical Company

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<thead>
<tr>
<th>Metric</th>
<th>2017</th>
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Dow’s EH&S policies help the Company achieve its corporate strategy and demonstrate Dow’s environmental performance and improvements were made in injury/injury rates. Safety remains a priority for the entire Company. Furthermore, Dow operates with the intention that its environmental performance, remains a top management priority, with initiatives underway to further improve performance and compliance in 2019 as Dow continues to implement Dow’s 2025 Sustainability Goals.

Dow manages environmental data for reporting purposes along with the Global Emissions Inventory (GEI). The emissions businesses track and record their emissions in the GEI, the centralized database used as the basis for regional and global reports of emissions. Each facility has an EH&S local point of contact for collecting and reporting all waste and emission data to the GEI, in order to test, develop and project to update the GEI tool. Improvements to the tool reduce the effort and improve the clarity of the annual report.

Materials Used by Weight or Volume

The Company operates in a range of manufacturing environments. Basic raw materials are processed through many stages to produce a number of products that are sold as finished goods at various points in these processes. The majority of the products are made from the production of the Company’s finished goods in hydrocarbon-based raw materials. The Company uses essentially all hydrocarbon raw materials, including ethane, propylene, butane, and condensate as feedstocks. These raw materials are used in the production of both takeable products and energy. The Company also purchases certain monomers, primarily ethylene and propylene, and so on, to supplement internal production. The Company purchases natural gas, primarily to supplement internal generation. The Company purchases hydrocarbon-based raw materials. The Company purchases hydrocarbon-based raw materials.
Energy Management Approach

Dow’s Hydrocarbons & Energy business manages a portfolio of power and steam production assets as well as fuel and power purchases. Most of the power and steam consumed for operation of our manufacturing processes comes from combined heat and power (CHPs) plants. The CHPs provide power and steam to production facilities at 20 to 40 percent less fuel than conventional power generation while also reducing GHGs. The Hydrocarbons & Energy business goal is to operate Dow’s energy assets with manufacturing excellence and safety-creating value from our assets and commercial relationships managing the steam and industrial gas exposures for Dow. Dow’s energy business is led by a global Energy & Climate Change director. Under the global director’s leadership, the regional directors and energy managers define the best integrated asset and commercial strategies for major sites and the company exposures. The Energy Tech Center supports the efforts to manage energy in the most effective way through energy efficiency projects within Dow’s sites.

The 2025 Sustainability Goal for the Energy business is to procure 750 MW from clean energy by the year 2025. Dow purchases renewable energy in Europe, Latin America and North America. Because the economics for renewables vary, we have wind, solar, hydro, biomass and land fill gas, depending on the location. All of our projects are selected based on the lowest long-term cost of power or steam from available alternatives. We currently have contracts for 658 MW of clean energy and we continue to pursue clean energy opportunities where the resources (wind, solar, hydro and biomass) are available and the requirements of Dow can be met using these resources.

At Dow the strategic approach to energy management is with solutions that address the key five areas: 1) sustainability (environmental impacts), 2) societal demands – including political realities, 3) chemistry and physics (what is possible with existing technologies until we innovate better ones), 4) reliability, including infrastructure limitations and grid design, and 5) affordability.

Energy Consumption Outside of the Organization GRI 302-2

Energy consumption outside of the Company occurs throughout the upstream and downstream activities associated with our operations. The result is summarized in the figure below. In recent years, energy consumption outside the organization was calculated along with Scope 3 GHG emissions using an Economic Input Output (EIO) method, specifically the eiolca.net tool from Carnegie Mellon Green Design Institute and the 2002 producer cost models. Since 2017, we have updated our calculation methods for Scope 3 GHG to include primary company data for more accurate estimates (see discussion of disclosure GRI 305-3). We have not yet extended that more rigorous calculation to the energy outside of the organization estimate. The values reported for 2017 are simply scaled by Company revenue from the 2017 values.

Greenhouse Gas Emissions

The Dow Chemical Company plans to report only the Scope 1 and Scope 2 emissions, which are those that occur directly with our operations, and will not report Scope 3 emissions. The greenhouse gas emissions from Scope 1 and Scope 2 operations are reported in the following table. The values represent a trend over the last 15 years, and the data shown above are for the years 2003 to 2018.

Management Approach for Greenhouse Gas Emissions

Dow manages the reporting and cost of emissions with the joint objectives of minimizing the cost of emissions and maximizing the profitability of the operations over the long term. There are two types of work performed to achieve these objectives:

• The Hydrocarbons & Energy business, led by a global business director and through regional directors and their organizations, both purchases and trades any required allowances for GHG credits.

Energy Intensity GRI 302-3

In 2018, our energy intensity was 4,635 Btu/lb. This represents total energy, power, steam, compressed air, cooling water pumps and other equipment used by manufacturing facilities. Energy intensity has remained relatively flat since 2005.

Reduction of Energy Consumption GRI 302-4

Dow does not track all energy efficiency improvements throughout the Company. Many improvements come as an ancillary benefit of other capital projects. For example, if a pump fails and is replaced, rather than replacing it with the same pump and driver, a higher-efficiency pump and driver may be chosen. Upgrades are upgraded, replaced and regularized.

A good illustration of this happens at our site in Saint Charles. A project was implemented to use the hydrogen, which is a by-product of the ethylene crackers, as a fuel in the site’s gas turbines. This project helps us save 1,503,490 MMBtu/yr. and have 114,376 tons of CO2e less greenhouse gases.
Dow will achieve 50% of its carbon footprint from renewable sources by 2025.

Though we will grow globally over the next 10 years, Dow’s absolute greenhouse gas emissions will not exceed our 2006 baseline.

Dow will grow globally over the next 10 years, but our Scope 1 greenhouse gas emissions (classified as a non-Kyoto gas) in the production process, including all combustion of fuel to operate CHP plants, boilers, furnaces, flares and all combustion behind our fence.

Greenhouse gases identified for phase-out by the Montreal Protocol have historically been included in the Company’s Scope 1 emissions total. As new technologies have eliminated the use of these ozone-depleting materials, the associated greenhouse gas emissions have been reduced to nearly zero since 2010. More recently, our Scope 1 emissions have remained flat as increases in production have been largely offset by significant capital spending on emissions reduction projects. These efforts have increased associated with growth in production volume since the start of the 2025 Sustainability Goal period. The increase shown for 2018 was primarily attributed to changes made in site-specific emission factor changes.

Scope 2 emissions reflect power purchases to supply manufacturing operations around the world. These are calculated according to the Greenhouse Gas Protocol Scope 2 Guidance, including both location-based and market-based methods. The Scope 2 emissions included in the corporate total tracked for the 2025 Sustainability Goal period are calculated using a location-based approach.

Reduction of Greenhouse Gases GRI 305-5 Since 2006, Dow’s combined Scope 1 and Scope 2 emissions have been reduced by 9.6 million metric tons of CO2e (see chart above). The largest portion of these reductions occurred in the years following Dow discontinued the use of a high-GHG potential and high-ozone-depleting potential blowing agent (transformed into an equivalent estimate of the total GHG emissions of foam products. Since then, GHG emissions have remained relatively flat, with reductions due to improved efficiencies offset by volume growth and on track to meet our 2025 Sustainability Goal target. The difference in combined Scope 1 and Scope 2 emissions from 2017 to 2018 is an increase in Scope 2 emissions (the reasons for this are described above). Avoided emissions resulting from the use of Dow products are estimated as one of the targets for the Delivering Breakthrough Innovations 2025 Sustainability Goal. Our target is to achieve three times the greenhouse gas benefit in use than the benefits realized from our carbon footprint savings for the carbon benefit achieved through use of our products.

For product longevity and recycling, we are in the process of calculating this metric for all of the Dow portfolio, but the current estimate of the carbon benefit of our products to the burden of producing them is greater than five. The largest of these benefits comes from three product families:

• Building insulation products. This application accounts for the GHG emissions saved by replacing non-insulated building structures with insulated ones. We estimate these savings based on the insulating properties of Dow’s insulation products and on the energy saved as a result of the insulation being installed. The calculation assumes a 50-year service life for the insulation and a 20-year lifetime for the full lifetime savings in the year of sale.

• Products that enable lightweighting of vehicles. Dow polystyrene products are used in both external and internal vehicle parts. In this business sector, we estimate the carbon benefits of our products that replace only external steel parts.

• Plastic packaging. The calculation of the carbon benefits of plastic packaging products was based on the method defined in a report prepared for the American Chemistry Council (ACC) and the Plastic Industry Association (CPIA) by Franklin Associates. The detailed results of the individual application calculations, as well as an aggregate calculation results previously reported external.
**Ozone-Depleting Substances GRI 305-6**

Ozone-depleting emissions include substances with an ozone-depletion potential greater than zero that can deplete the stratospheric ozone layer. The emissions factors are based on the Montreal Protocol.

**Chemical Emissions to Air and Water**

**Ozone-Depleting Emissions – as CFC-11 Equivalents**

<table>
<thead>
<tr>
<th>Year</th>
<th>Metric Tons per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>17,076</td>
</tr>
<tr>
<td>2014</td>
<td>16,975</td>
</tr>
<tr>
<td>2013</td>
<td>16,152</td>
</tr>
<tr>
<td>2012</td>
<td>18,074</td>
</tr>
<tr>
<td>2011</td>
<td>19,220</td>
</tr>
<tr>
<td>2010</td>
<td>20,705</td>
</tr>
<tr>
<td>2009</td>
<td>20,015</td>
</tr>
<tr>
<td>2008</td>
<td>19,319</td>
</tr>
<tr>
<td>2007</td>
<td>19,220</td>
</tr>
<tr>
<td>2006</td>
<td>20,856</td>
</tr>
<tr>
<td>2005</td>
<td>20,112</td>
</tr>
</tbody>
</table>

**NOx, SOx, CO, CO2, Particulates, Methane, Hydrogen, Nitrogen, Oxygen, Water, Aluminum and Certain Salts**

Ninety-seven percent of ozone-depleting emissions have been phased out.

**Emissions of Priority Compounds to Air and Water**

<table>
<thead>
<tr>
<th>Year</th>
<th>Metric Tons per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>8,875</td>
</tr>
<tr>
<td>2014</td>
<td>8,872</td>
</tr>
<tr>
<td>2013</td>
<td>7,115</td>
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<td>2012</td>
<td>6,785</td>
</tr>
<tr>
<td>2011</td>
<td>7,954</td>
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<tr>
<td>2010</td>
<td>5,517</td>
</tr>
<tr>
<td>2009</td>
<td>4,098</td>
</tr>
<tr>
<td>2008</td>
<td>3,772</td>
</tr>
<tr>
<td>2007</td>
<td>3,440</td>
</tr>
<tr>
<td>2006</td>
<td>3,343</td>
</tr>
<tr>
<td>2005</td>
<td>6,563</td>
</tr>
</tbody>
</table>

**Emissions of Priority Compounds to Air and Water**

The volatile organic compounds total is down by 6 percent when compared to the 2015 baseline.

**Priority compounds are chemicals with persistent, bio-accumulative and toxic hazards, and chemicals with carcinogenic, mutagenic and reproductive hazards.**

The Dow Chemical Company's water use across its facilities has resulted in a significant reduction in water consumption and improved water conservation practices.

**Water Use Across Dow Facilities**

The Dow Chemical Company is working to improve the efficiency of water use for decades, to external partnerships improving the quality and availability around the globe.

**Clean and sufficient water is a critical resource for society and for Dow’s operations.** The global challenge of protecting this supply is addressed through a broad range of activities by the Company – from business offerings that enable water treatment for millions of people globally, to operations that have been working to improve the efficiency of water use for decades, to external partnerships improving the quality and availability around the globe.

This section focuses primarily on the water footprint of our global operations. It also highlights examples of where we leverage solutions from our own portfolio of business offerings and partner with others to improve sustainable water management.

**Sustainable Water Management**

Developing sustainable water management practices is critical to our business. Establishing a long-term vision for water is also a key part of our water management strategy and is reflected in the connection to water in several of our 2025 Dow Sustainability Goals.

The Dow Chemical Company's water use across its facilities has resulted in a significant reduction in water consumption and improved water conservation practices.

**Water recycle projects at Dow manufacturing sites**

These efforts also highlight examples of where we leverage solutions from our own portfolio of business offerings and partner with others to improve sustainable water management.

**Enabling a Circular Economy**

The Dow Chemical Company's water use across its facilities has resulted in a significant reduction in water consumption and improved water conservation practices.

**Water Use Across Dow Facilities**

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**Water recycle projects at Dow manufacturing sites**

These efforts also highlight examples of where we leverage solutions from our own portfolio of business offerings and partner with others to improve sustainable water management.
Water Stewardship in Action G30-3.5, 303-1

Among the initiatives undertaken by Dow in 2018 was a feasibility study on the reuse of seawater as a cooling resource. The study, executed with Deltares, a Dutch water management company, and the University of Twente, aims to evaluate the feasibility of using seawater for cooling in a Dow facility. The study involves assessing the technical and economic viability of using seawater for cooling and determining the potential benefits and challenges associated with this approach.

Water intake and effluent data G303-2

Water withdrawals

<table>
<thead>
<tr>
<th>Source of Water Withdrawals</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface water</td>
<td>2,013</td>
<td>2,133</td>
</tr>
<tr>
<td>Freshwater</td>
<td>1,540</td>
<td>1,658</td>
</tr>
<tr>
<td>Total</td>
<td>3,553</td>
<td>3,791</td>
</tr>
</tbody>
</table>

Water intake data G303-3

Dow has made a significant impact on reducing water intake at its facilities. The graph illustrates the percentage of water intake reduction from 2011 to 2018. The Dow Terneuzen site, for example, reduced its water intake by 13 percent from 2015 to 2018, resulting in a 22 million cubic meter (Mm³) reduction.

Wastewater data G306-1

Dow's focus on improving wastewater treatment and reducing pollution is evident in the graph showing changes in wastewater discharge. Several sites, such as Brussels, have reduced their wastewater discharge by more than 50 percent over the past decade.

Water Quality and Discharges G306-2

Dow's emphasis on sustainable water use and protection from natural and industrial sources is reflected in the data showing a decrease in water intake and an increase in recycled water use. The Dow Chemical Company

The Dow Chemical Company
Waste

Dow’s EH&S policy and standards encourage waste minimization, which includes current efforts to reduce waste generation in our manufacturing units and also elimination of waste in product R&D and process design. Our strategy is guided by a waste minimization hierarchy.

Waste Minimization Hierarchy

Source reduction
Use, reuse or recycle at or near the point of waste generation
Waste treatment
Proper disposal

Dow’s EH&S policy and standards encourage waste minimization, which includes current efforts to reduce waste generation in our manufacturing units and also elimination of waste in product R&D and process design. Our strategy is guided by a waste minimization hierarchy.
Partnering Through the Value Chain

Our transportation footprint depends on partnerships throughout our end-to-end value chain with all of our stakeholders, from suppliers and logistics service providers to customers. By collaborating across our value chains, including participating in third-party platforms like EcoVadis, and engaging in partnerships with suppliers and customers, we can drive sustainable business practices while improving supply chain capability and transparency.

CASE STUDY: Dow Achieves “Gold” for External Platform for Third Consecutive Year

At Dow we recognize the importance of our entire value chain, and it is through our collaboration with our customers and third-party partners that we can recover propylene by venting down and reprocessing that would have otherwise been flared into the atmosphere. This project has also recovered over 545,000 pounds of propylene for reprocessing that would have otherwise been flared into the atmosphere. Within the first 16 months of this initiative, we have recovered over 545,000 pounds of propylene.

CASE STUDY: Dow Receives Responsible Care Waste Minimization Award from the American Chemistry Council

In 2017, Dow launched our Supply Chain Strategy, working in collaboration with our carriers, customers and other key partners; as well as our accomplishments in transportation safety and security. We recognize the importance of safe and secure transportation and have taken a number of steps to engage internally and externally to make a positive long-term impact.

Dow demonstrated a comprehensive corporate social responsibility management system that could recover propylene by venting down and reprocessing that would have otherwise been flared into the atmosphere. This project has also eliminated over 11,000 lbs. of flare tip emissions that would have resulted from the flaring of these barges.

CASE STUDY: Green Transportation

In 2016, Dow partnered with the University of Michigan’s Taubman Institute for Global Operations to develop a green transportation initiative for our global supply chain. The collaboration resulted in an action plan for Dow to move from road transportation to multimodal (bulk marine + road) and serve customers located far from our baseport. As a result, the GHG emissions for this lane are reduced by 53 percent, which represents 1,360MT of CO2 equivalents per year compared to the baseline scenario utilizing only road transport.

In 2018, Dow continued implementation of the green transportation strategy through numerous improvements in measurement, management of these barges couldn’t be re-loaded once emptied due to the process. Dow took ownership of the company to join the Global Logistics Emissions Council (GLEC). GLEC is a group of companies, industry associations and programs that want to make carbon accounting work for industry. This mission is to standardize and implement a common and transparent framework, utilizing existing best practices, to calculate logistics emissions. A framework on how to calculate logistics emissions will help industry drive emission reductions and enhance efficiency across global supply chains.

There are a number of different ways Dow is advancing this strategy. For many years, Dow has been implementing modal shift and carbon-reduction projects, such as payload optimizations and changes to our delivery schedules to take a new lens on this approach. Below are just a couple of examples from 2018 that highlight projects that have been initiated across Dow’s global supply chain to reduce their carbon transport footprint.

1. Dow works on internal initiatives to streamline operations so they have the least impact on the environment and cost. Dow also opened a chemical port in the U.S. to allow Dow to move from road to rail, a multimodal solution to increase efficiency (bulk marine + road) and serve customers located far from our baseport. As a result, the GHG emissions for this lane are reduced by 53 percent, which represents 1,360 MT of CO2 equivalents per year compared to the baseline scenario utilizing only road transport.

2. Dow partners with carriers on advanced technologies and other measures that can help us achieve long-term business success while protecting people and the planet. Throughout 2018, Dow continued on their strategy to advance their green transportation efforts. Not only are they investing in new technologies, but they are also partnering with their suppliers to ensure that they are able to integrate sustainability into their operations so they have the least impact on the environment and cost.

3. Dow focuses on guidance and transparency through the supply chain with all of their stakeholders, from suppliers and logistics service providers to customers. By collaborating across their value chains, including participating in third-party platforms like EcoVadis, and engaging in partnerships with suppliers and customers, Dow can drive sustainable business practices while improving supply chain capability and transparency.

4. Dow is also proud of their commitment to fair business practices, including participating in third-party platforms such as EcoVadis, an international tool for global supply chain transparency and sustainability. Dow is in the top 8th percentile in the category of waste minimization. The Dow operations Site Logistics team determined we could recover propylene by venting down and reprocessing that would have otherwise been flared into the atmosphere. This project has also eliminated over 11,000 lbs. of flare tip emissions that would have resulted from the flaring of these barges.

5. Dow is a leader in the green transportation industry and is committed to making a positive impact on the environment. As part of their green transportation strategy, Dow has implemented a number of initiatives to reduce emissions and improve efficiency across their global supply chain. These initiatives include partnering with carriers on advanced technologies, implementing cost-saving and carbon-reduction projects, and enhancing efficiency across their logistics operations.

6. Dow has a long history of leadership in green transportation and is committed to making a positive impact on the environment. As part of their green transportation strategy, Dow has implemented a number of initiatives to reduce emissions and improve efficiency across their global supply chain.

Dow would like to thank our partners for their continued support and collaboration, and we look forward to continuing our efforts to reduce our carbon footprint and improve efficiency across our logistics operations.

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When the material gets to a temperature before a material needs to occur, a notification is sent to alert the provider to take action. In the past, driving teams would stop and perform a quick check of the temperature in the container at a certain frequency. This new technology allows for near real-time measurement of temperature at relatively low risk mitigations can occur, before there is an incident, or even a safety concern. This emerging technology can be leveraged across industries and will result in better performance overall for temperature-sensitive products.

CASE STUDY: SMART Containers

As a Responsible Care® Member Company, Dow is consciously working to improve transportation safety not only for our shipments, but also the industry. As Dow, we recognized an opportunity to develop an improved, standardized industry “excellent practice” of shipping, transporting and receiving chemicals to specific customers to ensure that every shipping arrives at the intended destination.

The program includes steps such as:
- Performing risk evaluations of operations
- Conducting internal assessments of environmental adherence and operating procedures
- Maintaining training and evaluating its effectiveness
- Sustaining effective information management and communication systems

The American Chemistry Council (ACC) is building on this approach at Exxellable Practice, to be leveraged to all ACC member companies and across the industry. We are proud to work with our partners in industry to improve transportation safety and security across the supply chain.

CASE STUDY: S4TAR Program

With a kick-off in China in 2011, the Dow S4TAR program has since expanded to Japan, Southeast Asia, Korea, Australia and India. It has been highly recognized in the chemical logistics industry across the region for many years, known as a platform for best-practice sharing, partnership cultivation, operation excellence recognition and sustainability advocacy. Due to the success of this program, Dow is leveraging it globally in 2019.

The Dow S4TAR award is designed to encourage sustainable excellence of Dow supply chain partners. Dow S4TAR program is a sustainable program with performance standards in the area of safety, sustainability, social responsibility and service. Through quarterly and annual evaluation, the S4TAR award presents Best Carrier; Best Service; Best Technology and Best Practice, to be leveraged to all ACC member companies and across the industry. We are proud to work with our partners in industry to improve transportation safety and security across the supply chain.

CASE STUDY: Emerging Geographies – Managing Supply Chain Risk

India continues to be one of the fastest-growing economies in the world and, although it is rapidly transitioning to the developed nation category, the logistics sector requires steps to ensure that the current improvements in terms of infrastructure, policy and technological transformation.

As stated in Dow’s 2017 Sustainability Report, Dow has continued to work on initiatives to ensure a strong and sustainable logistics operation in India continues to be one of the fastest-growing economies in the world, and is transitioning, with the resources and tools to think outside of the box.

In 2018, Dow adopted technology to manage safer driving habits at Exxellable Practice, to be leveraged to all ACC member companies and across the industry. We are proud to work with our partners in industry to improve transportation safety and security across the supply chain.

When compared to the baseline scenario year 1, the Dow S4TAR program has already achieved a number of milestones in 2018 by implementing leading-edge programs to influence the industry toward a new standard of transportation safety and security. Dow achieved incident free performance for the industry and will result in better performance overall for temperature-sensitive products.

CASE STUDY: SMART Containers

One of the objectives of Transportation Stewardship is to work in partnership with external providers to put in place actions that can be used to reduce transportation incidents across the industry. By working in collaboration on this, it allows the implementation of SMART containers, which is where temperature monitoring during transportation is critical. This technology allows for the position and temperature monitoring data to be made available to the Logistics Service Provider (LSP)

The path to innovative collaboration:

The key to leveraging the supply chain is investing in exploratory solutions that make big step changes, while seamlessly integrating these solutions with our traditional way of improving our processes and operating models. At Dow, a key pillar of our Integrated Supply chain Strategy is focused on our next-generation end-to-end supply chain capabilities. In order to support this pillar, we need to explore, evaluate and experiment with new and innovative technologies in supply chain, transform, while continuing to provide stability and implement incremental solutions to meet the needs of today. We also need to provide our employees with the resources and tools to think outside of the box.

CASE STUDY: Digital Fulfillment Center

In 2018 Dow invested in a Digital Fulfillment Center (DFC), a 6,000-square-foot state-of-the-art innovation facility, which was constructed on the corporate campus to educate, inspire, instigate and accelerate transformative change.

As a Responsible Care® Member Company, Dow is constantly working to improve transportation safety and security across the industry and will result in better performance overall for temperature-sensitive products.
CASE STUDY: Utilizing Technology to Advance Transportation Safety and Sustainability

Dow is an industry-recognized leader when it comes to safety and sustainability, and it is committed to maintaining its leadership role in industry. Dow is utilizing technology in new ways to quantify and improve our safety and sustainability metrics. These tools and technologies will improve the customer experience through increased transparency and identification of improvement opportunities.

• Road Site Safety & Optimization Tools: Some of Dow’s sites have hundreds of miles of roads and rail tracks, which means traffic safety is not only a high priority but complex. Dow initiated a project focused on real-time tracking of carrier driver compliance, which monitors the driving performance of our carriers on Dow property. We are implementing a solution using GPS and geofencing technology to improve compliance to site traffic rules and help ensure the safety of drivers, employees and the surrounding communities. The Integrated Supply Chain Innovation and Site Logistics team has also developed a new automated capability to analyze and optimize on-site traffic in order to prescribe optimal routes to reduce personnel safety risk and overall congestion. The use of these new real-time tracking and optimization capabilities continues to improve visibility and safety at Dow.

• CO2 Inclusion in Network Optimization: Optimizing supply chains typically involves a high level of quality and safety. Dow has calculated transportation carbon emissions within our supply chain for many years, and it has always been calculated in separate tools. Dow’s new capability now includes transportation carbon emissions as an additional optimization variable that is optimized directly into our supply chain models. This brings improved visibility to the environmental impact of our supply chain decisions and drives carbon reduction.

• Carbon Footprint Tracker: This dashboard was developed in order to track our transportation emissions as we generate them. It provides visibility and reporting capabilities. Businesses can use this detailed data to answer questions at multiple levels. The levels vary from a high-level total number of transportation carbon emissions generated by business to the transportation carbon emissions that we generate when we ship a specific product, in a particular mode of transport, to a particular customer.

CASE STUDY: Virtual Reality Load Rack Operator Training Simulation

The virtual-reality training simulation for hopper railcar loading was created by a cross-functional team from Dow and a Michigan State University (MSU) students. The simulation focuses on training loader on hopper railcar loading procedures at a high level of quality and safety.

Cross-Functional Highlights:

• Digital Fulfillment Center sponsored the project team from Dow and a Michigan State University (MSU) students.
• Loaders in Freeport Plant B Poly 4 area wore Augmented Reality headsets attached to safety helmets to view loading procedure for MSU students.

Sustainable Packaging

In 2018, Dow fully integrated the Universal Packaging Specification System (UPSS), an SAP module to manage packaging specifications, into various workflows for end-to-end work process connectivity. The resulting controlled packaging data is bringing new visibility to areas of opportunity that will improve the sustainability profile of the industrial packaging systems that are common across all businesses and regions. Utilizing data such as materials of construction and tare weights at the packaging component level and cross referencing with other internal Dow reports, such as inventory management, provides a new level of transparency on Dow’s packaging.

This visibility shows where current practices can be further leveraged across Dow, such as lightweighting films and steel drums, and where making changes will have the greatest impact, such as introducing Post-Consumer Recycled (PCR) content into our packaging components and systems. Opportunities are evaluated to ensure functional and performance requirements continue to be met, and changes across the entire value chain reduce environmental impacts. Life Cycle Assessments are used to help identify the most effective solutions and quantify the overall improvements.

Dow’s Packaging Sustainability Council continues to align with the Dow 2025 Sustainability Goals and drive projects to increase closed loop systems and support circular economy development through packaging design. These effects are accelerated by the use of UPSS and the supporting work processes.

CASE STUDY: Dow Performance Silicones Promotes a Circular Material Flow with Packaging Change

It’s estimated that airdopes have saved over 28,000 lives in North America alone. Dow Performance Silicones recently partnered with the world leader in automobile airbags to develop a next-generation silicone airbag coating demonstrating superior performance, while consuming 30% less material.

To keep pace with industry demand, coated airdop production facilities must be updated to include a new level of transparency on Dow’s packaging.
Supplier Code of Conduct
At Dow, we continue to engage new suppliers globally and communicate our expectations that all suppliers are compliant with regulations and Dow's values, through the Dow Code of Conduct. Dow continues to review and refresh the Supplier Code of Conduct regularly, conducting an analysis of our current standards and industry best practices to ensure that we're holding our suppliers to the highest standards regarding Human Rights, Health, and Safety. In 2018, we engaged to complete an extensive review, benchmarking and harmonization of our Supplier Code of Conduct, confirming alignment to industry best practices and standards. Our Code of Business Conduct for Suppliers is required in all new and existing supplier agreements. The requirements of the Code of Business Conduct are built into supplier contracts to ensure they're contractually enforceable. Dow reserves the right to discontinue business with the supplier at any time. In cases where we identify less-than-adequate supplier practices, we reserve the right to immediately discontinue the supplier. Annually we've identified compliance issues resulting in the immediate cessation of business in less than 0.1 percent of our supplier base.

External Manufacturing
External Manufacturing (EM) refers to manufacturing services conducted by a third-party, usually to the success of businesses at Dow. Although Dow is consumer-facing, its operations fundamentally rely on the successful operation of its suppliers. Dow contractually enforces our strong Environmental, Health and Safety standards for our Logistic Service Providers (LSPs) by having in place an extensive risk-based audit program. Through these audits, Dow continues to work with its LSPs to adhere to our commitment of environmental and socially responsible practices. Dow’s Level 2 EM training is a requirement for all new and existing EM suppliers. This training covers the Dow Code of Business Conduct and the Fundamental EH&S Expectations for External Manufacturers. Dow also operates a detailed Distribution Risk Review process to ensure risks are adequately mitigated. We are committed to driving sustainable behavior throughout our entire value chain. These risk reviews are clear expectations for our suppliers including EM and MRO and corporate service providers. Dow has approximately 50,000 suppliers in our supply chain across approximately 130 countries, with a purchased managed spend of approximately $27 billion. We have procurement centers around the world to establish effective relationship-centric partnerships with global and local suppliers of goods and services. We work with our suppliers to pursue the principles of sustainability through Responsible Care®. This provides us with a stable supply of raw materials.

Supplier Diversity
Dow’s Supplier Diversity initiative includes small businesses and diverse businesses identified as owned by persons who are minorities, women, veterans (including service-disabled), LGBTT, and disabled. We’re committed to supplier diversity as an element of our global procurement strategy with a focus on accelerating spend with diverse suppliers and achieving top benchmark performance in Supplier Diversity by 2020. In 2018, Dow established an advisory council, enhanced metrics and reporting internally and found 100 percent more Certified Diverse by third parties than we were previously aware of. In support of our Tier II Supplier Diversity Strategy, we have provisions in our Supplier Code of Conduct and contract templates to ensure an effective role in our Supplier Diversity. Dow will continue to measure, track and report our small and diverse business spend, which currently represents approximately 13 percent of total spend in the United States.

Logistic Service Providers
Leveraging our approach to suppliers and EM suppliers, we also set high standards for our Logistic Service Providers (LSPs) by having in place an extensive risk-based program in order to qualify providers, and established performance metrics at project level for health and safety practices; labor practices; environmental compliance and security, and are conducted via work processes and external initiatives such as the Safety & Quality Assessment System (SQAS); Chemical Distribution Institute (CDI); Responsible Care® and Anti-Corruption Due Diligence (ACDD). We also operate a detailed Distribution Risk Review process to ensure risks are adequately mitigated. We are committed to driving sustainable behavior throughout our entire value chain. These risk reviews are clear expectations for our suppliers including EM and LSPs to adhere to our commitment of environmental and socially responsible practices. Dow’s level 2 EM training is a requirement for all new and existing EM suppliers. In cases where we identify less-than-adequate supplier practices, we reserve the right to immediately discontinue the supplier. Annually we’ve identified compliance issues resulting in the immediate cessation of business in less than 0.1 percent of our supplier base.

External Manufacturing
External Manufacturing (EM) refers to manufacturing services conducted by a third-party, usually to the success of businesses at Dow. Dow is a leading global materials science company whose purpose is to help our customers win with breakthrough technologies. Dow works with a variety of suppliers ranging from raw material, Logistic Service Providers (LSPs) and labor service providers to capital equipment and MRO and corporate service providers. Dow has approximately 50,000 suppliers in our supply chain across approximately 130 countries, with a purchased managed spend of approximately $27 billion. We have procurement centers around the world to establish effective relationship-centric partnerships with global and local suppliers of goods and services. We work with our suppliers to pursue the principles of sustainability through Responsible Care®. This provides us with a stable supply of raw materials.

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2018 Awards & Recognition
In 2018, we were recognized for our work culture, innovation and strides to create a sustainable future. Here is a sample of our 2018 awards:

America’s most JUST Companies by Forbes and JUST Capital
DowDuPont named to FTSE4Good Index Series for strong environmental, social and governance practices
DowDuPont named to Dow Jones Sustainability World Index by S&P Dow Jones Indices and RobecoSAM
2018 Top 50 Companies for Diversity from DiversityInc
Six R&D 100 Awards from R&D Magazine
Four 2018 Edison Awards for breakthrough technologies
Leading Disability Employer by the National Organization on Disability
2018 “Best Place to Work” for LGBTQ+ equality by Human Rights Campaign
2018 certification as a Top Employer in Canada, China, Egypt, Germany, Ghana, India, Kenya, Mexico, The Netherlands, Nigeria, Russia, Saudi Arabia, South Africa, Sweden, Switzerland, United Arab Emirates, and the United States by Top Employers Institute
Delegating Authority GRI 102-19

Dow employs a systematic delegation of authority structure from the Dow Executive Leadership Team throughout the Company through a chain of command. Generally, this occurs from vice presidents to business directors, to leaders and then to specialists.

Delegation of Authority GRI 102-19

Governance

Role of Highest Governance Body in Setting Purpose, Values and Strategy GRI 102-26

Prior to the Separation of Dow from DowDuPont on April 1, 2019, and throughout the calendar year 2018, refer to disclosure GRI 102-26 on page 115 of the Dow 2017 Sustainability Report.

• Create an ownership alignment with stockholders
• Competitive marketplace
• Support the achievement of Dow’s vision and strategy
• Motivate and reward executives when they deliver desired business results and stockholder value
• Attract and retain the most talented executives to succeed in today’s competitive marketplace
• Create an ownership alignment with stockholders

Pay Mix

2018 was a unique year, as both Dow and DuPont were merged as one company; however, the final intended business separations (“spin” of Dow) took place on April 1, 2019, and Corteva on June 1, 2019. Due to the relatively short period of time after the closing of the Merger, a decision was made to not develop separate executive compensation programs at the Dow level for a short period of time after the closing of the Merger, a decision was made to not develop separate executive compensation programs at the Dow level for a short period of time after the closing of the Merger.

Executive Compensation Recovery (Clawback) Policy

As part of their overall Corporate Governance structures, both Dow and DuPont maintained executive compensation recovery policies for their executive officers. These policies allowed the respective companies to recover incentive income if an executive officer either knowingly engaged in or was grossly negligent in the event of circumstances that resulted in a financial restatement or other material non-compliance. Under the Dow Executive Compensation Recovery Policy, Dow may recover incentive income that was based on achievement of quantitative performance targets if an executive officer engaged in grossly negligent conduct or intentional misconduct that resulted in a financial restatement or in any increase in his or her incentive income. Incentive income includes income related to annual bonuses and long-term incentives.

Sign-On Bonuses or Recruitment Incentive Payments

Dow rarely uses sign-on bonuses or recruitment incentive payments during the recruitment of senior executives. If needed, such sign-on bonuses or recruitment incentive payments may be delivered in the form of either retention shares or cash in order to attract and retain the most talented executives to succeed in today’s competitive marketplace.

The Dow Chemical Company
dow.com/sustainability
Potential Payments

Upon Termination or Change-in-Control, Dow follows local pay practices for severance payments excluding those impacted by legacy change-in-control agreements. While such legacy agreements remain in existence, the Board prohibits new or amended change-in-control agreements and no new agreements with Dow executives have been executed since 2007. To find details about potential payments upon termination or change-in-control, see the DowDuPont 2018 Proxy Statement from page 54 through 56.

Process for Determining Remuneration GRI 102-36

Compensation is a key component of Dow’s Employee Value Proposition (EVP). Dow has a variety of compensation programs to incentivize and reward employees’ contributions. There are two main components of compensation that all Dow employees receive: base pay and an annual variable program called the Performance Award. These components are reviewed for each employee annually through Dow’s Global Pay Planning (GPP) cycle. During the GPP cycle, annual base pay guidelines and Performance Award payout guidelines are created for each employee by Dow’s global compensation department. Supervisors make compensation decisions for their employees using these guidelines and assessing the employee’s overall contribution and goal completion, including performance reviews.

The Compensation and Leadership Development Committee is responsible for the approval of the overall design of Dow’s annual Performance Award and Long-Term Incentive programs, and the metrics and goals that determine payout amounts. The Compensation and Leadership Development Committee has retained external compensation consultants, who report directly to the committee. The compensation consultants have multiple safeguards and procedures in place to maintain the independence of the consultants in their executive compensation consulting practice. These safeguards include a rigidly enforced Code, a policy against investing in client organizations and separation between their executive compensation consulting and their other administrative and consulting business units from a leadership, performance measurement and compensation perspective.

Annual Total Compensation Ratio GRI 102-36

As required by Item 402(p) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, and Item 402(c) of Regulation S-K, Dow is providing the following information about the relationship of the annual total compensation of DowDuPont chief executive officer (other than our CEO) and the annual total compensation of DowDuPont executive officers identified in 2017 for purposes of preparing the ratio.

DowDuPont calculated annual base pay based on a reasonable estimate of the median employee, DowDuPont estimated the ratio of CEO pay to median employee pay for 2018 was 249:1.

In accordance with Instruction 2 to Item 402(c) of Regulation S-K, because there has been no change in our employee population or employee compensation arrangements in the past fiscal year that DowDuPont reasonably believed would significantly impact our pay ratio disclosure, DowDuPont elected to utilize the same median employee that we had identified in 2017 to calculate our 2018 CEO pay ratio. DowDuPont identified the median employee in 2017 from the population of all employees worldwide as of October 31, 2017, utilizing base pay and annual incentive at target – rather than Summary Compensation Table compensation. DowDuPont calculated annual base pay based on a reasonable estimate of hours worked during 2017 for hourly workers, and upon salary levels for the remaining employees. DowDuPont used a valid statistical sampling methodology to identify employees who we had expected to be paid within a .05 percent range of the median. DowDuPont selected an employee for purposes of preparing the ratio of CEO pay to median employee pay.

Dow Defined Benefit Pension Plans

The Company has both funded and unfunded defined benefit pension plans that cover employees in the United States and a number of other countries. The U.S. qualified plan covering the company parent is the largest plan. Benefits for employees hired before January 1, 2008, are based on length of service and the employee’s three highest consecutive years of compensation. Employees hired after January 1, 2008, earn benefits that are based on a set percentage of annual pay plus interest.

The Company’s funding policy is to contribute to the plans when pension laws and/or economics either require or encourage funding. In 2018, the Company contributed $1,656 billion to its pension plans, including contributions to fund benefit payments for its non-qualified pension plans. In the third quarter of 2018, DowDuPont elected to make a discretionary contribution to its principal U.S. pension plan, which is included in the 2018 contribution amount above. The Company expects to contribute approximately $240 million to its pension plans in 2019. Additional information about pension plans and other postretirement benefits can be found in the 2018 Dow Form 10-K.

The Dow Chemical Company
dow.com/sustainability

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Funding Program | Program Title
---|---
Belgium National | Flakes and Chemicals by feed pyrolysis of biomass
Belgium National | Extraction of Lighter Hydrocarbons from Heavy Oil Shores | Search for Bio-Piracy
Belgium National | Lower offsite from Synthetic Gas using supported iron catalyzed coping with the challenges of efficiency and stability
Belgium National | Energy-efficient utilization of components from process water streams
Belgium National | MWCNT NCDT | excising value in water and footprint areas worldwide
Belgium National | Electrochromic Organic Thin Films | Small-footprinting of Chromogenic Separations
Belgium National | Compact Conversion and Storage of thermal energy
Belgium National | Steam and Condensate Quality Water Process Technology
Belgium National | Development and demonstration of low-carbon technologies to transform CO2 and CO2 streams from the steel industry into value chains
Belgium National | Energy-efficient Separation of a multitude of Gases
Belgium National | Flexibility study subsurface fresh water storage in Brabant-South Region
Belgium National | Waste heat recovery in industrial batch processes: analysis of combined heat storage and plant pump application
Belgium National | Sustainable steam production for industry
Belgium National | Electricity driven Therm AEPC high temperature STFare producing heat pump
Belgium National | Mechanical steam recompression
Belgium National | Cool Refr in for Industrial Heat Pumps
Belgium National | Electrons to Close the Carbon Cycle
Belgium National | Heat-integrated Distillation enabling innovative effecive crackers
Belgium National | Low-Cap氏 industrial heat pump in paper carry
European Union | PU Dextral technology to dramatically improve Energy Efficiency of Household Appliances
European Union | Compact Refr in Alkaline Water energy storage
European Union | Integrate Mobilise:ProcessesWater-Onderzoekvoering voor een Economische Delta
European Union | Formulations & Computational Engineering
European Union | Advanced Composite Material Selection Platform with a Seamless Integration of Material Models and multidisciplinary Design framework
European Union | Compressed Natural Gas Transport System
European Union | Enhanced Integration of the Gas Transport System
European Union | Solar Heat-integrated Distillation enabling innovative ethylene crackers
European Union | Fast pyrolysis of biomass
European Union | US-NSF Selective C-H Borylation of Arenes and Heterocycles
European Union | US-DOE Efficient chemicals production via chemical looping
European Union | US-DOE An experimentally verified physical properties database for absorbent selection
European Union | US-DOE RAPID Multiscale Modeling Infrastructure
European Union | US-DOE Formation of Rapid Center for Process Modeling
European Union | US-DOE Energy-efficient separation of olefins and paraffins through a membrane
European Union | US-DOE Bio-Syngas fermentation for C6-C14 alcohol production as a pathway to fuels
European Union | US-DOE 3D Structure and Organization in Polymeric and Organic Thin Films
European Union | US-DOE Imaging Model Ziegler Natta Catalysts with Single-Atom Sensitivity
European Union | US-DOE Ambient pressure XPS for in situ studies of heterogeneous catalysts
European Union | US-DOE Air interface optoelectronic devices for flexible systems
European Union | US-DOE Efficient chemical production through chemical looping
European Union | US-DOE Refrigeration Modeling
US-NRF | KU/UCRC for Light Conducting Materials
US-NRF | Selective C-H Borylation of Arenes and Heterocycles
US-NRF | Improved Energy Efficient Thermal Energy-storage technology for Separation of the Biocorency
US-NRF | Population Balance Modeling - Fundamental Closures and Experimental Validation
US-NRF | Advancing Thermof-Field-Fractionation for Complex Polymers and Colloids

**Conflicts of Interest GRI 102-25**

The Dow Board adopted a Code of Conduct for all employees, directors and officers (see disclosures 102-10 and 102-17 for more details) and a Code of Financial Ethics applicable to the chief executive officer and chief financial officers (see disclosures 102-16 and 102-17 for more details) and a Code of Conduct for the Board of Directors (see disclosures 102-25 for more details). The Dow Code of Conduct and Code of Financial Ethics are available at [https://corporate.dow.com/us/about/codes-of-conduct](https://corporate.dow.com/us/about/codes-of-conduct). For more information about Dow’s Code of Conduct and Code of Financial Ethics are available at [https://corporate.dow.com/us/about/codes-of-conduct](https://corporate.dow.com/us/about/codes-of-conduct). Further, Dow discloses all executive compensation-related matters through the “Compensation” section of its Corporate Governance page. The Code of Conduct requires disclosure under applicable rules for matters such as business conflicts of interest involving a member of senior management. Further, Dow discloses any waiver of or amendment of the Code of Conduct for any member of senior management in its Annual Report on Form 10-K. The Dow Corporate Governance Committee has responsibility for reviewing the Code of Conduct and for approving any amendment of the Code of Conduct.
and primary business or charitable affiliations, and other potential conflicts of interest, as well as other relevant facts, decisions, relationships or arrangements between Dow and the one hand and a director, officer or individual from whom such director or officer owes a duty to the other. New directors also includes an orientation process that includes guidance on how to fulfill their responsibilities as a director.

All Dow directors, officers and employees are required to complete an annual ethics and compliance certification, which includes questions concerning potential conflicts of interest. All responses are reviewed by the Office of Ethics & Compliance, and action is taken to appropriately mitigate risk where an actual or apparent conflict exists.

It is Dow’s policy to recruit for diverse candidates to its public company directorship. In considering director candidates, the Nominating and Corporate Governance Committee evaluates the business and professional experience, background and qualifications of each individual in accordance with the Board’s independence standards. All new directors also includes an orientation process that includes guidance on how to fulfill their responsibilities as a director.

The oversight responsibility of the Board and Committees is enabled by an enterprise risk management model and process implemented by management. The purpose of risk management is to design and implement a process for identifying, assessing, managing and monitoring the enterprise risk management model and process. This process enables the Board and the Board as a whole to accurately assess the risks that Dow faces.

The Oversight Responsibility of the Board and Committees is supported by the enterprise risk management model and process implemented by management. The purpose of risk management is to design and implement a process for identifying, assessing, managing and monitoring the enterprise risk management model and process. This process enables the Board and the Board as a whole to accurately assess the risks that Dow faces.

The Audit Committee is responsible for overseeing that management implements and follows the enterprise risk management model and process for and coordinating the outcome of reviews by the other Committees in their respective risk areas. In addition, the enterprise risk management model and process is reviewed by the Board annually, and the Board recognizes that risk management and oversight constitute a dynamic and continuous process.

The strategic plan and critical issues and opportunities are presented annually to the Board by the CEO and senior management. Throughout the year, management reviews any critical issues and actual results compared to plans with the Board and relevant Standing Committees. Members of executive management are also available to discuss company strategy, plans, results and issues with the Standing Committees and the Board, and attend executive sessions with the lead client service partner of the independent registered public accounting firm, internal auditor, general counsel and other management as appropriate.

During 2018, DowDuPont held seven Board meetings and 21 Committee meetings. All of the incumbent Directors attended more than 75 percent of the sum of the total number of Board meetings and the total number of meetings of the Committees on which the Director served during the past year, except one. The Directors are encouraged to attend all annual meetings of Stockholders.

Nature and Total Number of Critical Concerns GRI 102-34

The Dow Sustainability Team has established a set of criteria for elevating selected activities or opportunities and their attendant EH&S and product efficacy risks for review. These criteria are not to be interpreted as defining what the Company considers to be acceptable or unacceptable levels of risk, but rather they are intended to be those activities or opportunities that carry levels of risk that the Sustainability Team wants to review and approve or reject. They are subject to modification and further clarification with experience on their use.

How Stakeholders’ Views Are Sought and Taken into Account: Remuneration GRI 102-36

Throughout the year, the independent directors and members of the management teams at Dow conduct extensive outreach to stockholders, engaging with investors who collectively hold more than 50 percent of outstanding shares of the Company. Through this outreach, the management teams update investors on a range of topics such as the overall business strategy, current business conditions, corporate citizenship and sustainability, corporate governance practices and executive compensation. In 2018, the independent directors and members of the management teams met with investors, and through their discussions, Dow seeks to gain feedback from these meetings, as well as stockholder support, when reviewing the business, corporate governance and executive compensation profiles.
Independent Assurance Statement to The Dow Chemical Company GRI 102-56

The Dow Chemical Company (Dow) engaged ERM Certification and Verification Services (ERM CVS) to provide limited assurance in relation to the Dow 2018 Sustainability Report (the Report), as set out below.

Engagement summary

Scope of our assurance engagement

Whether Dow has prepared the Report in accordance with the Global Reporting Initiative (GRI) Standards Comprehensive option.

Whether Dow’s reported progress against its 2025 Sustainability Goals is fairly presented, in all material respects, in accordance with its internal reporting criteria.

Reporting criteria


Dow Chemical 2025 Sustainability Goals.

Assurance standard

ERM CVS’ assurance methodology, based on the International Standard on Assurance Engagements ISAE 3000 (Revised).

Assurance level

Limited assurance.

Respective responsibilities

Dow is responsible for preparing the Report and for the collection and presentation of the information within it.

ERM CVS’s responsibility is to provide conclusions on the agreed scope based on the assurance activities performed and exercising our professional judgment.

Our conclusions

Based on our activities, as described below:

- Nothing has come to our attention to indicate that the report has not been prepared in accordance with the Global Reporting Initiative (GRI) Standards Comprehensive option;
- Nothing has come to our attention to indicate that reported progress against Dow’s 2025 Sustainability Goals is not fairly presented, in all material respects, in accordance with internal reporting criteria.

Our assurance activities

A multi-disciplinary team of sustainability and assurance specialists performed the following assurance procedures:

- A visit to the head office of Dow in Midland, Michigan, to:
  - Interview management representatives in order to understand Dow’s sustainability strategy, policies and management systems for the relevant disclosures;
  - Interview 2025 Sustainability Goal project teams in order to understand the evolution and definition of the goals and the basis on which performance is determined;
  - Review internal reporting guidelines, including reporting databases as well as the associated conversion factors used;
  - Review performance during the reporting period against the 2025 Sustainability Goals; and
  - Review a sample of qualitative and quantitative evidence supporting the reported information;
- Check consistency of financial data and other information with Dow’s 2018 10K report;
- Confirm the consistency of the reported information with our understanding of Dow’s business, operations, sustainability strategy and prior reporting;
- Review external media reporting relating to Dow to identify relevant sustainability issues in the reporting period; and
- Check the presentation of the information relevant to the scope of our work in the Report to ensure consistency with our findings.

The limitations of our engagement

The reliability of the assured data is subject to inherent uncertainties, given the available methods for determining, calculating or estimating the underlying information. We did not undertake source data verification at any operated facilities. It is important to understand our assurance conclusions in this context. Our scope of work and activities relate to information presented in the Report for Dow in its operational structure as of 31 December 2018 and not relate to any information in the Report presented in relation to Dow operational structure post 1 April 2019. Our independent assurance statement provides no assurance on statements in the Report regarding future performance or on whether Dow will achieve its stated goals.

Jennifer Iansen-Rogers
Head of Corporate Assurance Services
12 June 2019

ERM CVS is a member of the ERM Group. The work that ERM CVS conducts for clients is solely related to independent assurance activities and auditor training. Our processes are designed and implemented to ensure that the work we undertake with clients is free from bias and conflict of interest. ERM CVS and the ERM staff that have undertaken this engagement have provided no consultancy related services to Dow in any respect.
Mary Grenn, corporate vice president and chief sustainability officer, is responsible for Environment, Health & Safety and leading the Company’s commitment to Sustainability. Mary reports directly to Jim Fitterling, chief executive officer.

The composition of the highest governance body and its committees from January 1 to March 31, 2018; Andrew Liveris served as executive chairman of the board of DowDuPont while Dow operated as the Materials Science Division of DowDuPont. April 1, 2018 - March 31, 2019: Jeff M. Fettig served as non-employee executive chairman of the board of DowDuPont while Dow operated as the Materials Science Division of DowDuPont. Effective April 1, 2019, Jeff M. Fettig serves as the non-employee executive chairman of the board of Dow.

From January 1 - March 31, 2018, effective April 1, 2019, refer to Dow Inc. Corporate Governance Guidelines, which can be found at: https://investors.dow.com/en/corporate-governance/board-committees/default.aspx. Prior to April 1, 2019, throughout the 2018 calendar year, refer to disclosure 102-28 on page 115 of the Dow 2017 Sustainability Report.
### 5. Stakeholder Engagement

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## Economic Performance

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<td>302-5</td>
<td>Reductions in energy requirements of products and services</td>
<td>Not applicable. Virtually all Dow products do not require energy in use.</td>
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### Water and Effluents

<table>
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Disclosed to GRI 303-1 (2016) as we transition to the new 303 water disclosure, which is required for reports published on or after Jan. 1, 2021. We expect to report fully to this disclosure next year.

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Not disclosed as we transition to the new 303 water disclosure, which is required for reports published on or after Jan. 1, 2021. We expect to report fully to this disclosure next year.

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