What is the science behind building a better tomorrow together?
The Dow Chemical Company

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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
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. GRI 102-52 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 a 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. GRI 102-54 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. GRI 102-32 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 304 GRI 102-44
• 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

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.
Through collaboration and science-based solutions, we can raise the bar and be the industry leader in creating a more sustainable planet. 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:

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

Finally, we must commit to developing societal blueprints by integrating all the different facets necessary for success: public policy, science and technology, and value chain collaboration around a few key concepts that align directly with the UN Sustainable Development Goals:

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

Among the questions we are asking:

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

As a partner to our customers and to the world.

Diversity is a business imperative. Our people are at the heart of our solutions and their diversity makes us stronger as a company and partners for a sustainable future. While lots of progress still needs to be made, I am confident that Team Dow’s passion and problem-solving abilities will continue to move our business and planet forward.

As I look back on 2018, I am not only inspired by what we have accomplished, but also by the collective vision of our people and partners for a sustainable future. While lots of progress still needs to be made, I am confident that Team Dow’s passion and problem-solving abilities will continue to move our business and planet forward.

We invite you to learn more about our progress and welcome your feedback as the journey continues.
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 GRI 102-1, GRI 102-3, GRI 102-5

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
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>
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<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><strong>TOTAL</strong></td>
<td><strong>164</strong></td>
</tr>
</tbody>
</table>

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

Then

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.

Now

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.

Cutting Waste

Then

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.

Now

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

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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.

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Now

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.

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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.

Product Groups

Through diverse but focused industries, Dow delivers innovative products and solutions to markets around the world. Our market-driven, industry-leading portfolio of advanced materials, industrial intermediates and plastics delivers a broad range of differentiated technology-based products and solutions to customers in 175 countries in high-growth markets such as packaging, infrastructure and consumer care. On the following pages, please find a description of the Company’s principal product groups.
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 protective industries, wood, metal packaging, traffic markings, thermal paper and leather. These products enhance coatings by improving tinting 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 technologies 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 meet 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, extend shelf life, improve performance of products under a wider range of conditions and provide a more sustainable offering. Consumer Solutions also provides stand-alone silicone materials that are used as intermediaries in a wide range of applications including adhesion promoters, coupling agents, crosslinking agents, dispersing agents and surface modifiers. It also collaborates closely with global and regional brand owners to deliver innovative solutions for creating new and unraveled 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 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, broad existing product lines and a rich product pipeline that creates competitive advantages for the entire packaging value chain. Dow is also a leader in polystyrene 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 socioeconomic status in emerging geographies; shifts in population demographics; improving effectiveness, facilitate dissolvability, 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.

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 dissolvability, 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, propylene glycol and polyethylene oxide, and a leading producer of aromatic 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 advanced mobility market sectors. Polyurethanes and CAV provides cost-advantaged chlaurine and caustic soda supply and markets caustic soda, a valuable co-product of the chlor-alkali manufacturing process. It also produces ethylene dichloride and vinyl chloride monomer, which is used to make polyvinyl chloride (PVC). The product grouping also provides off-gas, redispersible 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 gussum-, cement-, concrete- or dispersion-based building materials.

The Dow Chemical Company

dow.com/sustainability
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, photorefractive 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 biowarriors, 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 Specialty Products Business

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 foliar 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 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.

Our 2025 Sustainability Goals will help redefine the role of business at its intersection with society. They are our guide as we work to improve the well-being of humanity with solutions that are good for business and good for the world.

Jim Fitterling, chief executive officer, Dow
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.

2025 Sustainability Goal Updates

In 2018, Dow released two blueprints – Sustainable Watershed Management and Unlocking Carbon Reductions – that tell the story of Dow’s collaborations and chart a pathway forward for people, planet and society. 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 best practices we developed so others can use them to accelerate their adoption of carbon-mitigating technologies. These collaborations help reduce carbon footprints along industry value chains, build capacity in local markets and create a market-driven approach that supports countries’ Nationally Determined Contributions (NDCs) under the Paris Agreement. 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 for blueprints to develop and unlock carbon collaboration. Dow is sharing its technology and knowledge with its customers and other stakeholders to implement approximately 10 low-carbon technology projects around the world. These projects are tailored to country-specific needs and will mitigate greenhouse gas (GHG) emissions in the areas of infrastructure, transportation, packaging and manufacturing. Dow provides life-cycle expertise, technologies, application expertise and market access to support the carbon-mitigation program. Furthermore, Dow sees the collaboration as an opportunity for businesses in the value chain to join them in beyond-business-as-usual practices to accelerate the development and adoption of carbon-mitigating technologies. These collaborations help reduce carbon footprints along industry value chains, build capacity in local markets and create a market-driven approach that supports countries’ Nationally 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 the 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.

Unveiled in 2018, Sustainable Watershed Management and Unlocking Carbon Reductions blueprints...
In 2018, Dow products and processes again were acknowledged by awards recognizing sustainability. In fact, all of our R&D 100 awards were for sustainability-related products, such as ENGAGE™ Polyolefin Elastomers that enable expansion of photovoltaic power production, and ECOFAST™ Pure Sustainable Textile Treatment that reduces the chemicals and water used to dye cotton fabric. The goal uses five targets to track progress:

• Dow will be a leader in energy and GHG HxTV-cycle management by ensuring 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 5:1, 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 in general. Calculating the benefit to burden ratio of several product groups has been completed by project teams participating in the Sustainability Academy (see page 56 for additional detail).

• Dow 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 product portfolio of new Dow, post-spin from DowDuPont. This is an exception to the stated boundaries of this report in general. Calculating the benefit to burden ratio of several product groups has been completed by project teams participating in the Sustainability Academy (see page 56 for additional detail).

• Dow businesses will set and achieve their own business-specific sustainability goals. We track business-specific sustainability goals using the Sustainable Chemistry Index (SCI). In 2018, we updated the existence of the SCI. Continuing work will be to track progress toward meeting the goals and identify any activity that might render the goals and SCI data invalid.

• Dow 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 and opportunities for a 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 that business strategy. In early 2019, identification of resources and training began to address the increasing demand for LCA.

• Dow will continue to improve its sustainable chemistry performance and reporting externally. The Sustainable Chemistry 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.

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Advancing a Circular Economy

Circular economy projects included:

• Continued growth of a program to recycle used mattress foam into polyolefin. Dow has entered into a collaboration with developer partner H&S Airbus Technologies in Germany to economically recycle post-consumer mattresses. The goal of this project is to create a value-stream for end-of-life mattresses back to their main chemical building block (i.e., polyolefin). This “circular” polyolefin then would be used as a high-value constituent of new polyurethane foam formulations for different applications, such as new mattresses or thermal insulation.

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• Addressing global recycling challenges with a commercial leadership mind-set. 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 economic recycling technology that will contribute to a global circular economy for plastic. In North America, Europe and Africa, the focus is primarily on advancing the circular economy of plastic through new product offerings via value constituents of new polyurethane foam formulations for different applications, such as new mattresses or thermal insulation.

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Dyeing to Save Water in the Textile Industry

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™ 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? ECOFAST Pure is added as a pre-treatment, which converts asparagine, otherwise known as cationic cotton. 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.
**Valuing Nature**

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 to the end of 2018, we have achieved more than 25 percent toward our goal of $1 billion. Critically, 2018 was a turning point for the Valuing Nature Goal, where we are confident 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 remediation gave us an advantage and enabled us to incorporate previously unacknowledged 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 benefited clean air, clean water, healthy soil and healthy ecosystems. Our Nature Scopes, which ask pivotal 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 will deliver business value and natural capital through projects that are good for the Company and better for nature.

**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. We will work toward this future by developing and promoting sustainable materials for tomorrow and leading candid conversations on product safety and sustainability by engaging with external partners. In addition, we are committed to open and transparent chemistry by listening to the needs of our value chain, including customers, brand owners and retailers.

Through its carbon-mitigation projects for the Olympic Movement, 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 CO2e 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 sustainability. The IOC is seeking Leadership in Energy and Environmental Design (LEED) Platinum certification in part to open and transparent chemistry by listening to the needs of our value chain, including customers, brand owners and retailers.

UN SDG ALIGNMENT

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**Putting Collaboration at the Heart of Sustainable Design**

Collaboration is to advance product safety practices around the globe. Our signature initiative is our Product stewardship Academy, where we are doing outreach in developing markets to promote product safety practices. In 2018, we expanded our Product Stewardship Academy into additional countries and regions. We have held academies in five countries including Ghana, Nigeria, Kenya, Ethiopia and the United Arab Emirates.

For a Leadable Conversation, we are focused on outreach and collaborations to advance product safety practices around the globe. Our signature initiative is our Product stewardship Academy, where we are doing outreach in developing markets to promote product safety practices. In 2018, we expanded our Product Stewardship Academy into additional countries and regions.

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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.

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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 (GOEAS), 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 200,000 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, salt 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 nongovernmental 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
World-Leading Operations Performance

We have made progress in our World-Leading Operations Performance Goal continued as planned in 2018. We made significant progress in our operations performance in environment, health and safety in all four indices: Unplanned Event Reduction, Total Worker Health™ Index, Environmental Stewardship Index and Transportation Stewardship Index. Dow achieved or exceeded the annual targets for each. Dow senior leaders made two-day visits to 144 sites across 32 countries to engage employees in discussions on safety, ethics and inclusion.

Unplanned Event Reduction

We finished 2018 with eight severe injuries, which was below the prior year result of 13. Serious injuries include fatalities, high-consequence injuries (injuries with long-term impact) and injuries that had the potential to have life-altering impact if circumstances were only slightly different. Our top two risk categories for unplanned events and near misses in personal safety. A business focal point went site to site and performed a Gaps identified were prioritized and action plans established. Our aim was to eliminate or implement engineering controls to address the gaps in achieving Dow’s Life Critical Standards that are beyond the scope of API’s metric. Our performance in environment, health and safety in all four indices: Unplanned Event Reduction, Total Worker Health™ Index, Environmental Stewardship Index and Transportation Stewardship Index. Dow ended 2018 with a 5 percent performance improvement over the prior year in process safety events. For example, we have installed stand/sit desk workstations in several locations, encouraging employees to be less sedentary.

Environmental Stewardship

Total Worker Health™

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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.

Tackled 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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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 Polylefins 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 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.
The results of the materiality assessment are mapped out below. The vertical axis maps the relative importance of the topics to stakeholders, while the horizontal axis shows the significance of Dow's economic, environmental and social impacts. GRI 102-47

Impact on Stakeholders' Decisions

The Dow Chemical Company plans a comprehensive review of the materiality of sustainability topics. Following the separation of Dow from DuPont in 2019, the Company is evolving its strategy and leveraging existing resources for sustainable value creation. This approach is an important element for the Company to repetitively incorporate sustainability into its business decision-making.

By combining the resources and expertise of two organizations, we are able to better understand the value of nature into Dow's business decision-making. The results of the collaboration between Dow and The Nature Conservancy (TNC) on valuing ecosystem services, which are demonstrating that protecting nature can be both a global business strategy and a Company priority.

The Dow Chemical Company has a series of scenario-based probabilistic analyses, which were performed to evaluate the direct and indirect, intangible value and externally (i.e., borne by society) value of Dow's sustainability activities. The approach is an extension of a method that was originally developed by Dow and several other companies, such as the American Institute of Chemical Engineers (AIChE). The analyses show that Dow's sustainability activities will bring significant benefits to Dow from growing top-line and bottom-line value by improving reputation, increasing human capital return and improving resilience. The analyses also show that many external stakeholders will receive mutual benefits from Dow's sustainability activities, such as reducing environmental impacts, increasing ecosystem value and improving life quality.

By using Dow's Sustainability Assessment System, which was developed by Dow and several other companies, Dow performed scenario-based probabilistic analyses to evaluate the direct and indirect value of Dow's sustainability activities. The approach is an extension of a method that was developed by Dow and several other companies, such as the American Institute of Chemical Engineers (AIChE). The results of the collaboration between Dow and The Nature Conservancy (TNC) on valuing ecosystem services, which are demonstrating that protecting nature can be both a global business strategy and a Company priority.

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and duties and tariffs. The imposition of additional regulations, controls, or duties and tariffs could have an adverse effect on the Company’s results of operations, and in turn, the Company’s market capitalization.

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 adequate financing to maintain operations, which could result in a decline in sales and a negative impact on the Company’s results from operations. Dow’s global business operations and reliance on feedstock and energy supplies subject it to 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 cost of these inputs, could impact Dow’s operating costs and add variability to earnings.

What do Americans want to see most from its biggest businesses? According to JUST Capital and The Boston Consulting Group, the top characteristics include fair pay for workers, quality products, ethical and diverse leadership, environmental, health and safety regulatory matter could result in fines or restrictions or prohibitions on operations, increased costs, and could result in higher operating costs. As a result, volatility in these costs could impact the Company’s results of operations.

Environmental Compliance: The costs of complying with evolving regulatory requirements could negatively impact the Company’s financial results. Actual or alleged violations of environmental laws or permit requirements could result in fines or restrictions or prohibitions on operations, increased costs, and could result in higher operating costs. As a result, volatility in these costs could impact the Company’s results of operations.

Health and Safety: Concerns regarding the safe use of chemicals in commerce 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. Concerns regarding the safe use of chemicals and plastics in commerce 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.

By driving innovations that protect life and the environment, we will continue to create sustainable economic value.

Howard Ungerleider, vice president and chief financial officer, Dow

The Company is subject to extensive federal, state, local and foreign regulations that affect its business, including regulations relating to the 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 unremediated inactive or inactive waste disposal sites that the Company has not recorded. With respect to these potential actions, it is reasonably possible that the Company’s ultimate cost with respect to the total amount of costs incurred could be significantly higher, which could negatively impact the Company’s financial condition and results of operations. Costs and capital expenditures related to environmental, health and safety matters are subject to evolving regulatory requirements and depend on the timing of the promulgation and enforcement of specific standards that impose the necessary costs and expenditures. The Company could be required to prohibit or interrupt the Company’s operations, or require modifications to its facilities. As a result, environmental health and safety regulatory measures 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-
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.

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.

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.

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.

SDGs that Dow has a current negative impact on

SDGs that Dow can engage and contribute

SDGs that present business opportunities and risks
Plastics in the Environment

Extremely versatile and lightweight, plastics have helped improve living standards, hygiene and resilience around the world. Plastics 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 fuel efficient, produce fewer carbon dioxide emissions and are safer and 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 plastics are simply too valuable to be lost as waste. It is aligned around three pillars:

1. We will work to keep plastic out of the environment.
2. We will deliver circular economy solutions.
3. We will innovate in collaboration with partners.

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 pledged 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 pellet 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 in many developing countries, children are squeezed into overcrowded classrooms, classrooms that are falling apart, or are learning outside. 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.

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.

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 with a goal of 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 model.
- 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 and government 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.

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.

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

UN SDG ALIGNMENT

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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

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<td>Policy and legal</td>
<td>Regulation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enhanced emissions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exposure to litigation</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>Change in consumer preferences</td>
<td>&gt;</td>
</tr>
<tr>
<td></td>
<td>Inability to do business</td>
<td>&gt;</td>
</tr>
<tr>
<td></td>
<td>Disruption in ship and shipment</td>
<td>&gt;</td>
</tr>
<tr>
<td></td>
<td>Damages</td>
<td>&gt;</td>
</tr>
<tr>
<td></td>
<td>Increased operating costs</td>
<td>&gt;</td>
</tr>
<tr>
<td></td>
<td>Early write-off of capital investments</td>
<td>&gt;</td>
</tr>
<tr>
<td></td>
<td>Reduced demand for products</td>
<td>&gt;</td>
</tr>
<tr>
<td></td>
<td>Revenues</td>
<td>&gt;</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 price of carbon has regulatory frameworks. Emissions trading systems (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 upgrading 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 a real and present danger. The scientific consensus on climate change 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 business. Concerns have been raised that climate change may result in more frequent and severe weather events, and the supply of certain raw materials, which had an adverse impact on Dow's operations in the U.S. Gulf Coast. Dow has 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 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 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 what our growing portfolio of solutions. As part of our 2025 Sustainability Goals, Dow will reduce GHG emissions below 2006 levels on an absolute basis at all GHGs. But 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 further 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.
- **Dow Buildings Solutions** launched THERMASHIELD® DOWSIL™ silicone structural glazing systems that help buildings meet LEED certification. Dow will also help clients achieve carbon neutrality by using its building insulation technology.
- **Dow Consumer Solutions** offers solutions that help keep our homes more energy-efficient. Thermal mass is demonstrated to enhance energy savings in residential window manufacturing. With longer life cycles and application durability than their petroleum-based organic counterparts, silicons

The Dow Chemical Company

Dow is offering POLYETHYLENE made with 100% RENEWABLE ELECTRICITY

Dow 2018 SUSTAINABILITY REPORT
resist natural breakdown from environmental factors. The rate of more than 40 years of proven performance, Dow silicone sealants have been used in a wide range of high-end, construction, and weatherproofing applications to withstand hurricanes, earthquakes, acid rain, typhoons and extreme humidity, heat and freeze conditions.

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 Sochi 2014 and Rio 2016. 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 2026, the reductions from these programs are projected to exceed 6 million metric tons of CO2e. Many of these projects have also 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 (ii) to balance the operational carbon footprint of the IOC from 2017-2020, and (iii) to deliver a positive carbon legacy by encouraging the adoption of low-carbon solutions in the industry value chain. Already 330,000 MT 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 until 2020.

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 30 percent of global final energy use and 39 percent of energy-related CO2 emissions when upstream power generation is included.

The Dow and the Organizing Committees of the Olympic Games Sochi 2014 and Rio 2016, as well as reduced carbon emissions along industry value chains. We are working with the American Institute of Architects – International Region (AIA-IR) to help advance the implementation of sustainable solutions in the built environment and reduce GHG emissions worldwide. We are jointly presenting a Sustainable Future Award, sponsored by Dow until 2020, as part of the AIA-IR’s annual awards.

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 conform to REACH standards, have consistent properties between batches and can be processed like existing materials. These attractively priced polyols then convert 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

The Dow Chemical Company

Advocacy and Advisory Groups

Stakeholder Engagement

The Dow Chemical Company

Advocacy and Advisory Groups (e.g., Sustainability External Advisory Council)

Community Advisory Panels (United Way, Habitat for Humanity, Keep America Beautiful)

Academia Panels, meetings, research projects, social media, awards

NGO and Think Tanks (e.g., The Nature Conservancy, Ocean Conservancy)

Networks

Community Advisory Panels (CAPs) – At Dow we believe our decision-making processes are improved when we involve the community. Dow has been an industry leader in establishing and using CAPs in the communities where we have operations. With sites in 35 countries, Dow has a daily presence in small towns and cities around the world as a neighbor, community leader, employer and manufacturer. Understanding the needs of the communities where Dow has locations, and responding in a constructive and appropriate way, is part of our role as a community member and one to which we are deeply committed. Dow has a wide range of local interests, including public, housing, healthcare, civic engagement, law enforcement and local business. The Dow community involves most departments in the company in interacting with communities and help us engage in ongoing and open communication regarding the company’s operations, safety programs, environmental conditions, community interaction, and other aspects of the company and plant.

The CAPs operate in more than 38 of our global manufacturing communities, with 2025 Sustainability Goals.

Advocacy and Advisory Groups

External engagement strategy

Some examples of intentional and purposeful listening to stakeholders occur 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 dialogue; 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

Stakeholder Engagement takes place in a variety of other ways throughout the year. The fundamental principles of Dow’s on-going sustainability stakeholder engagement strategy focus on three areas:

1) information sharing and disclosure; 2) participating in active dialogue; 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.

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

- Advocacy and Advisory Groups

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

- Customers: Events, meetings, emails, surveys, social media

- Employees: Surveys, emails, Global Employee Advocacy and Advisory Groups

- Stakeholders: Meetings, email communications, meetings, social media

- Academia: Panels, meetings, research projects, social media, awards

- NGOs and Think Tanks (e.g., The Nature Conservancy, Ocean Conservancy)

- Networks

- Communities (e.g., Community Advisory Panels, United Way, Habitat for Humanity, Keep America Beautiful)

- Suppliers: Meetings, emails, surveys

- Regulators: Meetings, emails, calls

List of Stakeholder Groups

- Dow’s Environmental Advisory Council (SEAC)

- Industry issues, opportunities, collaboration and partnership opportunities

- Key areas of interest

- Frequency

- Mechanism for engagement

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

- Stakeholder Engagement

- Sustainability External Advisory Council (SEAC) has represented a wide variety of external stakeholders since its initial meeting in 1992. The SEAC provides for open and structured dialogue between Dow’s senior leaders and individuals representing a cross-section of critical audiences to society and the Company. The SEAC challenges the way the Company thinks about its core business strengths and opportunities in a creative, solutions-oriented way. The selection of members for the SEAC focuses on the potential to challenge conventional thinking and press the case for adopting proactive and impactful positions on important issues.

- Topics discussed with the SEAC in 2018 include:
  - Sustainability strategy for the new Dow and impact of future trends
  - Valuing Nature goal, seeking benchmarks for valuing ecosystem services
  - Inclusion and Diversity strategy
  - Recommendations for sustainability topics to address that are not covered with 2025 Sustainability Goals
  - Plastics business sustainability strategy
  - External engagement strategy
  - Plastics circular economy and recycling platforms

- Communities: GRI 413-1, GRI 413-2

- Housing and Hope for Hurricane Harvey Survivors

- When natural disasters strike, they can leave destruction behind in minutes. But it can take communities an extended period of 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 were still 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 waters 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 RedBull Texas Fund, Dow donated 57 trailers to communities hit by the hurricane and in need of housing. The donation, valued at more than $600,000, 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 people who 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 save money to rebuild a permanent home.

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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 key areas for community improvement through 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 input and opportunities on where Dow can have a positive impact. We address these and many more issues through our local site Community Success Plans.

Customers

In 2018, Dow’s commercial leadership recognized that customer-facing roles are in position to understand the needs of our customers, thereby increasing their efforts to tackle sustainability challenges and Dow’s capabilities to impact these efforts. The corporate sustainability team partnered with Dow’s commercial organization to launch a series of training sessions across the global customer interface organizations (sales, marketing, technical support, etc.) to help Dow people proactively identify opportunities and provide candid, constructive feedback on specific opportunities for improvement. The Leadership Guide and Leadership Effectiveness Feedback Report help Dow leaders with whom they are in their journey toward superior leadership. Together, they offer ideas on the areas to focus on as they work to build relationships and enhance their interactions with individuals on their team to motivate, engage and lead them to success. Dow connects leaders with specific development resources as part of the LES feedback process.

In 2018, surveys on the LES were also revised to simplify the reporting model; items now roll up into the Global Employee Opinion and Action Survey (GEOAS). The GEOAS survey was developed in 1995 and utilizes an annual survey called the Global Employee Opinion and Action Survey (GEOAS). The GEOAS is designed to measure employee satisfaction, commitment and engagement via questions about the job, the work environment, leadership, work-life balance, communications and more. The GEOAS survey is administered by a third-party vendor. GEOAS results are key inputs into the corporate and HR strategy and provide the primary metric of performance results. The survey is administered globally to all employees of Dow, with minimal parameters around the survey, specific to any one location, such as who is full-time, not on 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 governance behind confidentiality is reviewed each year with legal counsel and European Works Council representatives.

Engaged, energized employees are at the heart of Dow’s success. In 2018 GEOAS, questions were added to align our assessment with Dow’s strategy, and it was the first year that employees were invited to provide feedback on their time at Dow and how their experiences have changed since joining new Dow from heritage DuPont.

In addition to the critical metric of employee engagement, the 2018 GEOAS was again implemented by a third-party vendor. GEOAS resources as part of the LES feedback process. Together, they offer ideas on the areas to focus on as they work to build relationships and enhance their interactions with individuals on their team to motivate, engage and lead them to success. Engaged, energized employees are at the heart of Dow’s success. In 2018 GEOAS, questions were added to align our assessment with Dow’s strategy, and it was the first year that Dow is continuing on a path to success for everyone.

In the critical area of employee engagement, the 2018 GEOAS was also paired with a Leadership Effectiveness Survey (LES). The LES allowed employees to provide confidential feedback on their supervisors and the areas where they can develop to better lead and engage. Employees are encouraged to think about recent interactions with their leaders, call attention to their strengths, and provide candid, constructive feedback on specific opportunities for improvement. The Leadership Guide and Leadership Effectiveness Feedback Report help Dow leaders on areas where they are in their journey toward superior leadership. Together, they offer ideas on the areas to focus on as they work to build relationships and enhance their interactions with individuals on their team to motivate, engage and lead them to success.

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Employee Resource Groups

Ten Employee Resource Groups (ERGs) – each with a senior executive sponsor – bring together people with a common interest to share experiences, find mentors and network. ERGs also advance Dow’s diversity and inclusion efforts, 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 employees over 50 bring to Dow’s business, 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 25,000 employees have taken on leadership roles, and green 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 siloxanes
- 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

dow.com/sustainability
Risk Characterization Process

All products (100 percent) are assessed in an appropriate manner – depending upon the scope of change required to overcome global challenges such as climate change or to prevent environmental degradation. We view the precautionary principle as an application of the principles of risk assessment and risk management. As a responsible corporate citizen, Dow continues to use a well-defined chemical management approach that is science-based, ensuring decision-making includes an appropriate assessment and risk assessment. Risk management encompasses the identification, selection and implementation of alternative actions for postponing cost-effective measures to prevent environmental degradation.

The Dow Chemical Company

Below is a partial list of associations in which Dow is engaged and provides leadership support. GRI 102-13


As a responsible corporate citizen, Dow continues to use a well-defined chemical management approach should be:

• Proportionate to the objective being pursued
• Provisional
• The least burdensome option that provides adequate protection from the risk

52% of sales are from products that address world challenges

65% of R&D projects address world challenges
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.

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>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMINISTRATIVE</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>TECHNICAL EMPLOYEES</td>
<td>37%</td>
<td>63%</td>
</tr>
<tr>
<td>PROFESSIONALS &amp; MANAGERS</td>
<td>69%</td>
<td>31%</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.
### Workforce Representation by Job Family

<table>
<thead>
<tr>
<th>Region</th>
<th>Administrative</th>
<th>Technical</th>
<th>Professionals &amp; Managers</th>
<th>Global Leaders &amp; Executives</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>72%</td>
<td>94%</td>
<td>94%</td>
<td>72%</td>
<td>85%</td>
</tr>
<tr>
<td>LA</td>
<td>32%</td>
<td>7%</td>
<td>37%</td>
<td>46%</td>
<td>35%</td>
</tr>
<tr>
<td>NA</td>
<td>27%</td>
<td>37%</td>
<td>44%</td>
<td>44%</td>
<td>41%</td>
</tr>
<tr>
<td>AP</td>
<td>59%</td>
<td>65%</td>
<td>73%</td>
<td>89%</td>
<td>87%</td>
</tr>
<tr>
<td>Global</td>
<td>65%</td>
<td>76%</td>
<td>65%</td>
<td>79%</td>
<td>73%</td>
</tr>
</tbody>
</table>

### Employee Turnover

<table>
<thead>
<tr>
<th>Age Group</th>
<th>EU</th>
<th>LA</th>
<th>NA</th>
<th>AP</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 Years</td>
<td>6.1%</td>
<td>4.3%</td>
<td>6.0%</td>
<td>12.0%</td>
<td>6.9%</td>
</tr>
<tr>
<td>2-3</td>
<td>7.4%</td>
<td>4.4%</td>
<td>6.7%</td>
<td>8.0%</td>
<td>7.0%</td>
</tr>
<tr>
<td>4-5</td>
<td>6.1%</td>
<td>5.3%</td>
<td>5.7%</td>
<td>6.1%</td>
<td>6.1%</td>
</tr>
<tr>
<td>6-10</td>
<td>4.4%</td>
<td>3.8%</td>
<td>4.3%</td>
<td>3.9%</td>
<td>4.2%</td>
</tr>
<tr>
<td>11-15</td>
<td>1.9%</td>
<td>0.8%</td>
<td>2.4%</td>
<td>2.7%</td>
<td>2.2%</td>
</tr>
<tr>
<td>16+</td>
<td>6.5%</td>
<td>6.4%</td>
<td>4.3%</td>
<td>3.4%</td>
<td>4.1%</td>
</tr>
</tbody>
</table>

### Voluntary Attrition

<table>
<thead>
<tr>
<th>Region</th>
<th>EU</th>
<th>LA</th>
<th>NA</th>
<th>AP</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.6%</td>
<td>5.0%</td>
<td>4.1%</td>
<td>6.0%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Male</td>
<td>4.1%</td>
<td>4.4%</td>
<td>4.8%</td>
<td>6.3%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Female</td>
<td>5.2%</td>
<td>5.6%</td>
<td>5.6%</td>
<td>5.4%</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

### Involuntary Attrition

<table>
<thead>
<tr>
<th>Region</th>
<th>EU</th>
<th>LA</th>
<th>NA</th>
<th>AP</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.3%</td>
<td>4.5%</td>
<td>4.6%</td>
<td>5.4%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

### Parental Leave

- **Voluntary Attrition by Age Group**
  - Male: 66.0% 34.0%
  - Female: 79.0% 21.0%

- **Return from Leave Rates**
  - Total number of employees who took parental leave: 123 75.0% 25.0%
  - Total number of employees who returned to work after parental leave ended: 79 66.0% 34.0%
  - Total number of employees who returned to work after parental leave ended that were still employed: 19 89.5% 10.5%

### Benefits Provided to Full-Time Employees

- **Employee Turnover**
  - EU: 6.1%, LA: 7.4%, NA: 6.1%, AP: 4.4%, Global: 5.2%
  - Male: 4.1%, Female: 4.5%

- **Voluntary Attrition**
  - EU: 4.6%, LA: 4.1%, NA: 6.0%, AP: 6.5%, Global: 4.8%
  - Male: 4.1%, Female: 5.2%

- **Involuntary Attrition**
  - EU: 4.3%, LA: 4.5%, NA: 4.6%, AP: 5.4%, Global: 4.6%

- **Voluntary Attrition by Age Group**
  - Male: 66.0%, Female: 79.0%

- **Return from Leave Rates**
  - Total number of employees who took parental leave: 123 75.0%
  - Total number of employees who returned to work after parental leave ended: 79 66.0%
  - Total number of employees who returned to work after parental leave ended that were still employed: 19 89.5%

- **Benefits Provided to Full-Time Employees**
  - 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 benefits plans are designed to build on the social security system in 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

- **Return from Leave Rates**
  - Total number of employees who were entitled to parental leave: 53,672 28.0%
  - Total number of employees who took parental leave: 123 75.0%
  - Total number of employees who returned to work in the reporting period: 79 66.0%
  - Total number of employees who returned to work after parental leave ended that were still employed 12 months after their return to work: 19 89.5%
  - Total number of employees who returned to work after parental leave ended that were not employed 12 months after their return to work: 98 67.0%
To promote our digitally enhanced employee experience, each associate is able to go mobile to our employees for a job well done. Accelerate Great is the formal recognition tool that can be used to validate performance: recognizing globally there are numerous steps taking place to ensure safety and effective operation of our plants.

Investing in Our Workforce

Through the Engaging for Impact 2025 Goal, Dow will continue to provide value internally in the form of employee engagement, development 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 generations to come.

Dow's reputation and have a lasting effect for generations to come.

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 for appreciating great work at Dow. When you "thank you" to our employees for a job well done. Accelerate Great is the formal recognition tool for appreciating great work at Dow. When

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Spotlight, Bronze, Silver, Gold and Diamond, as well as options for higher-level impact, contribution and increasing value to better align recognition with impact.

GEOAS (Global Employee Operating Standards) is the backbone of our learning culture. Dow can engage as we continue to leverage more of our system's capabilities. Over 40,000 courses are currently available, from internal content to Harvard Business Leadership courses, keeping our learning experience diverse and dynamic. Dow's reputation and have a lasting effect for generations to come.

Freight is the biggest of all the operational costs.

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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.

### 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</th>
<th>Performance Award</th>
<th>Long-Term Incentives</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 take sustainability insights into 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 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 each and work directly with a client or community partner. 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 business. 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 some 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 in sustainability also is woven into career development within Dow:

• 2025 Sustainability Goal leadership and implementation. Approximately 10 Dow leaders are engaged in a high-commitment network commissioned with implementing Dow’s 2025 Sustainability Goals. For each goal, Dow has designated executive sponsors, implementation leaders and project leaders. In addition, in every business, function and geography, there are Dow leaders who have at least a portion of their role dedicated to implementing sustainability actions and the 2025 Goals into their business, function and/or geography.

• Sustainability Network: More than 1,200 Dow employees are on distribution lists for our Sustainability Network, which gather Dow people together globally and nationally for monthly training. In addition, a monthly newsletter provides information on specific events (e.g., business-specific initiatives, local Earth Day). When employees express interest in sustainability, they are invited to join this entry-level opportunity to engage in sustainability-related events and receive regular updates.

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 platform to make an impact.

Matt Pundmann, Dow business sustainability intern

See the Dow Fellows Program website: http://sustainability.umich.edu/dow/media/

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

http://sustainability.umich.edu/dow/media/

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At Dow, 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 DuPont in 2017, we are accelerating our actions and strengthening our 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, 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 deliver concrete, visible and meaningful results globally by 2020:

- Address diversity dimension gaps in employee perceptions of equal opportunity and valuing diverse perspectives.
- Activate Employee Resource Groups (ERGs) and align their strategies and actions with Dow’s business imperatives.
- Accelerate our spend with diverse suppliers and achieve top benchmark performance.
- Advance representation globally and across multiple dimensions of diversity.
- Achieve targeted premier recognition globally.

We will measure our progress through improvements in ERG engagement, workforce and leadership representation, supplier diversity, employee perceptions of our inclusive culture, and achieving external recognition 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.

Inclusion and Diversity

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-du pont.com/investors/dowdupent-filings-and-reports/default.aspx.
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 employees 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 a HalloPic Challenge

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. As a world leader in science and technology, and a place where people can bring their whole selves to work, Dow is committed to being a place where people across the globe can thrive.

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WE Are Innovators: Whether it is helping people gain access to healthy food, efficient transportation and infrastructure, safe housing, sustainable energy or protecting the local environment, Dow employees are committed to making a difference.

In 2018, nearly 200 teams in six countries were sponsored by Dow.

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Investing in Innovative, Inspired and Inclusive Young Leaders Across the World

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Dow Leadership Academy in Louisiana: Thirteen male students from White Castle High School, Louisiana, were selected as Dow Leadership Academy scholars. This unique program is designed to inspire young people to develop a passion for STEM and leadership.

Each year, high school students from all over the world meet for a new edition of the FIRST Robotics Competition. In 2018, there were over 3,500 teams worldwide, from which about 100 are formed by Mexican students. Two of these teams, the Pink Hawks, the first 100-percent Mexican women-registered team, as well as the WinT team, which ranks in the regional top 10, have been supported by Dow since 2017.

Enriching Shared Value & Engaging the Value Chain Through Partnership

Business Impact Fund: Now in its third year, the Business Impact Fund is designed to educate textile workers in Ethiopia on proper resource management, as well as to provide them with sustainable practices.

Solutions, is designed to educate textile workers in Ethiopia on proper resource management, as well as to provide them with sustainable practices.

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Example: Reduction of Water Usage and Chemical Waste in Ethiopian Fashion Industry

According to the United Nations Economic Commission for Europe, the fashion industry is the second largest user of water globally, consuming 7,000 liters per cotton shirt, which is equivalent to water used by approximately 300 Ethiopians per day. This project partners with Dow Industrial Solutions, is designed to educate textile workers in Ethiopia on proper resource management, as well as to provide them with sustainable practices.

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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; PZ Cussons Ghana Limited; Unilever Ghana and Liberta Limited; Guinness Company of Ghana; Dow Chemical West Africa Industries (AGI) with a stake in the plastics sector; and India.

The main aim of the school recycling program is to increase plastics collection rates, thereby decreasing plastics sent to landfills and pollution. Additionally, the project will drive recycling, as the collected waste will be sent to a sorting center where it will be sold into second-life applications.

Aligning Passion to Purpose Through Engagement

Building the Workforce of Tomorrow: Every day during the month, Dow STEM Ambassadors share their passion and expertise with students, educators and their local communities through careers 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 day around the world, Dow STEM Ambassadors 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.

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.

Engaging Employees for Impact

A New Day. A New Dow. Developing an Engaging for Impact Volunteer Blueprint for the New Dow
Volunteers align to 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 transformation. 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.

Grant Giving
Total Corporate and Foundation Contributions: $39.1MM
Product and Equipment Donations: $4.4MM

Dow is committed to sustainability and continues to work towards solutions for global challenges through collaboration with local organizations. Our work with the Ghana Recycling Initiative by Private Enterprise is an example, and institutions will help increase the impact of our work by creating a blueprint solution for global application.
Employee Health and Safety

GRI 403-1 Work protection has been a priority at Dow since the Company’s earliest days. With the goal of having every worker go home safely at the end of their work shift, Dow uses a comprehensive, integrated operating discipline management system that includes policies, requirements, processes, best practices and procedures associated with Environment, Health and Safety, as well as Quality, Operations and 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 organization within Dow to implement and use Health and Safety Programs to:

• Identify, assess, and eliminate or mitigate hazards
• Prevent unsafe acts and conditions
• Maintain and improve the health of personnel
• Foster communication on health and safety issues

The system is grounded in requirements of the U.S. EPA and OSHA, but incorporates ideas from other global regions, as well as Dow’s own more stringent requirements. The management system has been externally audited and found to meet both ISO-14001, ISO-9001 and Responsible Care code requirements. The system applies globally to all Dow premises and JV locations where we have greater than 50 percent ownership (i.e., full operational control). Dow’s health and safety and internal requirements process meet or exceed the most countries in which we operate, and all Dow locations are expected to comply with Dow or local requirements, whichever are more stringent.

The Company management system covers Dow workers, contractors, suppliers and others whether they are working on or off Dow premises, and all contracted workers performing work for Dow’s continuous improvement mindset, the most comprehensive system that identifies when deliver materials to company premises only (e.g., package delivery services) are excluded from our full management system, though they receive fundamental training if they are to enter any of our sites. The management system is designed and implemented by professionals employed or contracted by Dow (e.g., Health Services, Industrial Hygiene, EH&S Delivery). The system is grounded in requirements of the global management system, every work group at Dow must establish and sustain the required, and implement full compliance of all requirements within our standards and compliance with local regulations. Required self-assessments and independent internal audits monitor and identify

best practices, with audit results reviewed by Dow’s EH&S Committee. Consistent with Dow’s continuous improvement mindset, the most comprehensive system that identifies when deliver materials to company premises only (e.g., package delivery services) are excluded from our full management system, though they receive fundamental training if they are to enter any of our sites. The management system is designed and implemented by professionals employed or contracted by Dow (e.g., Health Services, Industrial Hygiene, EH&S Delivery). The system is grounded in requirements of the global management system, every work group at Dow must establish and sustain the required, and implement full compliance of all requirements within our standards and compliance with local regulations. Required self-assessments and independent internal audits monitor and identify

Identify, assess, and eliminate or mitigate hazards

The Dow Chemical Company

GRI 403-2 Leading indicators of Occupational Health and Safety performance are a cornerstone of Dow’s worker protection program. A consistent set of globally applied leading indicators is complemented by locally defined leading indicators. Globally applied leading indicators include:

• Non-injury (near miss) situations with potential to cause a life-altering property damage. Often safely had the situation been only slightly different (“non-injury, near-miss event”)
• Percent completion of training for Life Critical Standards
• Internal EH&S management system audit results
• Open actions from Reactive Chemical and Process Hazard Analysis reviews

Leading rate for Management of Change actions, a measure of the amount of change work managed by a work group, normalized by worker capacity to implement such actions. Our routine hazardous analysis programs include:

• Periodic health exams informed by the employee’s role and potential exposure to specific hazards
• Qualitative exposure assessment for chemical, physical, ergonomic and biological hazards overseen by professional Industrial Hygienists
• Regular evaluation and periodic re-evaluation of process safety hazards via our Layers of Protection Analysis
• Personal safety risk analysis performed as a part of numerous work processes (e.g., permit to work/Safe Work Permit, pre-task safety reviews, pre-startup safety reviews)

Effective, integrated work processes and committed people are key to protecting all workers. Workers have direct line of sight to potential hazards. They are expected and encouraged to identify, report and intervene when unsafe or unhealthy work conditions are observed. They are also actively recognize coworkers making safe choices. Worker input on hazards and the feedback process that enable near-miss programs and leverage where appropriate. Workers are protected from reprisal via our global Ethics policy, part of our Dow Standard.

Eliminating waste has been a priority at Dow since the Company’s earliest days. With the goal of removing plastic waste in our oceans and other waterways.

FOUR POUNDS: That’s the average amount of waste each 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 72 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.

Hierarchy of Controls

ENFORCEMENT

Physically remove the hazard

ENGINEERING CONTROLS

Replace the hazard

SUBSTITUTION

Isolate people from the hazard

ADMINISTRATIVE CONTROLS

Change the way people work

PERSONAL PROTECTIVE EQUIPMENT

Protect the worker with personal protective equipment
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 hydroblasting industry has led to far greater availability of automated hydroblasting options for use by all industries. Similarly, in 2018 Dow took action in response to a severe contractor injury to drive the implementation of anti-crush technology on all self-driven personnel lifting devices to be used at Dow locations globally. This has resulted in accelerated development of safeguards on such equipment by their respective organizations. The implementation of this type of technology on all self-driven personnel lifting devices to be used at Dow locations globally.

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With more than a century of experience in occupational health, Dow is committed to making an impact on worker protection. In 2018, we made significant improvements through our Total Worker Health pilot program. As part of our Total Worker Health pilot program, we are developing wearable technology that would track vital signs, eye movement, and head positioning for night shift workers who operate motor vehicles or heavy equipment. When we have people working critical processes, we want them to be at a high level of alertness.

Dow offers a comprehensive and robust program of workplace health risks, protects workers, and improves the health of Dow people:

- **Reorganizing hazards:** We rely on toxicologists, industrial hygienists, and physicians to apply our expertise and knowledge of the scientific and medical literature. We maintain a team and work processes to monitor trends and regulations in worker health assessment. We engage local EH&S delivery personnel to help identify workers at potential risk. Worker health hazards are considered as part of the risk review process for new products and changes in the manufacture of current products.

- **Reducing risks:** We use the hierarchy of controls to mitigate worker health risks. Industrial hygiene guidelines drive use of engineering controls and appropriate personal protective equipment. Travel health services (i.e., counseling, vaccinations and access to local care) reduce risk for endemic or acute health problems while on business. In addition to traditional occupational health risks, we minimize other workplace health risks through fitness for duty, workplace tobacco and substance-use policies, active worker engagement and worksite cultural change. We recently launched a technology-use strategy to reduce worker health risks through improved awareness, architecture, organizational support and adherence.

- **Screening for illness:** Employees who work in areas with high-risk occupational hazards (e.g., hearing conservation, confined space entry, high-pressure cleaning, and biologics) are monitored medically and tracked through our health records system. All workers are provided baseline and periodic medical screening, testing, evaluation and health counseling to identify and control health problems. We use the same rigorous standards globally. Health results are carefully monitored through health trend summaries and directed health epidemiology studies.

- **Confirming the effectiveness of our interventions:** We perform population health surveillance to assess patterns of recognized occupational exposures and develop epidemiology to perform population health surveillance for serious illnesses such as cancer. We track health outcomes for work-related injury and illness cases (i.e., results from potential exposure to chemical, physical or biological substances or ergonomic workplace stressors), with annual improvement targets.

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- **Environmental, health and safety standards:** Occupational health requirements are global and meet or exceed local regulations. Every employee has access to occupational health services at no cost through an on-site, company-managed clinic (93 locations in 2018) or an off-site provider managed by Dow Health Services.

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- **Clinical treatment:** In 2018, we provided health services to 2.7 million people. We provide medical care to our employees, their dependents, and the local community through our Health Services. At the local level, we maintain active crisis planning teams to monitor needs and ensure appropriate plans are in place for emerging health risks and/or pandemic. This includes protecting the health of our employees and families as a result of extreme weather. Crisis plans are activated when necessary and led by key functional directors, including health and safety leaders.

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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 measurement methodologies are utilized, including regular informal emphasis topics, communities of practice, interactive e-learning and instructor-led offerings for the most critical or technical topics. For our most significant, life-critical standards, 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 every shift, 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.

Improvements are evaluated and prioritized. If a global policy change is indicated, the change is presented to a global policy team for consideration and final approval. Locally, employees are directly and actively engaged in improving local policies, procedures and safeguards (e.g., Personal Protective Equipment selection, unsafe conditions and near-miss programs).

Health with Speed

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 responsibility at work. Formal training is offered in-person, on-site or online. Dow, access to such training is provided free of charge within the constraints of co-employment limitations. Where co-employment concerns exist, an on-site health and safety representative is assigned to provide support to employees and make best use of our available resources.

Whether entering tanks or working from scaffolding sometimes hundreds of feet high, inspecting hard-to-reach places can put people at risk. Whether it’s Toxics Use Reduction, Remote Work, or the Domestic Aerospace, our customers and governments rely on Dow, and other organizations such as Sprint Robotics, the American Society of Mechanical Engineers and the American Petroleum Institute have worked with us to improve our work.

In 2018, we used design thinking to update our approach to well-being that is health-centered and outcomes-driven. It drives health support across four pillars:

- **Work:** Change job characteristics detrimental to well-being and help employees use the tools they need.
- **People:** Foster supportive and valued relationships between employees and between employees and leaders; protect workers.
- **Place:** Create a supportive and thinning environment that enables the well-being of all employees and is conducive to healthy choices.
- **World:** Realize we can’t achieve optimal well-being alone, we’ll seek to create and implement solutions with our vendors, communities, peers, partners and customers.

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

Our well-being strategy is jointly sponsored by the chief human resources and corporate safety and environment officers. It is cooperatively owned and activated by Health and Safety Services, E&S Operations, Employee Communications, Learning & Training, Dow Foundation, Relocation Services, renovating our facilities, Corporate Citizenship. Together we will take a cohesive and systemic approach to supporting the well-being of all 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, physical, intellectual and environmental. A few of our global supports are:

- **Healthy City Index:** Measures a city’s alignment with evidence-based best practice well-being strategies including access to healthy foods, relaxation space, better income, peer and leader support for health, and access to physical activity. In 2018, 45 percent of the Dow population worked at sites at the highest achievement levels in the index; this is our overall goal for a target. Peer mentors help sites create and implement improvement plans.
- **Employee Assistance Program (EAP):** Available to all employees and 100% of Dow employees use the service. This service addresses issues, financial struggles and family relations. Our EAP program also provides on-site health and safety support in response to a personal or work-related incident.
- **Case Management:** Helps employees maneuver the healthcare systems, removing barriers to accessing and paying for appropriate, quality healthcare and maintaining their progress. This is offered globally through Dow Health Services and where available by local insurance or worker compensation providers.
- **Health Benefits:** Seeks to improve the health of Dow employees by removing barriers to accessing and paying for appropriate, quality healthcare across the globe. This is done through both medical insurance and other health offerings for employees. The level of support is determined based on the needs of our workforce within a given geography.

Efforts to optimize total worker health are recognized annually. The aggregate status in seven risk factors tracked across the globe. In 2018, there was a 16% improvement and an 8 percent improvement in the blood pressure high-risk group from the previous year’s results. Site and company awards are given to sites achieving significant positive health results and to individuals who make significant contributions to the health of others.
Dow Family Health Centers – an Effective Model for Health Care

The Dow Family Health Centers (DFHCs) are an integral part of Dow’s integrated approach to health and safety management system excellence in EH&S performance. Our integrated approaches to both protect health and optimize health are linked at the highest level of EH&S. Dow’s management fully supports the DFHCs’ mission to provide access to affordable, quality health care services.

Family Health Center experienced:

• Reduced drug costs, vs. 11 percent increase for non-Dow employees
• A 4 percent decrease in total medical and drug costs 26 percent less

These range broadly depending on specific activities at each location. 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. This increase broadly depends on specific government 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.

Our system has a requirement for Management of Technology to monitor and improve traffic warning and barrier systems, and the application of technology to monitor and improve traffic warning and barrier systems, and significant adjustments to our rail crossing warning and barrier systems.

GRI 403-2: All workers who are not employees but whose work and/or workplace is controlled by Dow are required to comply with 100 percent of health and safety management system requirements. We employ a comprehensive permit-to-work system that facilitates a robust dialogue around hazards and mitigation of such hazards for each task.

Our Corrective and Preventative Action program ensures that each incident is addressed via corrective or preventative actions applied. 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 initiatives. 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 initiatives. In each case, a global leader spends two days at a location focused on observation and dialogue with the work group.

Many industries now recognize the necessity for ongoing dialogue around hazards and mitigation. These dialogues are the result of our Corrective and Preventative Action program. Our Corrective and Preventative Action program ensures that each incident is addressed via corrective or preventative actions applied.

We have a very robust, globally tracked near-miss program for situations that did not result in an injury but could have been high consequence had something been slightly different. This non-injury potential L.I.F.E. event (non-LIFE) provides an opportunity to perform adequate investigation and to identify broadly leveraged 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.

We have an annual review of near-miss data to identify trends and areas for improvement. Dow maintains a very active and dynamic near-miss program, which is formalized through a comprehensive Corrective and Preventative Action process. We provide full compensation for time lost from work and ensure other appropriate assistance to the individual concerned.

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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.

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Dow has a sincere interest in their health and well-being.

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Environmental

Dow is committed to world-class environmental, health and safety (EH&S) performance, demonstrated by industry-leading performance, a long-standing commitment to Responsible Care, and a commitment to achieving Dow’s 2025 Sustainability Goals – goals that set the standard for sustainability in the chemical industry by focusing on improvements in Dow’s local community, in our company’s operations, and by actively pursuing methods to reduce the Company’s environmental impact. To meet the Company’s public commitments, as well as the strengthening environmental regulations related to environmental protection and remediation to which its global operations are subject, Dow has well-defined policies, requirements and management systems. Dow’s EH&S Management System (EMS) defines the "who, when, where and how" needed for the periodic auditing and improvement process. Dow believes third-party verification and transparent public reporting are cornerstones of world-class EH&S performance and building public trust. Numerous Dow sites in Europe, the Americas, Asia Pacific, and Eastern Europe and Canada have received third-party verification of Dow’s compliance with Responsible Care and have earned outside recognition of the application and impact of Responsible Care around the world through engagement with suppliers, customers and joint venture partners. Dow’s EMS policies help the Company achieve its corporate goals. Dow works to eliminate or minimize the generation of waste and emissions at the source, through research, process changes and operations 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 and volume of the waste. Treatment may include destruction by chemical, physical, biological or thermal means. Disposal of waste materials in landfills is considered only when all other options have been thoroughly evaluated. Dow has specific requirements for waste that is transferred to non-Dow facilities, including the periodic auditing of these facilities. Dow continues to be a global champion of health and safety (EH&S) performance, as demonstrated by industry-leading performance, a long-standing commitment to Responsible Care and has worked to broaden the scope of world-class EH&S performance and building public trust. Numerous Dow sites in Europe, the Americas, Asia Pacific, and Eastern Europe and Canada have received third-party verification of Dow’s compliance with Responsible Care and have earned outside recognition of the application and impact of Responsible Care around the world through engagement with suppliers, customers and joint venture partners.

Environment, Health, and Safety Policy

At Dow, protecting people and the environment is a part of everything we do and every decision we make. Each employee has a responsibility in ensuring that our products and operations meet expectations and public commitments. To ensure businesses track and record their emissions in GEI, the central database used for national and global reports of emissions. Each facility has an EMS local plan that is the basis for collecting and reporting all waste and emission data to the GEI, in addition to project to update the GEI tool. Improvements to the tool reduce effort and improve quality of the annual emissions inventory to which its global operations are subject. Dow has well-defined policies, requirements and management systems. Dow’s EH&S Management System (EMS) defines the "who, when, where and how" needed for the periodic auditing and improvement process. Dow believes third-party verification and transparent public reporting are cornerstones of world-class EH&S performance and building public trust. Numerous Dow sites in Europe, the Americas, Asia Pacific, and Eastern Europe and Canada have received third-party verification of Dow’s compliance with Responsible Care and have earned outside recognition of the application and impact of Responsible Care around the world through engagement with suppliers, customers and joint venture partners.

Materials Used by Weight or Volume

The Company operates in an integrated manufacturing environment. Basic raw materials are processed in many stages to produce a number of products that are sold as finished goods at various points in these processes. The impact of Responsible Care on the production of the Company’s finished goods is hydrocarbon-based raw materials. The Company procures a number of hydrocarbon raw materials, including ethane, propane, butane, naphtha, and ethylene. The type and volume of raw materials are used in the production of both saleable products and energy. The Company also purchases certain monomers, primarily ethylene, propylene, and polypropylene, to supplement internal production. The Company purchases natural gas, primarily to heat facilities and provide electricity to supplement internal generation. The Company purchases hydrocarbon raw materials for use as feedstocks. These raw materials include: acetone, benzene, butane, condensate, electric power, ethane, hexane, methanol, methyl methacrylate, naphtha, octane, propylene, propylene glycol, styrene and wood pulp. Key raw materials that are produced internally from recycled inputs include: alcohol, aqueous hydrogenic acid, butyl acrylate, chlorin, ethylene, hexane, hydrogen gas, hydrogen peroxide, hydrogen peroxide, and propylene. The Company uses both recycled inputs and purchased inputs as feedstocks and materials. The Dow Chemical Company

Environmental Metric Summary

The Dow Chemical Company

Endnote

Dow measures our business’ progress on sustainable chemistry as part of the Delivering Breakthroughs Goal using the Sustainable Chemistry Index (SCI). The SCI is an internal metric that asks each business to report in two ways: 1) to track progress against a set of qualitative challenges, business strategy and recognition, and value of sustainability (see page 56 for more detail). There are questions that ask the business to estimate the amount of their raw material inputs that are recycled, and the amount of their sold products that are recycled at the end of their life. However, this is an estimated value, but we report this data for both questions for both businesses. Circular economy opportunities are reported at the corporate level, through the SCI, each business is challenged to consider engagement in the circular economy and the potential use of recycled inputs and the recovery of products at the end of their life.
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 (CHP) plants. The CHPs provide power and steam to production facilities at up to 35 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-critical value from its assets and commercial relationships managing this power and industrial gas exposure 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 sources. Dow purchases renewable energy in Europe, Latin America and Asia. In addition to the 750 MW target, we will continue to pursue clean energy opportunities that add to 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.

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 Within the Organization gRI 302-1

<table>
<thead>
<tr>
<th>Fuel Source</th>
<th>Capacity</th>
<th>Consumption</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood</td>
<td>273</td>
<td>4.3</td>
<td>87</td>
</tr>
<tr>
<td>Coal</td>
<td>44</td>
<td>0.8</td>
<td>14</td>
</tr>
<tr>
<td>Gas</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>327</td>
<td>6.5</td>
<td>101</td>
</tr>
</tbody>
</table>

ReneWable Energy

In North America, our renewable energy for Dow comes primarily from wind energy. We have a power purchase agreement, which helped to create a new wind farm in West and South Texas to meet the demands of our renewable energy request.

Greenhouse Gas Emissions

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 business over the long term. There are some limits to what is currently possible to work through our strategies 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.
continue to grow globally over the 10-year period emissions below the 2006 baseline as we significantly with stable emissions.

efficiency allowing us to increase sales our new plants have significantly improved electricity is from renewable sources. Similarly, Approximately 9.5 percent of purchased have long-term contracts to procure clean

Sustainability Goals:

• VOCs, and nitrogen oxides (NOx).
• Greenhouse gases identified for phase-out by the Montreal Protocol have historically been included in the Company’s Scope 1 emissions total. As
• DEPEX Gulfstream investments (i.e., new PDH, cracker gas emissions have been reduced to nearly zero
• The Dow Chemical Company

0.782 0.500 0.600 0.900 1.000 0 20 30 40 50 0

Non-Kyoto GHGs as CO2e (Millions of Metric Tons)
Indirect Greenhouse Gas Emissions as CO2e (Millions of Metric Tons)

Goal
Kyoto GHGs as CO2e (Millions of Metric Tons)

Scope 1 and 2 greenhouse gas emissions were calculated using the location-based method as defined by the Greenhouse Gas Protocol Scope 2 Guidance based on 2 metric tons of CO2e. Currently we have 698 MW of renewable sources contracts toward a target of 750 MW. In Texas we have wind farm PPAs for 350 MW capacity. At Dow’s headquarters in Michigan we use power from landfill gas. We also have hydropower in Brazil and Sweden. Dow has biomass-based steam in Dow. Active into looking into energy-efficiency projects, new technologies and more renewable energy contracts to reduce Scope 2 emissions. These reductions of Scope 2 emissions have been mainly offset by increases associated with growth in production volume since the start of the 2025 Sustainability Goal period. The increased shown for 2018 was primarily attributed to changes made in site-specific emission factor changes.

The results are summarized in the Scope 3

Other Impact [Scope 3] Emissions 205-3

Other impact Scope 3 GHG emissions occur from sources not owned or controlled by Dow. We have assessed all Scope 3 categories according to the GHG Protocol Corporate Accounting and Reporting Standard provided by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). We are on track to meet all three goals. We have long-term contracts to procure clean energy in the U.S., Latin America and Europe. Approximately 5.5 percent of purchased electricity is from renewable sources. Similarly, many plants have significantly improved efficiency allowing us to increase sales significantly with stable emissions.

Greenhouse Gas Emissions GRI 301-1, 305-2

Dow’s target is to maintain absolute GHG emissions below the 2006 baseline and to continue to grow globally over the 10-year period of the 2025 Sustainability Goals. Greenhouse gas emissions are accounted for in the Dow Greenhouse Gas Protocol Corporate Accounting and Reporting Standard and are reported on a well-mixed methodology.

GHG Emissions Intensity GRI 304-5

Scope 1 and 2 emissions are the sum of direct and indirect emissions (Scope 1 + Scope 2) per pound of production.

GHG Emissions Intensity

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 (see chart above). The largest portion of the emission reduction occurred in 2013, when Dow discontinued the use of a high-GHG potential and high-ozone-depleting-potential blowing agent (transformed into a non-ODP blowing agent) for the production of foam products. Since then, GHG emissions have remained relatively flat, with reductions due to improved efficiencies offset by year 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 of 1.5 million metric tons (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 Deloitte Sustainable Innovations 2025 Sustainability Goal. Our target is to achieve three times the greenhouse gas benefit in use than the benefits realized from our own operations, and to quantify the carbon benefit achieved through use of the Dow products. The burden of production is approximated as the sum of Scope 1 and 2 greenhouse gas emissions for the Company. We are still 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 come from three product families:

• Building insulation products. This application accounts for the GHG savings gained by running the greenhouse gas free building vs. the embodied GHG benefits from the insulation products being installed. The calculation assumes a 50-year building lifetime for the full lifetime savings in the year of sale.
• Products that enable light-weighting of vehicles. Dow polyolefin products are used in both external and internal vehicle parts. In this business, the benefit comes from the use of fewer parts that replace only external steel parts.
• Plastic packaging. The calculation of the carbon benefit for plastic packaging products was based on the method defined in a report prepared for the American Chemistry Council (ACC) and the Non-High Global Warming Potential (HGW) product portfolio is the only one that replaces external steel parts.

Avoided emissions resulting from the use of Dow products are estimated as one of the targets for the Deloitte Sustainable Innovations 2025 Sustainability Goal. Our target is to achieve three...
Chemical Emissions to Air and Water

<table>
<thead>
<tr>
<th>Year</th>
<th>NOx (metric tons)</th>
<th>SOx (metric tons)</th>
<th>VOCs (metric tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>19,220</td>
<td>8,875</td>
<td>2,630</td>
</tr>
<tr>
<td>2014</td>
<td>17,076</td>
<td>7,824</td>
<td>2,442</td>
</tr>
<tr>
<td>2013</td>
<td>15,844</td>
<td>7,283</td>
<td>2,449</td>
</tr>
<tr>
<td>2012</td>
<td>15,000</td>
<td>7,065</td>
<td>2,353</td>
</tr>
<tr>
<td>2011</td>
<td>14,550</td>
<td>6,930</td>
<td>2,330</td>
</tr>
<tr>
<td>2010</td>
<td>14,200</td>
<td>6,800</td>
<td>2,306</td>
</tr>
<tr>
<td>2009</td>
<td>13,850</td>
<td>6,670</td>
<td>2,283</td>
</tr>
<tr>
<td>2008</td>
<td>13,500</td>
<td>6,540</td>
<td>2,260</td>
</tr>
<tr>
<td>2007</td>
<td>13,150</td>
<td>6,410</td>
<td>2,237</td>
</tr>
<tr>
<td>2006</td>
<td>12,800</td>
<td>6,280</td>
<td>2,213</td>
</tr>
</tbody>
</table>

NOx emissions have reduced 23 percent since 2005 and have been relatively flat over the last five years.

The SOx (sulfur oxides) total has decreased 6 percent when compared to the 2015 baseline. The volatile organic compounds total is down by 6 percent when compared to 2015 baseline.

Water Use Across Dow Facilities

Through the total amount of water on this planet does not change, the nature of that water and its availability is changing. The amount of rain a specific location receives in a given time affects the direction of the water flows and the ability of the land to store that water for future use determines the amount of usable water available.

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 operations 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 water 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.

Sustainable Water Management

The Company has identified six of our manufacturing sites as key water-stressed sites. These sites are designated based on a number of factors: their location in a water-stressed watershed; water quality; competition among users of the same watershed; local knowledge of watershed challenges at the site; and long-term projections. Water supply issues are evolving and not isolated to water-stressed sites. Dow also keeps track of sites that are under a “watch list” where water challenges may occur.

The Dow Chemical Company

dow.com/sustainability
Water Stewardship in Action GRI 306-5, 303-1

Dow began a seawater/brackish water reuse project in the Terneuzen site in The Netherlands. The Terneuzen site in The Netherlands withdraws fresh river water for cooling from the Biesbosch area, near the confluence of the Rhine and Meuse rivers, which is also the location of a Ramsar wetland (#197). The site withdraws less than 0.007 percent of the combined flow from the River and Maas rivers, which empty into the Biesbosch delta. Die Biesbosch is one of the largest national parks in The Netherlands and an area of extensive freshwater wetlands. Biesbosch is rich in biodiversity and is located close to the Terneuzen site. The Dow Terneuzen site has made steady progress in the past decade to decrease the long-term dependence on Biesbosch water by increasing the volume of recycled water. Last year’s effort continued with the negotiation of Dow’s new contract for water with Evides Industriewater. The contract involves a joint research agreement piloting novel technologies allowing for collection and storage of areas that will allow collection and storage of water for cooling from the Biesbosch area, near the confluence of the Rhine and Meuse rivers, which empty into the Biesbosch delta.

The Terneuzen site discharges treated wastewater into the canal connecting Anne and Saartinge, which is assigned as a Natura 2000 area (Ramsar #748). This natural wetland is the estuary of the River Scheldt, stretching 60 kilometers from the border with Belgium to the North Sea. It is a saltwater/braakland with multiple wetlands and mudflats on its banks that support migratory fish, birds and other wildlife. The Terneuzen site nature permit allows for the discharge from the cooling tower wastewater reuse to the river and estuary. The Dow Terragona site withdraws water for cooling and other operations from the Ebro River in Spain. The flow that it takes is less than 0.05 percent of the annual flow of the river. Further downstream at the coast the delta is part of Ternes de l’Ebre, Catalonia, a UNESCO World Heritage Site and a Biosphere reserve (#593). The delta and associated wetlands support numerous species of water birds and other wildlife. The site is discharging into the Ebro, River with projects that include water recycling. The overall site has increased its amount of recycle water by 13 percent since 2015. The site has designed new wetlands allowing for higher concentration cycles within the cooling tower and reduction in cleaning of exchangers.

Water withdrawals 303-3

Water is used for a variety of purposes in Dow production in the Gulf Coast. Water withdrawals across the region are 65 percent freshwater and 35 percent seawater/brackish. In locations where seawater/brackish is readily available, such as at production facilities at the coast, it is used for cooling. This accounts for the high proportion of seawater/brackish water in some locations. The fresh water use in seawater/brackish site at Terneuzen is similar and most of it is evaporated in cooling towers, returning the water to the environment. Rainbower is recovered from multiple locations and reused for freshwater and other purposes, but its volume compared to other intakes is relatively small. Only a small proportion of the intake ends up in product (e.g., consumption). Past assessment of water use in the sites with the highest freshwater intake showed that a significant volume of source water was watered within the watershed at elevation.

The total volume of water intake globally has been consistently around as a result of the combined investments in new capacity, process improvements, and business portfolio changes, and growth.

Water Discharges GRI 306-1 (2018)

Once the water has been used in Dow facilities, it is typically treated at a wastewater treatment plant and discharged. The total volume of wastewater discharged in 2018 was 143 million metric tons. The majority of the water is discharged as surface water, with a small portion returned to oceans. At a few sites Dow site wastewater goes to a third party for treatment before discharge (typically to surface water).

Wastewater intensity is the ratio of pounds of wastewater per pound of production. Over the past five years the wastewater intensity has been relatively consistent – around three pounds of wastewater discharge per pound of product.

<table>
<thead>
<tr>
<th>Site</th>
<th>Total Wastewater</th>
<th>Water-stressed Sites</th>
<th>Total all sites Water-stressed sites</th>
<th>Total all sites</th>
<th>Water-stressed sites</th>
<th>Water-stressed sites</th>
<th>Total all sites</th>
<th>Water-stressed sites</th>
<th>Water-stressed sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terneuzen</td>
<td>2,553 150 29</td>
<td>2015</td>
<td>4 30</td>
<td>6 15</td>
<td>0 1 99 3343</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total all sites</td>
<td>2,553 150 29</td>
<td>2015</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Water quality is strictly governed by local regulations and parameters are set specifically for each facility by local regulations. Dow’s operations abide by these local regulations. Therefore, wastewater discharge quality is not reported specifically for each watershed. Dow’s operations by local regulations and parameters are set specifically for each watershed.

Dow’s operations consistently across all Dow sites. Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) are the most important parameters across all Dow sites, which account for over 85 percent of Dow’s wastewater.
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

1. Source reduction
2. Use, reuse or recycle at or near the point of waste generation
3. Use, reuse or recycle external to the site or company generating the waste
4. Waste treatment
5. Waste disposal

As part of our efforts to advance safe materials for a sustainable planet, we are working with the Chinese government to help advance environmental quality. In 2018, we signed a memorandum of understanding with China’s State Key Laboratory of Environmental Criteria and Risk Assessment to collaborate for scientific research, policy counsel and technical service in the fields of environmental criteria and standards and ecological protection. The aim is to help build a solid scientific and technological foundation to boost China’s environmental quality and further develop the country’s environmental criteria and standards and ecological protection. The aim is to help build a solid scientific and technological foundation to boost China’s environmental quality and further develop the country’s environmental criteria and standards and ecological protection.

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Collaborating to Advance Safety

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Partnering Through the Value Chain

Our integrated supply chain 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” Rating on External Platform for Fifth 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 platforms that we could recover propylene by venting and recycling the following four themes:

- Environmental
- Labor Practices & Human Rights
- Fair Business Practices
- Social Responsibility

We are proud of our commitment to environmentally friendly and socially responsible operations, as well as our accomplishments in transportation safety and security. We recognize that Dow’s role is to deliver sustainable solutions and have taken a number of steps to engage internally and externally to make a positive long-term impact. This approach will help us achieve business success while continuing to protect the company’s integrity and reputation.

In 2018, Dow demonstrated a comprehensive corporate social responsibility management system that could recover propylene by venting and recycling the following four themes: Environmental, Labor Practices & Human Rights, Fair Business Practices, and Social Responsibility.

2018 SUSTAINABILITY REPORT

2018, Dow continued putting our strategy into action: We advanced our Green Transportation operations with a renewed focus on sustainability and transparency throughout our entire value chain, including participating in third-party platforms like EcoVadis, and engaging in partnerships with suppliers and 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.

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The American Chemistry Council (ACC) is publishing this approach at ExCel Europe, to be leveraged at 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 to be made.

**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 great 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 2018.

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 Warehouse; Best Freight Forwarding and Best Terminal Logistics Service Provider at the end of each year. S4TAR continuously raises the bar as a great platform for best-practice sharing, industry across the region for many years, known as a great 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 2018.

**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 a significant improvement in terms of infrastructure, policy and technological transformation. As stated in Dow’s 2017 Sustainability Report, Dow particiwd in a number of case studies to overcome these challenges. The team in India has continued to work on initiatives to ensure greater transparency, visibility of shipments, and emergency response support through the implementation of Nicer Globe (a Responsible Care initiative by the Indian Chemical Council), as well as utilizing technology to streamline our processes with our supply chain partners.

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**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. As Dow, we recognized an opportunity to develop an improved, standardized industry "excellent practice" in area 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). When the material gets to a temperature before above what needs to occur, a notification is sent to alert the provider to take action. In the past, drivers would stop and perform a manual check of the temperature in the container at a certain frequency. This new technology allows for near real-time measurement of temperature at critical risk mitigations can occur, before there is an incident, or even a safety concern. This emerging technology can be leveraged across 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. In order to maintain our 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 geo-fencing technology to improve driver 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 teams have also developed a new automated capability to analyze and optimize on-site traffic in order to prescribe optimal routes. The levels vary from a high-level total to granular levels. The levels are accelerated by the use of UPSS and the Digital Fulfillment Center sponsored the project team. The simulation focuses on training loaders on hopper railcar loading procedures at a MSU project team. The simulation is being 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 numerous levels. The levels vary from a high-level total of transportation carbon emissions generated by business to the transportation carbon emissions that we generate when we ship a specific product, in a specific mode of transportation, 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) Computer Science department capstone project team. The simulation focuses on training operators to use the new automated system to load and unload cargo in a safe and efficient manner.

Cross-Functional Highlights:
- Digital Fulfillment Center sponsored the project and coordinated work between MSU and the various Dow stakeholders.
- Loaders at Freewater Plant B Poly 4 area wore Augmented Reality headsets attached to safety helmets to video 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 airbags have saved over 30,000 lives in North America alone. Dow Performance Silicones recently partnered with the world leader in automotive airbags to develop a next-generation silicone airbag coating demonstrating superior performance, while consuming 30% less material. To keep pace with industry demand, coated airbag modules must be supplied to OEMs at increasingly higher rates. Dow’s solution was to convert...
In 2018, Dow established an advisory council, enhanced metrics and reporting achieving top benchmark performance in Supplier Diversity by 2020. In strategy with a focus on accelerating spend with diverse suppliers and committed to supplier diversity as an element of our global procurement portfolio of technologies. Leveraging our approach to our suppliers and EM suppliers, we also set high

**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, completing an extensive review of our current standards and industry best practices to ensure that we’re holding our suppliers to the highest standards regarding Human Rights, and Environmental Health & Safety. In 2018, merger activity enabled Dow to continue 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 are contractually enforceable. Dow requires our suppliers to maintain compliance at any time. In cases where we identify less-than-adequate supplier practices, we reserve the right to discontinue business with 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 an outside party on Dow’s behalf using Dow’s intellectual property. All external manufacturing suppliers are managed through a robust, risk-based work process that begins at project conception and extends through the conclusion of the business agreement. This work process includes a screening of the external manufacturer, a comprehensive on-site Environment, Health & Safety (EH&S) assessment is conducted, and regular subsequent EH&S audits. Some of the criteria reviewed in these audits include the implementation of safety management systems and safe work practices, compliance with local regulations and permits, environmental and waste management practices, and incident history. EM contract agreements also specify that the manufacturer comply with Dow’s Responsible Care® and the Fundamental EH&S Expectations for External Manufacturers. In 2018 Dow collaborated with more than 500 Logistic Service Providers (LSPs) and labor service providers to capital equipment suppliers around the world as Kiran Group, who drive cultures and behaviors focused on safety and sustainability. Casey Jones served as President of Dow’s Global Logistics and Supply Chain. In 2017 Dow, the Global Logistics and Supply Chain (GLSC) organization, which manages the Company’s logistics and supply chain activities, changed its name to Global Logistics and Supply Chain (GLSC) to emphasize the evolution of the organization from a logistics-focused entity to one that delivers integrated solutions for the full supply chain. Dow’s Supplier Diversity initiative includes small businesses and diverse suppliers identified as owned by persons who are minorities, women, veterans (including service-disabled), LGBTQ and disabled. We are 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 achieving top benchmark performance in Supplier Diversity by 2020. In strategy with a focus on accelerating spend with diverse suppliers and committed to supplier diversity as an element of our global procurement portfolio of technologies. Leveraging our approach to our suppliers and EM suppliers, we also set high

**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:

American’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

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Case Study: Dow is Proud to Partner with Kiran Group

Dow is a proud partner with Kiran Group, a terminal operator that has demonstrated leadership of transportation stewardship. Kiran Group is a liquid storage tank terminal based on the western coast of India at Kandla Port. Their terminal demonstrated leadership of transportation stewardship by being the first terminal in India to be successfully assessed under Chemical Distribution Institute-Terminal (CDI-T). This terminal is also completely powered by renewable sources of energy! Dow is fortunate to partner with LSPs such as Kiran Group, who drive cultures and behaviors focused on safety and sustainability.

**External Manufacturing**

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**Logistic Service Providers**

Leveraging our approach to our 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 provisions in our contract agreements also specify that the manufacturer comply with Dow’s Responsible Care® and Anti-Corruption Due Diligence (ACDD). We also operate a detailed Distribution Risk Review process to ensure risk is properly mitigated. We are committed to driving sustainable behavior throughout our entire value chain. For Dow’s clear expectations for our suppliers including all external manufacturers (LSPs) to adhere to our environmental and socially responsible operations, our collaborative partnerships with our upstream and downstream stakeholders, we are able to implement sustainable business practices across our entire value chain.

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Six R&D 100 Awards from R&D Magazine

Four 2018 Edison Awards for breakthrough technologies

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Four 2018 Edison Awards for breakthrough technologies
The Board has responsibility for overseeing the strategic planning process and annual review of the corporate action plan. The Board delegates the day-to-day management of the Company to the Chief Executive Officer and other senior executives of the Company, and provides guidance to and oversight of management.

Remuneration Policies GRI 102-35

Remuneration Policies for the Highest Governance Body and Senior Executives

Objectives of Dow’s Executive Compensation Program

The objectives of Dow’s compensation program are to align executives’ compensation with Dow’s short-term and long-term financial and operational performance and to provide the compensation framework to attract, retain and motivate key executives who are critical to achieving Dow’s vision, strategy and longer-term success. The primary objectives of Dow’s executive compensation program are as follows:

- 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 2018. Rather, the executive officers of DowDuPont continued to be employees of, and participants in, the compensation and benefit programs of Dow and DuPont, respectively. While the programs remained separate the financial outcomes under the programs’ annual and long-term incentives. The incentive programs include a balanced set of metrics that include operating return on capital, relative total shareholder return, operating net income, management operating cash flow and an individual performance multiplier ranging from 0-125% of the annual incentives award. Environment, Health & Safety metrics are thoroughly embedded in the leadership expectations of Dow executives, and executives are held accountable for environmental, health and safety outcomes through the individual performance process, which therefore significantly impacts the annual cash incentive.

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.
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 increase 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 on sustainability goals. All compensation decisions are reviewed by second-level leaders and ultimately functional leadership for equity and consistency.

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 102-38

As required by Section 953(b) 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’s CEO (other than our CEO) and the annual total compensation of DowDuPont’s CEO (other than our CEO).

• The annual total compensation for the median employee was $75,018, and
• The annual total compensation of the CEO, as reported in the Summary Compensation Table was $18,675,301.

Based upon the calculation of compensation for both the CEO and the median employee, DowDuPont estimated the ratio of CEO pay to median employee pay for 2018 was 249:1.

The pay ratio presented above is a reasonable estimate. Because SEC rules for identifying the median employee and calculating the pay ratio allow companies to use different methodologies, exemptions, estimates and assumptions, the pay ratio may not be comparable to the pay ratio reported by other companies.

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. 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 DowDuPont expected to be paid at or below the 90th percentile of annual base salary. DowDuPont selected an employee from that group as the median employee for purposes of preparing the ratio of CEO pay to median employee pay.

Percentage Increase In Annual Total Compensation Ratio GRI 102-39

The pay ratio presented above is a reasonable estimate. Because SEC rules for identifying the median employee and calculating the pay ratio allow companies to use different methodologies, exemptions, estimates and assumptions, the pay ratio may not be comparable to the pay ratio reported by other companies.

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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 parent company 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 made 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 $420 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
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<th>Program Title</th>
<th>Support ($MM) *</th>
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**Conflicts of Interest**

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</tbody>
</table>

All Dow directors, officers and employees are expected to be familiar with the Dow Code of Conduct, and to apply it in the daily performance of their responsibilities. The Dow Code of Conduct is intended to focus employees, officers and directors on our Values of Integrity and Respect for People, help them recognize and make informed decisions on ethical issues, assist in creating a culture of the highest ethical and business standards, and provide mechanisms to report unethical behavior.

The Dow Corporate Governance Committee has responsibility for reviewing issues involving director independence and related personal transactions using information obtained from directors’ responses to a questionnaire asking about their relationships with Dow, and those of their immediate family members.
and primary business or charitable affiliations, and other potential conflicts of interest, are reviewed annually. The committees of the Board and the Board as a whole participate in the oversight of the process. Specifically, the Board has responsibility for overseeing the strategic planning process and reviewing monitoring and management’s execution of the corporate and business strategy, and has each Standing Committee’s assessment of specific risk areas relevant to their respective charters. This process includes an assessment of potential risk factors and the ongoing review of Dow’s comprehensive cybersecurity program.

**Effectiveness of Risk Management Processes GRI 102-30**

The oversight responsibility of the Board and Committees is enabled by an enterprise risk management model and process implemented by management. Dow’s enterprise risk management process is consistent with public company governance standards and includes risk management as a strategic activity within Dow, and responsibility for managing certain risks as described above, the full Board is regularly informed by the Standing Committees about these risks. This enables the Board and the Committees to identify, evaluate and manage EH&S risks, including risks associated with the company’s major exposures. The strategic plan and critical issues and opportunities are presented annually to the Board by the CEO and senior management. Members of executive management, including the Chief Financial Officer, Chief Technology Officer, Chief Sustainability Officer, and other senior executives present financial, energy, safety, health and environment results and issues with the Standing Committees and the Board, and attend such meetings to provide periodic briefings and access. In addition, the Audit Committee regularly meets in executive sessions and holds separate 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 total number of Board meetings and the total number of meetings of the Committees on which the Directors served during the past year, except one. The Directors are encouraged to attend all annual meetings of Stockholders; 14 Directors attended the annual meeting of Stockholders. In 2018, 14 Directors then serving on the DowDuPont Board annually, and the Board recognizes that management and oversight comprise a dynamic and continuous process.

The Dow Sustainability Team has established a set of criteria for elevating selected activities and 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 based on experience with their use.

**How Stakeholders’ Views Are Sought and Taken into Account Regarding Remuneration GRI 102-37**

Throughout the year, the independent directors and members of the management teams at Dow conduct extensive outreach to stakeholders, 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 Board and management teams continued to engage with the feedback from these meetings, as well as stakeholder support, when reviewing the business, corporate governance and executive compensation profiles.

**External Initiatives GRI 102-12**

**Responsible Care® Management System**

**Capricorn Initiatives**

**Technology Committee**

**Committee**

**Audit Committee**

**Compensation and Leadership Development Committee**

**Corporate Governance Committee**

**Director Independence, conflicts of interest and other ethics and compliance**

**Director Diligence**

**Emerging regulatory developments related to**

**Safety, Health & Environment Technology Committee**

**Nature and Total Number of Critical Concerns GRI 102-34**

The Business Risk Review (BRR) Process exists to help Dow employees identify, evaluate and manage EH&S risks, including risks associated with possible failure of a product to perform as intended (i.e., product efficacy). Fundamental to the entire BRR Work Process is the recognition by someone in the organization, usually a supervisor, that there is a situation that potentially poses a risk to Dow and that is complicated by the fact that the Dow Sustainability Team has established a set of criteria for elevating selected activities and 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 based on experience with their use.
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 the 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 Certification and Verification Services, London
www.ermcvs.com; email: post@ermcvs.com

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.
GRI CONTENT INDEX

We prepared this report in accordance with the Global Reporting Initiative (GRI) Standards Comprehensive option. This Index of Content serves as a navigation tool for the GRI standards. GRI 102-55

GRI Standard/Disclosure | Page Number|Location | Description
--- | --- | ---
102-20 | Executive-level responsibility for economic, environmental and social topics | Mary Drewes, corporate vice president and chief sustainability officer, is responsible for Environment, Health & Safety and leading the Company’s commitment to Sustainability. Drewes reports directly to Jim Fitterling, chief executive officer.

102-21 | Consulting stakeholders on economic, environmental and social topics | Effective April 1, 2019, refer to Dow Inc. Corporate Governance Guidelines, which can be found at https://investors.dow.com/docs/ corporate-governance/board-committees/default.aspx.

102-22 | Composition of the highest governance body and its committees | The composition of the Board and its Committees effective April 1, 2019, following the separation of Dow from DowDuPont can be found at: https://investors.dow.com/docs/corporate-governance/board-committees/default.aspx and https://investors.dow.com/docs/corporate-governance/board-of-directors/default.aspx. The composition of the Board and its committees through calendar year 2018 prior to the separation are described in disclosure 102-22 on page 113 of the Dow 2017 Sustainability Report.

102-23 | Chair of the highest governance body | From January 1 – 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.

102-24 | Nominating and selecting the highest governance body | Effective April 1, 2019, refer to Dow Inc. Corporate Governance Guidelines, which can be found at: https://investors.dow.com/docs/corporate-governance/board-committees/default.aspx.


102-28 | Identifying and managing economic, environmental and social impacts | 37

102-29 | Effectiveness of risk-management processes | 37, 107, 110
5. Stakeholder Engagement

102-40 List of stakeholder groups 50
102-41 Collective bargaining agreements 50
102-42 Identifying and selecting stakeholders 50
102-43 Approach to stakeholder engagement 50
102-44 Key topics and concerns raised 50

6. Reporting Practice

102-45 Entities included in the consolidated financial statements 34
102-46 Defining report content and topic boundaries 34
102-47 List of material topics 36
102-48 Retaliation of information 111
102-49 Changes in reporting 111
102-50 Reporting period 4
102-51 Date of most recent report 4
102-52 Reporting cycle 4
102-53 Contact point for questions regarding the report 4
102-54 Claims of reporting in accordance with the GRI Standards 4

GRI Standard/Disclosure | Page Number/Location | Omission
--- | --- | ---
102-31 Review of economic, environmental and social topics | 110 |  
102-32 Highest governance body’s role in sustainability reporting | 4 |  
102-33 Communicating critical concerns | 116 |  
102-34 Nature and total number of critical concerns | 110 |  
102-35 Remuneration policies | 106 |  
102-36 Process for determining remuneration | 106 |  
102-37 Stakeholders’ involvement in remuneration | 111 |  
102-38 Annual total compensation ratio | 106 | Confidentiality constraints. In the interest of confidentiality and competitiveness, Dow does not report ratios based on individual compensation or make pay decisions based on these ratios.
102-39 Percentage increase in annual total compensation ratio | 107 | Confidentiality constraints. In the interest of confidentiality and competitiveness, Dow does not report ratios based on individual compensation or make pay decisions based on these ratios.
102-40 List of stakeholders groups | 50 |  
102-41 Collective bargains agreements | 62 |  
102-42 Identifying and selecting stakeholders | 50 |  
102-43 Approach to stakeholder engagement | 50 |  
102-44 Key topics and concerns raised | 50 |  
102-45 Entities included in the consolidated financial statements | 34 |  
102-46 Defining report content and topic boundaries | 34 |  
102-47 List of material topics | 36 |  
102-48 Retaliation of information | 111 |  
102-49 Changes in reporting | 111 |  
102-50 Reporting period | 4 |  
102-51 Date of most recent report | 4 |  
102-52 Reporting cycle | 4 |  
102-53 Contact point for questions regarding the report | 4 |  
102-54 Claims of reporting in accordance with the GRI Standards | 4 |  
5. Stakeholder Engagement

102-40 List of stakeholder groups 50
102-41 Collective bargaining agreements 62
102-42 Identifying and selecting stakeholders 50
102-43 Approach to stakeholder engagement 50
102-44 Key topics and concerns raised 50

6. Reporting Practice

102-45 Entities included in the consolidated financial statements Subsidiaries of the Company for which the effective ownership by Dow is the Materials Science Division of DowDuPont in 2018, is 50 percent or more are listed in the Dow 2018 10-K (Item 1, page 9). Subsidiaries of Dow, effective April 1, 2019, are listed as Exhibit 21 of the Dow Form 10.
102-46 Defining report content and topic boundaries 34
102-47 List of material topics 36
102-48 Retaliation of information 111
102-49 Changes in reporting 111
102-50 Reporting period 4
102-51 Date of most recent report 4
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102-53 Contact point for questions regarding the report 4
102-54 Claims of reporting in accordance with the GRI Standards 4

Economic Performance

Management Approach 12
301-1 Materials used by weight or volume 82
301-2 Recycled input materials used 82
301-3 Reclaimed products and their packaging materials 82

More

Management Approach 86
302-1 Energy consumption within the organization 87
302-2 Energy consumption outside of the organization 87
302-3 Energy intensity 87
302-4 Reduction of energy consumption 7
302-5 Reductions in energy requirements of products and services Not applicable. Virtually all Dow products do not require energy in use.

Water and Effluents

Management Approach 91
303-1 Water withdrawal 92
303-2 Management of water discharge-related impacts 93
303-3 Water withdrawal 92
GRI Standard/Disclosure | Page Number(s)/Location | Omission
--- | --- | ---
303-4 | Water discharge | 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 in this disclosure next year.
303-5 | Water consumption | 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 in this disclosure next year.

Emissions
Management Approach | 87
305-1 | Direct (Scope 1) GHG emissions | 88
305-2 | Energy indirect (Scope 2) GHG emissions | 88
305-3 | Other indirect (Scope 3) GHG emissions | 89
305-4 | GHG emissions intensity | 89
305-5 | Reduction of GHG emissions | 89
305-6 | Emissions of ozone-depleting substances (ODS) | 90
305-7 | Nitrogen oxides (NOx), sulfur oxides (SOx) and other significant air emissions | 90

Effluents and Waste
Management Approach | See above, water, and environmental
306-1 | Water discharge by quality and destination | 93
306-2 | Waste by type and disposal method | 93
306-3 | Significant spills | 93
306-4 | Transport of hazardous waste | Information unavailable. We will be reviewing ways to address the disclosure on a yearly basis as we define the need to capture this information. See page 98 for discussion of our Transportation Safety Index.
306-5 | Water bodies affected by water discharges and/or runoff | 92

Environmental Compliance
Management Approach | Report by reference to this 2018 Dow 10-K, pages 14-15, Item 3, Environmental Matters, Effective April 1, 2019
307-1 | Non-compliance with environmental laws and regulations | Report by reference to this 2018 Dow 10-K, pages 14-15, Item 3, Environmental Matters, Effective April 1, 2019

Employment
Management Approach | 91
301-1 | New employee hires and employee turnover  | 91, 92
301-2 | Benefits provided to full-time employees that are not provided to temporary or part-time employees | 91

GRI Standard/Disclosure | Page Number(s)/Location | Omission
--- | --- | ---
307-1 | Parental leave | 61

18 | Occupational health and safety
Management Approach | 74
308-1 | Occupational health and safety management system | 74
308-2 | Hazard identification, risk assessment and incident investigations | 75
308-3 | Occupational health services | 76
308-4 | Worker participation, consultation and communication on occupational health and safety | 77
308-5 | Worker training on occupational health and safety | 78
308-6 | Promotion of worker health | 79
308-7 | Prevention and mitigation of occupational health and safety impacts directly linked by business relationships | Reference to description of Safe Materials Goal, page 27, for prevention of occupational health and safety impacts of our products. Refer to page 97 for discussion of transportation stewardship for prevention of safety impact of our transportation operations.
308-8 | Workers covered by an occupational health and safety management system | 80
308-9 | Work-related injuries | 80
308-10 | Work-related illness | 80

Training and Education
Management Approach | 82
309-1 | Average hours of training per year per employee | 82
309-2 | Programs for upgrading employee skills and transition assistance programs | 82
309-3 | Percentage of employees receiving regular performance and career development reviews | 83, 84

Diversity and Equal Opportunity
Management Approach | 69
315-1 | Census of governance bodies and employees | (61, 50)
315-2 | Ratio of basic salary and remuneration of women to men | 65
315-3 | Local Communities | 66

Local Communities
Management Approach | 69
315-1 | Operations with local community engagement, impact assessments and development programs | 51
315-2 | Operations with significant actual and potential negative impacts on local communities | 51