



**2017**  
SUSTAINABILITY  
REPORT

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## Redefining the Role of Business in Society

We're living today in a rapidly changing world. Globalization and technology are accelerating the pace of change, and a growing population is putting more pressure on our planet's resources. Through science and collaboration, Dow's people are working across the Company to redefine the role of business by innovating solutions that advance business and society and by valuing nature in all of our decisions. With our 2025 Sustainability Goals, Dow is focused on developing collaborative blueprints that integrate public policy solutions, science and technology, and value chain innovation. The aim is to build solutions between government, business and society that generate shared value and are long lasting, scalable and transformative. These 10-year goals are designed to harness Dow's innovation strengths, global reach and the passion of our employees.



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**ABOUT THE DOWDUPONT MERGER TRANSACTION AND INTENDED BUSINESS SEPARATIONS GRI 102-10**

Effective August 31, 2017, The Dow Chemical Company (“Dow”) and E. I. du Pont de Nemours and Company (“DuPont”) completed the previously announced merger of equals transaction contemplated by the Agreement and Plan of Merger dated as of December 11, 2015, as amended March 31, 2017 (the “merger transaction”). The merger transaction resulted in each of Dow and DuPont surviving as subsidiaries of DowDuPont Inc. (“DowDuPont”). For purposes of this report, references to “the Company” refer to Dow.

DowDuPont is now pursuing the intended separation of the Agriculture, Materials Science and Specialty Products divisions into three independent, publicly traded companies (the “Intended Business Separations”).

DowDuPont announced dates for the Intended Business Separations: Materials Science is expected to separate from DowDuPont by the end of the first quarter of 2019, and Agriculture and Specialty Products are each expected to separate from one another by June 1, 2019.

DowDuPont also announced brand names for the Intended Business Separations reflecting its ongoing progress toward the separations.

- The Agriculture division will become Corteva Agriscience™, reflecting its purpose of enriching the lives of those who produce and those who consume.
- The Materials Science division will be called Dow and will retain the DOW® Diamond as its brand, building on the Company’s globally recognized 121-year history of innovation and value creation.
- The Specialty Products division will be the new DuPont, carrying forward a 215-year legacy of science-based innovation to transform industries and everyday life.

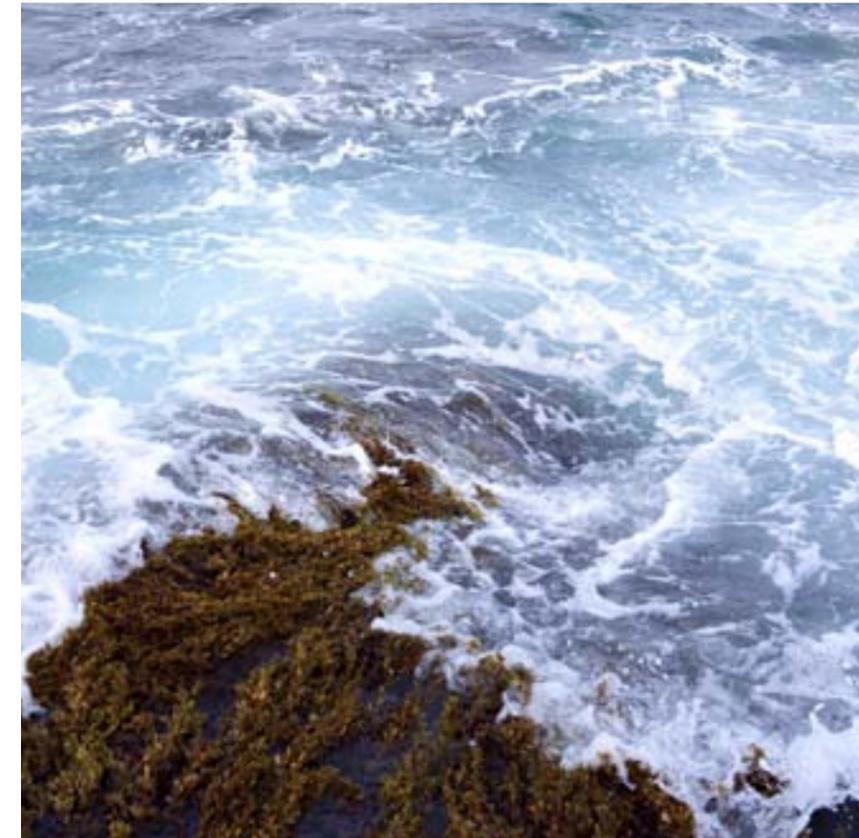
Effective with the Merger, Dow’s business activities, including the assessment of current aspects of sustainability policies and performance, ultimately are reviewed and managed by DowDuPont. As a result of this governance structure, certain information in this report is presented for DowDuPont.



Dow (“the Company”) has been committed to transparently reporting our progress on sustainability for many years. This report reflects the Company’s performance for the calendar year ended December 31, 2017. **GRI 102-50** Except where noted, the scope of this report includes The Dow Chemical Company before the merger transaction and Dow as a subsidiary of DowDuPont after the merger. The Company is proud to present this summary of the achievements of Dow employees around the world that advance our corporate sustainability strategy and goals.

This document also serves as Dow’s UN Global Compact Communication on Progress for 2017.

For the 15th year, Dow has applied the framework provided by the Global Reporting Initiative (GRI) to its annual sustainability report. **GRI 102-52** This report has been prepared in accordance with the 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. Neil C. Hawkins, chief sustainability officer and corporate vice president, Environment, Health & Safety, provides formal internal review of the report. **GRI 102-32** We also have used an independent assurance process to verify compliance with the GRI standards. See page 124 of this report for the Independent Assurance Statement.



Additional reporting that may be of interest to the reader can be found at [www.dow.com](http://www.dow.com) or [www.dow-dupont.com](http://www.dow-dupont.com):

- Downloadable version of this report, including additional interactive information
- 2017 DowDuPont Annual Report
- 2017 DowDuPont Form 10-K
- 2018 Proxy Statement
- 2017 Dow Form 10-K
- *The Diamond Standard*, Dow’s Code of Business Conduct (“Dow’s Code” and “Code”)
- Dow’s most recent previous report, covering the year ending December 31, 2016, and archive of earlier annual sustainability reports **GRI 102-514**

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](mailto:j.l.princing@dow.com)  
 989-496-7154 **GRI 102-53**

## COLLABORATING FOR IMPACT

At Dow, we see the role of business as a catalyst for change – as a driver of innovations that protect life and the environment, while creating sustainable economic growth. With our ambitious 2025 Sustainability Goals, we have committed to help redefine the role of business in society. A common thread across our goals is our focus on finding collaborative business models that will lead to transformative and more sustainable ways to do business. Not just for Dow, but for other companies, communities and society too.

Just as important, we see our sustainability efforts as an important way to strengthen our long-term competitiveness. As a global material science company, we have the talent and tools to help impact climate change, energy, food waste, sustainable infrastructure and consumer living. Our 2025 Sustainability Goals address each of the 17 UN Sustainability Development Goals and are influencing every aspect of our strategy – from helping guide future innovation efforts for our customers to inspiring employee empowerment and leadership opportunities. While we don't have all the answers, I'm proud of the progress we already have made in many areas:

- **Rethinking a Linear Economy:** We are collaborating with groups such as Ocean Conservancy, Ellen MacArthur Foundation and stakeholders across the packaging value chain to identify paths to new business models that enable a more circular economy. Last year, we launched the first quantitative studies to reduce plastic waste in Japan and helped the Indonesian government to turn plastic waste into sustainable roads – paving the way to a more sustainable future.
- **Promoting Inclusion and Diversity:** Dow has long believed in the business case for diversity. With the appointment of our first-ever chief inclusion officer last year, we are driving forward a number of initiatives to create a more inclusive and diverse workforce.
- **Investing in Workplace Safety:** The safety of our people and the communities in which we operate is at the heart of everything we do. As part of our 2025 LIFE multigenerational technology plan, we are innovating new technologies to remove workers from high-hazard activities. Examples include the use of robots in confined space projects and drones to eliminate certain elevated work.
- **Pioneering Practical Ways to Value Nature:** We continue to work with The Nature Conservancy to find ways to incorporate nature into decision-making and to develop tools that can be used by other businesses as well. Just last year, we generated \$120 million in cost savings or new cash flow through projects that were good for business and better for ecosystems.

At Dow, our business is not just about the products we create, but the problems we solve. At the heart of our purpose-led business approach are the women and men of Dow. It is their passion, innovation and commitment that fuel our progress. Together, we continue to help lead the transition to a more sustainable society through our commitment toward collaboration and science-based solutions.



Sincerely,

**Jim Fitterling**  
Chief Executive Officer-Elect, Dow  
Chief Operating Officer,  
DowDuPont Materials Science Division  
**GRI 102-14**

### Driving a Culture of Collaboration

As a global materials science company, we recognize the role that science and business can play in building a better world for 2030 and beyond. That is why our 2025 Sustainability Goals are focused on creating shared value – value for business and society. Our aim is to use the powerful combination of our innovation capabilities, global reach and know-how in science to create market-based solutions that help shape the transition to a more sustainable planet. Just two years into our 2025 Goals, we have taken a number of actions to translate our ambitious set of targets into practical business practices.

While I am excited about our progress, I am even more excited about how these goals are helping us rethink business models and product designs across Dow. Take, for example, our approach to circular economy solutions. Adopting a mindset that moves away from a “take-make-dispose” economic model to one that is regenerative has led us to innovate and collaborate in new ways and across multiple value chains. We are exploring how to give new life to old mattresses by recycling polyols. We are working with municipalities in water-stressed regions to reuse water for our operations. We are piloting programs that convert plastics that once went to landfills into valuable energy resources. And we are just getting started.

In 2017, we affirmed that our 2025 Sustainability Goals would continue to be the goals of the future Dow, currently the Materials Science Division of DowDuPont, upon intended separation of the Company. In reviewing and assessing our metrics and targets, it became clear that the societal challenges and business opportunities that inspired our goals are even greater today than when we launched them in 2015. As we look ahead, we believe that by accelerating our actions to help make the world more sustainable, we also will accelerate our path to become an even more innovative, resilient and growing company – now and in the decades to come.

We invite you to learn more about our progress and welcome your feedback.



Sincerely,

**Neil C. Hawkins**  
Chief Sustainability Officer and Corporate Vice President for Environment, Health & Safety  
The Dow Chemical Company

### 2017 Company Highlights

#### DELIVERING ON OUR COMMITMENTS

**15% INCREASE**

**in Dow Net Sales**  
to **\$55.5B** in 2017  
from **\$48.2B** in 2016

**TWENTY ONE**

**Consecutive quarters**  
Of top- and bottom-line growth for Dow as of the end of 2017

**\$1.89** <sup>per share</sup>

**Highest annual dividend in Dow history**

**↑ 5%**  
**in Material Science Division**  
net sales to **\$5.165MM** in 2017  
from **\$4.919MM** in 2016

**↑ 15%** **in DowDupont's**  
pro forma EBITDA<sup>1</sup>  
to **\$16.2B**

**\$800M**

DowDuPont annual run-rate savings by end of 2017, exceeding the target of **\$500MM**

#### INVESTING IN GROWTH

##### SADARA

**Commemorated the commissioning of all 26 PLANTS**  
of Sadara, the world's largest integrated chemicals complex built in a single phase

##### U.S. GULF COAST

**Startup of world-scale ethylene facility** and ELITE™ enhanced polyethylene resins production facility in Freeport, Texas

##### U.S. Gulf Coast, Europe and Michigan

**ANNOUNCED \$4B**

**in additional investments** over five years to enhance competitive advantage and long-term growth  
- Extends Dow's U.S. Gulf Coast growth investments to **\$12 billion** over a 10-year period

#### RECOGNITION AS A TOP EMPLOYER

- **2017 Top Employer in 14 countries** Named by Top Employers Institute
- Earned **top rating of 100** for 2017 Disability Equality Index
- **Best Place to Work** for LGBT Equality by Human Rights Campaign
- **JUST 100: America's Best Corporate Citizens** by Forbes Magazine
- **Top 50 Employer** by Women Engineer Magazine
- **Top 50 Employer** by Minority Engineer Magazine
- **Workforce 100 List of Top Companies for HR** by Workforce Magazine

(1) Operating earnings per share is defined as earnings per share excluding the impact of "Certain Items."

#### MAXIMIZING GROWTH FROM SCIENCE-DRIVEN INNOVATION

**789**

**U.S patents granted**  
9th consecutive annual increase and an all-time record high for Dow

**20%** **of Dow's revenue** represents patent-advantaged sales

**MORE THAN 2,500**

**New products in target markets**

**Announced construction of a new \$100M INNOVATION CENTER**   
in Midland, Michigan

**10** **R&D 100 AWARDS**  
from R&D Magazine; **6th** straight year Dow products recognized

#### CONTRIBUTING SUSTAINABLE SOLUTIONS

**11th**

**U.S. EPA Presidential Green Chemistry Challenge Award**  
For development of ROPAQUE™ NT-2900 Opaque Polymer for BLUE 4EST™ Thermal Paper

**2017 U.S. EPA Safer Choice Partner of the Year Award**

For the development of safer product innovations, ECOSURF™ EH Surfactants and BLUEEDGE™ Polymeric Flame Retardant (FR) Technology

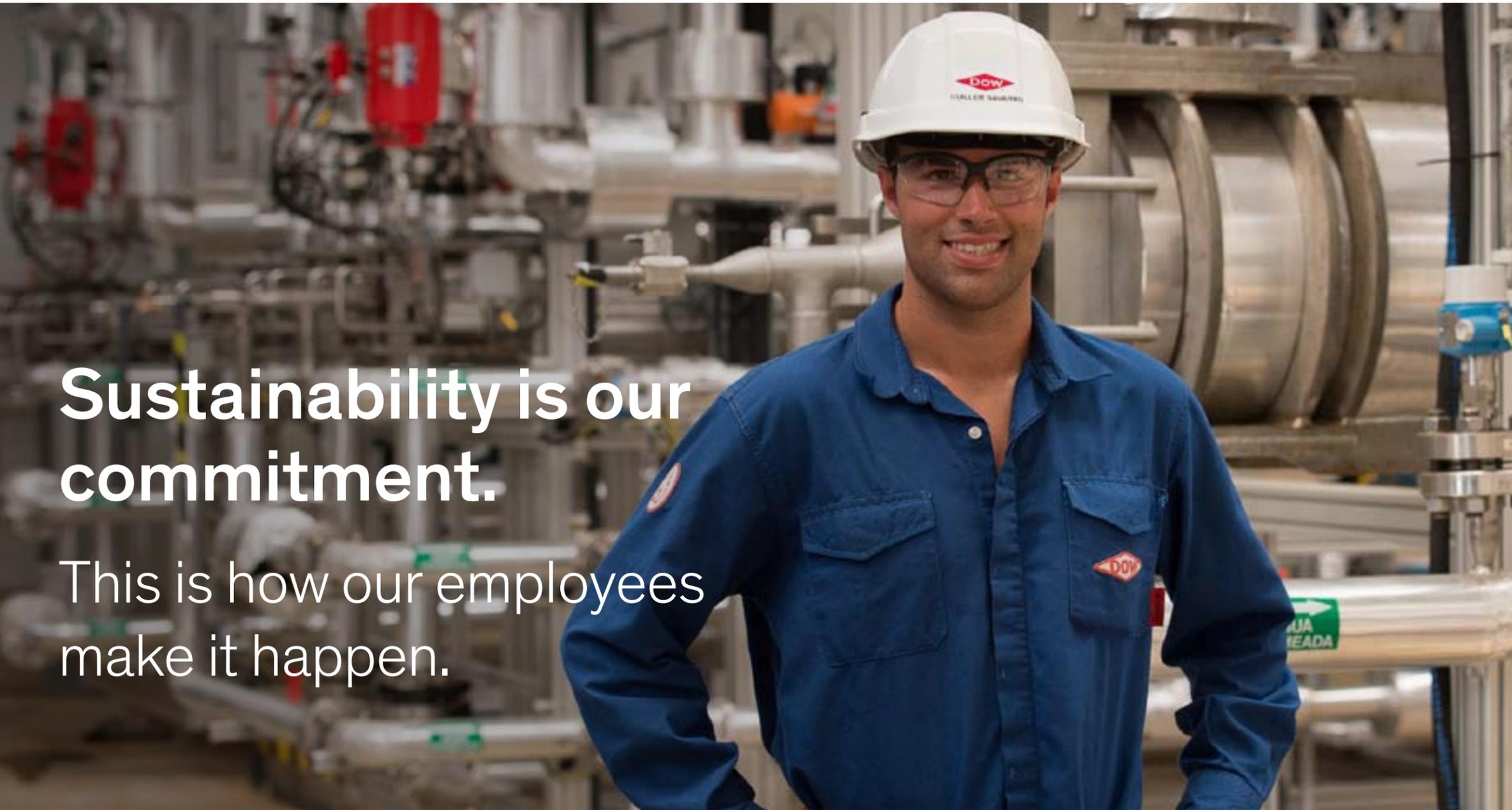
**3000+**

**Dow Science, Technology, Engineering & Math (STEM) ambassadors**  
volunteered **25,000** hours, engaging **23,000+** students in classrooms

Developing a market for **RECYCLED POLYOLS** made from old mattresses

**\$120 MM**

**Value added to Dow in 2017**  
Through the “Valuing Nature” 2025 Sustainability Goal



# Sustainability is our commitment.

This is how our employees make it happen.

## 2025 Sustainability Goals Progress

In 2015, Dow announced a strategic set of commitments 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 decade-long commitments. Dow's 2005 Environment, Health & Safety Goals resulted in \$5 billion in safety, waste, water and energy savings from a \$1 billion investment. Dow's 2015 Sustainability Goals provided more sustainable products and solutions addressing global challenges in food, energy, sustainable water supplies 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.

In November 2017, Dow affirmed that its 2025 Sustainability Goals would continue to be the goals of the future Dow (see page 4 for discussion of the DowDuPont merger and plans for future Dow). Goal implementation leaders reviewed and assessed metrics and targets associated with each goal, taking into account changes in global conditions over the past three years, as well as the scope and scale of the future Dow. Refreshed metrics and targets were rolled out to accelerate sustainability and the accomplishment of our 2025 Sustainability 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-elect of Dow and chief operating officer of DowDuPont Materials Science Division*





## 2025 Sustainability Goals



### Leading the Blueprint

Dow leads in developing societal blueprints that integrate public policy solutions, science and technology, and value chain innovation to facilitate the transition to a sustainable planet and society.



### Delivering Breakthrough Innovations

Dow delivers breakthrough sustainable chemistry innovations that advance the well-being of humanity.



### Advancing a Circular Economy

Dow advances a circular economy by delivering solutions to close the resource loops in key markets.



### Valuing Nature

Dow applies a business decision process that values nature, which will deliver business value and natural capital value through projects that are good for business and better for ecosystems.



### Safe Materials for a Sustainable Planet

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



### Engaging for Impact: Communities, Employees, Customers

Dow people worldwide directly apply their passion and expertise to advance the well-being of people and the planet.



### World-Leading Operations Performance

Dow maintains world-leading operations performance in natural resource efficiency, environment, health and safety.



## 2025 Sustainability Goal Team Updates



### Leading the Blueprint

The health of people, planet and business are intrinsically linked. 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 goals and businesses, forge new collaborations for greater impact.

In 2017, the goal team finalized a framework for blueprints, including defining criteria to determine topics for blueprint development. Based on these criteria, a pipeline of blueprint topics was defined, and working groups were assigned. The Watershed Management blueprint was developed in 2017 and launched at the World Water Forum in March 2018.



### Delivering Breakthrough Innovation

Dow's Delivering Breakthrough Innovation Goal is 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 world challenges. In addition, the design, manufacture and use of efficient, effective, safe and more environmentally benign products and processes will move us toward a more sustainable future. Dow products and processes again were acknowledged in 2017 by awards recognizing sustainability, including the U.S. Presidential Green Chemistry Award; six of our 10 R&D 100 awards for sustainability-related products; and an EPA Safer Choice Partner of the Year award. The goal uses five targets to track progress.

Business-specific goals are key to delivering breakthrough innovations. One-hundred percent of the business units within Dow have sustainability goals. Each business unit has goals that are unique to them, reflecting their opportunities and challenges that go beyond the specific targets of the corporate 2025 Sustainability Goals. These goals will help drive progress on our Delivering Breakthrough Innovation and all the 2025 Sustainability Goals. We continued to use the Sustainable Chemistry Goal Index to evaluate, track and improve business performance, and have published details on the method in the journal *ACS Sustainable Chemistry & Engineering* journal. In addition, the greenhouse gas benefits from use of products continues to exceed the burdens of the Company by a factor of 3 (see page 98 for details).



“The Blueprint for Sustainable Watershed Management is about sharing the story of Dow’s journey toward more sustainable water management, which centers on the power of collaboration. In those collaborations, stakeholders can play multiple roles, from framing the initial collaboration, to being a key supporter for project execution – from a technical, financial or policy standpoint.”

**Matt Davis, President, Dow North America, and Senior Vice President, Global Public Affairs & Government Affairs**

## 2017 PROGRESS AGAINST 2025 SUSTAINABILITY GOALS



## Advancing a Circular Economy

Through innovation and collaboration, Dow will help facilitate the world's transition to a circular economy, where waste and pollution are designed out of new products and services. Our goal is to advance a circular economy by delivering solutions to close the resource loops in key markets.

We will advance the circular economy through two different types of business models:

**Enabling Circularity** – Innovating products that enable higher durability of goods, making products suitable for sharing, and increasing energy efficiency.

**Circulating Molecules** – Maximizing the utility of existing molecules through recycle/reuse.

Achievements in 2017 included collaboration on a pilot project in Europe to develop a market for recycled polyols from end-of-life mattresses. Dow Packaging and Specialty Plastics also delivered the first certified renewable low-density polyethylene to customers.



## Valuing Nature

The Valuing Nature Goal team exceeded its 2017 target by generating \$120 million in cost savings or new cash flow from projects that are good for business and better for ecosystems. With \$40 million in value generated in 2016, Dow has achieved a total of \$160 million toward its goal of creating \$1 billion by 2025 for the Company by valuing nature in business decisions.

The Valuing Nature team also conducted **first-ever business workshops** within Dow to inspire and educate employees to incorporate nature into decision-making. The workshops are used to identify current and future opportunities for Valuing Nature projects.

In Aratu, Brazil, the project team found an erosion protection solution that incorporated the value of nature and helped stabilize a slope with a natural engineered technology that incorporated native plants. In 2009, an area of Matarandiba Island was excavated, leaving 24 meter-high slopes that were eroding and causing safety hazards. In lieu of conventional solutions, such as removing the slopes or stabilizing them with concrete and tie-back anchors, the team installed green gabion walls, which include steel mesh and natural fiber filled with rocks and embedded with native vegetation. In doing so, the team saved money and reduced the amount of energy and materials required for the project. The result was less forest being removed, a lower carbon footprint for project implementation, and a green, living slope in place of a concrete wall.



## 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. In 2017, Dow refreshed what was previously known as the Increasing Confidence in Chemical Technology Goal to Safe Materials for a Sustainable Planet. Significant progress was made in 2017 against the refreshed Safe Materials Goal, including these accomplishments:

- We initiated our Product Stewardship Academy, with outreach in Kenya, Nigeria and Ghana, to promote product safety. The Dow Product Stewardship Academy is about recognizing the needs of emerging countries and growing sales responsibly. The program builds on Dow's long-standing Product Stewardship program by providing hands-on training as well as support and mentoring to distributors and customers to ensure that Dow products are handled and used in a safe and sustainable manner. By the end of 2017, our

academy in Africa completed EH&S assessment for all customers in Ghana, Kenya and Nigeria, as well as conducted initial trainings, assessed Dow sales in these regions for hazardous materials that will prioritize training needs, and engaged country authorities as partners. The goal is to expand the program to other regions through 2025 and beyond to enable responsible and sustainable business growth that also ensures the safety of humans and the environment.

- Received a LAUNCH Chemistry Award for development of predictive safety assessment tools. A team from the Dow Cheminformatics Group was selected as one of five LAUNCH: Smarter Chemistry Innovation Challenge Innovators. Together with the American Chemical Society Green Chemistry Institute, Estée Lauder, NIKE, Inc. and additional partner organizations, LAUNCH put forward a call-to-action for innovators and companies to submit projects to make chemistry smarter by generating data, making data more accessible, analyzing the data or applying data in ways that move chemistry toward predictive design-based discovery. Dow met this challenge with an award-winning submission that highlighted our efforts to compile large inventories of acute toxicity data for use in predictive safety assessments and sustainable chemistry development. This critical information can be used to help inform safer, more sustainable chemistry selection during product development and provide practical safe handling and use information. Dr. Dan Wilson, a science leader in Dow's Computational Toxicology group, was invited to participate in the LAUNCH Circular Innovation Summit hosted by Nike, where Dow and innovators and leaders from other sectors were recognized.



It's great to see this Dow team recognized for their innovation in the area of predictive toxicology. They are making significant progress on the development of practical frameworks that leverage computational tools to inform chemical safety assessment. Such approaches are critical to the advancement of the science of toxicology and are a core element of Dow's 2025 Sustainability Goals.

Darrell Boverhof, director of Dow's Toxicology & Environmental Research and Consulting (TERC) Group





### Engaging for Impact

Dow people around the world directly apply their passion and expertise to advance the well-being of people and the planet. The power of Dow employees using their professional skills will enable sustainable development one community at a time, all over the world. In 2017:

- More than **3,000 STEM Ambassadors** supported more than 2,500 teachers and 700 projects – enhancing STEM opportunities for more than 380,000 students.
- The Dow Business Impact Fund provided nearly \$1 million in support of **six global projects**.
  - Funds supported the Hefty® EnergyBag™ Program in the United States, a clean water initiative in Ethiopia, flexible package recycling in Ghana, clean water for schools in India, a marine debris project in Indonesia, and recycled plastic bricks for low-cost, resilient housing in Colombia.
- Dow invested **\$39.74 million** in corporate and foundation contributions, driving employee, customer and community engagement.
  - 2,300 community volunteer projects
  - 15,000 volunteers reporting more than 150,000 hours of service
- Dow continued to evolve our skill-based volunteer programs through our fifth annual **Leadership in Action** and **Global Health Corporate Champion** programs. Nearly 50 employees were deployed to work on 10 projects with non-governmental organizations (NGOs) and universities in Vietnam and Ghana. Projects addressed issues related to water quality and access, environmental cleanup, education and career readiness.
- The **DowCorps Volunteer Portal**, an online tool employees used to find and track volunteer opportunities, launched.
- We announced a new dynamic partnership at the intersection of sustainability, innovation and citizenship with the WE organization, launching *We Are Innovators*. This new campaign is designed to challenge educators and students to apply chemistry and science to solve global challenges.



### World-Leading Operations Performance

Dow's 2025 World-Leading Operations Performance Goal states: "We will maintain world-leading operations performance in natural resource efficiency, environment, health and safety." In 2017, Dow developed four key indicators of World-Leading Operations: Unplanned Event Reduction, Total Worker Health™ Index, Environmental Stewardship Index and Transportation Stewardship Index. Each indicator is built on several metrics. In 2017, we achieved or exceeded annual targets for each of the four indicators.

- Dow's Texas City site is working on ways to **reduce its energy consumption**. These efforts resulted in quick wins that led to a 10 percent reduction in equivalent tons of CO<sub>2</sub> emitted. With the help of Dow's Energy Tech Center, an energy assessment also was performed, identifying a portfolio of projects that have the potential to deliver even more energy savings. The project is an example of actions that Dow is taking to meet its 2025 target, which states: "Though we will grow globally over the next 10 years, Dow's absolute greenhouse gas emissions will not exceed our 2006 baseline."

- Dow **eliminated 30 Priority 1 health risks** in 2017, exceeding its 2017 target of 25 reductions and bringing the total to 50 reductions since the launch of the 2025 Goals. Among the actions that Dow is taking to realize its Total Worker Health™ targets is the implementation of Life's Simple 7 (LS7), a program created by the American Heart Association (AHA) to evaluate employees' health. LS7 measures seven health behaviors and risk factors (physical activity, healthy eating, tobacco use, blood pressure, glucose, total cholesterol and body mass index). In 2017, Dow achieved Gold level recognition in the AHA Workplace Health Achievement Index by scoring 175 out of a maximum 217 points.
- To meet its goal "to eliminate all preventable Motor Vehicle Accident Fatalities," Dow will **introduce telematics devices in all Company-owned or leased vehicles** by January 1, 2019. These devices will help to improve safety and skills by alerting the driver when the speed limit in force is temporarily exceeded, when harsh acceleration, braking or cornering is observed or when a lane-handling deviation occurs. In 2017, Dow also banned employees and contractors from accepting incoming or

outgoing cellphone calls while driving, even if a hands-free system such as Bluetooth® is used. This is consistent with widely available information that proves even the use of a hands-free cellphone is a significant distraction and results in a higher probability of being involved in an accident than when the phone is switched off or left in a bag or the trunk.

- Dow is leading the industry in innovating new technologies to **remove workers from higher-hazard activities** in an effort to help achieve its 2025 target to "eliminate fatalities, reduce severe injury and illness incidents and maintain its total recordable injury and illness rate at industry-leading levels." Examples include implementing robotic high-pressure water cleaning, robotics to eliminate the need for confined space entry, drones to eliminate certain elevated work, and protection devices on aerial lifts.



With the goal of reducing marine debris and advancing a circular economy, Dow is collaborating with local governments and other stakeholders to help turn plastic waste into long-lasting roads in Asia Pacific. In India, Dow worked with the cities of Bangalore and Pune and waste collectors to bring together the people and materials needed for 40 kilometers of roads – diverting 100 metric tons of waste from landfills. Volunteers picked up the plastic waste, which was taken to local recyclers that ground the material into small pieces. Those pieces were then sent to local asphalt plants and added into the asphalt mixture, resulting in roads that last two times longer than traditional roads. In Indonesia, Dow worked with the government and various stakeholders to complete the first plastic road trial in Depok. Approximately 3.5 metric tons of plastic waste material was mixed into asphalt to create a 1.8-kilometer-long road.

# WHO WE ARE

Profile & People



## OUR PEOPLE FUEL OUR SUCCESS

Dow is a company of innovators, built on our founder’s philosophy to “do it better.” The curiosity and creativity of our people fuel our growth and help solve complex global challenges. Together, we’re committed to using science and technology to help create an economy that works for everyone – people and planet, as well as business and industry.

## Company Profile **GRI 102-1, GRI 102-3, GRI 102-5**

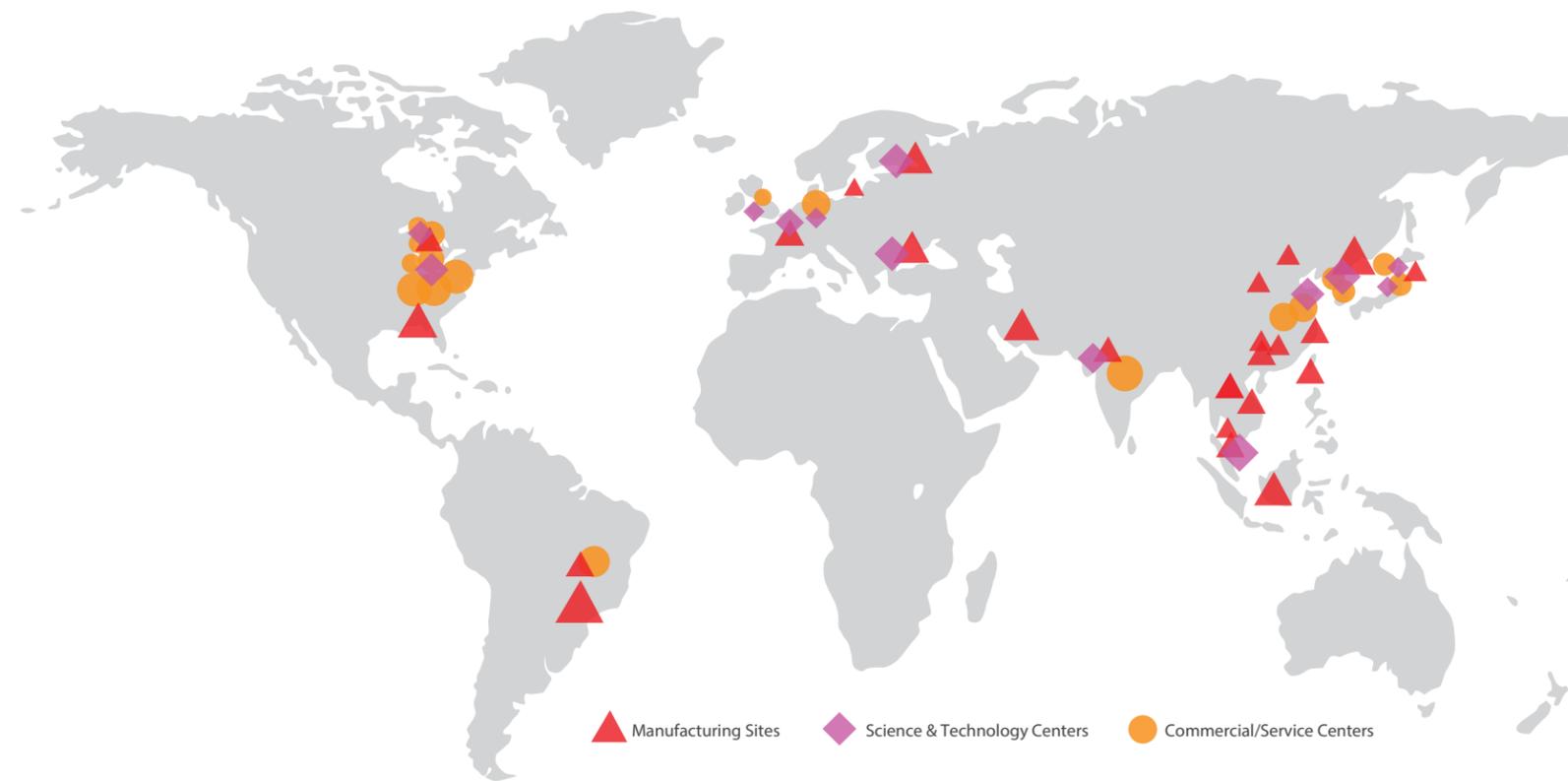
The Dow Chemical Company, with global headquarters in Midland, Michigan, is a diversified, worldwide manufacturer and supplier of products used primarily as raw materials in the manufacture of customer products and services.

On August 31, 2017, Dow and DuPont became subsidiaries of DowDuPont as a result of the merger between the two companies. (Reference page 4 for details about the merger and intended business separations). There are 100 shares of Dow common stock outstanding, all of which are held by the parent company, DowDuPont.

## Location of Operations

The Company operates 178 manufacturing sites in 35 countries. Properties of Dow include facilities which, in the opinion of management, are suitable and adequate for their use and have sufficient capacity for the Company’s current needs and expected near-term growth. **GRI 102-4**

| Geographic Region               | Number of Sites |
|---------------------------------|-----------------|
| U.S. and Canada                 | 65              |
| Europe, Middle East, and Africa | 46              |
| Asia Pacific                    | 44              |
| Latin America                   | 23              |

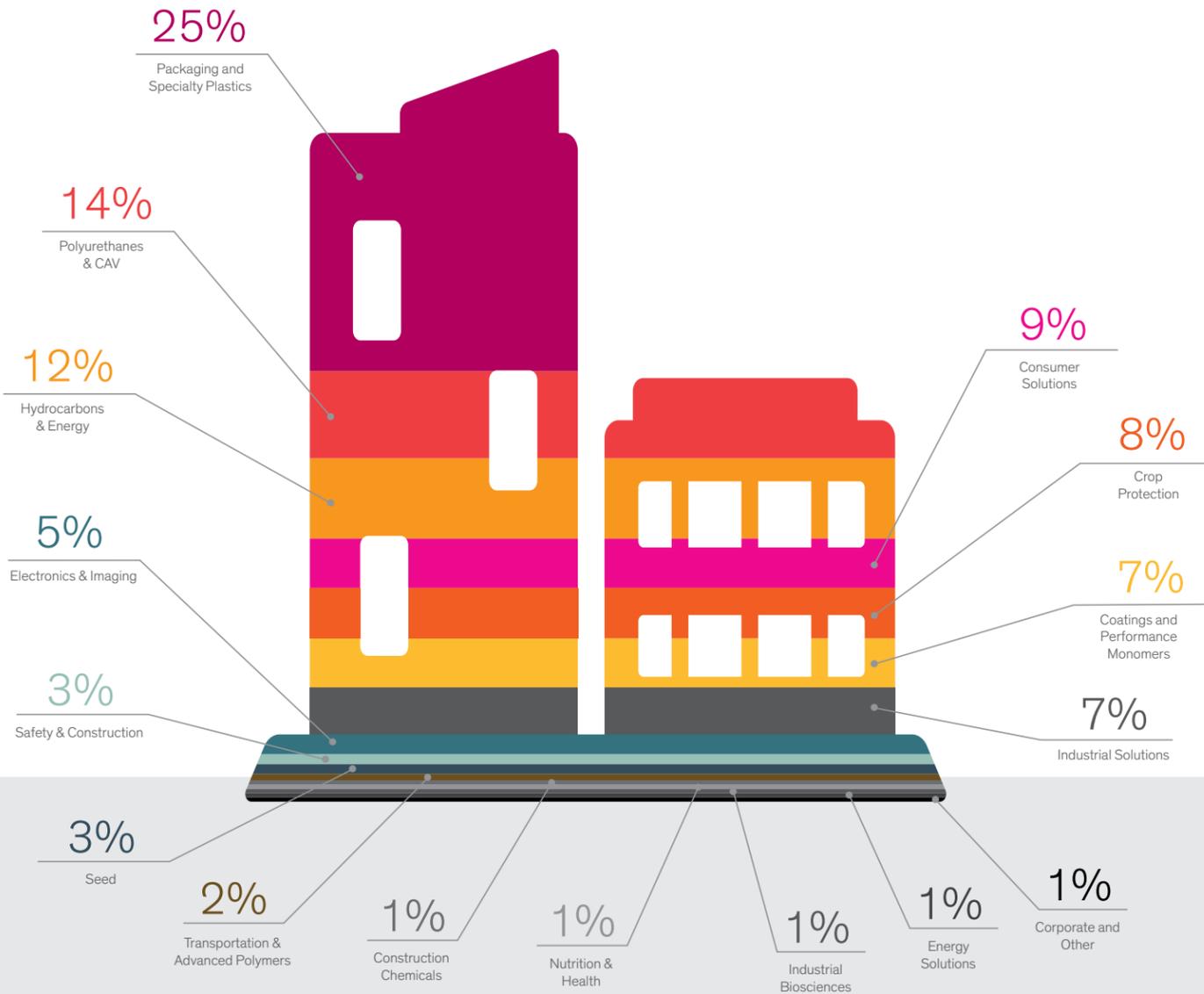


## 2017 Overview

In 2017, Dow's net sales were \$55.5 billion, up 15 percent from \$48.2 billion in 2016, primarily reflecting increased local price and product mix, higher sales volume and the addition of Dow Corning's silicones business. The Company employed approximately 54,000 people at December 31, 2017, down from approximately 56,000 at December 31, 2016, primarily due to the Company's restructuring programs.

GRI 102-7

## Sales by Product Group



## Financial Highlights GRI 201-1

In 2017, Dow delivered top- and bottom-line growth on robust consumer-led demand in core end markets where our segments hold leadership positions today. The Company also continued to advance our long-term growth projects – most notably on the U.S. Gulf Coast, with the startup of the new world-scale ethylene, polyethylene and elastomers facilities, as well as with our Sadara joint venture in the Middle East, which achieved full commercial operations for all 26 production units, with additional value-added products across these key chains and others including isocyanates, propylene oxide/propylene glycol, polyols, amines and glycol ethers. In addition, our innovation engine delivered more than 2,500 new products in our target markets and won numerous awards.

Our confidence in the future, in large measure, comes from the energy and passion of our people. Their creativity and curiosity will help us to continue to anticipate and quickly adapt to change and maintain our leadership positions – connecting science to the marketplace and creating new opportunities to help our customers solve the world's challenges.

2017 Sales by Geographic Area Total Sales: \$55,508 MM (dollars in millions)



| Economic value generated, distributed and retained, dollars in millions GRI 201-1 | 2017     | 2016       |
|---|----------|------------|
| Revenues  | \$55,508 | \$48,158   |
| Operating costs   | \$38,533 | \$32,623** |
| Wages/benefits  | \$8,000  | \$7,427    |
| Payments to providers of capital  | \$1,216* | \$1,101*** |
| Payments to governments   | \$2,346  | \$2,036    |
| Community investments   | \$42     | \$42       |
| Economic value retained   | \$5,371  | \$4,929    |

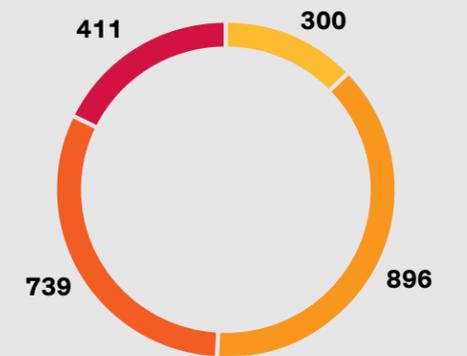
\* Includes \$1,056 million paid to Dow's parent company for funding of parent company dividends and share repurchases

\*\* This value is a change from what was reported in 2016 as \$32,972MM. This amount reflects what was moved from Cost of sales, R&D and SG&A to a new line in the 2017 10-K for integration and separation costs. This occurred as a result of the Merger with DuPont, as certain reclassifications of prior period amounts for TDCC were made to improve comparability with DowDuPont and to conform with the presentation presented for 2017.

\*\*\*Restatement from what was reported in 2016 as \$3213MM. The prior value reflected "Net interest expense" as reported in the 2016 Dow 10-K, which included expenses in addition to payments to providers of capital. The updated value is the sum of "interest expense and amortization of debt discount" and "capitalized interest".



2017 Taxes (payments to governments), Millions of Dollars



- Asia/Pacific
- North America
- Europe/Middle East/Africa
- Latin America

## The Future Is... The World's Best People, Working Together to Make a Difference

Integrity, Respect for People and Protecting Our Planet are the values that make up the foundation of Dow's culture and guide our engagement with both internal and external stakeholders. We keep sustainability at the forefront of everything we do, from internal work processes, to how we treat people, to the products we create. Dow's employee experience inspires our people to deliver sustainable solutions, business growth and an 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.

Our world is changing at a pace never before seen. 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 we deliver enable employees to access resources in real time through mobile applications.

Every Dow story starts with our people. Dow drives a performance culture through continuous feedback, feedforward, and frequent and diverse development opportunities. We measure and benchmark culture and employee engagement on an annual basis, and take action on corporate priority areas for improvement.

Dow's efforts and commitment to creating a workplace that fosters innovation, collaboration, inclusion, safety and well-being for all Dow employees is reflected through the 28 employer awards that Dow received in 2017, including Top Employer and Great Place to Work achievements.

## Investing In Our Workforce

### Employee Learning and Development

In 2016, Dow launched a global, cloud-based Learning Management System (LMS) called Diamond Learning. This is an important element of "Enabling Growth" as part of our strategic roadmap on People priorities. The system offers a simple, engaging user experience and integrates modern learning technology solutions such as Massive Open Online Content (MOOCs), social collaboration, mobile learning and much more.

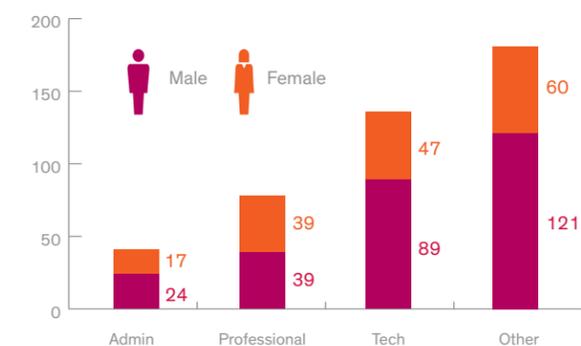
Diamond Learning also supports Dow's strategy of providing learning that is simple, continuous and value-added. Our employees select and manage curriculum that aligns with their core role responsibilities and personal development interests and the Company can ensure compliance with important safety training. Diamond Learning is improving our ability to make learning more relevant and engaging as we continue to leverage more of the system's capabilities.

There are more than 40,000 courses available in Diamond Learning. Dow creates internal learning content and partners with external content providers (such as Harvard ManageMentor, Skillsoft, Franklin Covey, Ken Blanchard Company and Wilson Learning) to ensure our employees have a diverse, rich and engaging learning experience. Our system and content are a catalyst to employee development, but our employees are at the core of our learning culture. According to the Gartner (formerly CEB) Learning Culture Survey completed in 2017, 68 percent of Dow employees feel accountable for contributing to the learning of others and 76 percent share their knowledge and expertise

regularly, which, respectively, is 28 and 29 percentage points higher than the survey benchmark.

On average, there were 61.5 hours of training per employee in 2017. Leaders completed 2,623 leadership training sessions. Also, 3,750 new employees participated in Great Start@Dow, an on-boarding development program critical to setting new employees up for success – immersing them in Dow's structure, culture and strategy.

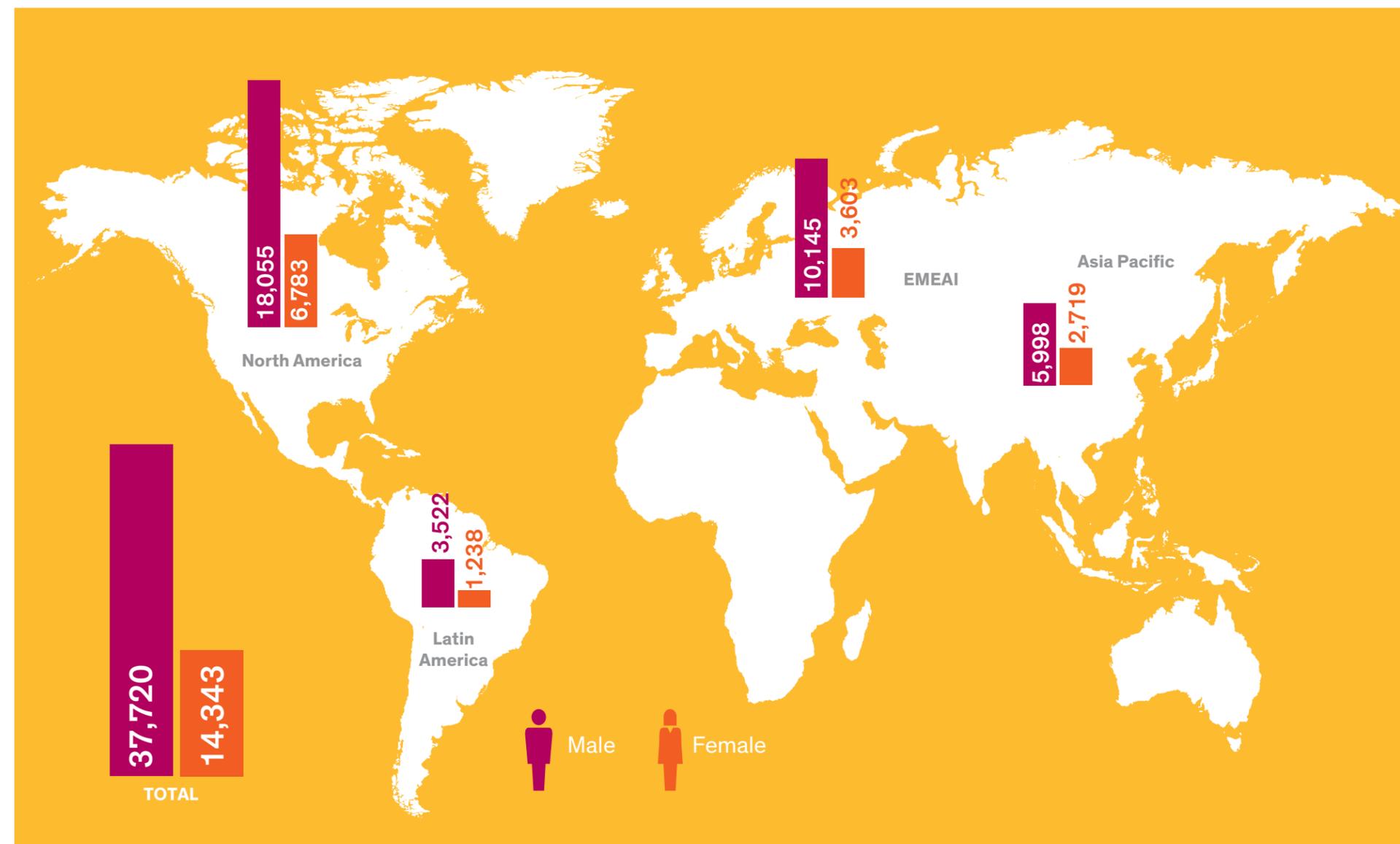
### Average Training Hours Per Employee GRI 404-1



The difference in the training hour average among males and females in the Tech and Other categories is largely influenced by the distribution of gender by function and role. Females in the Tech and Other categories are the majority in our support services functions and roles, while males in these categories are the majority in our plant-aligned functions and roles. The employees working in the production facilities have a higher number of required training hours to ensure safe and effective operation of our plants.

## Information on Employees and Other Workers GRI 102-8

### WORKFORCE REPRESENTATION – Male & Female by Geography



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

**NEW EMPLOYEE HIRES – Male & Female by Job Category**



**Percentage of total employees covered by collective bargaining agreements GRI 102-41**

Approximately 29 percent of Dow's workforce was covered by either formal collective bargaining agreements or works councils in 2017.

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

Regular full-time and less-than-full-time employees are provided a wide variety of benefits while only temporary employees are not eligible to receive these benefits. Dow's benefit plans are designed to build on the social security benefits provided 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
- Stock purchase plan

**Return-to-work and retention rates after parental leave, by gender GRI 401-3**

| Return from Leave Rates  | Number of Employees | Female | Male  |
|--|---------------------|--------|-------|
| Total number of employees entitled to parental leave               | 56,071              | 27.1%  | 72.9% |
| Total number of employees who took parental leave                  | 163                 | 68.1%  | 31.9% |
| Total number of employees returned to work                         | 137                 | 63.5%  | 36.5% |
| Total number still w/ Dow as of 3/31/2018 (of those that returned) | 98                  | 40.8%  | 59.2% |

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

**Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings GRI 404-2**

Dow employees have access to materials that support the entire employee life cycle, with the wealth of resources available on Dow's online people resource, My HR Connection. My HR Connection gives employees access to development resources, online internal job postings and customized notifications based upon employee preferences, compensation and benefit information, health and wellness programs, and career stage, including late-stage career planning. Employees take advantage of these offerings to develop their careers, enhance their employee experience and plan for career changes.

In addition, Dow supports lifelong learning through specific skill building provided through functions, externally licensed development tools and an internal talent review process focused on differentiated development.

Examples of development resources and programs include:

- Employee worksheets exploring personal and career values, preferences and orientations
- Forms and guidelines to prepare for employee career development discussions
- Global Educational Assistance that supports employees in pursuing external training/educational opportunities for career development
- Access to HR and retiree service call centers for personalized answers to HR questions
- Benefits counseling for employee retirement planning purposes
- Financial planning seminars for all employees
- Employee Resource Groups that support a variety of development opportunities
- A Learning Management System for tailored learning curricula aligning to role responsibilities and personal development
- Total health, nutrition and wellness centers and associated programs and counseling
- Career transition assistance benefits including outplacement counseling services

**Percentage of employees receiving regular performance and career development reviews by gender GRI 404-3**

Performance management (PM) strives to maximize the connection between employee development and organizational performance. Both leaders and employees together play a key role in ensuring the effectiveness of PM by establishing SMART goals,

encouraging continuous development feedback and dialogue, and reviewing progress on an on-going basis throughout the year. PM aligns with Dow's overall Employee Development strategy by building skills that promote change, aligning behaviors with corporate strategies and ethical standards, and providing employees the opportunities to improve their performance and effectiveness.

Our PM cycle provides a structure to facilitate the alignment of expectations and goals, the integration of ongoing coaching and feedback, and the summary of contributions – including both "What" (core job, goals, impact) and "How" (behaviors/competencies).

Setting clear, meaningful and challenging performance expectations along with providing regular coaching and feedback are critical leadership skills. Our leaders are encouraged to partner with their employees to identify their strengths as well as opportunities for development. This ongoing collaboration is one way we can engage our employees and drive Dow's success.

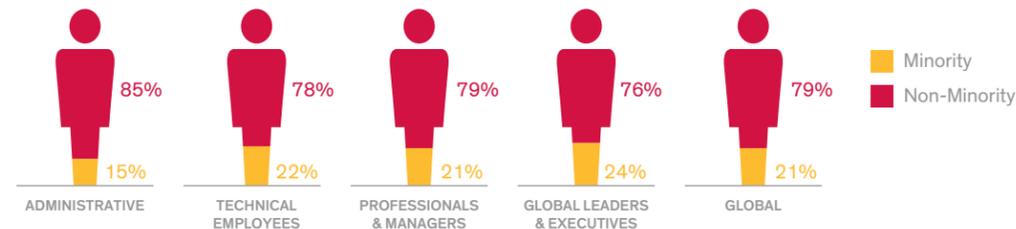
The PM cycle concludes with an annual review. This discussion features recognition for contributions and feedback on areas for development for the future. In preparation, leaders gather multi-rater feedback throughout the year to enhance the quality of the discussion and ensure multiple inputs to performance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

In 2017, 93 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 7 percent of employees that were ineligible including students, interns, co-ops, those who were part of divestitures, 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. On our annual engagement survey, we ask our global employee population to self-report whether they have experienced a recent Annual Performance Review and/or employee development discussion. This information is helpful for global Talent Management to understand and improve the effectiveness of our Performance Culture. **GRI 404-3**

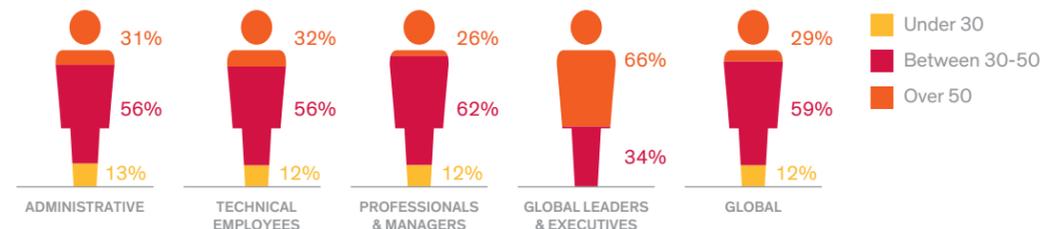
|                             | Male | Female |
|-----------------------------|------|--------|
| Administrative              | 76%  | 90%    |
| Professionals & Managers    | 95%  | 94%    |
| Global Leaders & Executives | 100% | 100%   |
| Technical                   | 77%  | 76%    |

**WORKFORCE REPRESENTATION**

**U.S. Minority & Non-Minority by Job Category**

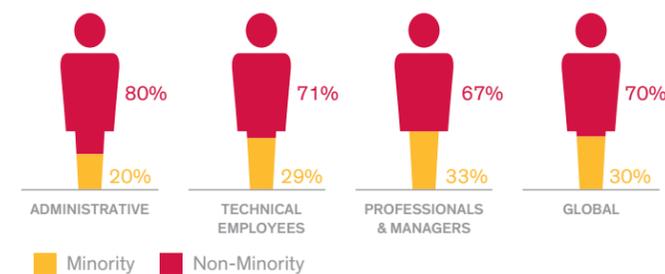


**Age by Job Category**

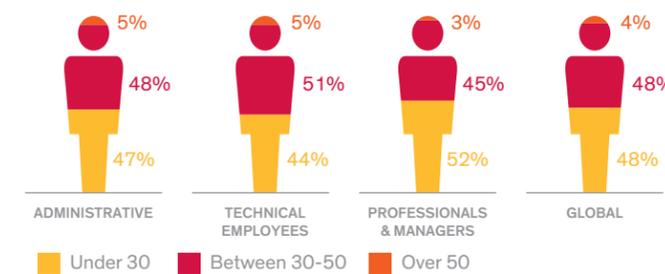


**NEW EMPLOYEE HIRES**

**U.S. Minority & Non-Minority by Job Category**



**Age by Job Category**



*\*The workforce data are gathered through a centralized database containing all employee information. The employee data are updated by Human Resources and managers when employee information changes occur. The data represent the global employee population as of December 31, 2017, and include all permanent, full-time and part-time employees. Temporary employees, contractors and manual additions are excluded unless otherwise stated.*

“ Inclusion and diversity is not a numbers game. It is about people. It is about behaviors. It is about actions. ”

**Karen S. Carter, Dow Chief Inclusion Officer**

**Inclusion and Diversity**

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

As we move toward launching the future Dow with the intended spin of the Materials Science Division in 2019, we are accelerating our actions and deepening our commitment to strengthening our 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, key areas of focus and measures in place for an effective, sustainable strategy implementation and sustained performance.

Based on extensive external and internal research, the Office of Inclusion identified 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 ERG engagement, workforce and leadership representation, supplier diversity, employee surveys and external recognition as a great place to work.

**Diversity of governance bodies and employees GRI 405-1**

The DowDuPont Board is comprised of 16 individuals (eight directors from the legacy Dow board and eight directors from the legacy DuPont board) with diverse experience and credentials, selected for their acumen and ability to challenge and add value to management. Board members bring a depth of experience across a wide variety of industries. Each director has held significant leadership positions, providing the Company with unique insights and fresh perspectives.

More information on DowDuPont’s corporate governance, including DowDuPont’s Corporate Governance Guidelines, Board Committee charters and Code of Business Conduct, is available online at [www.dow-dupont.com](http://www.dow-dupont.com).

**Gender and Age Composition of Board of Directors**

| Board of Directors |      |
|--------------------|------|
| Female             | 19%  |
| Male               | 81%  |
| Under 30           | 0%   |
| 30-50              | 0%   |
| Over 50            | 100% |

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.

**Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation GRI 405-2**

**Compensation Equity**

Global pay equity studies have been conducted at Dow over the last 20 years in order to assess fair treatment and ensure our pay practices are being implemented appropriately. These studies are updated biannually. Our next pay equity study is scheduled to take place in 2018.

The most recent analysis was conducted during 2016, following global pay planning activities. 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 analyzed (base pay, performance award and long-term incentives). The studies examine any impact to 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 2016 pay equity study found no significant 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 not to gender or ethnicity. These results demonstrate that pay equity existed across Dow after 2016 increases and that global pay-planning guidelines are being applied appropriately across Dow.

As a continued commitment to pay equity, Dow signed the White House Equal Pay Pledge in June 2016. With improvements to our technology platforms, Dow is making strides to develop more frequent pay equity analyses and expand the scope to include promotions, hiring and other activities.

**Ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees GRI 102-38**

In August 2015, the Securities Exchange Commission (SEC) adopted a rule under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 requiring annual disclosure of the ratio of the median annual total compensation for all employees other than the CEO to the annual total compensation of the CEO. The rule (Item 402(u) of Regulation S-K) requires disclosure of this information starting with the first fiscal year beginning on or after January 1, 2017.



**Dow's Sustainability Academy Helps Dow Employees Develop with Purpose**

In 2017, in partnership with the Erb Institute of the University of Michigan, Dow launched the Sustainability Academy. The Sustainability Academy is a development program that provides Dow employees with the tools needed to bring sustainability business insights into their jobs as well as give them hands-on experience on a sustainability related project.

"Increasingly, employees want a sense of pride and fulfillment from their work, and they want to work for a company whose values match their own," said Sustainability Academy creator and leader Erica Ocampo. "The Academy helps our employees unlock that potential and develop with purpose."

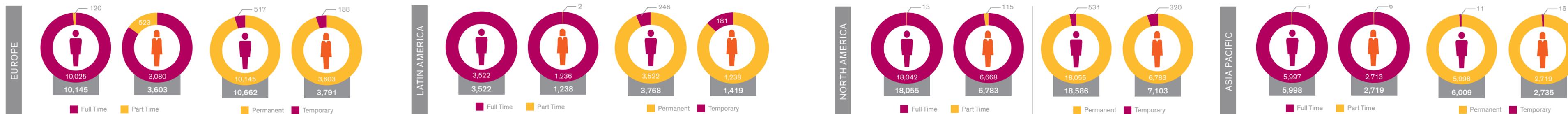
In July 2017, the first cohort started with 35 employees in North America who were selected to the Academy. They spent four days on the campus of the University of Michigan, learning fundamentals of sustainability from various university professors, building sustainability acumen and knowledge from these experts. Afterward, the employees split into teams, were given a sustainability project aligned with a Dow 2025 Sustainability Goal – oftentimes projects proposed by various Dow business units – and then matched with Dow sustainability subject matter experts. Teams were given six months to complete the project and solve the sustainability challenge. At the end of the six months, the teams presented their projects and solutions to an open audience that includes leaders such as Chief Sustainability Officer Neil Hawkins. These projects yielded real, lasting business impact.

The successful creation and deployment of the Sustainability Academy is another outstanding collaboration between the Erb Institute of the University of Michigan. And each Academy participant is awarded an externally validated certification upon program completion from the University of Michigan.

As of March 2018, the second cohort of the Academy is well underway, and the third cohort is scheduled to kick off in July 2018. Additionally, as the program gains strength in North America, a team of the second cohort is working to expand the program to the other regions of the world.

**Information on Employees and Other Workers GRI 102-8**

**WORKFORCE REPRESENTATION - Full Time and Part Time by Geography**



**Employee Turnover**

| Voluntary Attrition  | EU   | LA   | NA   | PA   | Global |
|----------------------|------|------|------|------|--------|
| Female               | 3.8% | 5.0% | 3.9% | 4.8% | 4.1%   |
| Male                 | 3.3% | 3.2% | 4.0% | 4.1% | 3.7%   |
| Total                | 3.5% | 3.7% | 3.9% | 4.4% | 3.9%   |
| 0-1 Years of Service | 4.6% | 5.3% | 6.0% | 9.7% | 6.2%   |
| 2-3                  | 7.9% | 4.0% | 5.8% | 6.8% | 6.2%   |
| 4-5                  | 4.7% | 5.7% | 3.8% | 5.9% | 4.4%   |
| 6-10                 | 3.2% | 6.6% | 3.7% | 3.7% | 3.5%   |
| 11-15                | 1.2% | 1.1% | 2.6% | 1.2% | 1.8%   |
| 16+                  | 2.9% | 4.2% | 3.4% | 2.8% | 3.2%   |

| Involuntary Attrition | EU   | LA    | NA   | PA   | Global |
|-----------------------|------|-------|------|------|--------|
| Total                 | 3.8% | 14.8% | 3.2% | 5.2% | 5.6%   |

| Voluntary Attrition by Age Group |      |
|----------------------------------|------|
| Under 30                         | 6.8% |
| 30-50                            | 2.9% |
| Above 50                         | 4.5% |

| Involuntary Attrition |      |
|-----------------------|------|
| Female                | 5.4% |
| Male                  | 5.7% |
| Total                 | 5.6% |

\*Involuntary attrition includes the impact of divestitures

To determine the median annual total compensation for all employees other than the CEO, a median employee was identified from the population of all employees worldwide as of October 31, 2017. As is permitted under SEC rules, DowDuPont utilized base pay and annual incentive at target – rather than Summary Compensation Table compensation – to determine the median employee. 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 within a .05 percent range of the median. DowDuPont selected an employee from that group as the median employee for purposes of preparing the ratio of CEO pay to median employee pay. DowDuPont then calculated the compensation for the median employee based upon the same components of compensation used to determine the CEO’s pay for purposes of Summary Compensation Table disclosure in the DowDuPont 2018 Proxy Statement. Based upon the calculation of compensation for both the CEO and the median employee, the ratio of CEO pay to median employee pay is 175:1.

However, the compensation of the CEO disclosed in the Summary Compensation Table is reflective of only that compensation earned as CEO of DowDuPont and does not reflect the value of all compensation earned by the CEO during 2017. If the compensation in the Summary Compensation Table were to include the value of all such compensation earned during 2017, the ratio of CEO pay to median employee pay would have been 387:1.

The pay ratio presented above is a reasonable estimate. Because the 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.

**Ratio of percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees GRI 102-39**

Dow’s annual total compensation is evaluated on a role specific basis. Each employee is paid on a market-competitive basis. In the interest of confidentiality and competitiveness, Dow does not report ratios based on individual compensation, or make pay decisions based on these ratios. See GRI 102-36 for a full description of the process for determining remuneration at Dow.

**Dow Global Employee Opinion and Action Survey (GEOAS)**

People in my work area are **protected from health and safety hazards.** **94%** FAVORABLE Top Quartile (2017 GEOAS)

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I am held accountable for **doing my work in a safe manner.** **98%** FAVORABLE No External Benchmark (2017 GEOAS)



**Building a Pipeline of Manufacturing Talent**

Combining on-the-job training with classroom instruction, Dow’s U.S. Apprenticeship Program is helping to build the workforce of tomorrow – and the Company’s global competitiveness – by increasing the pipeline of highly skilled technical workers to support and grow manufacturing. One of the greatest challenges facing the manufacturing industry today is a shortage of candidates with the technical skills necessary to qualify for key roles now available. Building on 40 years of successful apprenticeship programs in Europe, the fully paid U.S. Apprenticeship Program offers three-plus years of training and on-the-job experience in STEM-related career pathways. Since its 2015 launch, the program has grown to more than 100 apprentices at seven sites across four states – Michigan, California, Texas and Louisiana – with plans for expansion. In 2017, the program received U.S. Department of Labor Registration, and participants receive an industry-issued, nationally recognized credential that certifies occupational proficiency.



“

I'm very proud of the women and men behind these technologies, who continue to innovate to bring value to our shareholders and address the world's greatest challenges.

**A.N. Sreeram, Dow senior vice president, Research and Development, and chief technology officer**

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**TOP EMPLOYER  
UNITED STATES OF AMERICA**  
by *Top Employers Institute*

**BEST PLACES  
TO INTERVIEW**  
by *Glassdoor*

**TOP EMPLOYER  
EUROPE**  
by *Top Employers Institute*

**BEST COMPANIES  
FOR LEADERS**  
by *Chief Executive Magazine*

**BEST PLACES TO WORK  
FOR LGBT EQUALITY**  
by *Human Right Campaign*

**TOP 50 EMPLOYER**  
by *Minority Engineer Magazine*

**TOP 50 EMPLOYER**  
by *Women Engineer Magazine*

**JUST 100:  
AMERICAN BEST CORPORATE CITIZENS**  
by *Forbes Magazine*

**TOP 100 SCORE  
ON DISABILITY EQUALITY INDEX**  
by *U.S. Business Leadership Network  
and American Association of People  
with Disabilities*



## Dow Taps an Experienced Business Leader as First Chief Inclusion Officer

In 2017, Dow announced that Karen S. Carter was named the Company's first chief inclusion officer – a role created to strengthen the integration of inclusion and diversity with business strategy and results.

Carter, who has a long history as a proven business leader at Dow, is leading efforts to foster an inclusive and diverse workforce.

“Karen brings a strong international business background and diverse perspective to this new position,” said Dow Chief Executive Officer-Elect Jim Fitterling. “Through her focus and leadership, we will continue to build an atmosphere where employees of all backgrounds can come together to fulfill their own personal and professional goals and work together to help the Company succeed.”

Carter has more than 20 years' experience at Dow. She has held several strategic business leadership roles across Dow's Packaging & Specialty Plastics, Building and Construction, and Polypropylene Licensing and Catalyst businesses. Most recently, she held the role as North American commercial vice president for Dow Packaging & Specialty Plastics with responsibility for the overall profit and loss for the business's North America region.

Among Carter's goals are to raise the profile of Dow's Employee Resource Groups in contributing insights to the Company's business strategies and to bring more diversity into leadership roles. At the same time, Carter emphasizes that inclusion and diversity isn't a program or initiative – it is how we work at Dow. For that reason, another key area of focus is to address gaps in equal opportunity and valuing diverse perspectives that have been identified in Dow's global employee survey.

“Ultimately, our goal is to drive sustainable progress toward ensuring every employee is fully empowered and valued. In an increasingly global world, we need a culture even more welcoming of diversity of thought and opinions so that we can meet the ever-growing and increasingly complex challenges of this generation and ones to follow,” Carter said.

For Carter, the subject of inclusion and diversity is a personal one. She was only a sophomore in college when she first came to Dow's Midland, Michigan, headquarters to work as an intern.

At the time, she couldn't help but notice that she didn't see many people who looked like her. However, later in her career, encouragement from a mentor helped her believe she could succeed. The mentor took her into Dow's executive wing, sat her in the CEO's seat, and said: “You belong here.”

Those words have become a mantra for her. She continues to embrace them as she moves forward in her latest role and to share these words with employees – to focus less on how they might be different and more on how they can make a difference.

“I'm proud to play a role in Dow's inclusion and diversity efforts. Dow has long had a commitment to diversity and inclusion that has informed our strategies and helped fuel our success. It's a privilege to build on that success with a fully conceived strategy that is woven into the Company's overall business strategy,” Carter said.





# WHY WE DO IT

Global Challenges & Our Commitments



## A COMMITMENT TO DO WELL AND DO GOOD

In 2030, the world's population will reach 8.3 billion, placing increasing demands on the Earth's finite resources. To help lead the transition to a sustainable planet, Dow is doing what we do best: innovating, adapting and collaborating. We want to lead by example and work with others to address global challenges, helping advance solutions for energy, infrastructure and food waste, among other global challenges. By embedding sustainability into our business strategy and innovation engine, we seek to create a better company and a better world.



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

With more than 95 percent of manufactured products enabled by chemistry, world challenges will ultimately be solved by companies such as Dow, who collaborate with customers, industries, governments, academia and civil society. Our innovation engine is focused on water purification, crop productivity, building efficiency, development and commercialization of carbon mitigation, alternative energy and many more solutions that improve lives while protecting the planet. We are as committed to minimizing our own footprint as we are to delivering technology that helps the rest of society do the same. Our commitment to sustainability is integral to Dow's Vision, Mission and Values – which continue to drive change that is good for the environment, good for people and good for business.

Taken together, the essential elements of Dow's Mission, Vision, 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.

*The Diamond Standard*, Dow's Code of Business Conduct ("Dow's Code" and "Code"), summarizes the ethical principles and policies intended to deter and prevent corrupt activity such as bribery; outlines appropriate political contributions; and provides Dow's position on equal employment opportunity, 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 expects employees to understand and comply with all Company policies and applicable laws, and to adhere to the guiding principles outlined in the Code. Employees must certify compliance with the Code annually.

In December 2010, a new Code was approved by Dow's Board of Directors. The Code has been translated into 24 languages. A review of the Code is underway; a refreshed version is expected to be issued in early 2019.

More information about ethics and compliance at Dow can be found on our website. Winning in today's volatile, global marketplace requires sound strategy and disciplined execution. Building on our strengths, we continue to accelerate our market-driven approach – going narrower and deeper into strategically aligned end markets, increasing productivity across our integrated value chains, and maximizing the value of our investments.

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 for 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's

|  |   |   |  |
|--|---|---|--|
| <p><i>Mission:</i></p> <p>To passionately create innovation for our stakeholders at the intersection of chemistry, biology and physics</p> | <p><i>Vision:</i></p> <p>To be the most valuable and respected science company in the world</p> | <p><i>Corporate Strategy:</i></p> <p>Invest in a market-driven portfolio of advantaged and technology-enabled businesses that create value for our shareholders and customers</p> | <p><i>Values:</i></p> <ul style="list-style-type: none"> <li>• Integrity</li> <li>• Respect for People</li> <li>• Protecting Our Planet</li> </ul> |
|--|---|---|--|

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 organization to manage risk, maintain a positive reputation and avoid litigation. As the leader of Dow's Global Ethics & Compliance function, the chief ethics and compliance officer 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.

Dow's Code sets the ethical standard for Dow and its employees. Dow employees are expected to report potential violations of the Code for investigation and action; contingent staff and other third parties are also encouraged to report ostensibly inappropriate conduct.

The chief ethics and compliance officer is responsible for communicating to all stakeholders the mechanisms that are in place for employees to seek advice and report potential misconduct. These options are communicated in many ways, including on Dow's external website and intranet page, on the OEC's ethics and compliance training website, in the Respect and Responsibility Policy, and other training communications. Dow EthicsLine is a safe, reliable and convenient alternative to reporting ethical concerns in person (by calling or via online form). It is available globally, with multilingual capabilities, 24 hours a day, seven days a week. The Dow EthicsLine is operated by EthicsPoint, a professional vendor located in Lake Oswego, Oregon, USA, that specializes in providing similar services to global companies. No call tracing/tracking of IP addresses or recording device is ever used, and in some countries, as allowed by local law,

callers may remain anonymous. In addition to the EthicsLine, employees may choose to report concerns to their supervisors or other leaders, Dow attorneys, Human Resources personnel, Regional Ethics and Compliance Committee members or directly to the OEC. All concerns are evaluated, and all potential Code violations are investigated. Confidentiality is essential in order to maintain the integrity of the investigation process. Dow takes seriously its policy against retaliation, which provides that Dow will not tolerate retaliation against those who raise concerns about improper conduct in good faith or who participate truthfully in an investigation.

Reports and other data about alleged violations of the Code, its underlying policies or the law are provided to the Audit Committee of the Dow Advisory Board quarterly. In 2017, 433 matters were reported to the

OEC, 343 of which warranted an investigation. Two-hundred and thirty-two (54 percent) of the 433 matters were substantiated; 129 (30 percent) matters were unsubstantiated; and the remaining 72 (16 percent) are pending. Types of issues reported included conflicts of interest; environmental, health, and safety; human resources; misuse of assets and others. All issues that require corrective action are appropriately addressed.

**GRI 102-17**

## WHAT THE CHEMICAL INDUSTRY CAN DO:



### Climate Change

- ✓ Provide solutions in transportation and mobility
- ✓ Develop and use renewable and clean energy sources
- ✓ Find smarter ways to use energy
- ✓ Increase emissions control



### Water

- ✓ Reduce water scarcity with new treatments
- ✓ Develop technologies to improve water availability, water quality, cost and energy efficiency
- ✓ Turn wastewater into a valuable resource through advanced reclamation processes



### Food

- ✓ Offer technologies for healthier diets
- ✓ Provide technologies to prevent food loss and food waste
- ✓ Increase crop yields



### Waste

- ✓ Provide solutions to prevent and reduce waste
- ✓ Collaborate to improve waste management infrastructure
- ✓ Advance a circular economy



### Consumer Goods

- ✓ Develop effective biotechnology that help treat the population's evolving needs
- ✓ Increase the safety, durability and service life of products
- ✓ Offer technologies that help support an active lifestyle

*Collaboration, Innovation and Science are the Solution*



**95%** of the world's manufactured goods are created from chemistry

In the U.S., for every one job created from the business of chemistry,



**6** jobs are created in other sectors

Bicyclists in São Paulo and Rio de Janeiro know that using bikes instead of cars is better for the environment. What they may not know is that the coating on the bike lanes they're using also is more sustainable. Combining the durability of acrylics with the chemical resistance of epoxies, MAINCOTE™ AEH Resin is a novel hybrid technology for two-component concrete coatings that offers ultra-low VOC capability while accelerating dry time. The result is a bike lane that is durable and safe for bikers, not causing them to slip when wet. The carbon footprint also is lower than other technologies, including solvent-borne acrylics as demonstrated by a Life Cycle Assessment. During the project execution, the Dow team worked with local agencies in Brazil to influence regulations and public policies in hopes of helping create a mindset that encourages the use of bikes when possible – saving emissions caused by cars.

## The Science Behind a More Sustainable Bike Path



### Determination of Report Content and Boundaries GRI 102-46

Our process for determining materiality is a continual four-step cycle of identification, prioritization, validation and review. Defining our material topics and boundaries for reporting relies on the continuous process that we have used to develop three generations of corporate Sustainability Goals. The process assures that we are addressing material topics, and that our Sustainability Goals are aligned with external concepts of sustainability and global challenges. It also assures that we have considered the full scope of the impacts caused by our activities, both within our own operations and externally through interactions with suppliers, customers, consumers, communities, the environment and others.

#### Identification

A critical element in the development of the 2025 Sustainability Goals was extensive dialogue with stakeholders on a wide range of topics, which later became the key components of the goals. In 2013, we developed a first draft of the goals using a “bottom-up” approach with a number of functional experts and resources within the Company. We also conducted an extensive stakeholder and corporate interview process to identify the issues that are the most important to our stakeholders and most relevant for Dow. More than 300 one-on-one and small group interviews were conducted across the globe with stakeholders, including individuals from non-governmental organizations, academia and governments as well as from the environmental and sustainability communities. Key customers, consumer-facing companies and Community Advisory Panels (CAPs) were also interviewed. More than 500 telephone interviews were conducted to understand and prioritize environmental, social and economic needs in the communities in which Dow has significant operations. Further, individual conversations were conducted with Sustainability External Advisory Council (SEAC) members, senior leadership and employees in focus groups. Robust analytics and text mining were applied to analyze the extensive data collected through the interview process to assess the importance of issues to stakeholders and to the Company, which resulted in validation and prioritization of the topics.

One of the external stakeholders was the SEAC, who since 1992 has been a key contributor to Dow’s outside-in perspective on environment, health and safety, and sustainability issues for the Company. The SEAC played a critical role in developing our 2005 EH&S Goals, 2015 Sustainability Goals and 2025 Sustainability Goals.

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

#### Prioritization

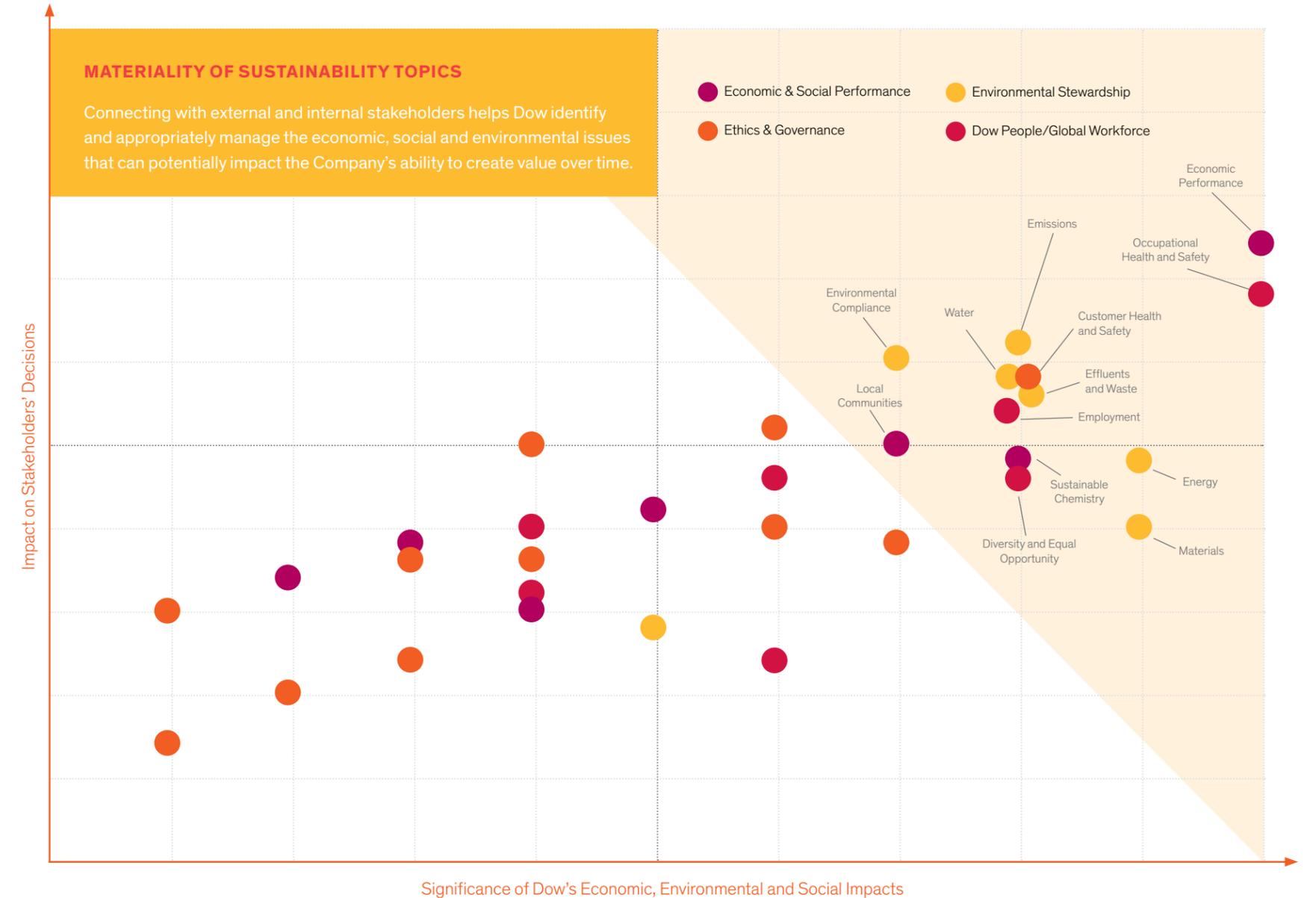
By extending the reach of our scope outside our operations, we understand that each action taken to address the material issues will have broader and long-term impact upstream and downstream of the value chain, which often can be beyond the Company’s direct control. However, to truly understand the pros or cons of our decisions, we

weigh them against other options and measure impact over time. Life Cycle Assessment (LCA) is an excellent methodology for examining the total impact of a product or service. Rather than focusing on a single process, LCA takes a holistic view, examining impacts over the complete “cradle to grave” life cycle. A life cycle perspective helps us prioritize material aspects according to their impact, given the sustainability context and the influence on stakeholder assessments and decisions. Dow applies life cycle thinking across the entire portfolio.

#### Validation

In 2014, as part of building Dow’s 2025 Sustainability Goals, a series of scenario-based probabilistic analyses was performed to evaluate the direct/indirect value, intangible value, and externality value (those borne by society) of Dow’s sustainability activities. The approach is an extension of a method that was originally developed by Dow and several other companies, as well as the American Institute of Chemical Engineers (AIChE).

The results of the materiality assessment are mapped out below. The vertical axis maps the relative importance of the topics to our stakeholders; the horizontal axis shows the significance of Dow’s economic, environmental and social impacts.



Our 2025 goals are well aligned to address the sustainability topics determined to be material. GRI 102-47

| Sustainable Chemistry           | •     | ••••• | ••••• | ••••• |       | •     |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Economic Performance            | ••••• | ••••• | ••••• | •     |       | ••••• | ••••• |
| Materials                       | •     | •     | •     | •     |       | •     | ••••• |
| Energy                          | ••••• | ••••• | •     |       |       |       | ••••• |
| Water                           | ••••• |       | •     | •     |       | ••••• | ••••• |
| Emissions                       |       |       |       |       |       | •     | ••••• |
| Effluents and Waste             |       |       | ••••• |       |       | ••••• | ••••• |
| Environmental Compliance        |       |       |       | ••••• |       |       | •     |
| Employment                      |       |       |       |       | ••••• |       |       |
| Occupational Health and Safety  |       |       |       | ••••• |       |       | ••••• |
| Diversity and Equal Opportunity | •     |       |       |       | •     |       |       |
| Local Communities               | •     | •     | •     | •     | ••••• | •     | •     |
| Customer Health and Safety      | •     | •     | •     | ••••• | •     | •     | •     |

••••• = Direct Connection Between Topic & Goal  
 • = Less Significant Connection Between Topic & Goal

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.

For example, as highlighted by the Carbon Disclosure Project (CDP), despite having no federal regulatory

price on carbon in the United States, 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. Another example is the results of the collaboration between Dow and The Nature Conservancy (TNC) on valuing ecosystem services, which is demonstrating that protecting nature can be both a global business strategy and a Company priority. By combining the resources and expertise of two organizations, we are integrating the value of nature into Dow's business decision-making.

# Broad Consultation

- Analysis of internal and industry standards, public policy
- Interviews with specialists
- More than 500 telephone interviews
- Customers
- Community Advisory Panels
- SEAC members
- Employee focus groups
- Senior leadership

**Review**  
 After having prioritized the material issues, the process at Dow becomes not only a process to decide the content of Dow's sustainability report, but also an important element for the Company to continually incorporate sustainability into its strategy and leverage existing resources for sustainable value creation.

Alignment of Dow 2025 Goals with UN SDGs

| 1  |   | • |   |   | • | • |   |
|----|---|---|---|---|---|---|---|
| 2  |   | • |   |   | • |   |   |
| 3  |   | • |   | • | • |   | • |
| 4  | • |   |   |   |   | • |   |
| 5  | • |   |   |   |   | • |   |
| 6  | • | • |   |   |   |   | • |
| 7  |   | • |   |   |   |   | • |
| 8  | • |   |   |   |   | • |   |
| 9  | • | • | • |   |   |   |   |
| 10 | • | • |   | • |   | • |   |
| 11 | • | • |   |   | • |   |   |
| 12 | • | • |   |   | • |   |   |
| 13 | • | • |   |   |   |   | • |
| 14 | • |   | • | • |   |   | • |
| 15 | • |   | • | • |   |   | • |
| 16 |   |   |   |   |   | • |   |
| 17 | • |   |   |   |   |   |   |



## Key Impacts, Risks and Opportunities GRI 102-15, 102-29, 102-30

Dow's impact through the products we produce is far-reaching. The Company's research and development efforts are essential to Company growth and future success. The Company is engaged in a continuous program of basic and applied research to develop new products and processes, to improve and refine existing products and processes, and to develop new applications for existing products. Research and development (R&D) expenses were \$1.637 million in 2017. At December 31, 2017, the Company employed approximately 6,800 people in R&D activities. Our industry-leading development engine is continuing to produce products each year that enable growth of the Company and solve world challenges. Dow's commercial teams align the Company's capabilities with opportunities in the marketplace, including those that enable solving the sustainability challenges of customers and consumers.

Refer to the Corporate Citizenship section starting on page 107 for details about the Company's impact on communities where we have operations.

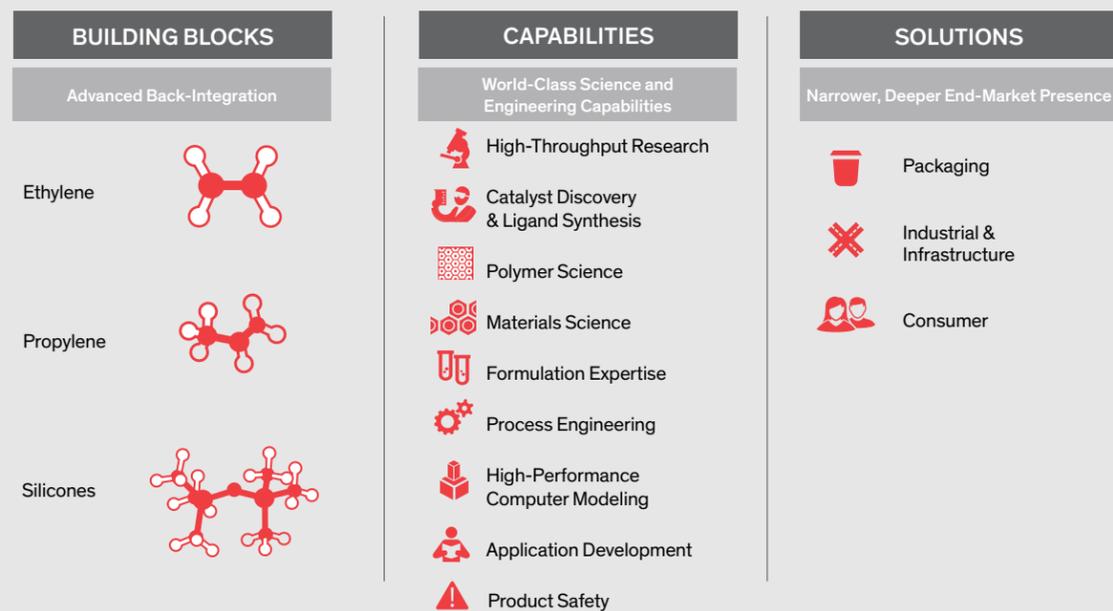
Risk management is considered to be a strategic activity within Dow and our ability to manage risk creates opportunity as well. Corporate-level identification and management of risk is systematically accomplished using an Enterprise Risk Management approach. The Board of Directors is responsible for overseeing the overall risk management process. Committees of the Board and the Board as a whole participate in the oversight of the process. The Audit Committee ensures there is a risk management process and it is being followed. Responsibility for managing risk rests with executive management. Examples include the potential impact of weather-related events, access to credit,

effect of foreign currency exchange rate movements, and volatility in purchased feedstock and energy costs. Risk management results are regularly communicated to the chief financial officer with a formal annual review with the Board of Directors and the Audit Committee.

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

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

## MATERIALS SCIENCE DIVISION: INNOVATION THAT DRIVES COMMERCIAL VALUE



volume, which could have a negative impact on Dow's results of 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 decrease in sales volume and have a negative impact on Dow's results of operations. The Company's global business operations also give rise to market risk exposure related to changes in foreign exchange rates, interest rates, commodity prices 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 feedstocks and energy, and the volatility of these costs, impact Dow's operating costs and add variability to earnings. Purchased feedstock and energy costs account for a substantial portion of the Company's total production costs and operating expenses. The Company purchases hydrocarbon raw materials including ethane, propane, butane, naphtha and condensate as feedstocks. The Company also purchases certain monomers, primarily ethylene and propylene, to supplement internal production, as well as other raw materials. The Company purchases natural gas, primarily to generate electricity, and purchases electric power to supplement internal generation.

Feedstock and energy costs generally follow price trends in crude oil and natural gas, which are sometimes volatile. While the Company uses its feedstock flexibility and financial and physical hedging programs to help mitigate feedstock cost increases, the Company is not always able to immediately raise selling prices. Ultimately, the ability to pass on underlying cost increases is dependent on market conditions.

Conversely, when feedstock and energy costs decline, selling prices generally decline as well. As a result, volatility in these costs could impact the Company's results of operations.

The Company has a number of investments in the U.S. Gulf Coast to take advantage of increasing supplies of low-cost natural gas and GHGs derived from shale gas. These include the restart of the St. Charles Operations (SCO-2) ethylene production facility in December 2012; construction of a new on-purpose propylene production facility, which commenced operations in December 2015; completion of a major maintenance turnaround in December 2016 at an ethylene production facility in Plaquemine, Louisiana, which included expanding the facility's ethylene production capacity by up to 250 kilotonnes per annum (KTA) and modifications to enable full ethane cracking flexibility; and construction of a new world-scale ethylene production facility in Freeport, Texas, which commenced operations in the third quarter of 2017, as well as a capacity expansion project that will bring the facility's total ethylene capacity to 2,000 KTA. As a result of these investments, the Company's exposure to purchased ethylene and propylene is expected to decline, offset by increased exposure to ethane- and propane-based feedstocks.

While the Company expects abundant and cost-advantaged supplies of natural gas liquids (NGLs) in the United States to persist for the foreseeable future, if NGLs were to become significantly less advantaged than crude oil-based feedstocks, it could have a negative impact on the Company's results of operations and future investments. Also, if the Company's key suppliers of feedstocks and energy are unable to provide the raw materials required for production, it could have a negative impact on 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 restrictions or prohibitions on plant operations, substantial civil or criminal sanctions, as well as the assessment of strict liability and/or joint and several liability.

The Company is subject to extensive federal, state, local and foreign laws, regulations, rules and ordinances relating to pollution, protection of the environment, greenhouse gas emissions, and the generation, storage, handling, transportation, treatment, disposal and remediation of hazardous substances and waste materials. At December 31, 2017, the Company had accrued obligations of \$878 million (\$909 million at December 31, 2016) for probable environmental remediation and restoration costs, including \$152 million (\$151 million at December 31, 2016) for the remediation of Superfund sites. This is management's best estimate of the costs for remediation and restoration with respect to environmental matters for which the Company has accrued liabilities, although it is reasonably possible that the ultimate cost with respect to these particular matters could range up to approximately two times that amount. Costs and capital expenditures relating to environmental, health or safety matters are subject to evolving



regulatory requirements and depend on the timing of the promulgation and enforcement of specific standards that impose the requirements. Moreover, changes in environmental regulations could inhibit or interrupt the Company's operations, or require modifications to its facilities. Accordingly, environmental, health or safety regulatory matters could result in significant unanticipated costs or liabilities.

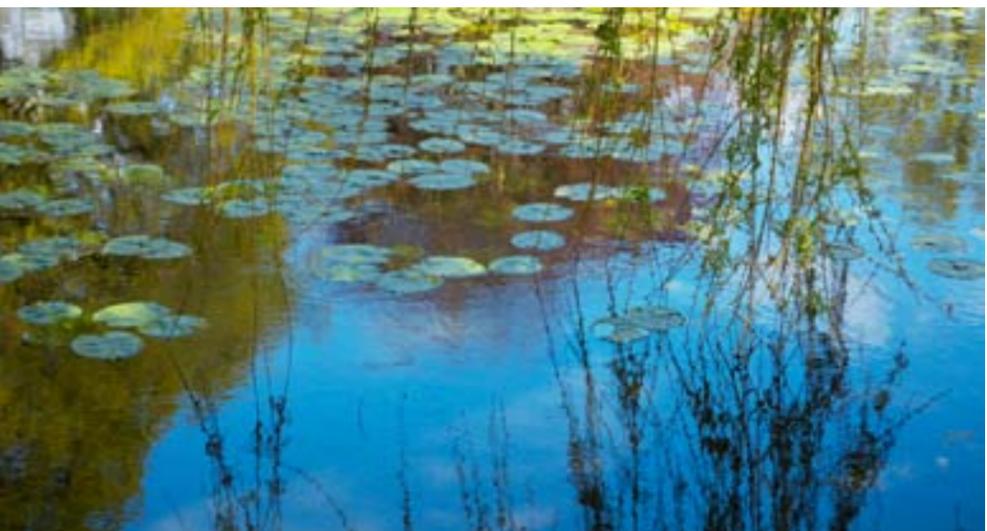
**Health and Safety:** Increased concerns regarding the safe use of chemicals in commerce and their potential impact on the environment as well as perceived impacts of plant biotechnology on health and the environment have resulted in more restrictive regulations and could lead to new regulations.

Concerns regarding the safe use of chemicals in commerce and their potential impact on health and the environment and the perceived impacts of plant biotechnology on health and the environment reflect

a growing trend in societal demands for increasing levels of product safety and environmental protection. These concerns could manifest themselves in stockholder proposals, preferred purchasing, delays or failures in obtaining or retaining regulatory approvals, delayed product launches, lack of market acceptance and continued pressure for more stringent regulatory intervention and litigation. These concerns could also influence public perceptions, the viability or continued sales of certain products, the Company's reputation and the cost to comply with regulations. In addition, terrorist attacks and natural disasters have increased concerns about the security and safety of chemical production and distribution. These concerns could have a negative impact on the Company's results of operations.

Local, state, federal and foreign governments continue to propose new regulations related to the security of chemical plant locations and the transportation of hazardous chemicals, which could result in higher operating costs.

**Operational Event:** A significant operations event could negatively impact the Company's results of operations. As a diversified chemical manufacturing company, the Company's operations, the transportation of products, cyber-attacks, severe weather conditions and other natural phenomena (such as drought, hurricanes, earthquakes, tsunamis, floods, etc.) could result in an unplanned event that could be significant in scale and could negatively impact operation, neighbors or the public at large, which could have a negative impact on the Company's results of operations.



Major hurricanes have caused significant disruption in Dow's operations on the U.S. Gulf Coast, logistics across the region, and the supply of certain raw materials, which had an adverse impact on volume and cost for some of Dow's products. Due to the Company's substantial presence on the U.S. Gulf Coast, similar severe weather conditions or other natural phenomena in the future could negatively impact Dow's results of operations.

Additional risk factors with less relevance to the Company's sustainability activities, including financial commitments and credit markets, supply/demand balance, cyber threat, company strategy, pension and other post-retirement benefits, and the DowDuPont merger are listed in the 2017 10-K.

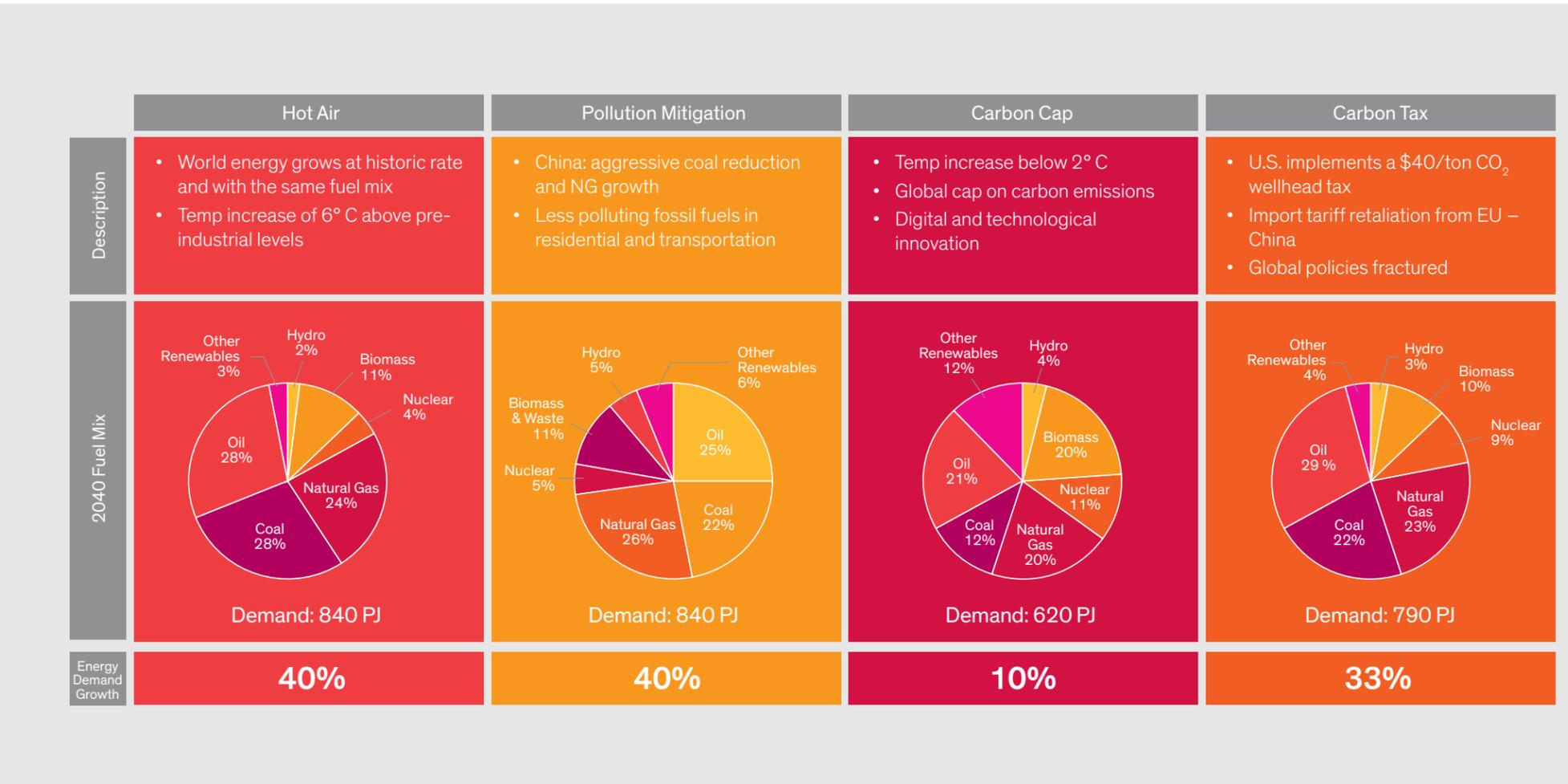
**Climate Change GRI 201-2**

**Governance**

At Dow, the Executive Sustainability Team is appointed by the Dow Board of Directors 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.

To help meet our goals, a working group is in charge of analyzing the various climate change scenarios and developing strategies, in conjunction with the Executive Sustainability Team, for the Energy business to deploy. In 2017, the Dow Energy & Climate Change business completed an updated scenario planning study to develop plans to mitigate costs and capitalize on opportunities over the next 10 years. Four boundary scenarios were considered, and the profitability impacts to Dow were evaluated at a high level. This scenario-based approach is used widely used across industries (i.e., EIA, CERA, Wood Mackenzie, BHP, etc.).



Sources for fuel mix:  
 • Hot Air: International Energy Agency, Energy Technology Perspectives 2015 - www.iea.org/etp2015 - 6D Scenario.  
 • Pollution Mitigation: Dow analysis.  
 • Carbon tax: MIT Joint Program on the Science and Policy of Global Change  
 • Carbon Cap: International Energy Agency, Energy Technology Perspectives 2015 - www.iea.org/etp2015 - 2D Scenario.

**Strategy**

Dow’s Energy & Climate Change business and Public Affairs and Sustainability functions are tasked with developing and implementing a comprehensive strategy that addresses the potential challenges of energy security and greenhouse gas (GHG) emissions for the Company. The Company continues to elevate its internal focus and external positions to identify and address the root causes of GHG emissions, including the unsustainable use of energy. Dow’s energy plan provides the roadmap:

- Conserve – aggressively pursue energy efficiency and conservation
- Accelerate – develop cost-effective, clean, renewable and alternative energy sources
- Optimize – increase and diversify energy resources
- Transition – to a sustainable energy future

The risk matrix below 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 matters for Dow are likely to be driven by changes in regulations, public policy and physical climate parameters.

**Regulatory Matters:** Regulatory matters include cap-and-trade schemes; tighter limits on GHG emissions; and taxes on GHG emissions, fuel and energy. 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 (such as cap-and-trade systems or carbon taxes) 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 unfolding 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:** Many scientific academies throughout the world have concluded it is very likely that human activities are contributing to global warming. At this point, it is difficult to predict and assess the probability of potential risks related to a global warming trend on Dow specifically. Concerns have been raised that climate change may result in more frequent incidents of severe weather and the potential for rising sea levels. In the past, major hurricanes have caused significant disruption in our operations on the U.S. Gulf Coast, logistics across the region and the supply of certain raw materials, which had an adverse impact on volume and cost for some of Dow’s products. Due to our substantial presence on the U.S. Gulf Coast, similar severe weather in the future could negatively affect our results on operations. Hurricanes Gustav and Ike, which hit the U.S. Gulf Coast in 2008, caused temporary outages for several of the Company’s Gulf Coast production facilities, resulting in \$181 million in additional operating expenses. More recently, Hurricane Harvey, which hit the U.S. Gulf Coast in August and September 2017, caused widespread temporary logistics and supply chain disruptions as well as brief outages and slowdown of production rates for some of the Company’s Gulf Coast facilities. To mitigate risks associated with severe weather, we have engineered the facilities to better withstand these events. Additionally, these sites have specific emergency preparedness plans that detail actions to take in the event of severe weather. Historically, these activities and associated costs are driven by normal operational preparedness. Dow continues to study the long-term implications of changing climate parameters on water availability, plant-siting issues, and impacts and opportunities for products.

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

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

Dow innovations are already at work improving people’s lives around the world – making clothes fresher, foods healthier, water cleaner, medicines more effective and homes more energy-efficient. And that’s just the beginning of our growing portfolio of solutions. As part of our 2025 Sustainability Goals, Dow will maintain GHG emissions below 2006 levels on an absolute basis for 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 help others reduce GHG emissions. For example, compared to current best-in class water purification membranes, our 2015 Sustainability Goal “Breakthrough to World Challenges” product, FILMTEC™ ECO Membrane Modules filter out 40 percent more salt from water, while consuming 30 percent less energy than industry standard reverse osmosis elements. In the building and infrastructure sector, Dow’s building insulation materials and airsealing products can save up to 20 percent on heating and cooling costs and significantly reduce GHG emissions.

The Company’s STYROFOAM™ insulation is installed in more than 20 million buildings worldwide, saving greater than \$10 billion in energy costs annually. DOWTHERM™ A heat transfer fluids are used in 35 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.

| Type                          | Climate-related risks   | Horizon | Potential impacts on business |  |                                |                           |                           | Potential financial impacts |          |              |                    | Potential opportunities |                                     |                             |                               |  |  |                                |                          |
|-------------------------------|---|---------|-------------------------------|--|--------------------------------|---------------------------|---------------------------|-----------------------------|----------|--------------|--------------------|-------------------------|-------------------------------------|-----------------------------|-------------------------------|--|--|--------------------------------|--------------------------|
|                               |   |         | Inability to do business      | Disruption in production capacity and shipment | Fines and reputational damages | Increased operating costs | Early write-off of assets | Reduced demand for products | Revenues | Expenditures | Assets/liabilities | Capital                 | More efficient production processes | Diversify business activity | Emergence of new technologies | Climate adaptation markets product solutions | Lower emission and renewable sources of energy | Participating in carbon market | Resource diversification |
| Transitional                  | <b>Policy and legal</b>                                       |         |                               |  |                                |                           |                           |                             |          |              |                    |                         |                                     |                             |                               |  |  |                                |                          |
|                               | Increased pricing of GHG emissions                            | >       |                               |  |                                | ■                         |                           |                             |          | ■            |                    | ■                       | ■                                   |                             | ■                             |  | ■  | ■                              | ■                        |
|                               | Enhanced emissions reporting obligations                      | >       |                               |  |                                |                           |                           |                             |          | ■            |                    |                         |                                     |                             |                               |  |  |                                |                          |
|                               | Exposure to litigation  | >       |                               |  | ■                              | ■                         |                           |                             |          |              | ■                  |                         |                                     |                             |                               |  |  |                                | ■                        |
|                               | <b>Technology</b>   |         |                               |  |                                |                           |                           |                             |          |              |                    |                         |                                     |                             |                               |  |  |                                |                          |
|                               | Substitution of existing products with lower emission options | >       |                               |  |                                |                           |                           | ■                           | ■        |              | ■                  | ■                       |                                     |                             | ■                             | ■  |  |                                | ■                        |
|                               | <b>Markets</b>  |         |                               |  |                                |                           |                           |                             |          |              |                    |                         |                                     |                             |                               |  |  |                                |                          |
|                               | Changing customer behavior                                    | >>      |                               |  |                                |                           | ■                         | ■                           | ■        |              |                    |                         |                                     |                             | ■                             | ■  |  |                                |                          |
|                               | Uncertainty in market signals                                 | >>      |                               |  |                                |                           | ■                         | ■                           | ■        |              |                    |                         |                                     |                             | ■                             |  |  |                                | ■                        |
|                               | <b>Reputation</b>   |         |                               |  |                                |                           |                           |                             |          |              |                    |                         |                                     |                             |                               |  |  |                                |                          |
| Shift in consumer preferences | >>  |         | ■                             |  |                                |                           | ■                         | ■                           | ■        |              |                    |                         |                                     | ■                           |                               |  |  | ■                              |                          |
| Stigmatization of sector      | >   |         | ■                             |  |                                |                           |                           | ■                           | ■        |              |                    |                         |                                     | ■                           |                               |  |  | ■                              |                          |
| Physical                      | <b>Acute</b>  |         |                               |  |                                |                           |                           |                             |          |              |                    |                         |                                     |                             |                               |  |  |                                |                          |
|                               | Tropical cyclones   | >       |                               | ■  |                                | ■                         | ■                         |                             | ■        | ■            |                    | ■                       |                                     |                             | ■                             |  |  |                                |                          |
|                               | Change in precipitation extremes/droughts                     | >       |                               | ■  |                                |                           |                           |                             | ■        | ■            |                    | ■                       |                                     |                             | ■                             |  |  |                                |                          |
|                               | <b>Chronic</b>  |         |                               |  |                                |                           |                           |                             |          |              |                    |                         |                                     |                             |                               |  |  |                                |                          |
|                               | Change in precipitation pattern                               | >>>     |                               | ■  | ■                              |                           |                           |                             |          | ■            |                    | ■                       |                                     |                             | ■                             |  |  |                                |                          |
| Rising sea level              | >>>   |         | ■                             | ■  |                                |                           | ■                         |                             |          |              | ■                  |                         |                                     | ■                           |                               |  |  |                                |                          |
| Rising mean temperature       | >>>   |         | ■                             | ■  |                                |                           |                           |                             |          |              | ■                  |                         |                                     | ■                           |                               |  |  |                                |                          |



# Olympics Partnership: Combining the Power of Sport and Science for a More Sustainable Future

In September 2017, Dow and the IOC announced Dow as the Official Carbon Partner of the IOC. This announcement is another step in a long journey of support by Dow for the Olympics.

Through Dow's appointment as the Official Carbon Partner of the Olympic Winter Games Sochi 2014 and the Olympic Games Rio 2016, Dow has already delivered to date third-party verified greenhouse gas reductions amounting to 3.10 million tonnes of carbon dioxide equivalent. By 2026, the reductions are projected to exceed 4 million tonnes of CO<sub>2</sub>e. Beyond balancing the carbon footprint of the Olympic Games, the program evolved in Rio to have a much broader impact in terms of ongoing adoption of energy-efficient and low-carbon technologies across major sectors of the Brazilian and greater Latin American economies.

Now as the Official Carbon Partner of the IOC, Dow is taking the carbon mitigation program beyond the Games, beyond the venues and beyond the host cities to engage its customers, partners, stakeholders and other business communities around the world in joining the IOC and Dow in our quest to provide a blueprint for a new type of climate collaboration. This collaboration calls on the industry to make different decisions along its value chain and stretches its capabilities and imagination for the benefit of positive action and innovation.

As the Official Carbon Partner of the IOC, Dow is leveraging the Olympic brand to drive engagement and implement a series of impactful mitigation projects around the world. In alignment with the IOC Sustainability Strategy, the projects will balance the IOC's operational carbon footprint while demonstrating environmental leadership on a global level.

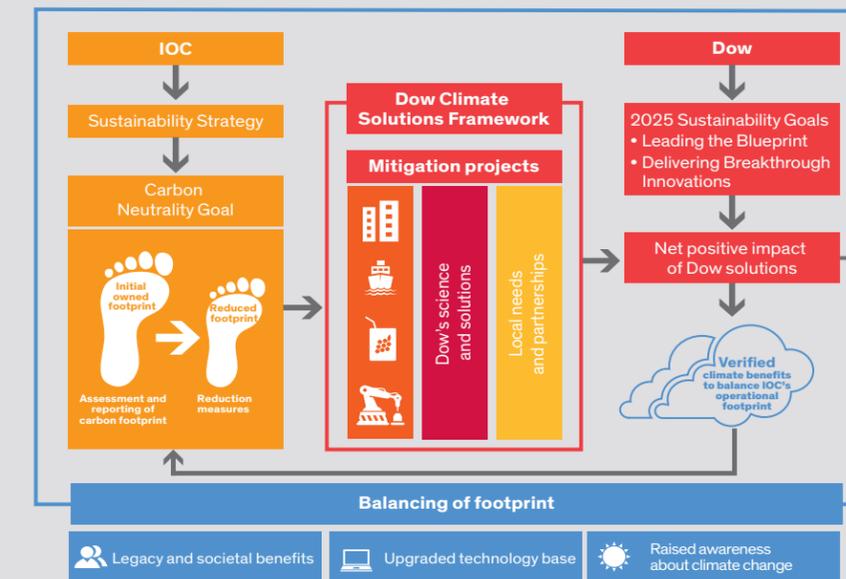
Between 2017 and 2020, Dow will develop and implement projects in various countries across different sectors of the market. Aided by Dow's science and technology, these projects will be tailored to country-specific needs and will mitigate greenhouse gas (GHG) emissions in areas such as infrastructure, transportation, packaging and manufacturing, for which Dow has proven solutions.

In close collaboration with the IOC, Dow will work with multiple players – businesses, governments, communities and non-governmental organizations (NGOs) – to evaluate technologies and support implementation of economically viable projects that can deliver significant climate benefits and maximize positive impacts within the program time frame. Working within the Dow Climate Solutions Framework, each project will provide GHG reductions and help drive the adoption of low-carbon innovations where implemented. Climate benefits will be monitored through 2026 and verified by third-party experts.

This innovative partnership uses the platform of sport and the Olympic brand to demonstrate how science and technology can help the transition to a lower-carbon society and offers an exceptional opportunity to collaborate with industry leaders to introduce solutions that will benefit generations to come.

The Dow-IOC Carbon Partnership represents a new type of sustainability collaboration supporting Dow's 2025 Sustainability Leading the Blueprint Goal. Through this innovative partnership, Dow is working with customers and expert partners across the globe to understand local market environments and identify opportunities to increase awareness and adoption of energy-efficient and low-carbon technologies. In addition to leading the program implementation, Dow is also offering life-cycle expertise, technologies, application expertise and market access to support the carbon mitigation program. The goal is to raise awareness and provide education on this important topic, alter existing business operations and create sustainable legacies.

The United Nations (UN) General Assembly recognizes how all sectors of society, including sport and business, play an important role in supporting its 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs). Both Dow's 2025 Sustainability Goals and the IOC Sustainability Strategy reflect each organization's commitment to contribute to the 2030 Agenda for Sustainable Development and closely align to a number of SDGs, including partnerships for sustainability (SDG # 17) and climate action (SDG # 13).



### At a Glance:

>35 YEARS OF SUPPORT

Supplier to the Games Since 1980

WORLDWIDE PARTNER

Official Chemistry Company of the Olympic Games Since 2010

OFFICIAL CARBON PARTNER

Official Carbon Partner of the International Olympic Committee

OFFICIAL CARBON PARTNER

Helped Mitigate the Sochi 2014 Carbon Footprint Before the Games Began

OFFICIAL CARBON PARTNER

Created a Legacy of Low-Carbon, Energy-Efficient Technologies in Latin America

## Stakeholder Engagement

Stakeholder analysis helps identify and evaluate stakeholders that can and do impact or influence the Company's strategy and reputation as well as contributes to identification of material risks and opportunities. **GRI 102-29** The intentional effort is to identify stakeholders who can drive, block or shape the discourse around sustainability. In addition, those who are affected may then influence how this discourse ultimately impacts Dow. Through keeping up with current perspectives, more successful issues management and government affairs efforts are accomplished helping to avoid negative impacts for the Company's businesses.

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

| Stakeholder Groups  | Mechanism for Engagement   | Typical Frequency | Key Topics of Interest  |
|---|--|-------------------|---|
| Advocacy and Advisory Groups. (e.g., Sustainability External Advisory Council)                          | Meetings, email communications   | Monthly           | Progress on Dow's 2025 Sustainability Goals, advice on how to address sustainability issues; site production performance and employment trends; environmental impacts, community health impacts and needs, etc. |
| Communities (e.g., Community Advisory Panels, United Way, Habitat for Humanity, Keep America Beautiful) | Meetings, social media   | Monthly           | Site financials, shipments and employment trends; environmental impacts, community health impacts and needs, etc.   |
| Customers/Retailers (e.g., The Sustainability Consortium)   | Events, meetings, emails, surveys, social media  | Daily             | Market trends, technology needs, opportunities, requirements  |
| Employees   | Surveys, emails, Global Employee Opinion and Action Survey, Employee Resource Groups, Sustainability Network | Daily             | Company's strategy, Dow's 2025 Sustainability Goals progress, engagement  |
| Investment Professionals  | Calls, emails, media, meetings   | Daily             | Market trends, Company's financial performance, risk management   |
| Industry and Trade Associations/ Consortiums (see GRI 102-13)   | Meetings, emails, conferences  | Monthly           | Key industry issues, opportunities, collaborations and partnership opportunities  |
| Academia  | Panels, meetings, research projects, internships, social media, awards                                       | Monthly           | Research, Dow's 2025 Sustainability Goals progress, opportunities, workforce development  |
| Shareholders  | Meetings, mail, media  | Monthly           | Company's financial performance, risk management  |
| NGOs and Think Tanks (e.g., The Nature Conservancy, Ocean Conservancy)                                  | Visits, meetings, emails, calls, social media  | Monthly           | Industry issues, opportunities, collaboration and partnership opportunities.  |
| Regulators  | Meetings, emails, calls  | Monthly           | Company's environmental and social impacts  |
| Suppliers   | Calls, emails, surveys   | Daily             | Value chain insights, limitations, opportunities  |

## List of Stakeholder Groups

Stakeholder engagement takes place in a variety of other ways throughout the year. The fundamental principles of Dow's ongoing sustainability stakeholder engagement strategy focus on three areas: (1) information sharing and disclosure; (2) participating in active 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.

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

## Advocacy and Advisory Groups

The 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 independent external thought leaders on issues of critical importance to society and the Company. The SEAC challenges the way the Company thinks, helping to frame important challenges and opportunities in a creative, solutions-oriented way. Member selection for SEAC is based 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 2017 include:

- Progress toward meeting 2025 Sustainability Goals
- Review of Consumer Solutions business strategy, innovation portfolio and issues management strategy
- Digitalization and sustainability trends
- Interactive discussion between SEAC and customers on sustainability trends in the marketplace

### Communities GRI 413-1, GRI 413-2

Community Advisory Panels (CAPs): 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 member of the community and one to which we are deeply committed. At Dow, we believe our decision-making processes are improved when we involve the community. Dow's CAPs represent a broad cross-section of local interests, including healthcare, education, civic engagement, law enforcement and local business. The CAPs operate in more than 38 of our global manufacturing communities for the purpose of engaging in ongoing and open communication regarding Dow's operations, safety programs, environmental conditions, community interactions, and other aspects of the Company and plant.

Feedback from CAPs enables Dow to be responsive in addressing a community's quality of life needs, especially in areas where the Company can have the greatest impact. Dow continually refreshes its CAPs to maximize value for both Dow and the community. Many Dow CAPs regularly reinvigorate their processes. 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 concerns through periodic community assessment surveys at select sites. These surveys generate feedback related to quality of life issues, identifies Dow's "rightful role" in a community and also provides direct recommendations on identified opportunities where Dow can have a positive impact. We address these and many more issues through our local site Community Success Plans.

## Customer and Retailers

Dow is a member of The Sustainability Consortium, an independent organization of diverse global participants working to design and implement credible, transparent and scalable science-based measurement and reporting systems accessible for all producers and users of consumer products. Through The Consortium, Dow works collaboratively with its customers and the value chain to develop approaches to providing more sustainable solutions for the whole supply chain and ultimately, the end consumer. Dow leverages its science and technology expertise in sustainable chemistry and global network while working alongside The Consortium's various private- and public-sector partners.

### Employees and Job Candidates

Attracting and retaining world-class talent is the key to maintaining Dow's competitive advantage. We constantly strive to maintain a culture where each employee is valued, respected and encouraged to grow in their careers. In order to continue accelerating Dow's transformation, we must empower one another to act as agents for positive change within our Company. This is why we are committed to regularly conducting global survey programs among our employees, and tracking and planning actions against measures of the Company culture.

Dow's global survey program has existed since 1995 and utilizes an annual survey called the Global Employee Opinion and Action Survey (GEOAS). The GEOAS is designed to measure employee satisfaction, commitment and engagement via questions about the job, development, leadership, work environment, communications and more. The GEOAS survey is currently implemented by a third-party vendor, CEB, with whom Dow has partnered since the beginning of the GEOAS in the 1990s. 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 eligibility. Specifically, any employee who is full time, not on a leave of absence, and has been with Dow for at least three months is eligible. This includes bargained-for employees. Survey confidentiality is also protected, and the governance behind confidentiality is reviewed each year with legal counsel and European Works Council representation.

The intent of the survey program is to provide a tracking mechanism, which enables the Company to focus on priority actions that will increase engagement in the workforce and ultimately improve corporate performance. External research shows that higher scores on engagement lead to more positive organizational outcomes (e.g., performance, productivity and retention). Organizations with highly engaged employees achieve greater total shareholder return (TSR).

The 76 percent global response rate achieved on the survey demonstrates the value employees place on providing their feedback to Dow. Employee feedback from the 2017 GEOAS showed that, on the whole, survey results were down from the previous year. This result is consistent even after taking into consideration the effects of removing the Dow AgroSciences and Electronic Materials business divisions from participation. Feedback shows employees' desire for continued focus on improving overall career development, appreciation and recognition, and work-related stress. We continue to maintain emphasis on employee appreciation and career planning. In addition, our Health Services team has carefully examined the data to pinpoint the root causes of work-related stress and develop interventions to eliminate or reduce it. Since 2013, we have measured gradual improvements in each of the focus areas.

In addition to the critical metric of employee engagement, the 2017 GEOAS was again 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 development. The Leadership Development Guide and Leadership Effectiveness Feedback Report provide leaders with insight into 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. Dow connects leaders with specific development resources as part of the LES feedback process. In 2017, scores on the survey were also realigned to simplify the reporting model; items now roll up to dimensions that are one-for-one with Company values and leadership expectations.

Finally, in 2017, new action planning resources were developed and launched for people leaders and their HR business partners. These resources were aligned to themes of items that fit well together and helped leaders to zero in on more focused areas of improvement. These resources will evolve in 2018 to become more robust.



### Employee Resource Groups

Eight employee resource groups (ERGs) – each with a senior executive sponsor – bring together people with a common interest to share experiences, find mentors, seek professional development, and gain access to senior leadership.

- African American Network
- Asian Diversity Network
- Disability Employee Network
- Gays, Lesbians & Allies at Dow
- Hispanic Latin Network
- Middle East Intercultural Network
- Women's Innovation Network
- Veteran's Network

The ERGs serve as an internal resource to help cultivate a multicultural competency within Dow, as the groups partner with businesses and 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.

The ERGs also serve as critical links to career development resources and opportunities through an inclusive community highlighted by respect, collaboration, and open and honest communication. The groups offer mentoring and networking opportunities and provide access to professional development. All employees are eligible to join any of the networks as early in their career as they choose.

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 ensuring that we have a robust talent pipeline to meet current and future business needs and fuel 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.

Dow has participated in external benchmarking studies that rank the digital recruiting performance of premier companies. The benchmarking studies evaluated 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 career website, our mobile careers website and our online application process. Dow has been ranked more favorably than premier companies, including our competitors, for talent and also ranked higher than leading global technology companies.

The engagements described were not undertaken specifically as part of the report preparation process but as part of our ongoing engagement process. To learn more about how Dow reaches out to community stakeholders, please visit the Global Citizenship website.

### 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 more directly through collaboration. For example, since 2011 The Nature Conservancy (TNC) and Dow have been working side by side to advance our understanding of the value of nature and to carry these findings into the business setting. Our hypothesis is: Investing in nature will lead to conservation AND business benefits. It is a new way of thinking, rooted in Dow's commitment to leading on sustainability and The Nature Conservancy's desire to accelerate the private sector's adoption of nature-based solutions.

As the TNC-Dow collaboration moved into its second phase at the start of 2017, we shifted from conducting analyses and pilots to implementing projects and spurring culture change with the goal of incorporating the value of nature throughout Dow and across other companies. The collaboration team is visiting Dow sites around the world to conduct Nature Goal Workshops and to help identify projects where the incorporation of nature can be beneficial. We are also pleased that a peer company has expressed interest in the Nature Goal concept and is working with Dow and TNC to determine how it might be applied within their organization. Dow continues to make steady progress and is on pace to achieve its goal of \$1 billion in business value from

projects that are better for nature. Much of the focus of the Dow and TNC collaboration continues to be identifying new types of projects that fit the Nature Goal framework, while scaling previously identified projects.

The Ecosystem Services Identification and Inventory (ESII) tool, which was developed by TNC and Dow in the first phase, continues to gain momentum as companies seek to identify projects that are good for nature. This year, Dow had discussions with more than a dozen companies and organizations, which are investigating or piloting the use of ESII in their operations. As in the first phase of the Collaboration, a key priority now is to share our results publicly. The Dow and TNC Annual Report, published on Dow.com and nature.org, complements the other channels we use to communicate the outcomes of the collaboration. We are particularly interested to share our work with other companies as the focus on nature-based solutions continues to evolve in the corporate sector.

Although the project has made strong progress in 2017, there have been some challenges as the team seeks to accomplish the collaboration's objectives. The last year has been one of change at Dow, as it is in the midst of one of the largest corporate mergers in history. The post-merger integration activities are expected to continue during 2018. In addition, one of the core project objectives is to conduct Nature Goal workshops at as many Dow sites as possible. Given resource limitations, we are restricted in the number of sites that we can visit annually.

Another challenge is to define what a nature project is, and how it is different from sustainability or efficiency projects. The collaboration team's re-evaluation of the scorecard is intended to address this confusion. As the collaboration moves toward engaging other companies in the Nature Goal, it will be helpful to strengthen the collaboration's own communication as to how this engagement helps TNC and Dow. As this is one of the core goals of the collaboration, we are looking to identify additional benefits that can be quantified, reported and potentially tied to Dow's internal metrics. For example, the team is concerned that lack of transparency in the external reporting of progress made toward the \$1 billion in business value for the Nature Goal might experience a credibility gap. This concern will be addressed by more complete reporting on progress details.

### Regulators

The actions and proposed actions of regulators can impact Dow's operations and reputation. Regulators were engaged on several topics in 2017 including microplastics, cyclic methyl siloxanes and others. Dow's Issue and Policy Management Council drives alignment of global issues and policy management strategies, setting priorities, and coordinating efforts and resources.



# WHAT WE DO

Our Products & Solutions



## SOLUTIONS ESSENTIAL TO HUMAN PROGRESS

Through diverse but focused businesses, Dow delivers innovative products and solutions to markets across the world. In an increasingly competitive business environment, we are harnessing our strong science and chemistry position to accelerate the commercialization of solutions for our customers and strengthen our leadership position in high-growth end markets.



## Using Science and Innovation to Advance Our Company and Society **GRI 102-2, GRI 102-6**

Dow combines science and technology knowledge to develop premier materials science solutions that are essential to human progress. Dow has one of the strongest and broadest toolkits in the industry, with robust technology, asset integration, scale and competitive capabilities that enable it to address complex global issues. Dow's 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 approximately 175 countries and in high-growth end-markets such as packaging, infrastructure and consumer care. The following is an overview of our businesses.

### Coatings & Performance Monomers

Coatings & Performance Monomers leads innovation in technologies that help advance the performance of paints and coatings and also provides critical building blocks needed for the production of coatings, textiles, and home and personal care products. Its water-based acrylic emulsion technology revolutionized the global paint industry. This product grouping offers innovative and sustainable product solutions to accelerate paint and coatings performance across diverse market segments, including architectural paints and coatings, as well as industrial coatings applications used in paper, leather, wood, metal packaging, traffic markings, maintenance and protective industries. Coatings & Performance Monomers is a worldwide supplier of plastics additives used in a large variety of applications ranging from packaging to consumer appliances and office equipment.

#### APPLICATION/MARKET SEGMENT

Acrylic binders for architectural paints and coatings, industrial coatings and paper; acrylic sheets; adhesives; coatings; dispersants; flocculants and detergents; impact modifiers; inks and paints; molding compounds; opacifiers and surfactants for both architectural and industrial applications; plastics additives; processing aids; protective and functional coatings; rheology modifiers; super absorbents; and textiles

#### MAJOR PRODUCTS/TECHNOLOGIES

ACOUSTICRYL™ liquid-applied sound damping technology; acrylates; ACRY SOL™ Rheology Modifiers; AVANSE™ acrylic binders; EVOQUE™ Pre-Composite Polymer; foam cell promoters; FORMASHIELD™ acrylic binder; high-quality impact modifiers; MAINCOTE™ acrylic epoxy hybrid; methacrylates; PARALOID™ Edge ISO-free technology; processing aids; RHOPLEX™ acrylic resin; TAMOL™ Dispersants; vinyl acetate monomers; and weatherable acrylic capstock compounds for thermoplastic and thermosetting materials



## Consumer Solutions

Consumer Solutions collaborates closely with global and regional brand owners to deliver innovative solutions for creating new and unrivaled consumer benefits and experiences; provides standalone silicone and acrylic-based materials that are used in a wide range of applications including adhesion promoters, coupling agents, crosslinking agents, dispersing agents and surface modifiers; and uses innovative, versatile silicone-based technology to provide solutions and ingredients to customers in personal care, consumer goods, silicone elastomers and the pressure sensitive adhesive industry.

### APPLICATION/MARKET SEGMENT

Personal care; color cosmetics; baby care; home care and specialty applications with a key focus on hair care, skin care, sun care, cleansing, as well as fabric, dish, floor, hard surface and air care applications; commercial glazing; electrical and high-voltage insulation; lamp and luminaire modules assembly; oil and gas; paints and inks; release liners; specialty films and tapes; sporting goods; and 3D printing

### MAJOR PRODUCTS/TECHNOLOGIES

Adhesives and sealants; antifoams and surfactants; coatings and controlled release; coupling agents and crosslinkers; EVOLV3D™ printing technology; fluids, emulsions and dispersions; formulating and processing aids; granulation and binders; oils; polymers and emollients; opacifiers; reagents; resins, gels and powders; rheology modifiers; rubber; silicone elastomers; silicon-based materials; solubility enhancers; aerospace composites; surfactants and solvents; XIAMETER® silicones; and DOWSIL™ high-performance silicone-based building products



## Construction Chemicals

Construction Chemicals combines its deep application know-how, materials science and formulation competence to offer manufacturers key building blocks for formulating efficient and differentiated building and construction materials. With a broad range of technologies – including cellulose ethers, redispersible latex powders, silicones and acrylic emulsions – Construction Chemicals is a leading supplier to customers around the world and addresses the specific requirements of the industry across many market segments and applications, from roofing to flooring, and gypsum-, cement-, concrete- or dispersion-based building materials. Construction Chemicals' chemistries are designed to help advance the performance, durability and aesthetics of buildings and infrastructure.



### APPLICATION/MARKET SEGMENT

Caulks and sealants, cement-based tile adhesives, concrete solutions, elastomeric roof coatings, exterior insulation and finish systems, industrial non-wovens, plasters and renders, roof tiles and siding, sport grounds and tape joint compounds

### MAJOR PRODUCTS/TECHNOLOGIES

AQUASET™ acrylic thermosetting resins, DOW™ latex powder, LIQUID ARMOR™ flashing and sealant, RHOPLEX™ and PRIMAL™ acrylic emulsion polymers, WALOCEL™ cellulose ethers, WEATHERMATE™ house wrap

## Energy Solutions

Energy Solutions supplies smart, innovative and customized solutions to enhance productivity and efficiency in the oil, gas and mining markets. This product grouping is aligned with all markets of the oil and gas industry – including exploration, production (including enhanced oil recovery), refining, gas processing and gas transmission.

### APPLICATION/MARKET SEGMENT

Helping customers in exploration, production, transmission, refining, mining and gas processing to optimize supply, improve efficiencies and manage emissions

### MAJOR PRODUCTS/TECHNOLOGIES

Demulsifiers, drilling and completion fluids, heat transfer fluids, rheology modifiers, scale inhibitors, shale inhibitors, specialty amine solvents, surfactants, water clarifiers, frothing separating agents



## Industrial Solutions

Industrial Solutions provides a broad portfolio of sustainable 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 active 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 better crop protection offerings in agriculture, coatings, detergents and cleaners, solvents for electronics processing, inks and textiles. Dow is also the world's largest producer of purified ethylene oxide.

### APPLICATION/MARKET SEGMENT

Broad range of products for specialty applications, including agriculture crop protection offerings, aircraft deicing, coatings, heat transfer fluids for concentrated solar power, construction, solvents for electronics processing, food preservation, fuel markers, home and personal care, infrastructure, lubricant additives, paper, transportation and utilities

### MAJOR PRODUCTS/TECHNOLOGIES

Acetone derivatives, butyl glycol ethers, VERSENE™ Chelants, UCAR™ Deicing Fluids, ethanolamines, ethylene oxide, ethyleneamines, UCON™ Fluids, glycol ethers, UCARTHERM™ Heat Transfer Fluids, higher glycols, isopropanolamines, low-VOC solvents, methoxypolyethylene glycol, methyl isobutyl, polyalkylene glycol, CARBOWAX™ SENTRY™ Polyethylene Glycol, TERGITOL™ and TRITON™ Surfactants



## Polyurethanes & CAV

Polyurethanes & CAV is the world's largest producer of propylene oxide and propylene glycol; a leading producer of polyether polyols and aromatic isocyanates that serve energy efficiency, consumer comfort and industrial market sectors; and an industry leader in the development of fully formulated polyurethane systems. Propylene oxide is produced using the chlorohydrin process as well as hydrogen peroxide to propylene oxide manufacturing technology. The product group also provides cost advantaged chlorine and caustic soda supply and markets caustic soda, a valuable co-product of the chloralkali manufacturing process, and ethylene dichloride and vinyl chloride monomer.

### APPLICATION/MARKET SEGMENT

Aircraft deicing fluids, alumina, pulp and paper, appliances, automotive bedding, building and construction, flooring, footwear, heat transfer fluids, hydraulic and brake fluids, infrastructure, packaging, textiles and transportation

### MAJOR PRODUCTS/TECHNOLOGIES

Aniline, caustic soda, ethylene dichloride, methylene diphenyl diisocyanate ("MDI"), polyether polyols, propylene glycol, propylene oxide, polyurethane systems, toluene diisocyanate ("TDI"), vinyl chloride monomer



## Packaging and Specialty Plastics

Packaging and Specialty Plastics serves high-growth, high-value sectors using world-class technology and a rich innovation pipeline that creates competitive advantages for customers and the entire value chain. Dow is also the leader in polyolefin elastomers and ethylene propylene diene monomer elastomers. Market growth is expected to be driven by major shifts in population demographics; improving socioeconomic status in emerging geographies; consumer and brand owner demand for increased functionality; global efforts to reduce food waste; growth in telecommunications networks; global development of electrical transmission and distribution infrastructure; and renewable energy applications.



### APPLICATION/MARKET SEGMENT

Adhesives, construction, cosmetics, electrical transmission and distribution, food and supply chain packaging, footwear, housewares, health and hygiene, industrial specialties, irrigation pipe, photovoltaic, sporting goods, telecommunications infrastructure, and toys and infant products

### MAJOR PRODUCTS/TECHNOLOGIES

Acrylics, bio-based plasticizers, elastomers, ethylene copolymer resins, ethylene propylene diene monomer elastomers ("EPDMs"), ethylene vinyl acetate copolymer, methacrylic acid copolymer resins, polyethylene, high-density polyethylene, low-density polyethylene, linear low-density polyethylene, polyolefin elastomers, resin additives and modifiers, semiconductive and jacketing compound solutions and wire and cable insulation

## Hydrocarbons & Energy

Hydrocarbons & Energy is one of the largest global producers of ethylene, an internal feedstock, and a leading producer of propylene and aromatics products that are used to manufacture materials that consumers use every day. It also produces and procures the power used by the Company's manufacturing sites. Hydrocarbons & Energy leverages its global scale, operational discipline and feedstock flexibility to create a cost-advantaged foundation for the Company. In the U.S. and Canada, the increased supplies of natural gas and natural gas liquids remain a key cost-competitive advantage for the Company's ethane- and propane-based production. The Company's U.S. and European ethylene production facilities have the flexibility to use different feedstocks in response to price conditions.

### APPLICATION/MARKET SEGMENT

Purchaser of feedstocks; production of cost-competitive hydrocarbon monomers utilized by derivative businesses; and energy, principally for use in the Company's global operations

### MAJOR PRODUCTS/TECHNOLOGIES

Ethylene, propylene, benzene, butadiene, octene, aromatics co-products, power, steam, other utilities. Advanced feedstock positions in the United States, Canada, Argentina and the Middle East.



## 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.



### INSECTICIDES

ISOCLAST™; LORSBAN™; OPTIMUM® INTRASECT® insect protection products RADIANT™; SENTRICON™; and TRACER™

### FUNGICIDES

DITHANE™; INATREO™; Penthiopyrad family of disease control products - FONTELIS®, VERTISAN®, TREORIS®, FRELIZON®, AYLORA®, INTELLIS®, ORLIAN™, REFINZAR™; and ZORVEC®

### HERBICIDES

ARIGO®; ARYLEX™; BROADWAY™; CLINCHER™; DURANGO™; FENCER™; GARLON™; INSTIGATE®; LONTREL™; MILESTONET™; PANZER™; PRIMUS™; RESICORE™; RINSKOR™; SPIDER™; STARANE™; SURESTART™; and TORDON™

### OTHER

INSTINCT®; LUMIGEN™ Seed Sense family of seed treatment products - LUMIDERM™ and LUMIVIA™; N-SERVE™ Nitrogen Stabilizer; and TELONE™

## Electronics & Imaging

Electronics & 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. Dow offers a broad portfolio of semiconductor and advanced packaging materials including chemical mechanical planarization (CMP) pads and slurries, photoresists and advanced coatings for lithography, metallization solutions for back-end-of-line advanced chip packaging, and silicones for light emitting diode (LED) packaging and semiconductor applications. This product line also includes innovative metallization processes for metal finishing, decorative, and industrial applications and cutting-edge materials for the manufacturing of rigid and flexible displays for liquid crystal displays and quantum dot applications.

### SEMICONDUCTOR TECHNOLOGIES

#### APPLICATION/MARKET SEGMENT

Integrated circuit fabrication for memory and logic and semiconductor fabrication

#### MAJOR PRODUCTS/TECHNOLOGIES

CMP consumables, photolithography materials, semiconductor fabrication materials, fabrication cleaners and removers, advanced chip packaging materials and thermal management materials

### CIRCUIT & INDUSTRIAL TECHNOLOGIES

#### APPLICATION/MARKET SEGMENT

Printed circuit board, electronic and industrial finishing

#### MAJOR PRODUCTS/TECHNOLOGIES

Circuit packaging materials, interconnect metallization and imaging process chemistries, dry film laminates, and flexible circuit materials

### PHOTOVOLTAIC AND ADVANCED MATERIALS

#### APPLICATION/MARKET SEGMENT

Photovoltaics, aerospace/aircraft, automotive, military and consumer electronics

#### MAJOR PRODUCTS/TECHNOLOGIES

Metallization pastes, thick film pastes, polyvinyl fluoromaterials, silicone encapsulants and silane precursors



### ADVANCED PRINTING

#### APPLICATION/MARKET SEGMENT

Flexographic printing and inkjet printing

#### MAJOR PRODUCTS/TECHNOLOGIES

Flexographic printing plates and materials and digital inks

### DISPLAY TECHNOLOGIES

#### APPLICATION/MARKET SEGMENT

Display materials

#### MAJOR PRODUCTS/TECHNOLOGIES

OLED materials, Cd-free quantum dots, display process chemistries, LED encapsulants and display enhancement solutions

## 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 biosensors, ozone delivery technology and biological microbial control.



### APPLICATION/MARKET SEGMENT

Animal nutrition, detergents, biofuels production, food and beverage, carpet and apparel fiber, sulfuric acid, oil refining, phosphate fertilizer and providing expertise and localized solutions for microbial control for well souring, industrial cooling water, fabric odor elimination and in-can preservation and dry film protection

### MAJOR PRODUCTS/TECHNOLOGIES

Enzymes, BIO-PDO™ propanediol, SORONA® PPT polymer, yeast, betaine, direct-fed microbials, MECS® sulfuric acid technology, BELCO® clean air technologies, STRATCO® alkylation technology, ISOTHERMING® hydroprocessing, SILVADUR™ antimicrobial, glutaraldehyde

### Nutrition & Health

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

**APPLICATION/MARKET SEGMENT**  
Food and beverage, dietary supplements, child nutrition, sports nutrition and oral dosage pharmaceuticals excipients

**MAJOR PRODUCTS/TECHNOLOGIES**  
Cellulosic and other technologies help bring new classes of medicines to market and enable foods that are healthier (gluten-free, reduced oil/fat content). Notable technologies include excipients and active pharmaceutical ingredients, solubility enhancers, reagents, granulation and binders, as well as coatings and controlled release. Other major products include probiotics, soy protein, fibers, cultures, antioxidants, antimicrobials, emulsifiers, texturants, ingredient systems and sweeteners.



### Transportation & Advanced Polymers

Transportation & 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; DOW CORNING® silicone solutions for healthcare; MULTIBASE™ TPSiV™ silicones for thermoplastics; and BETASEAL™, BETAMATE™ and BETAFORCE™ structural and elastic adhesives.



**PERFORMANCE RESINS**  
MULTIBASE™ TPSiV™ silicones for thermoplastics

**PERFORMANCE SOLUTIONS**  
DOW CORNING® silicone solutions for healthcare; BETASEAL™, BETAMATE™ and BETAFORCE™ structural and elastic adhesives

## Seed

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

**SEED BRANDS**  
 AGROMENT™<sup>1</sup>; DOW™ Seeds; MYCOGEN™ Seeds; NEXERAT™; Omega-9 Healthier Oils; OPTIMUM® AQUAMAX® hybrids; PHYTOGEN™; and PROPOUND™

**SEED TRAITS AND TECHNOLOGIES**  
 ENLIST™; ENLIST DUO™; EXZACT™ Precision Technology; HERCULEX® Insect Protection; ACREVALUE™; POWERCORE™ Insect Trait Technology<sup>2</sup>; OPTIMUM® ACREMAX™ Family of products; REFUGE ADVANCED™ powered by SMARTSTAX®<sup>2</sup>; and SMARTSTAX® Insect Trait Technology<sup>2</sup>



1. AGROMENT™ trademark used under license from Agromen Sementes Agricolas Ltda.  
 2. SMARTSTAX® and POWERCORE™ multi-event technology developed by Dow AgroSciences LLC and Monsanto Technology LLC. SMARTSTAX®, the SMARTSTAX® logo, POWERCORE™ and the POWERCORE™ logo are trademarks of Monsanto Technology LLC.

## Safety & Construction

Safety & 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 DOW FILMTEC™ reverse osmosis and nanofiltration elements to deliver products to a broad array of markets including industrial, building and construction, consumer and water processing. Safety & 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 & 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 wastewater streams and making more potable drinking water.



**PROTECTION SOLUTIONS**  
**APPLICATION/MARKET SEGMENT**  
 Industrial personnel protection, military and emergency response, medical devices, automotive, aerospace, oil and gas and solid surfaces  


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**MAJOR PRODUCTS/TECHNOLOGIES**  
 DUPONT™ NOMEX® fiber and paper; DUPONT TYCHEM® protective suits; DUPONT™ CORIAN® solid and quartz surfaces

**BUILDING SOLUTIONS**  
**APPLICATION/MARKET SEGMENT**  
 Rigid and spray foam insulation, weatherization, waterproofing and air sealing, caulks and sealants and roof coatings  


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**MAJOR PRODUCTS/TECHNOLOGIES**  
 STYROFOAM™ brand insulation products, THERMAX™ exterior insulation, WALOCEL™ cellulose ethers, WEATHERMATE™ house wrap, XENERGY™ high performance insulation, LIQUIDARMOR™ flashing and sealant, GREAT STUFF™ insulating foam sealants and adhesives

**WATER SOLUTIONS**  
**APPLICATION/MARKET SEGMENT**  
 Water filtration and purification technology for residential and industrial use. Key industries include municipal, power, electronics, pharmaceuticals, food and beverage, mining and oil and gas applications  


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**MAJOR PRODUCTS/TECHNOLOGIES**  
 DOWEX™ and AMBERLITE™ ion exchange resins, DOW FILMTEC™ reverse osmosis (RO) and nanofiltration elements, INTEGRALFLUX™ ultrafiltration modules and FORTILIFE™ RO Elements for challenging waters and applications

## Sustainable Chemistry

### Sustainable Chemistry Index (SCI) Methodology Aligns with Our 2025 Sustainability Goals

As one of the metrics for our 2025 “Delivering Breakthrough Innovation” Sustainability Goal, Dow has developed the Sustainable Chemistry Index (SCI). The SCI is a series of questions to be answered annually by each of our business units. The 2025 SCI questions are grouped into four themes: risk, innovation, business rewards and strategy, and value chain. Some questions require quantitative or semi-quantitative answers, and some are opportunities to provide stories in text or examples. These stories can be drawn from – or be the starting point for – information used to promote Dow products and actions or to create external reports.

The SCI process each year includes identification of business focal points and subject matter experts who respond to the survey. Scoring is done by the corporate team, which reviews the results with each business and aggregates the results into a corporate measure of sustainable chemistry progress. Each business is provided feedback in the form of scorecards, benchmarks, and lists of strengths, gaps and opportunities. The results provide a way to analyze the Company’s portfolio that incorporates sustainability and economic performance together.

Below are some of the data insights we learned in the 2017 cycle (reviewing 2016 performance):

**59% of Sales**  
are from products that  
address world challenges



**70% of R&D  
Projects**  
address world challenges



### Precautionary Principle or Approach GRI 102-11

We support a precautionary approach as set out in Principle 15 of the Rio Declaration on Environment and Development: “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

The Rio Declaration was amended at the Johannesburg Summit to include health impacts, in addition to environmental impacts. We believe that approaches should be risk-based and cost-effective. Additionally, the selected chemicals management approach should be:

- Proportional to the objective being pursued;
- Provisional;
- The least burdensome option that provides adequate protection from the risk.

As a responsible corporate citizen, Dow continues to use a well-defined process for assessing and managing risks in the face of uncertainty. This process is science-based, ensuring decision-making includes an appropriate evaluation of risk and benefits. It applies to current products as well as those being contemplated for development. We view the precautionary principle as an application of the principles of risk assessment and risk management. Risk assessment includes hazard identification, characterization, exposure assessment and risk assessment. Risk management encompasses the identification, selection and implementation of alternative actions for addressing risk through the control of identified hazard(s) and/or exposure.

## Risk Characterization Process

All products (100 percent) are assessed in an appropriate manner – depending upon EH&S profile, application and exposure potential – for improvement opportunities as part of Dow’s EH&S management approach at each stage of the product life cycle. The human and environmental risks of all our products are characterized using Dow’s risk characterization process/tool. The tool requires the assessment of hazard and exposure information to identify the risk tier. The risk tier will then determine the depth of the Product Stewardship program, including EH&S information, Business Risk Review requirements and distributor/customer support. Dow businesses utilize the Business Risk Review process to assess and minimize possible adverse impacts on people, property and the environment as a result of Dow’s business activity, including minimizing EH&S impacts associated with new and existing operations, products, applications and services throughout the products’ life cycle.

Businesses are required to conduct risk reviews when material new information is received, including material changes in product uses, regulations or raw materials, or when triggered, in certain cases, by the passage of time. Improvement opportunities have been identified to clarify and strengthen these triggers. How frequently risk reviews should be repeated is determined by the risk tier for the product/application

identified with Dow’s product risk characterization tool. In the process, and through use of supporting processes and tools, health and safety impacts are assessed with respect to new product development, manufacture of product, transportation and distribution, use of product at customer facilities, and recycle, reuse or disposal. Risk mitigation measures are identified and implemented as a direct result of the Business Risk Review work process. Various product stewardship efforts such as distributor and customer qualifications and industry advocacy work are just a couple examples of involvement in the storage, distribution, supply and use steps of product life. With increasing interest of the value chain in chemical identity and use, working with these stakeholders to support their users and address their questions is a priority. Dow continued to increase its engagement with the value chain in 2017 to provide a better opportunity for us to understand the uses and exposure potential of Dow products. Further, this interaction provides a better opportunity to not only address the needs of our direct customers for health and safety information but also their customers. Dow accepts the responsibility to be a good steward of the environment on behalf of current and future generations. Dow identifies the management of chemicals to protect human health and the environment as a priority issue. To learn more about our policy on chemicals management and our product stewardship program, visit the Market & Solutions section on [www.dow.com](http://www.dow.com).

## Replacing Chemical Developers with Air

A breakthrough innovation originally developed to improve architectural paints is finding renewed value in making receipts printed on thermal paper more sustainable. Dow’s ROPAQUE™ NT-2900 Opaque Polymer for BLUE 4EST™ Thermal Paper is a first-of-its-kind technology, offering a thermal paper option that is free of chemical developers. Instead the new technology relies solely on air voids in the paper coating to develop an image. Exposure to heat collapses the voided particles making the colored layer visible. Thermal paper is used broadly throughout the world for cash register receipts, tickets, tags and labels. Regulatory and consumer concern over chemical developers is driving a search for replacement chemicals. In 2017, ROPAQUE™ NT-2900 Opaque Polymer for BLUE 4EST™ Thermal Paper, co-developed with The Koehler Paper Group, won both the U.S. EPA Presidential Green Chemistry Challenge and R&D 100 Award.

## Collaborations **GRI 102-13**

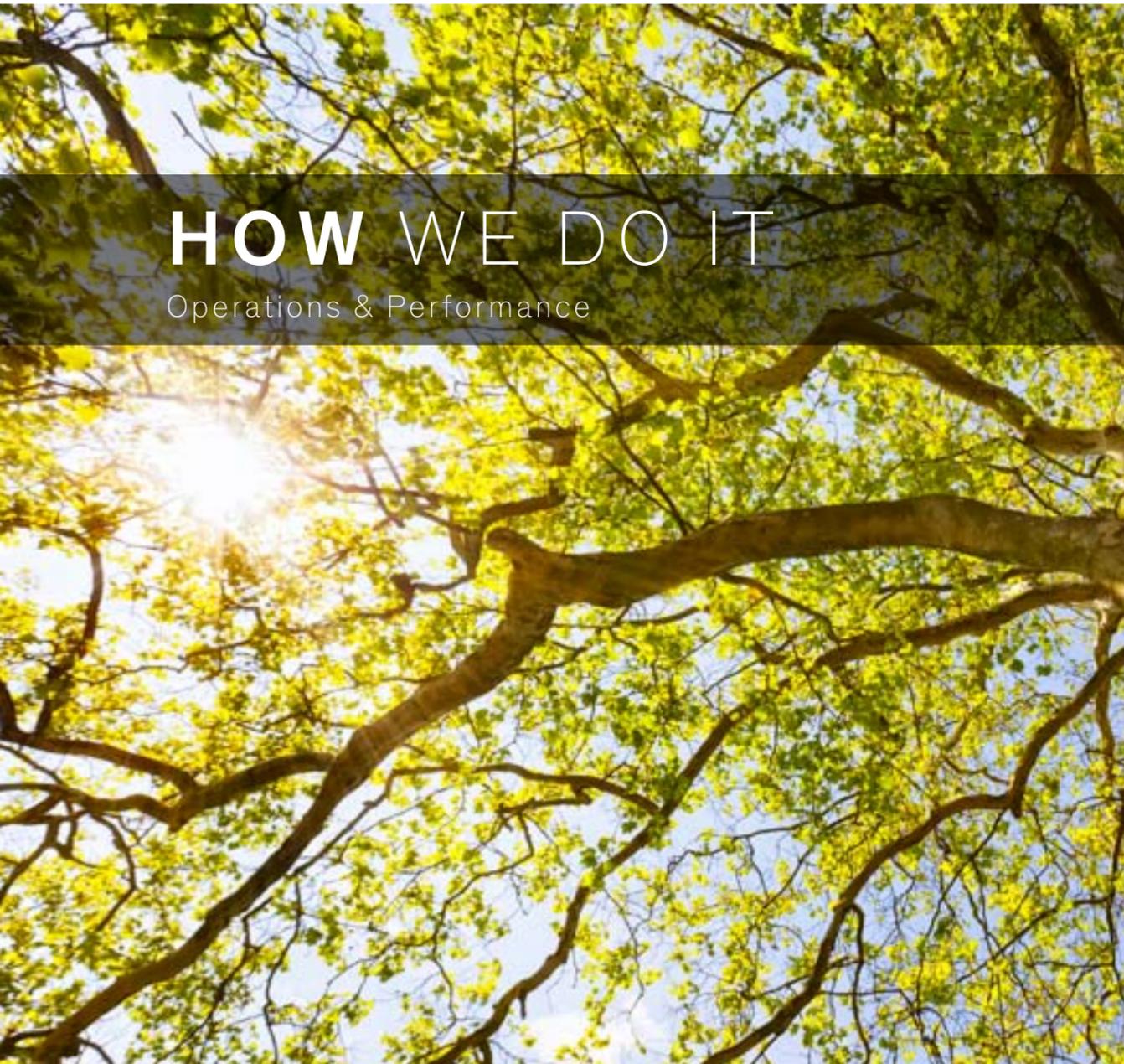
### Membership of Associations

Dow recognizes that the actions of one company alone cannot achieve the scope of change required to overcome global challenges such as climate change or food waste. As a global industry leader committed to advancing science and sustainability, Dow openly collaborates with customers, academia, suppliers, communities and governments. Through collaboration, we can help spur innovation, solve some of society's greatest challenges, and lead the transition to a more sustainable planet and society by championing a more inclusive model of business. Over the years, we have nurtured successful collaborative partnerships with dozens of organizations and institutions around the world in pursuit of shared goals.

Below is a partial list of associations that Dow supported in 2017.

|   |  |  |   |
|---|--|--|---|
| Acumen  | Center for Climate Change and Energy Solutions (C2ES)            | International Olympic Committee            | The Dow Centre for Sustainable Engineering Innovation at the University of Queensland |
| Agriculture Retailers Association                               | Center for Chemical Process Safety (CCPS)                        | Louisiana Chemical Alliance                | The Energy Materials Industrial Research Initiative (EMIRI)                           |
| Alliance for PE Pipe  | European Chemistry Industry Council (CEFIC)                      | Michigan Chamber of Commerce               | The Michigan Chemistry Council  |
| Association of Businesses Advocating Tariff Equity (ABATE)      | Corporate Eco Forum  | Michigan Manufacturers Association         | The Nature Conservancy  |
| Alliance for Competitive Taxation                               | CropLife America   | National Association of Manufacturers      | The Sustainability Consortium   |
| America Made Coalition  | China Petroleum and Chemical Industry Federation (CPCIF)         | Ocean Conservancy                          | United Nations Global Compact   |
| American Institute for Packaging and the Environment (AMERIPEN) | Dow Sustainability Fellows Program at the University of Michigan | Paulson Institute                          | U.S. Chamber of Commerce  |
| American Center for Life Cycle Assessment (ACLCA)               | Environmental Defense Fund                                       | Plastics Europe                            | U.S. Council for International Business   |
| American Chemistry Council (ACC)                                | Flexible Packaging Association                                   | Plastics Pipe Institute                    | United States - India Strategic Partnership Forum                                     |
| American Coatings Association                                   | Global Silicones Council (GSC)                                   | Personal Care Products Council (PCPC)      | World Business Council for Sustainable Development (WBCSD)                            |
| American Fuel & Petrochemical Manufacturers                     | Global Water Challenge   | Responsible Industry for Sound Environment | World Chlorine Council (WCC)  |
| American Petroleum Institute                                    | Green Chemistry and Commerce Council (GC3)                       | Retailers Leadership Council (GC3)         | World Economic Forum (WEF)  |
| American Seed Trade Association                                 | Grocery Manufacturers Association                                | Smart Cities Council                       | World Environment Center (WEC)  |
| Biotechnology Industry Organization (BIO)                       | Halogenated Solvents Industry Association                        | Sustainable Brands                         | World Resources Institute Corporate Consultative Group                                |
| Business for Social Responsibility (BSR)                        | International Council on Chemical Associations (ICCA)            | Sustainable Packaging Coalition            |   |
| Business Roundtable   |  | Texas Chemical Council                     |   |
|   |  | The B Team                                 |   |





# HOW WE DO IT

Operations & Performance



## WHAT COMES FIRST

Reducing our environmental impact and managing our operations safely and responsibly is fundamental to our business. We put the health and safety of our people, communities and environment at the heart of everything we do. Our goal is to maintain world-leading operations and to collaborate across the value chain and with our communities to optimize our natural resource efficiency, environment, health and safety performance.



## Supply Chain Sustainability Strategy Overview GRI 102-9

Integrated Supply Chain recognizes the importance of safe, secure and responsible operations throughout our value chain. With this in mind, we have included sustainability as one of the four key tenants of our overall Integrated supply chain strategy.

With customers, suppliers and operations across the globe, supply chain sustainability is critical to our success, and core to Dow and the customer experience.

In 2017, we launched our Supply Chain Sustainability Strategy. This strategy puts the customer experience at the core of our supply chain operations, helping us to achieve long-term business success while protecting people and the planet.

Throughout 2017, we made huge strides in putting our strategy into action: We have implemented our Green Transportation Initiative, working in collaboration with our carriers; executed our Transportation Stewardship Program, achieved external recognition for our approach to end-to-end transparency within the value chain and applied our advocacy blueprint within our supply chain operations.

At Dow, we recognize the importance of collaboration for long-term success and have further enhanced our already deep-rooted relationships with our logistic service providers, suppliers and customers by proactively identifying opportunities for collaborative supply chain sustainability projects and initiatives.

Our Integrated Supply Chain Sustainability strategy is built on the following pillars:



### Partnering Through the Value Chain

Our supply chain success 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 Ecodesk, 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 Fourth Consecutive Year

At Dow we recognize the importance of transparency throughout our entire value chain, and it is through our collaboration with our customers and third-party platforms that we continue to drive long-term business success and improve our supply chain capability.

>2,000  
SERVICE PROVIDERS  
IN 59 COUNTRIES



561  
WAREHOUSES  
AND 135 TERMINALS

100B  
POUNDS/YEAR  
TO 100,000 SITES

6,000  
SHIPMENTS  
PER DAY

2ND  
LARGEST  
CHEMICAL  
RAIL FLEET GLOBALLY

EcoVadis, an international organization that provides sustainability ratings and performance improvement tools for global supply chains, renewed the “Gold” status of Dow’s Integrated Supply Chain for the fourth consecutive year in 2017, reaffirming the Company’s global citizenship commitment to supply chain transparency and sustainability excellence.

“Gold” is the highest rating awarded by EcoVadis. The EcoVadis platform delivers reliable scorecards to monitor supplier practices covering 150 purchasing categories, 110 countries and 21 corporate social responsibility indicators. The scorecards are intended to be shared with purchasers who want to assure the integrity of their suppliers. With Dow’s EcoVadis rankings, our customers can be assured of our commitment to driving responsible and sustainable end-to-end value chains. Dow is in the top 3 percent in the category of “Manufacturer of Base Chemicals, Fertilizers and Nitrogen Compounds, Plastics and Synthetic Rubber” and in the top 2 percent in all categories in its assessment of approximately 30,000 suppliers.

Dow demonstrated a comprehensive corporate social responsibility management system that covered the following four themes:

- Environmental
- Labor Practices & Human Rights
- Fair Business Practices
- Sustainable Procurement

The following table outlines our performance against all supplier categories as assessed by EcoVadis:



|                                       |   |
|---------------------------------------|---|
| Environment                           | TOP 11 % of suppliers in the category Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in. |
| Labor Practices                       | TOP 5 % of suppliers in the category Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in.  |
| Fair Business Practices               | TOP 2 % of suppliers in the category Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in.  |
| Sustainable Procurement               | TOP 7 % of suppliers in the category Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in.  |
| Overall (sector)                      | TOP 3 % of suppliers in the category Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in.  |
| Overall (across all industry sectors) | TOP 2 % of suppliers in all categories  |

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 the importance of safe and secure transportation and have taken a number of steps to engage internally and externally to make a positive long-term impact. This approach has helped us to achieve business success while continuing to protect the communities within which we operate and the planet.

### Case Study: Dow Road Logistics Mission to Help End Human Trafficking

According to the U.S. Department of Justice, human trafficking is the world’s fastest-growing crime. After learning about this growing and often hidden crime through our partnership with one of our logistics carriers, Quality Carriers, the Dow Logistics Road Team made it their goal to help educate the industry and spread preventative methods. Dow joined the Department of Transportation (DOT) in North America to partner on their Transportation Leaders against Human Trafficking initiative and became a shipping partner with Truckers against Trafficking (TAT). Additionally, Dow created a proposed multigenerational human trafficking prevention plan that requires Dow North American road carriers and third-party logistic service providers (3PLs) to become TAT Certified by April 1, 2018.

Along with our carrier and 3PL participation, the proposed plan includes the following:

- Train and educate Dow Logistics and Site leadership on what to look for and who to call.
- Using Dow’s learning management system, Diamond Learning, create a course for all employees.
- Educate our customer base.
- Review employee agreements to consider adding immediate termination clauses for participation in trafficking activities.
- Work with government officials on education and prevention methods, such as requiring commercial drivers to complete a course on how to recognize human trafficking.

Through the partnership with government officials, Dow is providing support for the following:

- Providing schools with education and training to help protect our most vulnerable members of society – our children.
- Promoting overall community awareness through local and national prevention and educational campaigns.

To date, Dow has been identified as being a best-in-class TAT shipping partner.

### World-Leading Transportation Stewardship and Performance

Dow launched its Transportation Stewardship program in 2017 to drive the industry to new levels of safety performance. We believe it is critical to have strategic alignment and collaboration with our logistics service providers and other chemical producers and shippers to achieve safe and secure transportation of materials throughout chemical supply chains across the globe.

### Case Study: Emerging Geographies – Managing Risk within Supply Chains – India

India is 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.

Dow identified a number of challenges with regards to the transportation of chemicals in India and in

response, set about creating a strategy to build safe and sustainable logistics operations to overcome these challenges. The team in India worked on initiatives to ensure greater transparency, visibility of shipments and develop quick emergency-response support.

The implementation of Nicer Globe (a Responsible Care® initiative by the Indian Chemical Council) includes:

- GPS integrator for single-window visibility of in-transit vehicles
- Real-time location update of shipments to customers
- Emergency-response support and a list of points of interest such as the nearest police, fire station and crane services
- Alerts for overspeeding, pre-defined route deviation, odd hour of operations, and other incidents

In addition, the Gate Check Tool was implemented, providing the following capabilities:

- Paperless vehicle inspection having centralized data accessibility
- Mobile device app with questions in local language
- Capability to take pictures at every stage
- Driver details and performance history
- One checklist for all gate inspections

As a result, Dow is now able to track all the hazardous

goods movements through Nicer Globe and safeguard better control and proactive measures. Market vehicles are also tracked through Nicer Globe, and we aim to bring all shipments on this platform.

The Gate Check Tool was launched at two major locations in India in 2017. By Q3 2018, it will be implemented at all Dow locations across India. The following graphic outlines the benefits that have been achieved as a result of Dow implementing this strategy:



### Breakthrough Innovations in Supply Chain Design

At Dow, we have embedded sustainability elements into supply chain design and optimization processes and technologies. This includes reducing our carbon footprint, improving energy efficiency, optimizing costs and working with safe, sustainable and socially-responsible suppliers and logistics providers. An example of where we have collaborated with our logistic service providers is through the implementation of our Green Transportation Strategy in 2017.

#### Case Study: Green Transportation Carrier Awards

In 2016, Dow partnered with the University of Michigan’s Tauber Institute for Global Operations to develop a green transportation initiative for our global supply chain. The collaboration resulted in an actionable strategy for Dow, consisting of internal activities to actively manage and reduce our impact, as well as external engagement to drive and promote sustainable logistics. Implementation took place in 2017.

Asia Pacific and Latin America had previously implemented award programs with a sustainability element: S4TAR and DowGOL, respectively. It then was decided to leverage these programs to other regions, the first being the launch of the North American Road Carrier/3PL Sustainability Awards in Q3 2017. Collaborations took place between our North American road team and logistic service providers (LSPs) to create a survey that truly captured the importance of sustainability and provided visibility to initiatives that were already in progress. Simultaneously, we also rolled out our Green Transportation Initiative in Europe, which included the launch of the European sustainability survey with carriers in Q4 2017. The European sustainability award was launched at a Q1 2018 event.

In addition to the award programs, we also have a number of regional initiatives aligned to green transportation:

In Brazil, Dow is leading the implementation of a Green Transportation Program in collaboration with other international companies and the Federal University of Rio de Janeiro. In 2017, an important milestone was accomplished with the launch of the Reference Guide on Sustainability – Best Practices for Freight Transport. By 2020, the Brazilian Green Logistics Program is targeting to have a Green Transportation Certification Program implemented in Brazil.

In China, Japan, Korea, South East Asia and Australia, Dow has implemented multiple programs related to greenhouse gas emissions reduction, natural resource consumption reduction, waste management and environmental awareness training to create more awareness about green transportation in collaboration with LSPs.

### Transportation Stewardship: A Holistic Approach

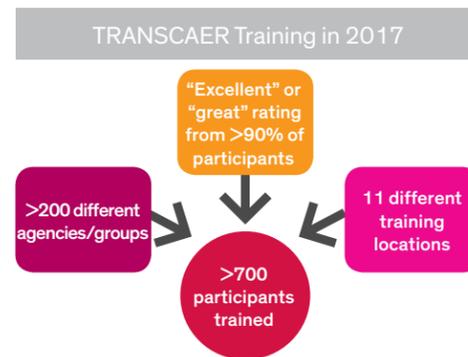
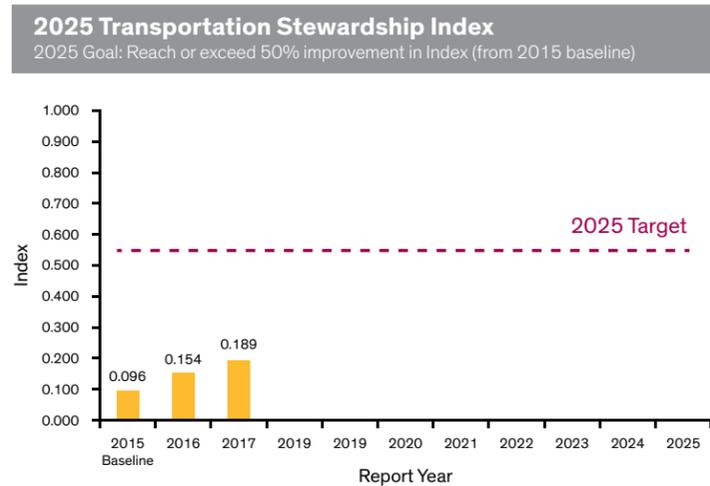
Dow’s Transportation Stewardship Program – an extensive, holistic program focused on driving the industry toward a new standard of transportation safety and security – achieved a number of milestones in 2017 by implementing several initiatives that support our commitment to strengthen transportation safety to reduce risk to people and the planet.

In 2017, Dow launched a number of Responsible Transportation Initiative programs globally. These programs emphasized collaboration for long-term success within our value chain and continuing to drive the industry to a new standard of transportation safety and security.

Dow has engaged with external organizations in each region, which has resulted in greater than 150 programs now active globally. As part of this initiative, best practice programs were identified within each region. These programs will continue to be leveraged into regions that do not have established pre-existing programs in place. For example, the Nicer Globe initiative in India, Brazil’s Green Freight initiative, China’s AICM initiative and the North American Layers of Protection Partnership program were all identified as being of a high standard and could be leveraged by other regions.

To track our progress, we’ve created a Transportation Stewardship Index that looks at leading indicators and is comprised of metrics in three categories: 1) incident-free performance; 2) leading-edge programs; and 3) transportation risk across the value chain. By 2025, Dow has committed to achieving a 50 percent improvement in the Transportation Stewardship Index and eliminating severe transportation incidents that impact the communities through which our products, raw materials and intermediates flow. 2016 was our first year using the index, and we continue to be successful in moving toward our 2025 goals.

To achieve our 2025 goal of eliminating severe transportation incidents, we’ve changed the way that we manage incidents to take a more holistic view of Dow’s transportation impact. Our incident matrix includes three categories of incidents and enables us to weigh the impacts (human, environmental and community) and severities of any incidents caused by Dow products. Our robust incident management programs helped us to achieve our goal of zero serious transportation incidents in 2017.



### Risk Reduction Across the Value Chain

Achieving our Transportation Stewardship goals will require us to take a broader approach to managing transportation risk. To accomplish our 2025 Transportation Stewardship goals, we’re mitigating risk by looking at a variety of factors, including highly hazardous materials tonne-mile reduction, modal and route changes, new technology and enhanced packaging and securement. We’ve expanded our risk approximation and mitigation processes beyond Toxic Inhalation Hazardous (TIH) materials to include a broader scope of materials, and we are currently evaluating opportunities within the heritage Dow Corning business units to further minimize the potential for transportation incidents. We have robust Distribution Risk Management programs in place that include detailed risk reviews, and we are continuously using these systems to review our vulnerabilities. These programs help us to identify our highest transportation risk areas and target them effectively.

#### Culture Change

As part of Dow’s Transportation Stewardship Change Management and Communication strategy, we are measuring culture change with regards to transportation safety and risk management.

A measurement tool has been implemented to track our culture change process amongst the different stakeholders. This gives us insight into where we are with culture change and enables us to adapt our communication strategy accordingly. This accomplishment provides us with a solid basis to further develop next-phase communication strategies. With our new approach to managing transportation risk, we’re focused on sharing our experiences and best practices externally to help drive the transportation industry toward a safer, more sustainable future.

#### TRANSCAER

Dow has been an active participant on the National TRANSCAER Task Group, a voluntary national outreach effort, since its creation. For more than 15 years, we’ve had a representative serving on the TRANSCAER Executive Committee, as well as a handful of personnel either serving as the regional or state coordinator and/or members of state TRANSCAER teams/committees.

Every year, Dow continues to provide training, at no cost, to educate and assist communities near major transportation routes about hazardous materials. This training is focused on enhancing outreach to communities for improved education and emergency preparedness. We continue to be recognized for our accomplishments, as we’ve received the TRANSCAER National Achievement Award for the past nine consecutive years.

### Sustainable Packaging

The Packaging Sustainability Council continues to focus on implementing key projects as well as developing future capabilities to meet our objectives for each of the global packaging strategy areas:

- Seek innovative technology
- Design for sustainability
- Drive sustainable behavior
- Share the sustainability story

#### Case Study: Universal Packaging Specification System Launch

Design for Sustainability is one of the key global strategic areas for Packaging. In 2017, the Packaging Sustainability Council focused on implementing sustainable work processes and tools, which resulted in the implementation of the Universal Packaging Specification System (UPSS).

The Universal Packaging Specification System delivers an end-to-end packaging work process and a controlled management system of record for packaging specifications on Dow's SAP platform. The process builds in sustainability considerations at the start of all design projects and utilizes an impact assessment to evaluate benefits across multiple areas beyond packaging material choices. The assessment looks at supplier selection, including their sustainability practices, filling operations and logistics efficiencies, to determine optimal packaging systems. From concept to implementation, packaging data can be rapidly shared with internal partners and external customers. Having a single source of packaging data is providing a new means for opportunity analysis. Combined with efficiency gains from having a robust work process, packaging professionals now have more time to innovate the next generation of sustainable packaging solutions.

#### Suppliers

We work with a variety of suppliers ranging from raw material, logistic service providers (LSPs) and labor service providers to capital equipment and corporate service providers. Dow has approximately 50,000 suppliers in our supply chain and in approximately 130 countries, with a purchasing managed spend of approximately \$27 billion. We have procurement centers around the world to establish effective relationships with global and local suppliers of goods and services. We work with our suppliers to pursue the principles of sustainability through Responsible Care.® This helps provide us with a stable supply of raw materials.

In water-scarce countries such as India, nearly half of a household's daily water use comes from hand-washing laundry. DOWSIL™ EasyRinse technology is a cost-effective laundry solution that enables more precious potable water to be used for drinking rather than for cleaning. Typically, clothing is rinsed in sequential buckets of fresh water until no foam is observed. The technology supports development of rich foam during washing. During rinsing, the technology activates to suppress foaming – helping reduce the number of rinses needed and saving consumers water and time. Consumers can get superior wash performance while using 25-50 percent less potable water to achieve the expected visual cue of a rinsed garment. DOWSIL EasyRinse technology is now being used by Unilever in its RINT laundry bar detergent, which, in India, is a cost-sensitive consumer product that sells for 10 rupees (14.9 cents U.S.).

## Innovative Laundry Technology Tackles Water Scarcity



### Supplier Diversity

Dow's Supplier Diversity initiative includes small businesses and diverse businesses identified as being owned by minorities, women, veterans (including service disabled), LGBTQ and disabled. We are committed to supplier diversity as an element of our global procurement strategy. In 2017, Dow named a Supplier Diversity Leader to develop and execute our three-year multigenerational plan to ensure alignment to our corporate Inclusion & Diversity strategy. In addition, we have incorporated provisions into our Supplier Code of Conduct and contract templates to set expectations with our suppliers as it relates to their role in supplier diversity. We measure, track and report our small and diverse business spend, which currently represents approximately 13 percent of spend in the United States.

#### Supplier Code of Conduct

At Dow, we continue to engage new vendors globally and communicate Dow's expectations that all suppliers are compliant with regulations and Dow's values through the Dow Code of Business Conduct. In 2017, our Supplier Code of Conduct was refreshed to add a provision on supplier diversity. Suppliers are encouraged to have an active supplier diversity program and support the businesses and communities where Dow operates by engaging with small businesses, minority- and woman-owned businesses and other diverse categories. Dow continues to review and refresh the Supplier Code of Conduct on an annual basis, completing a full analysis 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. Our Code of Business Conduct for Suppliers is required in all new and existing supplier engagements. The requirements of the Code of Business Conduct are built into supplier contracts so as to

ensure they are contractually enforceable. We reserve the right to audit supplier compliance at any time. In the case where we identify less than adequate supplier practices, we reserve the right to discontinue business with the supplier. Annually we've identified compliance issues in less than 0.1 percent of our supplier base, resulting in the immediate cessation of business.

#### External Manufacturing

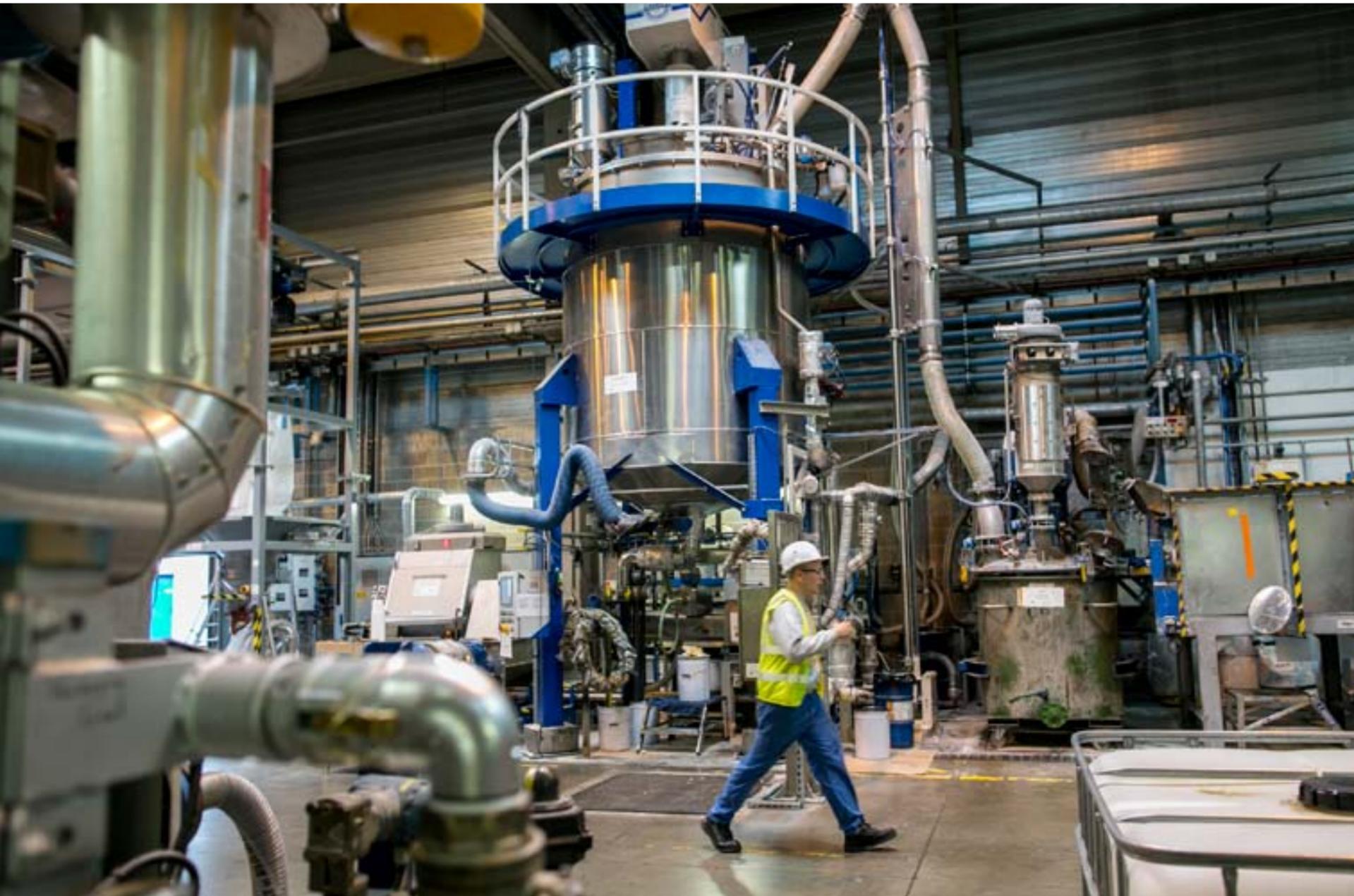
External Manufacturing (EM) refers to manufacturing services that are performed by an outside party on Dow's behalf using Dow's intellectual property. We spend more than \$1 billion on a diverse portfolio of technologies at more than 500 external manufacturers globally. We manage all external manufacturing suppliers through a robust, risk-based work process that extends throughout the life of the business relationship, from the initial selection of a supplier through the conclusion of the business agreement. This work process includes a screening of process risks,

a supplier selection process in which an initial 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 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 Code of Business Conduct and the Fundamental EH&S Expectations for External Manufacturers

#### Logistic Service Providers

Leveraging our approach to our suppliers and external manufacturing (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 periodic follow-up assessments. These assessments include reviewing health & safety practices; labor practices; environmental compliance and security and are conducted via work processes and external initiatives such as the Safety & Quality Assessment System (SQAS); Chemical Distribution Institute (CDI); Responsible Care® and Anti-Corruption Due Diligence (ACDD). We also operate a detailed Distribution Risk Review process to ensure risks are adequately mitigated.

We are committed to driving sustainable behavior throughout our entire value chain and set clear expectations to our suppliers including EM and LSPs to adhere to our commitment of environmental and socially responsible operations. Similar to our approach with our suppliers, if an EM or a LSP is found to be in breach of our expectations, Dow will cease current and future business opportunities with the supplier. Through our collaborative partnerships with our upstream and downstream stakeholders, we are able to implement sustainable business practices across our entire value chain.



### Employee Health and Safety

Worker safety has always been a core value of Dow. Personal safety incident reduction goals have been a part of our sustainability goals since inception and are represented in our 2025 Sustainability Goals under our World-Leading Operations Performance Goal. Looking ahead, we are working to eliminate the most severe incidents (incidents that result in fatality or life-altering injuries).

Dow has integrated our approach to managing worker safety into our Operating Discipline Management System, which broadly applies to all Dow work groups and locations. Within that management system, Dow has created a series of standards that lay the foundational expectations of hazard assessment and risk mitigation. All safety standards apply to all Dow locations regardless of geography or operating unit. Every workgroup within Dow must establish site and unit-specific procedures that assure full implementation of all requirements within our standards. Standard effectiveness is evaluated through required work group self-assessments and periodic audits from an independent group within the Company.

Dow’s robust safety management system is maintained through a continuous improvement cycle, with regular effectiveness checks. In 2017, a comprehensive update of all of the Company’s safety standards was made with implementation of the changes carrying into 2018. The update involved consolidating similar requirements, simplifying the way requirements are written, and harmonizing approach between standards to achieve greater consistency. Additional requirements were added to address management system gaps identified through investigation of incidents and near misses.

One aspect of our safety standards that was improved in the 2017 refresh was the reinforcement to use technology and other innovative approaches to avoid putting people at risk altogether. In support of this, Dow has driven the industry in innovating new technologies to remove workers from higher-hazard activities. Examples include robotic high-pressure water cleaning, robotics and drones to eliminate the need for confined space entry, drones to eliminate certain elevated work, and protection devices on aerial lifts.

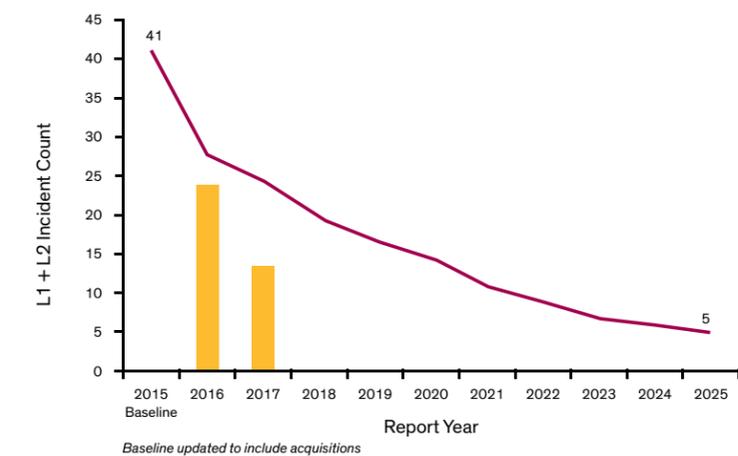
It is important to note that when discussing both our safety goals and performance at Dow, we concern ourselves not only with the safety of our processes and employees, but with all workers who perform business on Dow property or on behalf of the Company.

With the goal of having every worker go home safely at the end of each day, all of our workers have the opportunity to participate in site or workgroup specific Environmental, Health and Safety teams. Additionally, our largest manufacturing locations extend this opportunity to contract employees through joint Dow-contractor site safety steering teams. **GRI 403-1**

In 2016, Dow reshaped its incident reporting and measurement system. Our new system defines incident levels from 1–5, with Level 1 being the most severe. Our new measurement system allows for the collection of low-level incident and near-miss information (Level 4–5) in a consistent way globally, and elevates incidents with actual or potential severe impact (Level 1–3). At Dow, facilities and teams that have a strong near-miss reporting culture have proven to have better safety performance compared to those who do not. Near-miss reporting is a key factor in improved safety performance and supports Companywide learning from near-miss events.

**Our 2025 Company Injury and Illness goal is to reduce the most severe incidents by 85 percent versus our 2015 baseline.**

Severe Injury Illness 2025 Goal Curve



In 2017, we ramped up our support for and visibility of our non-injury pLIFE metric. A non-injury pLIFE describes an unsafe behavior or condition for which there was no actual injury, but the incident might have led to a life-altering injury if one aspect had been different. Heightened awareness of and response to situations with the potential for life impact is a key driver of our safety improvement efforts. These observations are visible globally and reviewed weekly for learnings to leverage.

The safety performance on our most significant incidents improved in 2017, with no work-related fatalities. Unfortunately, however, the Company did still have one event severe enough to be counted as a Level 1 event. As always, our management system actions were adjusted based on recent trends. The key management system elements driven in 2017 were:

- Top leadership assessments at Dow facilities globally
- Increased visibility and focus on near misses and leading indicators via our new measurement system, with emphasis on our non-injury pLIFE observations
- Engagement of motorized lift equipment manufacturers to offer collision and crush protection technology

The Company maintains the more traditional lost time and incident rate data, based on U.S. OSHA's classification criteria to facilitate external reporting and intercompany benchmarking.

Dow continues to demonstrate a safety record well ahead of the competition in both the manufacturing sector and the chemical industry.

### 2017 Safety Metrics by Region – Employees and Contractors GRI 403-2

|                          | Area                            | Recordable Injury Rate | Lost Workday Case Rate (DAWC & Fatality) | Lost day Rate (LDR) | Fatality Count | Occupational Disease Rate |
|--------------------------|---------------------------------|------------------------|--|---------------------|----------------|---------------------------|
| Employee and contractors | ASIA PACIFIC                    | 0.07                   | 0.01                                     | 0.10                | 0              | 0.000                     |
|                          | EUROPE/MIDDLE EAST/AFRICA/INDIA | 0.11                   | 0.07                                     | 1.85                | 0              | 0.000                     |
|                          | LATIN AMERICA                   | 0.16                   | 0.07                                     | 1.54                | 0              | 0.000                     |
|                          | NORTH AMERICA                   | 0.14                   | 0.03                                     | 0.92                | 0              | 0.006                     |
|                          | All Regions                     | 0.13                   | 0.04                                     | 1.10                | 0              | 0.003                     |
| Employee only            | ASIA PACIFIC                    | 0.09                   | 0.01                                     | 0.10                | 0              | 0.000                     |
|                          | EUROPE/MIDDLE EAST/AFRICA/INDIA | 0.10                   | 0.08                                     | 2.06                | 0              | 0.000                     |
|                          | LATIN AMERICA                   | 0.14                   | 0.04                                     | 1.00                | 0              | 0.000                     |
|                          | NORTH AMERICA                   | 0.16                   | 0.03                                     | 1.05                | 0              | 0.007                     |
|                          | All Regions                     | 0.13                   | 0.04                                     | 1.13                | 0              | 0.003                     |
| Contractors only         | ASIA PACIFIC                    | 0.04                   | 0.02                                     |                     | 0              | 0.000                     |
|                          | EUROPE/MIDDLE EAST/AFRICA/INDIA | 0.13                   | 0.06                                     |                     | 0              | 0.000                     |
|                          | LATIN AMERICA                   | 0.19                   | 0.10                                     |                     | 0              | 0.000                     |
|                          | NORTH AMERICA                   | 0.13                   | 0.03                                     |                     | 0              | 0.004                     |
|                          | All Regions                     | 0.13                   | 0.05                                     |                     | 0              | 0.002                     |

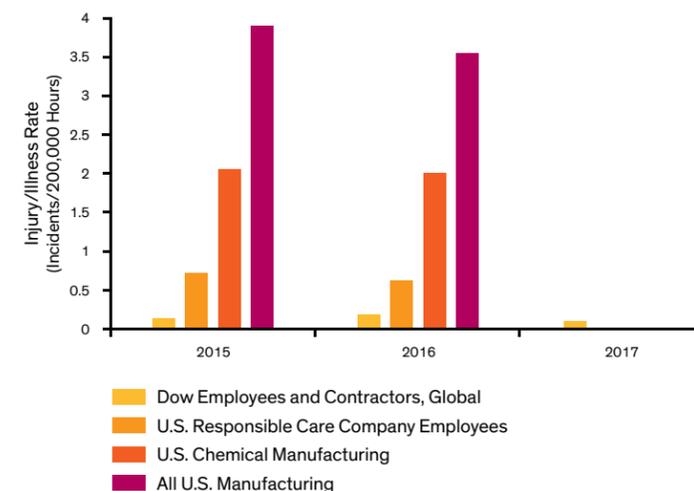
1) Recordable injury rate includes fatalities but does not include first aid visits.

2) Recordable Injury rate includes Dow employees on Dow business and contractors performing work at Dow locations.

3) Due to a change in data collection tool and privacy concerns, incident rate by gender is not available for 2017.

4) In our days lost calculation, we begin counting the day after the incident and count every calendar day toward total days lost.

### Injury Rate Comparison



### Employee Health Protection GRI 403-3

Dow controls occupational health risks in our workers' environments. Comprehensive workplace risk assessments are completed to evaluate hazards in the chemical manufacturing, office and field settings. Workers are provided detailed education and training along with specific procedures for safe operation. General and tailored health prevention programs to reduce overall health risk are also provided. Risk-control measures in the workplace are implemented, and emergency planning is coordinated with external medical and public health experts. Detailed exposure controls are implemented as global standards. All workers are provided baseline and periodic medical screening, testing, evaluation and health counseling to identify and control health problems. Clinical treatment is available, which includes specialized protocols for Dow's workplace.

As a global organization, we have employees that work in areas with high-risk occupational hazards and are monitored medically and tracked through our health records systems. Such high-risk groups include hearing conservation, confined space entry and other potential exposures, such as benzene, butadiene, post-asbestos,



silica or other identified hazard based upon current medical literature or industrial hygiene review. Their risk is minimized by providing them with the appropriate preventive measures. Finally, health results are carefully monitored for trends, including summaries of health trends and directed health epidemiology studies. Thus, our system is focused on both health protection and health promotion. The focus in health protection is detailed.

In our system, health protection hinges upon:

- **Recognizing hazards:** We rely on toxicologists, industrial hygienists and physicians to apply their expertise and knowledge of the scientific literature.
- **Reducing risks:** Often we develop our own industrial hygiene guides (IHGs), which drive the introduction or refinement of engineering controls as well as the appropriate selection of personal protective equipment.
- **Screening for illness:** We uphold the same rigorous standards wherever we operate, even in countries where regulatory requirements are less stringent than in the United States.
- **Confirming the effectiveness of our system:** We use both medical surveillance to assess patterns of recognized occupational illnesses and epidemiology to perform population health surveillance for serious illnesses such as cancer.

In addition, Dow is committed to enhancing our employees' overall health for many reasons. For example, we know that healthy people are less likely to suffer injuries and illnesses. Dow started a comprehensive wellness program more than two decades ago and was an early pioneer in recognizing the

importance of health promotion in mitigating occupational injury and illness. Community health risks are examined and opportunities for community health partnership are initiated. Workers in each area and travelers to the region are given specific advice about endemic health problems, such as communicable disease issues, vaccinations, air quality and social conflicts. Education and prevention programs are implemented, including medication prophylaxis, vaccination and medical treatment. Pandemic- and crisis-management planning for emerging risks are implemented when necessary. In some cases, direct support for the community is also provided (e.g., hurricane damage, tsunami, earthquakes, radiation, HIV/AIDS).

Dow offers medical benefits that cover a range of preventive, diagnostic and treatment services. Programs vary by country and other criteria. Dow Health Services makes the following available in the area of Occupational Health and health-related Human Performance:

- **Employee clinical treatment services** are available on-site at approximately 80 Dow clinics globally.
- **Periodic employee health assessments** screen for a variety of diseases (including heart, lung, liver, kidney, blood, etc.). Specific counseling and follow up are provided to assist in reducing any identified risks.
- **Health promotion programs** are offered to all employees and often retirees and employees' dependent family members. These programs include education on important health risks such as tobacco use, inactivity, obesity and resiliency. Employees are taught to assess their risks and understand interventions they can pursue to reduce them.
- **Employee Assistance Programs** are offered globally. These provide assistance for employees and families for issues such as general stress, anxiety, financial and family relations.

In 2015, Dow started a Total Worker Health (TWH) initiative (in alignment with The National Institute for Occupational Safety and Health Total Worker Health concept). The program aims to integrate traditional health protection and promotion programs into one single package. This initiative is part of the Company's 2025 Sustainability Goals and is comprised of three main elements: Healthy Culture, Healthy Workplace and Healthy People.

- **Healthy Culture** represents the underlying values driving healthy behaviors and forms the foundation of TWH efforts to promote and maintain both a Healthy Workplace and Healthy People. Using a set of questions, the Healthy Culture Index (HCI) measures a site's alignment with evidence-based best practice strategies and interventions in diverse health-related areas. Each question has an assigned score, depending on the impact on employee health. At the end of each year, Dow sites evaluate themselves based on these questions to achieve a site score. Overall, Dow's HCI score improved in 2017, achieving 41 percent of the 2025 target of 100 percent and meeting the 2017 target.
- **Healthy Workplace** refers to continuous efforts to identify workplace health risks, prioritize and reduce them utilizing the hierarchy of control (preferring engineering controls over the use of personal protective equipment).

- **Occupational health and preventive health programs** both contribute to the Healthy People component of our strategy. To measure the impact of preventive health programs, we have retooled the Health Assessment Program exams so that they align with the My Life Check approach for evaluating "Life's Simple 7" risk factors as defined by the American Heart Association (AHA). The impact of occupational health programs and workplace health risk reduction is measured as a reduction in the number of occupational injuries and illnesses from workplace health stressors.

Growing evidence indicates that comprehensive policies and programs that simultaneously address health protection and health promotion may be more effective in preventing disease and promoting health and safety than either approach taken separately.

Examples of the integrated approach:

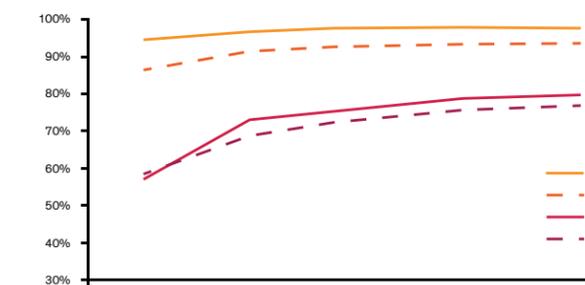
- Smoking cessation programs are included in the education of respirator wearers.
- Resiliency training is included in leaders' training curricula.
- Risks of prolonged sitting training is integrated with the introduction of sit/stand workstations and walking workstations for office workers, while also managing the personal safety risks of these stations.
- Fitness for duty procedure crosses all functions involved (Health Services, Industrial Hygiene, Human Resources, EH&S and Hiring functions)
- Physical activity programs are targeted to people exposed to ergonomic risk to minimize injuries and illnesses and increase their fitness for duty.

Overall, the TWH score improved by 22 percent in 2017 compared to the 2015 baseline.

Dow's health program is recognized internationally, and the Company is regularly invited to present as a benchmark model program or to provide scientific information to assist regulators and experts in evaluating risks. Some examples include: International Neurotoxicology Association, International Commission on Occupational Health, American Cancer Society, Workplace Health Initiatives, the Institute of Medicine, U.S. Environmental Protection Agency, California Office of Environmental Health Hazard Assessment, Dutch Health Council, Center for Disease Control, OSHA, NIOSH, and the Health Enhancement Research Organization. Dow efforts were recognized through several awards, including Excellence in Business Action on Health (Global Business Coalition - Africa), SESI Quality in the Workplace Award (São Paulo, Brazil), Asia Pacific Business Services Paragon Award (Japan), Bureau of Health Department's, Badge of Accredited Healthy Workplace (Taiwan), and the Alzheimer's Association's Mission Mover Award (United States). In 2017, Dow achieved Gold level recognition by participating in the AHA Workplace Health Achievement Index for taking significant steps to build a culture of health in the workplace. Companies recognized at the Gold level have achieved an Index score of 175-217 out of a maximum 217 points. More than 800 companies completed the Index assessment this year and, of those companies, 67 percent received either Gold, Silver or Bronze recognition

In summary, integrated approaches to both protect health and optimize health are linked at Dow. Employees also respond with their perspective on how the Company is approaching health in our annual employee opinion survey. The results indicated high confidence in Dow's approach.

### Majority of Dow Employees Report That Dow Encourages Safe and Healthy Behaviors



A. I am held accountable for doing my work in a manner that is safe

B. People in my work area are protected from health and safety hazards

C. Dow provides a supportive work environment that encourages me to practice healthy behaviors

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

Of the 27 percent of employees covered by either formal collective bargaining agreement or works council, 51 percent of the agreements cover health and safety topics. Regardless of formal trade union agreements, all employees are covered by Dow's health and safety processes and programs that meet and, in most cases, exceed country regulations. Health and safety are the highest priority for Dow.

**GRI 403-4**

## Environmental

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

To meet the Company's public commitments, as well as the stringent laws and government 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, what, when and how" needed for the businesses to achieve the Company's policies, requirements, performance objectives, leadership expectations and public commitments. To ensure effective utilization, the EMS is integrated into a companywide management system for EH&S, Operations, Quality and Human Resources.

It is Dow's policy to adhere to a waste management hierarchy that minimizes the impact of wastes and emissions on the environment. First, Dow works to eliminate or minimize the generation of waste and emissions at the source through research, process design, plant 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 after 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 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, Latin America, Asia Pacific, the United States and Canada have received third-party verification of Dow's compliance with Responsible Care® and with outside specifications such as ISO-14001. Dow continues to be a global champion of Responsible Care® and has worked to broaden its impact around the world through engagement with suppliers, customers and joint venture partners.

Dow's EH&S policies helped the Company achieve improvements in many aspects of EH&S performance in 2017. Dow's process safety performance was excellent in 2017 and improvements were made in injury/illness rates. Safety remains a top priority for the entire Company. Further improvement in these areas, as well as environmental compliance, remains a top management priority, with initiatives underway to further improve performance and compliance in 2018 as Dow continues to implement the Company's 2025 Sustainability Goals.

### Materials Used by Weight or Volume GRI 301-1, GRI 301-2, GRI 301-3

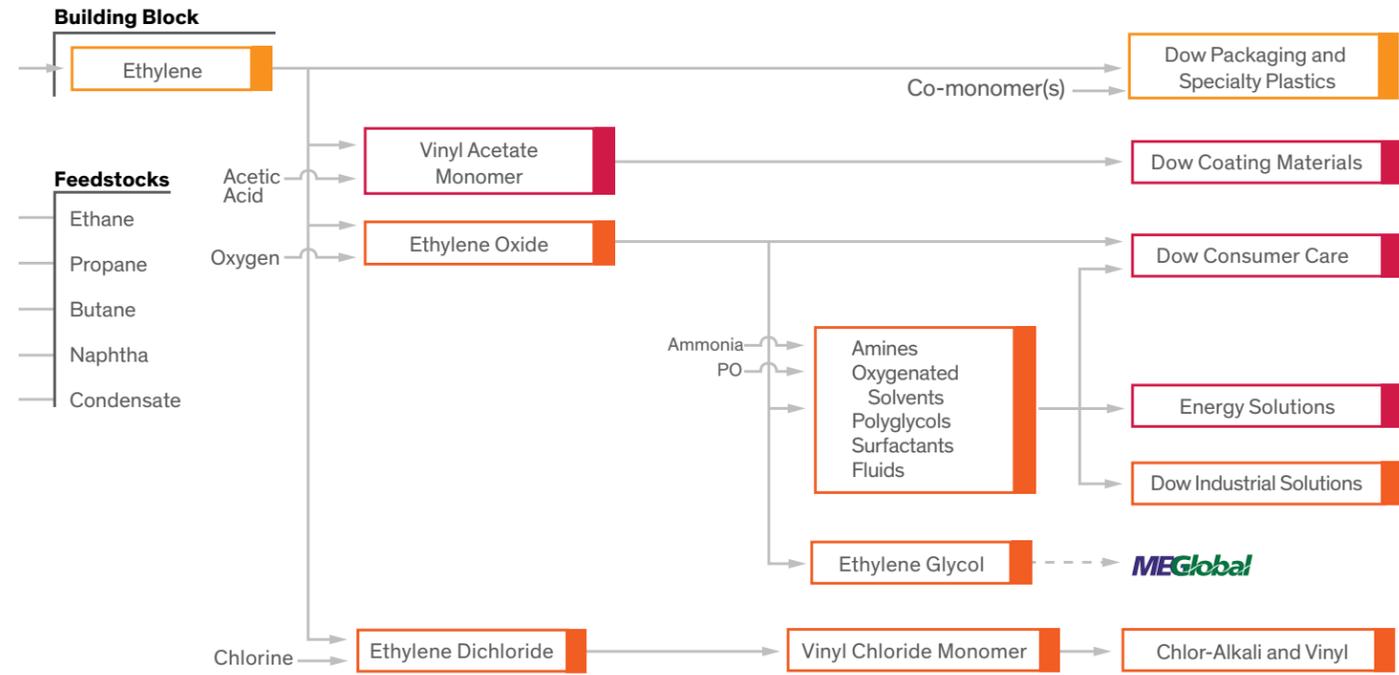
The Company operates in an integrated manufacturing environment. Basic raw materials are processed through many stages to produce a number of products that are sold as finished goods at various points in those processes. The major raw material stream that feeds the production of the Company's finished goods is hydrocarbon-based raw materials. The Company purchases hydrocarbon raw materials including ethane, propane, butane, naphtha and condensate as feedstocks. These raw materials are used in the production of both saleable products and energy. The Company also purchases certain monomers, primarily ethylene and propylene, to supplement internal production. In 2017, Dow moved 36.75 million metric tons of product in trade and consignment movements.

Key raw materials purchased for use in the manufacturing process include: acetone, benzene, butane, condensate, electric power, ethane, hexane, methanol, methyl methacrylate, naphtha, natural gas, propane, pygas, silica and styrene. Key raw materials that are produced internally and procured from external sources for internal consumption include aniline, aqueous hydrochloric acid, butyl acrylate, chlorine, ethylene, octane, propylene and silicon metal. Hydrogen peroxide is produced internally and procured through a consolidated variable interest entity and a joint venture. The Company had adequate supplies of raw materials in 2017 and expects to continue to have adequate supplies of raw materials in 2018.

| Metric   | Unit   | 2016   | 2017   |
|--|--|--------|--------|
| Energy Intensity   | Btu per lb of production                     | 4,469  | 4,542  |
| Scope 1 GHGs as CO <sub>2</sub> e                                    | millions of metric tons                      | 25.6   | 25.8   |
| Scope 2 GHGs as CO <sub>2</sub> e                                    | millions of metric tons                      | 9.3    | 8.8    |
| Combined Scope 1 and 2 GHG Intensity                                 | lb of CO <sub>2</sub> e per lb of production | .751   | 0.767  |
| Scope 3 GHGs as CO <sub>2</sub> e                                    | millions of metric tons                      | 75.9   | 75.7   |
| Emissions of Ozone Depleting Compounds – Corporate Totals as CFC-11e | metric tons                                  | 7      | 8      |
| Nitrogen Oxide Compound Emissions                                    | metric tons                                  | 18,568 | 19,096 |
| Sulfur Oxide Compound Emissions                                      | metric tons                                  | 2,637  | 2,913  |
| Emissions of Volatile Organic Compounds                              | metric tons                                  | 9,507  | 8,793  |
| Chemical Emissions to Air and Water                                  | metric tons                                  | 16,997 | 16,789 |
| Emissions of Priority Compounds to Air and Water                     | metric tons                                  | 268    | 273    |
| Water Intake   | millions of cubic meters                     | 3,161  | 3,151  |
| Wastewater   | millions of metric tons                      | 140    | 141    |
| Wastewater Intensity   | lb of wastewater per lb of production        | 3.2    | 3.1    |
| Waste  | millions of metric tons                      | 1.66   | 1.73   |
| Waste Intensity  | lb of waste per lb of production             | .038   | 0.038  |

We measure our business units' progress on sustainable chemistry as part of the 2025 "Delivering Breakthrough Innovation" Sustainability Goal using the Sustainable Chemistry Index (SCI). The SCI is an internal metric that asks each business to report in four areas: product risk, addressing world challenges, business strategy and recognition, and value chain sustainability. 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. In 2017, businesses reported small percentages for both questions. Opportunities for recycling vary depending on chemistry and application, but through the SCI, each business is being challenged to consider engagement in the circular economy and increase both the use of recycled input and the recovery of products at the end of their life.

### Ethylene Value Chain Overview

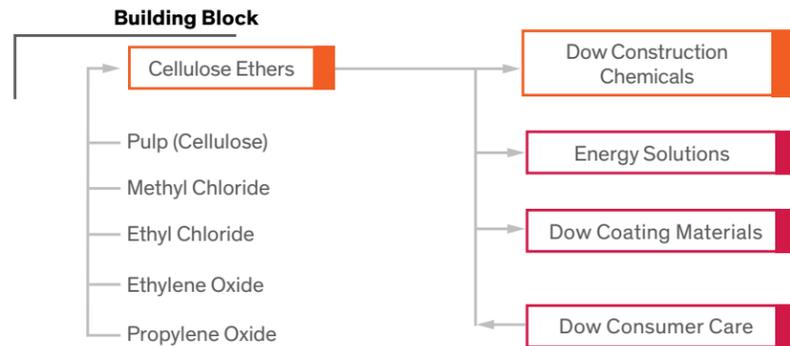


- Packaging & Specialty Plastics
- Industrial Intermediates & Infrastructure
- Performance Materials & Coatings

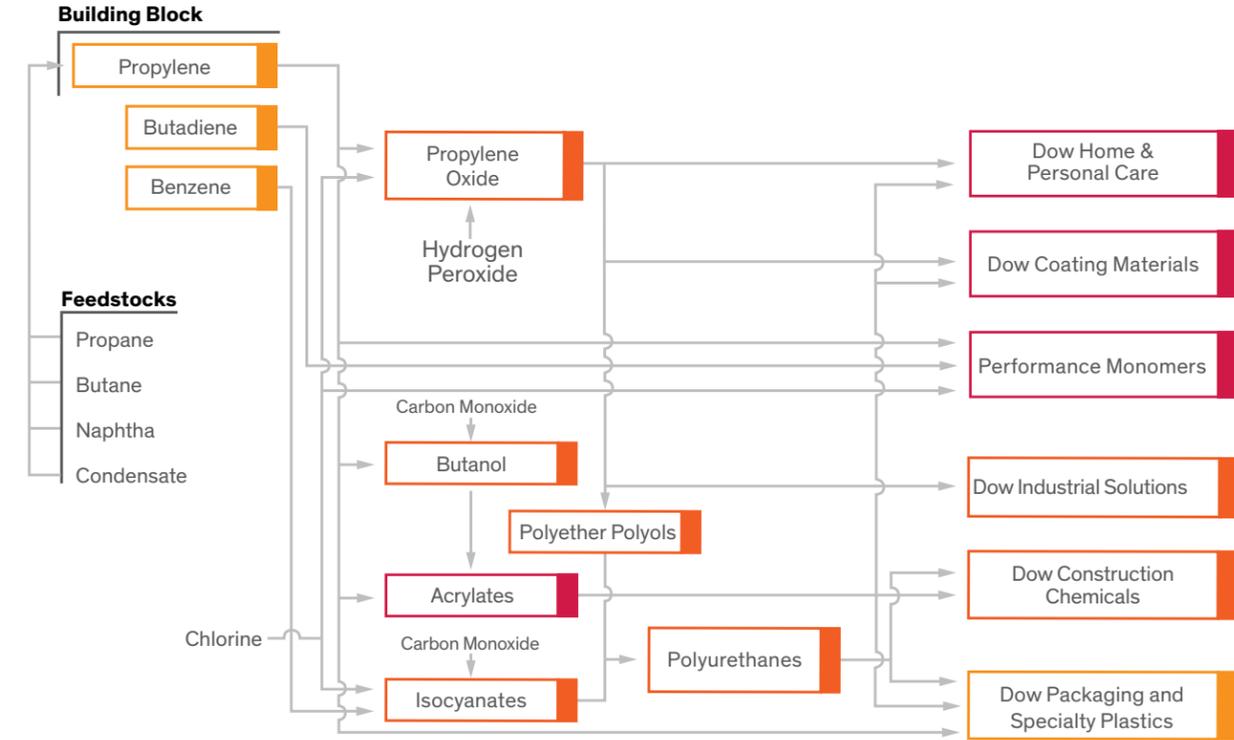
→ Solid arrows represent how basic chemicals feed Dow's value-adding chains

- - - Dotted lines represent certain joint ventures or divested businesses

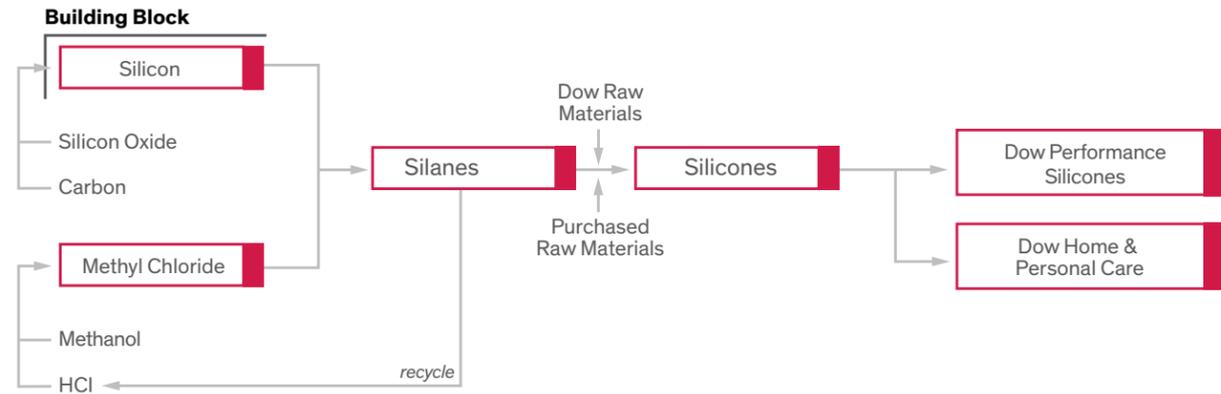
### Cellulosics Value Chain



### Propylene Value Chain Overview



### Silicon Value Chain



**Management Approach for Energy**

Energy at Dow is managed by the Energy and Climate Change Business, since it is a top priority for the Company. Most of Dow's energy comes from cogeneration (combined heat and power (or CHP)) plants because Dow needs both steam and power in the manufacturing processes. CHP is considered the most efficient way to produce steam and power since it typically uses 20 to 40 percent less fuel than conventional power generation while also reducing GHGs. The Energy Business goal is to operate Dow's energy assets with manufacturing excellence and safety, creating value from our assets and commercial relationships while managing the power, steam and industrial gas exposure for Dow. Dow's Energy Business is led by a Global Energy & Climate Change director. Under his 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.

Dow's integrated approach to energy is represented through the acronym COAT. We should:

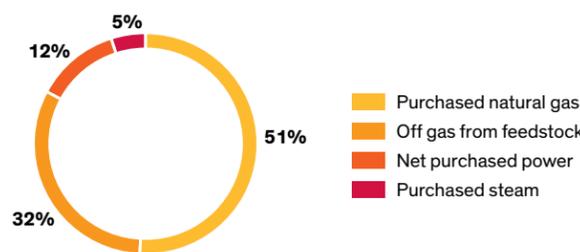
- Conserve energy by aggressively pursuing energy efficiency and conservation.
- Optimize, increase and diversify domestic hydrocarbon energy resources.
- Accelerate development of clean and renewable energy alternatives.
- Transition to a sustainable energy future.

**Energy Consumption Within the Organization GRI 302-1**

| Source                 | Million GJ |
|------------------------|------------|
| Purchased Natural Gas  | 311        |
| Off Gas from Feedstock | 198        |
| Purchased Electricity  | 132        |
| Power Sold             | 61         |
| Net Purchased Power    | 71         |
| Purchased Steam        | 30         |
| Net Use                | 610        |

The 2025 Sustainability Goal for the energy business is to procure 750 MW from clean energy for Dow's operations. We currently have contracts for 698 MW of clean energy, and we continue to pursue clean energy opportunities where the resources (wind, solar, hydro and biomass) are available and the requirements of Dow can be met using these resources.

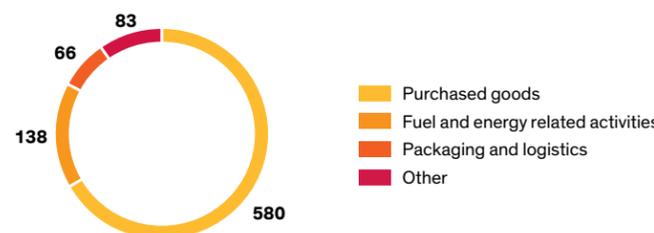
**2017 Energy Consumption Source Breakdown**



In 2017, 9.5 percent of our total purchased electricity was from renewable sources for which we have direct purchase power agreements.

**Energy Consumption Outside of the Organization GRI 302-2**

**Energy Consumption Outside of Dow (in million gigajoules)**



| Fuel Source  | Capacity (MW) | Consumption (Million GJ) |
|--------------|---------------|--------------------------|
| Wind         | 352           | 5.7                      |
| Hydro        | 81            | 2.6                      |
| Biomass      | 261           | 4.2                      |
| Landfill Gas | 3             | 0.0                      |
| Solar        | 0.6           | 0.0                      |
| Total        | 698           | 12.5                     |

Purchased electricity includes renewable sources

Energy consumption outside of the Company occurs throughout the upstream and downstream activities associated with our operations. The results are summarized in the figure above. In past years, energy consumption outside the organization was calculated along with Scope 3 GHG emissions using an Economic Input Output (EIO) method, specifically the eiolca.net tool from Carnegie Mellon Green Design Institute and the 2002 producer cost models. For 2017, we have updated our calculation methods for Scope 3 GHG to include primary Company data for more accurate estimates (see discussion of disclosure GRI 305-3). We have not yet extended that more rigorous calculation to the energy outside of the organization estimate. The values reported for 2017 are simply scaled by Company revenue from the 2016 values.

**Energy Intensity GRI 302-3**

In 2017, our energy intensity was 4,542 Btu/lb. This represents total energy, power, steam, compressed air, cooling water pumps and other equipment used by manufacturing facilities. Energy intensity has remained relatively flat since 2005.

**Reduction of Energy Consumption GRI 302-4**

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

The following are examples of improvement projects and energy efficiency projects and their energy savings from 2017:

- In Bahia Blanca, Argentina, the Energy Management program aims to track all energy efficiency improvements based on a black box model of the site. The 2017 energy reduction achieved equals to 480,000 MMBtu/yr.
- At Terneuzen, The Netherlands, the energy efficiency projects saved 324,630 MMBtu/yr.
- By upgrading the power supply sourcing for HVAC units, the energy saved was 12,400 MMBtu/yr.

- Using hydrogen as fuel utilization optimization has saved 20,805,000 MMBtu/yr.
- In Texas City a project to reduce steam usage in the Vinyl Acetate site using advanced process control, helped reduce 310,000 MMBtu/yr.

The 2017 energy reductions achieved in the examples above equal 21,932,030 MMBtu/yr. The types of fuels saved are limited to fuel consumption and electricity. Since the projects reported above are discrete projects, the basis used for calculating savings was year-over-year, subtracting the year after the project was completed from the year before the project was completed. The energy used before the project and the energy used after the project was measured, and the efficiency gain was calculated directly.

**Greenhouse Gas Emissions**

**Management Approach for Greenhouse Gas Emissions**

Dow has a corporate database called Global Emissions Inventory (GEI). The emitting businesses track and record their emissions in GEI, the central database that is used as the basis for regional and global reports of emissions. Each facility has an EH&S focal point responsible for collecting and reporting all the waste and emission data. The GEI tracks Scope 1 GHG emissions. Scope 1 emissions come from our manufacturing processes, which include power plants (cogeneration), crackers, smelters, flares, etc. Dow's Scope 2 GHG emissions come from our purchased power. Dow's emissions are divided by Scope 1 GHG emissions, 74.5 percent; and Scope 2 GHG emissions, 25.5 percent.

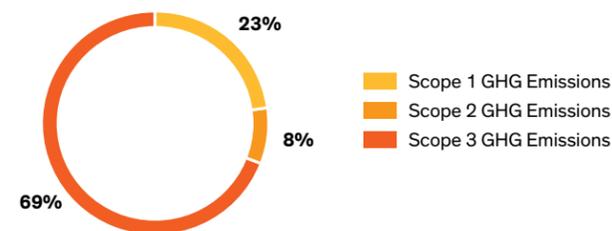
Dow manages the reporting and cost of emissions with the joint objectives of minimizing the cost of emissions and maximizing the profitability of the Company over the long term. There are two types of work performed to achieve these objectives:

- The Energy and Climate Change business, led by a global business director and through regional directors and their organizations, both purchase and trade any required allowances for these emissions, and consider the cost of carbon in the production and acquisition of steam and power for the Company. This includes developing long-term projections of the cost of carbon at each of our production locations globally.
- In addition, the global carbon management director and team are responsible for developing an optimized list of projects to reduce carbon emissions and to increase efficiency and to ensure the present and future cost of carbon is included in all capital investment and maintenance decisions. Dow tracks progress in reducing emissions through three specific goals as part of our 2025 Sustainability 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.

- Dow will grow, but offset emissions of priority compounds, volatile organic compounds (VOCs) and nitrogen oxides (NOx).

We are well on track to meet these goals. We have long-term contracts to procure clean energy in the United States, Latin America and Europe. Approximately 9.5 percent of purchased electricity is from renewable sources. Similarly, our new plants have significantly improved efficiency, enabling us to increase sales significantly with stable emissions.

### GHG Emissions Distribution



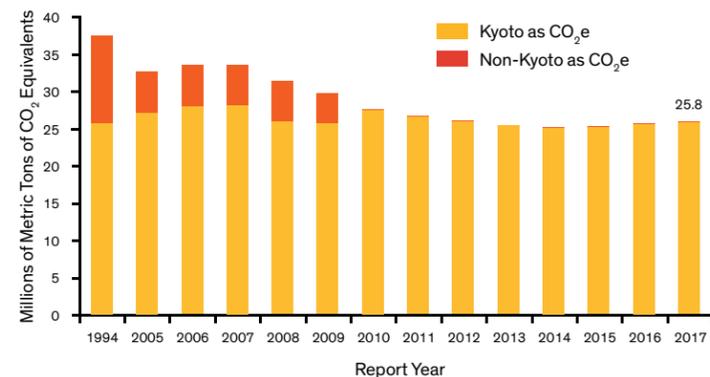
### Direct (Scope 1) GHG Emissions GRI 305-1

Dow's portfolio of products are energy intensive and many are mature technologies. Since their initial introduction, the efficiency of most processes has been improved dramatically, just as the emissions have been reduced. Our overall Scope 1 emissions have been reduced since 2006. More recently, our emissions have remained stable as increases in production from new facilities associated with our U.S. Gulf Coast Gulfstream investments (i.e., a new PDH unit, cracker and derivative units) have been largely offset by reductions elsewhere.

We are constantly evaluating new technologies, new materials science products, renewable energy and alternative feedstocks that will allow us meet our 2025 Sustainability Goals. We use the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* for guiding the reporting of greenhouse gas emissions. Dow's historic data take into account any divestitures, mergers and acquisitions and may change to reflect those activities.

Our intensity metrics are calculated as a ratio to global production. The Kyoto Protocol covers emissions of main greenhouse gases: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>); and nitrogen trifluoride (NF<sub>3</sub>). Our direct greenhouse gas (GHG) emissions are from sources controlled by Dow and include Kyoto and non-Kyoto GHGs using IPCC Fifth Assessment Report (AR<sub>5</sub>). Significantly, Dow is in compliance with the Montreal Protocol so that Dow no longer emits non-Kyoto gases, which may deplete the ozone layer rapidly.

### Direct Greenhouse Gas Emissions as CO<sub>2</sub> Equivalent (Scope 1)

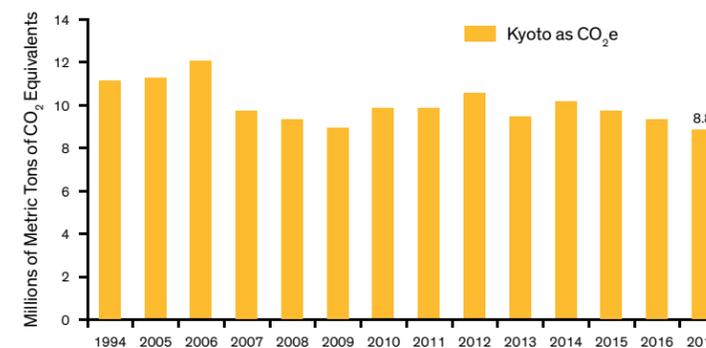


### Energy Indirect (Scope 2) GHG Emissions GRI 305-2

Dow's Scope 2 emissions have decreased since 2006. Dow follows the *GHG Protocol Scope 2 Guidance* for the locations that do not have direct renewable energy contracts. Dow uses the location-based method that reflects the average GHG emissions intensity of grids on which energy consumption occurs. Dow's 2025 Sustainability Goal is that we will obtain 750 MW of our power demand from renewable sources by 2025. This strategy has helped Dow reduce our Scope 2 emissions. Currently, we have 698 MW of renewable sources contracted. In 2016, the two wind farm purchase power agreements (PPAs) started. They account for 350 MW of the 2025 Sustainability Goal, helping Dow reduce Scope 2 emissions from our procured energy in Texas during 2016 and 2017. We also

have hydropower in Brazil and Sweden, and biomass-based steam in Brazil. Dow is actively looking into energy efficiency projects, new technologies and more renewable energy contracts to reduce Scope 2 emissions.

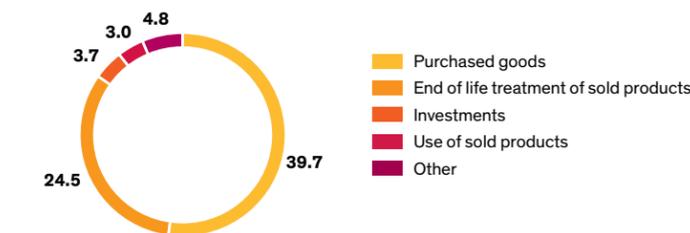
### Indirect Greenhouse Gas Emissions as CO<sub>2</sub> Equivalent



### Other Indirect (Scope 3) Emissions GRI 305-3

Other indirect (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 and the World Business Council for Sustainable Development. The results are summarized in the Scope 3 chart. We are transitioning from a calculation method based on economic factors to a methodology utilizing actual data and engineering mass-balance calculations combined with emissions factors for mass-based operations from ecoinvent v2.2. This more rigorous calculation method will give us a more accurate estimate of Scope 3 emissions, although the actual Scope 3 emissions with respect to each category could still vary significantly. Dow's CDP climate change response for 2017, when published, will have additional information.

### Scope 3 GHG Emissions (in million metric tons CO<sub>2</sub>e)



\* Other includes: Capital goods, fuel and energy-related upstream and downstream transport, employee commuting, business travel, upstream leased assets, and waste generated in operations.

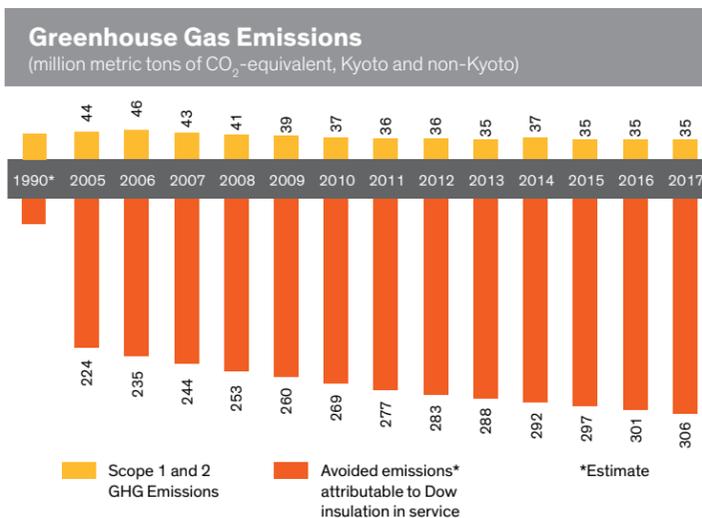
### GHG Emissions Intensity GRI 305-4

Total GHG intensity is the sum of direct and indirect emissions (Scope 1 + Scope 2) per pound of production. Our total GHG intensity in 2017 is down by 3 percent from 2016. In the last decade, we have significantly reduced our non-Kyoto emissions, making our GHG emissions intensity metric with and without non-Kyoto emissions almost the same.

Avoided emissions resulting from the use of Dow products are an important contribution to reducing the overall footprint of human activities. One of the targets for the 2025 “Delivering Breakthrough Innovation” Sustainability Goal is for Dow’s product portfolio to achieve three times the greenhouse gas benefit in use than the burden of producing it. We are still in the process of calculating this metric for all of the Dow portfolio. An example is the analysis we have completed to quantify the GHG benefit of our insulation portfolio. This calculation was made by quantifying the GHG emissions at all stages of the life cycle and comparing these with the GHG emissions savings from the use of the insulation products in buildings and pipe systems. The estimated GHG-avoided emissions for 2017 from the use of Dow’s insulation products is 306 million metric tons of CO<sub>2</sub>e.

**GRI 305-5**

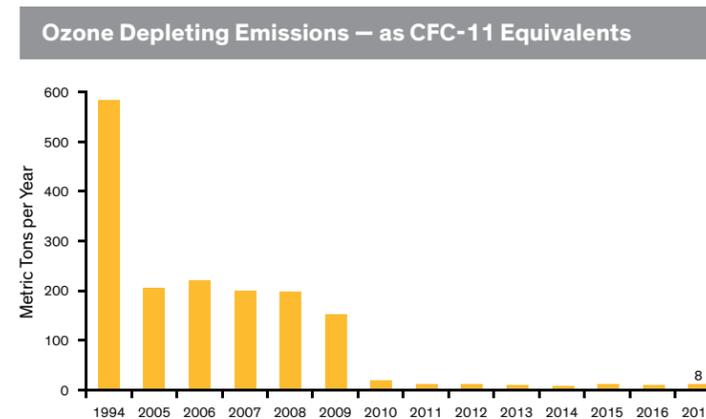
**GHG Emissions Savings: Dow Insulation Products in Use**



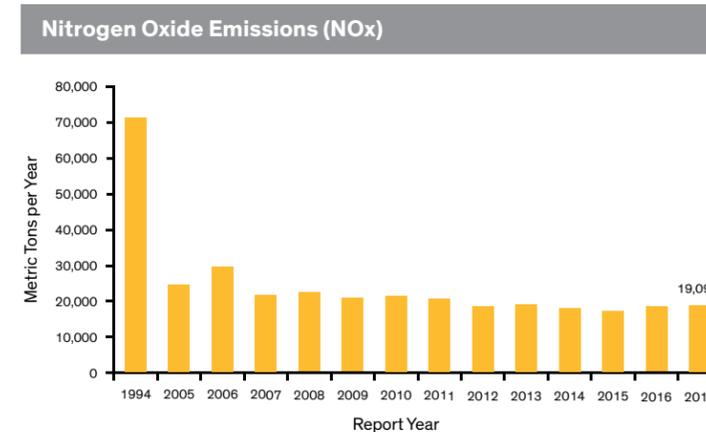
**Air Emissions**

**Ozone-depleting Substances GRI 305-6**

Ozone-depleting emissions include substances with an ozone-depletion potential greater than zero that can deplete the stratospheric ozone layers. The emissions factors are based on the Montreal Protocol. Ozone-depleting emissions have been reduced 96 percent since 2005.

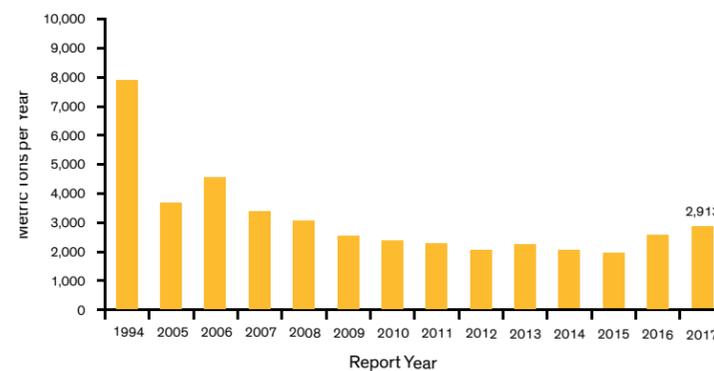


**NOx, SOx and Other Significant Air Emissions GRI 305-7**



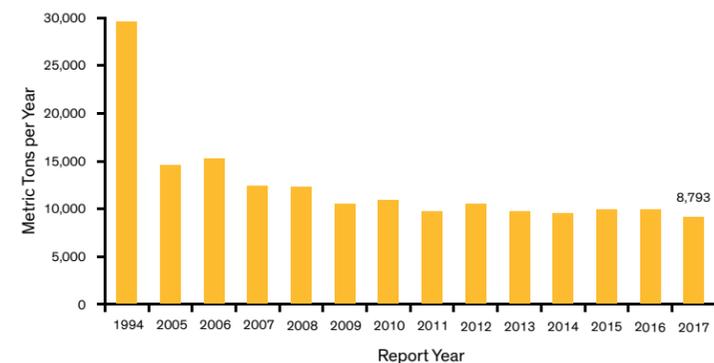
The NOx (nitrogen oxides) total was reduced 23 percent since 2005, but has remained relatively flat over the last five years.

**Sulfur Oxide Emissions (SOx)**



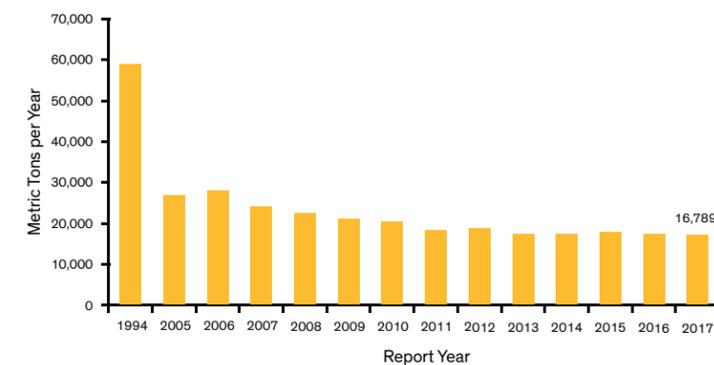
The SOx (sulfur oxides) total has increased approximately 10 percent from 2016. This is mostly related to increased production.

**Volatile Organic Compounds (VOCs)**



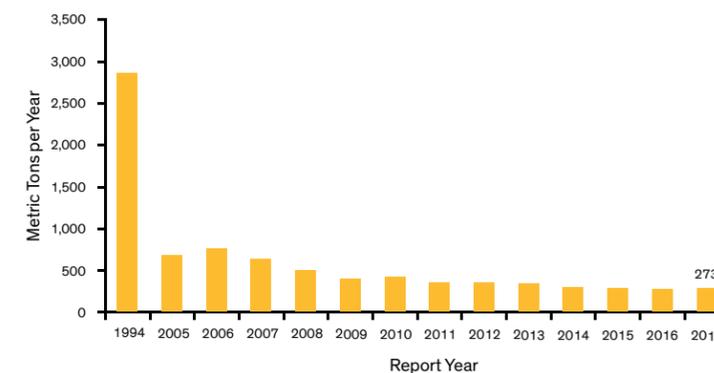
Volatile organic compounds (VOCs) are organic chemicals with high vapor pressures that react photochemically with the atmosphere. The VOC total is down by 8 percent when compared to the 2015 baseline.

**Chemical Emissions to Air and Water**



Chemical emissions are any release or discharge to the air or water of any pollutant from a facility. Chemical emissions exclude items such as NOx, SOx, CO, CO<sub>2</sub>, particulates, methane, hydrogen, nitrogen, oxygen, water, aluminum and certain salts. The chemical emissions total is down by 36 percent when compared to 2005.

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



Priority compounds are comprised of chemicals with persistent, bioaccumulative and toxic hazards, and chemicals with carcinogenic, mutagenic and reproductive hazards. The priority compounds total is up 1 percent when compared to 2015 baseline.

**Water Use Across Dow Facilities**

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

| Dow 2025 Goal                        | Alignment with Water Strategy   |
|--------------------------------------|---|
| Leading the Blueprint                | Blueprint for Sustainable Watershed Management                                |
| Enabling a Circular Economy          | Water recycle projects at Dow manufacturing sites                             |
| Valuing Nature                       | Projects that deliver value for Dow and for ecosystems                        |
| World-Leading Operations Performance | Goal to reduce freshwater intake intensity by 20% at key water-stressed sites |

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 experience 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. For example, the Aratu, Brazil, site is currently evaluating water-supply-reliability options after experiencing supply issues due to drought in 2017. **GRI 303-2**



| Dow Location               | Source   |
|----------------------------|--|
| Seadrift, Texas            | Guadalupe River  |
| Bahia Blanca, Argentina    | Purchased freshwater   |
| Terneuzen, The Netherlands | Rivers Rhine and Meuse   |
| Tarragona, Spain           | Purchased freshwater supply, source is Ebro River diversion                      |
| Dow Central Germany        | River Saale (Schkopau site), River Weisse Elster and Lake Witznitz (Böhlen site) |
| Freeport, Texas            | Brazos River   |

**Water Stewardship in Action**

Among the key water-stressed sites that have been identified by Dow, two sites withdraw river water near sensitive wetlands areas designated in the Ramsar Sites database, which is a list of wetlands of international importance. **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 Rhine and Meuse rivers, which empty into the Biesbosch wetlands. Die Biesbosch is one of the largest national parks in The Netherlands and an area of extensive freshwater wetlands. Biesbosch is rich in biodiversity, as is described further at the Ramsar website. Dow Terneuzen continues to look for opportunities to decrease its long-term dependence on Biesbosch water by increasing the volume of recycled water use at the site and has been active in this endeavor for many years. In the early 1990s, Dow began to collaborate with the municipal water board, the City of Terneuzen and a local

water company to implement an innovative wastewater recycling program that uses every liter of water three times – by the local community, Dow’s manufacturing plants, then cooling towers. The site takes some 2.5 million m<sup>3</sup>/year of treated municipal wastewater, further purifies it, and uses it for steam and cooling. Compared to original desalination, the plant has reduced the energy use associated with water treatment by more than 95 percent – the equivalent of reducing its carbon dioxide emissions by 60,000 tonnes each year. This collaborative project has been advancing in successive stages for more than a decade and is featured as a case study in the Sustainable Watershed Management blueprint, a blueprint launched in 2017 for the 2025 “Leading the Blueprint” Sustainability Goal.

The **Dow Tarragona site** withdraws water for cooling and other operations needs from the Ebro River in Spain. The site uses less than 0.05 percent of the annual flow of the river. Further downstream, the river’s delta is part of Terres de l’Ebre, Catalonia, a UNESCO-designated biosphere and also a Ramsar site (# 593). The delta and associated wetlands support numerous species of water birds and other wildlife. Dow Tarragona has diminished its intake from the Ebro River with projects that include water recycling. Overall the site has increased its amount of recycled water by 13 percent since 2015. The site reclaims municipal water from two nearby cities and purifies it at the Camp de Tarragona Advanced Water Reclamation Plant. The reused water is used for cooling tower water, freeing up fresh river water for other uses. This recycled water supplies up to 40 percent of Dow’s needs at one of our facilities. Additional piping is being installed to expand recycled water use at another nearby Dow facility. Dow and partners Veolia, **Agua Industriales de Tarragona SA** and Agencia Catalana del Agua were recognized in 2016 with the Environmental Leader’s Project of the Year award.

Dow also has leveraged the water reuse and partnership approach in Freeport, Texas, its largest production facility globally, where it takes City of Lake Jackson wastewater and reuses it to produce steam. Dow’s efforts to bring employees and community and government stakeholders together to collaborate on more holistic approaches to water management were recognized with a 2013 Texas Environmental Excellence Award by the Texas Commission on Environmental Quality (TCEQ). Dow Texas Operations in Freeport received the award for a series of water conservation/improved utilization projects implemented in 2012 that save up to 9,900 gallons per minute (20 million m<sup>3</sup>/year) of water. The project resulted in a 10 percent reduction in water use at the site.

**Dow’s Freeport Texas Operations** is also the site of an ambitious pilot Dow initiated with The Nature Conservancy to assess the value of freshwater to business. The program analyzed nature-based solutions such as watershed management that could

bring about substantial benefits and interest investments. The analysis has already impacted the Freeport site’s long-term water management plan and led to a more holistic approach with partners across the watershed.

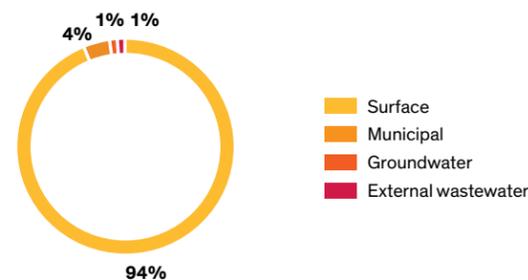
These projects are examples of how Dow is reducing the potential for impact on natural areas by recycling a portion of the water used at the plant. The strategy is part of a broader emphasis in Dow’s water stewardship program on reducing water stress and improving resilience in water-stressed areas. At key water-stressed sites, the freshwater recycle and reuse rate is approximately 20 percent, and the volume of recycled and reused water is about 50 MM m<sup>3</sup>/year. **GRI 303-3**

Recycling and reusing water not only reduces Dow’s water footprint but helps reduce stress on sensitive natural areas downstream of Dow sites by reducing freshwater withdrawal from the local watershed. The Terneuzen site discharges treated wastewater into the protected area of Westerschelde and Saeftinghe, which is assigned as a Natura 2000 area (Ramsar # 748). This large natural area covers the entire estuary of the River Scheldestretching, stretching 60 kilometers from the border with Belgium to the North Sea. It is a saltwater/brackish area 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 municipal wastewater reuse to the river and estuary. At our Stade, Germany, site, a project was implemented to optimize the biological wastewater treatment system by recycling streams with high nutrient content back to the biological reactors, which reduces the nitrogen content in the water discharged to the Elbe River. **GRI 306-5**



**Water Withdrawal by Source GRI 303-1**

**Water Intake**



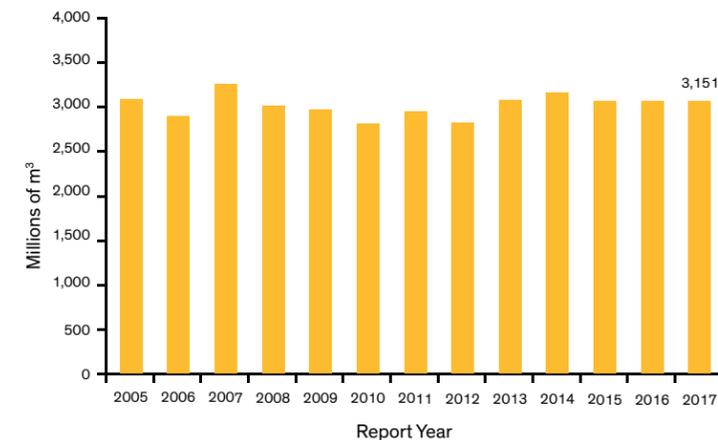
Water is used for a variety of purposes in Dow production facilities across the globe. Surface water withdrawals are 68 percent freshwater and 32 percent seawater/brackish. In locations where sea/brackish water is readily available, such as at production facilities at the coast, it is used for cooling. This accounts for the high proportion of seawater/brackish water in some locations. The majority of the freshwater intake is used for cooling, and most of it is evaporated in cooling towers – returning the water to the environment. Rainwater is recovered in multiple locations and reused for firewater and other purposes, but its volume compared to other intakes is relatively small.

Only a small proportion of the water intake ends up in product (e.g., consumption). Past assessment of water use in the sites with the highest freshwater intake showed that more than 85 percent of the source water was returned within the watershed at equal or better quality than at withdrawal.

The total volume of water intake globally has been relatively consistent as a result of the combined impact of process efficiencies, business portfolio changes and growth.

Freshwater intake intensity is tracked for the six defined water-stressed sites described above. In 2017, the freshwater intake intensity at these sites was 11.2, a reduction of 5 percent from the 2015 baseline toward the 2025 goal of 20 percent reduction.

**Water Intake Quantity**

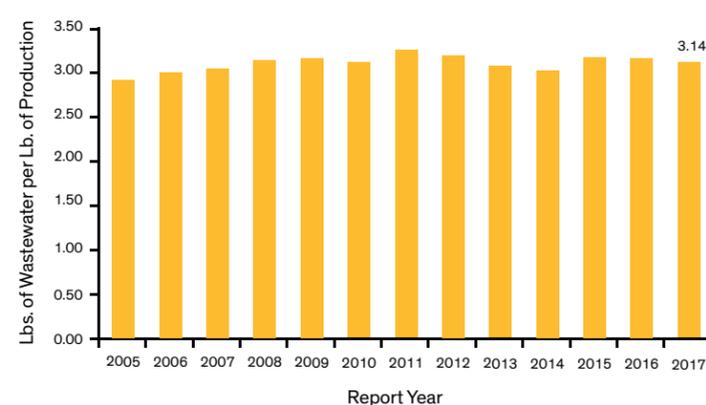


Once the water has been used in Dow facilities, it is typically treated at a wastewater treatment plant and discharged. The total volume of wastewater discharged in 2017 was 141 million metric tons. The majority of the water is discharged as surface water with a small portion returned to oceans. At a few Dow sites, 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 many years, the wastewater intensity has been consistent at approximately three pounds of wastewater discharged per pound of product.

**Wastewater GRI 306-1**

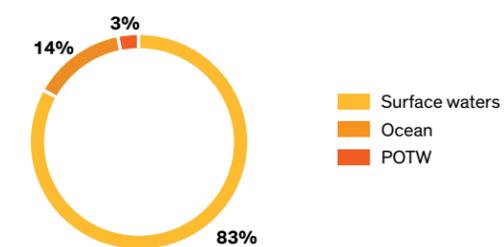
**Wastewater Intensity**



Wastewater quality is strictly governed by local regulations, and parameters are set specifically for each watershed. Dow's operations abide by these local regulations. Therefore, wastewater discharge quality is not reported consistently across all Dow sites. Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) are reported for the sites listed below, which account for over 85 percent of Dow's wastewater discharge. The seven Major Wastewater Discharge Sites were identified to establish the baseline for the 2015 Sustainability Goals and account for more than 80 percent of the total. The six Key Water-Stressed Sites were added to the wastewater discharge quality reporting with the addition of the 2025 Sustainability Goal to reduce freshwater intake intensity at key-water stressed sites by 20 percent.

| Major Wastewater Discharge Site | Key Water-Stressed Sites   |
|---------------------------------|----------------------------|
| Plaquemine, LA                  | Terneuzen, The Netherlands |
| Stade, Germany                  | Böhlen, Germany            |
| Freeport, TX                    | Freeport, TX               |
| Aratu, Brazil                   | Tarragona, Spain           |
| Midland, MI                     | Bahia Blanca, Argentina    |
| Deer Park, TX                   | Seadrift, TX               |
| Texas City, TX                  |                            |

**Wastewater Discharge Destination**



The TSS discharge concentration across the sites in 2016 was 0.005 percent and the BOD concentration was 0.004 percent.

### Dow Volunteer Helps with Blue Accounting

The Great Lakes are the world's largest freshwater ecosystem, containing about 20 percent of the surface freshwater supply for the world. Recognizing the importance of Great Lakes resources, the governors in the region and the premiers of Ontario and Quebec have called for a more collaborative and comprehensive approach for goal-setting, monitoring and reporting on key water issues.

Enter Blue Accounting. Launched in 2017, Blue Accounting is a groundbreaking initiative that helps Great Lakes communities set shared goals, monitor the effectiveness of efforts and measure progress toward achieving them.

"Hundreds of different groups – across eight states and two provinces – invest billions of dollars in protecting and restoring the Great Lakes, but we don't currently have a way to measure how effective these efforts are," said Helen Taylor, Michigan director of The Nature Conservancy. "Blue Accounting gives us the tools to do this type of monitoring. It provides decision-makers a big-picture view of critical and complex issues."

Currently, the initiative, which is managed by The Nature Conservancy and The Great Lakes Commission, is focused on five key pilot issues: aquatic invasive species, coastal wetlands, maritime transportation, phosphorus control and source water protection. The initiative is supported by an innovative online platform and a set of related services. Dow has collaborated with the initiative through the pioneering efforts of one of our employees, Dave McLean, business IT director for Packaging & Specialty Plastics, Feedstocks & Energy and Hydrocarbons. McLean advises on the overall program design, program management and IT approaches to help enable the success of the initiative and the pilot projects. He also provides connections to other technical Dow expertise as needed.

"By providing a cutting-edge, single information source for key experts and stakeholders, we are helping to enable the cross-organization collaboration needed to combat key issues facing the lakes today," said McLean. "The website is helping transform existing data into useful information."

Taylor added that McLean's work is an example of how businesses and conservation organizations can collaborate to reach shared goals.

"Michigan Governor Rick Snyder has said many times that this is one of the most fundamentally transformative initiatives underway in the region, and it addresses one of the most critical gaps facing decision-makers and leaders in the Great Lakes Basin," Taylor said. "Dave has been invaluable to this project, particularly as we developed the detailed business plan for what Blue Accounting should look like and how the enterprise should be designed and governed over the next five years."

Today, McLean continues to serve on the bi-national Blue Accounting advisory committee and often works with its leadership team.

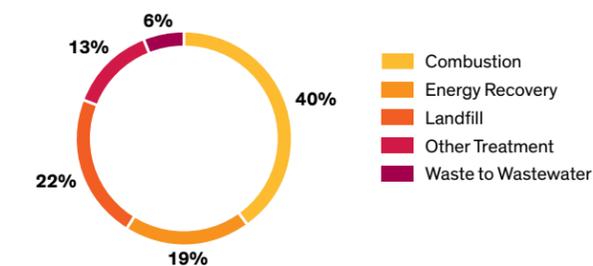
"Water sustains us all, and I am proud to be part of an initiative that is helping us understand the progress we're making and challenges that remain in protecting this vital resource," McLean said.



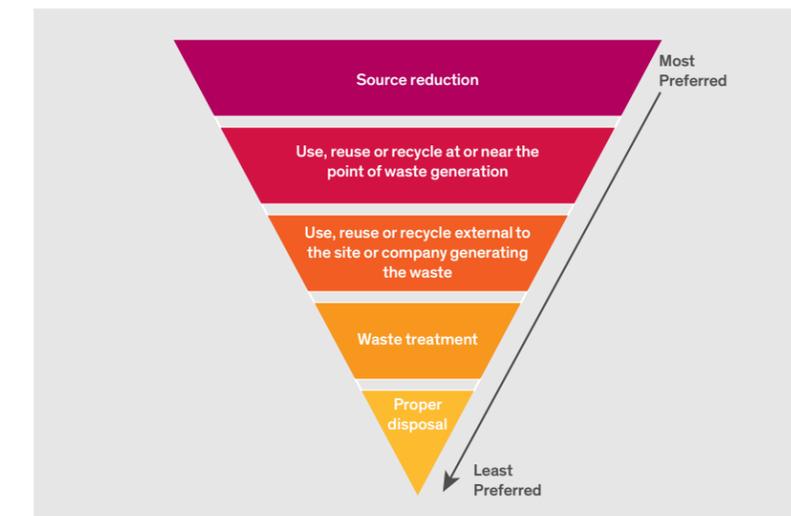
### Waste GRI 306-2

In 2017, the Company produced a total of 1.7 million metric tons of waste, a majority of which was thermally treated. Approximately 60 percent of the waste is classified as nonhazardous and 40 percent as hazardous as defined regionally. Total waste generated was 4 percent higher in 2017 than 2016, and waste intensity remained the same year-on-year.

Waste Treatment by Category



We encourage waste minimization, which includes current efforts to reduce waste generation in our manufacturing units and also pollution prevention advancement at the R&D state to avoid waste creation in the future. Our strategy is guided by a Waste Minimization Hierarchy.



Every year, we recognize hundreds of individuals through the Waste Reduction Always Pays (WRAP) award program for their waste reduction achievements. Encouraging a culture of raw material efficiency and rewarding individuals for positive behaviors are keys to a successful waste reduction goal. Projects that address one of the top three categories of the Waste Hierarchy can be nominated for a WRAP award. The WRAP program has recognized individual projects since 1986, with a total projected monetary value to Dow of greater than half a billion dollars since 1995.

### Environmental Compliance GRI 307-1

Dow Corning Corporation, a wholly owned subsidiary of Dow, has received the following notifications from the U.S. Environmental Protection Agency (EPA), Region 5, related to Dow Corning's Midland, Michigan, manufacturing facility: 1) a Notice of Violation and Finding of Violation (received in April 2012), which alleges a number of violations in connection with the detection, monitoring and control of certain organic hazardous air pollutants at the facility and various recordkeeping and reporting violations under the Clean Air Act; and 2) a Notice of Violation (received in May 2015) alleging a number of violations relating to the management of hazardous wastes at the facility pursuant to the Resource Conservation and Recovery Act. Discussions between the EPA, the U.S. Department of Justice (DOJ) and Dow Corning are ongoing.

On March 14, 2017, FilmTec Corporation, a wholly owned subsidiary of Dow, received notifications from the EPA, Region 5, and the DOJ of a proposed penalty for alleged violations of the Clean Air Act at FilmTec's Edina, Minnesota, manufacturing facility. Discussion between the EPA, DOJ and FilmTec are ongoing.

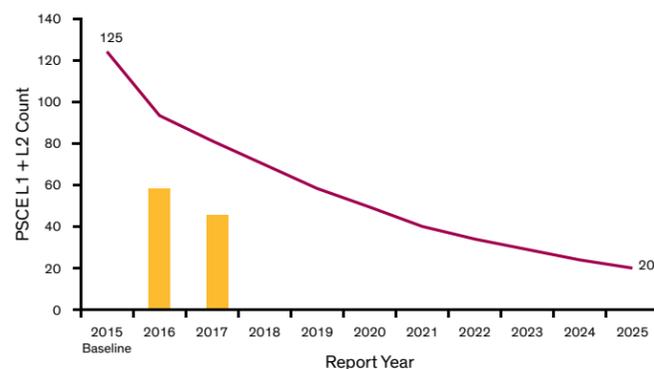
### Significant Spills GRI 306-3

Beginning in 2016, the Company began using a new metric, Process Safety Containment Event (PSCE), in place of our previous Process Safety Incident (PSI) and Loss of Primary Containment (LOPC) metrics. Our PSCE metric is derived from an industry best practice, API RP-754. As an industry leader in sustainability performance, Dow has been heavily involved in the development of this metric. We believe aligning to this measure will help us achieve an even higher level of performance related to the containment and control of the materials we handle and produce.

Similar to the approach we are now taking with Injury and Illness measurement, our new PSCE metric focuses on both incidents that have the greatest impact, as well as incidents with the greatest potential for significant impact, including process damage, interruption or possible impact on our surrounding communities. The Company has defined Levels 1–4, with Level 1 incidents having the highest actual or potential impact. By 2025, the Company's goal is to reduce the number of Level 1 and Level 2 events by more than 80 percent from our 2015 baseline of 125.

In 2017 the Company achieved an impressive 22 percent reduction in Level 1 and Level 2 events, combined, versus 2016 results. A total of 45 events (compared to 59 in the previous year) resulted in releases of 82.3 metric tons of material (compared with 290 metric tons in 2016). Just two years into our decade-long 2025 goal cycle, the Company is 75 percent of the way toward the original 2025 target, achieving an overall 63 percent reduction from baseline in the number of these releases. These releases resulted in very minimal impact to any of our stakeholders. Impacts may have included localized shelter in place for vapor releases, while liquid spills are generally captured in some form of secondary containment and recovered or properly disposed of.

Process Safety Containment Event 2025 Goal Curve



## Corporate Citizenship

### GLOBAL CITIZENSHIP AT DOW GRI 413-1

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

As part of our efforts, we look for solutions to enable economic development, sustainability and education that lead to socially healthy and resilient communities, while also supporting and furthering business success, in alignment with the Company's 2025 Sustainability Goals. Our holistic approach promotes relevant, long-term change for communities by applying integrated solutions and cross-sector collaborations at the intersection of sustainability, innovation and citizenship.

Dow's Global Citizenship strategy focuses on three strategic commitments – Workforce Solutions, Community Solutions and Business Solutions. Through these commitments, we look to address global and local challenges.

The passion and expertise of our people are the heart and soul of our work. In support of our 2025 Sustainability Goal to positively impact the lives of 1 billion people across the globe by 2025, Dow people are committing their time and talents through our DowCorps volunteer program.

### THE INTERSECTION OF SUSTAINABILITY, INNOVATION AND CITIZENSHIP

Driven by our rapidly expanding global population, we ensure our unique chemical, physical and biological science capabilities work together to provide innovative products and solutions where they are needed most. Dow is an engaged partner in applying products, solutions and expertise to solve some of the world's greatest challenges and build sustainable communities.

By understanding how solving a social problem can drive business results, companies have clear incentives to invest resources to innovate more deeply and scale socially oriented business opportunities and markets.



### Nurturing Learning and Play in Safe, Sustainable Environments

An element to nurturing and inspiring the workforce of tomorrow is to ensure that students and teachers are able to learn, teach and play in an environment that is a catalyst for creativity and development.

- **Singapore:** Building on a successful collaboration model in China, Dow has been working with customers, industry partners and the Grace Orchard School – a school for children with autism and mild intellectual disabilities – to transform sports facilities, including a running track, basketball court, parade square, therapy rooms and classrooms. Partnering with customers Nippon Paint, KDY Holdings and sport installer B.T. Sports, Dow incorporated the R&D 100 award-winning ECOGROUND™ and FORMASHIELD™ technologies. The ECOGROUND™ Waterborne Acrylic Binder System, used for the running tracks, basketball court and parade square, is a novel low-odor, low-VOC (volatile organic compound) solution that does not contain free TDI/MDI and provides an improved environmental friendly and higher-performing alternative to solvent-based systems. DowCorps volunteers joined volunteers from Nippon Paint to paint the classrooms using paint enabled with FORMASHIELD™ Formaldehyde-Abatement Technology, which is the only known paint technology that achieves greater than 80 percent efficiency in purifying indoor air by absorbing harmful formaldehyde and converting them to water vapor.
- **Colombia:** More than 200 children in Cartagena, Colombia, have benefited from the construction of two classrooms built with 100 percent recycled plastic blocks. These classrooms, constructed with the help of DowCorps volunteers, will change the educational dynamics of more than 200 Cartagena children by improving their training. In addition, the project is an example of collaboration between Dow and a diverse group of partners, including Mamonal Foundation, Conceptos Plásticos, Rochester College and the Colombian Council of Sustainable Construction. The project also was endorsed by the

Ministry of Education and the District Education Secretary of Cartagena. The innovative and cross-sector collaboration is using the principles of a circular economy to help close the plastic cycle and create sustainable learning spaces that benefit low-income communities. This effort offers an economic and sustainable alternative to the development of housing projects using plastic construction blocks.

#### Advancing a Circular Economy with the Business Impact Fund:

The Business Impact Fund, in its second year, aims to create shared value — unlocking Dow business opportunities by solving social problems through our



own technology and expertise. Shared value creates a virtuous cycle to maximize business and social impact.

By understanding how solving a social problem can drive business results, companies have clear incentives to invest resources to innovate more deeply and scale socially oriented business opportunities and markets. In 2017, six projects supported with \$1 million in seed funding from Dow's Business Impact Fund are helping address issues such as access to clean drinking water, food waste and post-consumer waste management in Colombia, Ethiopia, Ghana, India, Indonesia and the United States.

- **Example: Energy Bag**  
Building on a 10-year partnership with Keep America Beautiful through the Great American Cleanup™, the largest U.S. community improvement program, Dow and Keep America Beautiful collaborated in 2017 to launch a grant program for municipalities, nonprofits, materials recovery facilities and other qualifying organizations to establish Hefty® EnergyBag™ programs in their communities. The grant program sought applications from communities across the United States. The Hefty® EnergyBag™ program offers an

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By collaborating with organizations and communities nationwide with the Hefty® EnergyBag™ program, we are increasing plastics recovery, reducing the amount of waste going into landfills and advancing the vision of a circular economy.

Jon Pyper, associate director of sustainability & advocacy for Dow

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innovative approach to diverting plastics that are not currently recycled – such as chip bags and juice pouches – from landfills and converting the materials into valuable energy resources. The two winning communities, Cobb County, Georgia, and Boise, Idaho, were awarded \$50,000 each and provided technical expertise to implement community waste recovery programs.

- **Example: Montgomery Food Bank's Produce Rescue Center**

One third of food produced across the world goes to waste each year. That's equal to \$1 trillion lost annually and is a missed opportunity to feed the estimated 795 million undernourished people globally. It also results in the consumption of natural resources and creation of greenhouse gases from food production, processing and distribution. Partnering with the Montgomery County Food Bank in Houston, Texas, Dow helped create a produce rescue center, using Dow packaging technology to extend produce shelf life and increase the available supply of nutritious food.

#### Inspiring Innovation from a New Generation of Student Leaders

Dow, and WE, an organization made up of WE Charity and ME to WE, launched We Are Innovators, a new campaign designed to challenge educators and students to apply chemistry and science to solve global

challenges. We Are Innovators gives educators and students in the United States and across the world the tools and hands-on experiences that enable them to explore global challenges and design potential sustainable solutions using science and chemistry. The future of innovation and the development of sustainable new ideas and technologies are not only essential for Dow in meeting customer needs, but in the growth of manufacturing and the global economy. We Are Innovators is designed to empower change with resources that create sustainable impact and solutions. Aligned to Dow's 2025 Sustainability Goals, the modules will highlight important concepts such as the role of sustainable chemistry and advancing a circular economy. The campaign engages educators, inspires students and leverages Dow STEM Ambassadors through community and world-changing service learning and actionable solutions, in support of the UN's Sustainable Development Goals and a global economy.



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As a leading science and technology company focused on solutions that are essential to human progress, we are truly honored to partner with Dow in harnessing the power of chemistry to inspire students to innovate for a more sustainable future. Through We Are Innovators, young people will have the knowledge and tools to spark innovative ideas that bring positive change in the world and drive economic growth.

Craig Kielburger, co-founder of WE

### DEVELOPING LEADERS THROUGH SERVICE LEARNING

In the global economy of today and the future, Dow's leaders require specific skills in change management, critical thinking, leading cross-cultural teams, strategy development and implementation. To help develop future leaders, Dow has applied service learning, through traditional and skills-based volunteer programming, to the formula.

- **Leadership in Action (LIA):** LIA is an innovative leadership development program where employees work on projects with nongovernmental organizations (NGOs) in emerging nations. Participants apply their own skills and expertise to community-based problems by working virtually for several months and in-country for one week. The result is exceptional training for the employees, resolution of long-term issues for the NGOs, and business penetration into new markets for Dow.

Dow's 2017 LIA program reconfirms the Company's long-term commitment to Vietnam as a primary sustainable development partner with the deployment of 43 Dow employees from around the world to Hanoi and Hai Phong. Dow is collaborating with six strategic NGOs and

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universities in an effort to enhance the country's competitive advantage and address pressing local challenges for the betterment of the Vietnamese. These partnerships provide Dow a unique ability to further develop relationships with key stakeholders as the Company progresses its growth strategy in the Asia Pacific geographic area.

LIA has helped develop 202 future Dow leaders since 2013 and applied pro-bono services to 35 skill-based DowCorps volunteer projects in Ghana, Ethiopia, Indonesia, the Philippines and Vietnam.

- Global Health Corporate Champions:** Working to build global leadership talent through pro bono service, Dow, in partnership with PYXERA Global and peer companies, have come together for Global Health Corporate Champions (GHCC), an activity of USAID Global Health Fellows Program-II. This innovative collaborative approach brings together the diverse perspective and talent of the public, private and social sectors to address high priority health issues in Ghana in 2017.
- Dow Leadership Institute:** Since the program's launch in North America in 2016, the Dow Leadership Institute has expanded globally to further cultivate superior leaders who positively impact employee engagement and inclusion, champion diversity and collaborate effectively. As part of the program, 1,000 of our leaders in 2017 gained greater understanding of community and global challenges, and volunteered their time with nonprofit partners in Illinois, Louisiana, Michigan and Texas.



**GROWING SUSTAINABLE COMMUNITIES THROUGH PARTNERSHIP AND DISASTER RECOVERY**

For employees around the world, Dow's focus year-round is on supporting sustainable communities – doing our part to make the places where Dow people live and work healthy, vibrant and resilient places to be. The reason for these efforts is simple: As a science and technology company, our ability to drive innovation to help address many of the world's most challenging problems is rooted in the health and safety of our employees and neighbors, and the economic vibrancy of our communities.

In 2017, the world watched in shock at the devastation of life and property resulting from Hurricane Harvey in Texas, Hurricane Maria in Puerto Rico, and earthquakes in Mexico. Dow was one of many companies with

tremendous impact from these natural disasters, but our employees found hope in the strength of the human spirit and the healing power of working together.

In each of these disasters, Dow mobilized resources for immediate relief and long-term recovery efforts with a commitment to support impacted employees and our communities in the aftermath.

Upon impact, we immediately began coordinating with national partners, such as the American Red Cross and Team Rubicon, that provide critical services to individuals affected by the hurricane and resulting flooding to serve the needs of the displaced.

As we worked with our local nonprofit partners, such as the strong network of United Way agencies and community foodbanks throughout the affected areas, we focused not just on financial support but applying Dow technology and engaging employees through our DowCorps volunteer network in the days and months afterward.

Having trusted partners is critical. Building on a strong 35+ year partnership between Dow and Habitat for Humanity, we have launched a new initiative, Habitat Hammers Back, to help families recover from the unexpected. Through this program, Dow is providing \$1 million in support to Hurricane Harvey rebuilding efforts, including a financial commitment, a broad range of technology-based products and solutions and DowCorps volunteers. **GRI 413-1, 413-2**

“An essential part of Dow's leadership development philosophy is action learning. The Leadership in Action program continues to be one of our flagship programs and has proven to help transform the way we develop superior leaders by introducing them to real world challenges and giving them learning experiences that test their ability to lead courageously, collaborate effectively and deliver innovative solutions that generate value.

**Johanna Soderstrom, chief human resources officer and senior vice president, Human Resources and Aviation**

**Engaging Employees For IMPACT**

**1,073**  
Recipient Organizations

**1,526**  
Grants Delivered Worldwide

**\$7.34 MM**  
Product Donations



**\$39.74 MM**  
Corporate & Foundation Contributions

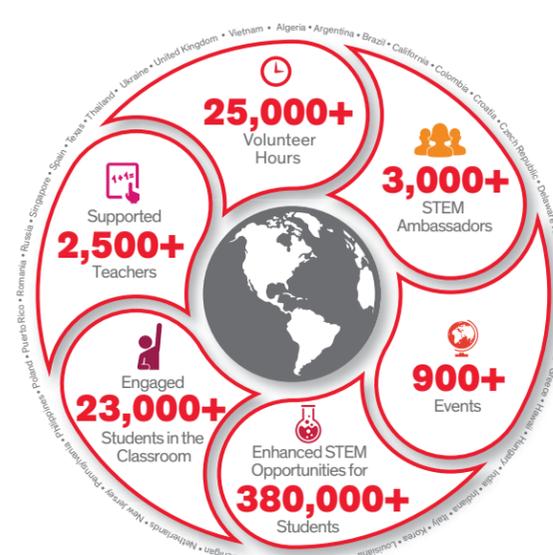
**15,000**  
DowCorps Volunteers

**2,300**  
Volunteer Projects

**150,000**  
Volunteer Hours Served

**2017 Dow STEM Ambassadors**

Building the **STEM (Science, Technology, Engineering and Math) Workforce** around the world.



# ADDITIONAL INFORMATION



## Corporate Governance

### Chair of the Highest Governance Body: DowDuPont Leadership GRI 102-23

In order to ensure that DowDuPont benefited from the experience and expertise of both Dow’s and DuPont’s leadership teams and Board directors, it was determined prior to the merger transaction that Andrew N. Liveris, chairman and CEO of Dow, would serve as the executive chairman of DowDuPont and Edward D. Breen, chairman and CEO of DuPont, would serve as the chief executive officer of DowDuPont. As announced by DowDuPont on March 12, 2018, as of April 1, 2018, Mr. Liveris no longer serves as executive chairman. Effective April 1, 2018, Jeff M. Fettig serves as a non-employee executive chairman. See page 4 for a more detailed explanation of the merger transaction and intended business separations.

In addition, key executive leaders from both Dow and DuPont were named as executive officers of DowDuPont: Howard I. Ungerleider, chief financial officer; Stacy L. Fox, general counsel; James R. Fitterling, chief operating officer, Materials Science Division; James C. Collins Jr., chief operating officer, Agriculture Division; Marc Doyle, chief operating officer, Specialty Products Division; Charles J. Kalil, special counselor to the executive chairman and general counsel for the Materials Science Division; Ronald C. Edmonds, co-controller; and Jeanmarie F. Desmond, co-controller.

### Board of Directors GRI 102-22, GRI 102-18

The DowDuPont Board of Directors (the “Board”) is responsible for broad corporate policy and overall performance of DowDuPont through oversight of management and stewardship of DowDuPont. Among other duties, the Board appoints DowDuPont’s officers, assigns to them responsibility for management of the Company’s operations and reviews their performance.

The Board consists of 16 directors; eight of whom were directors at Dow prior to the merger transaction and eight of whom were directors at DuPont prior to the merger transaction. The directors are: Lamberto Andreotti, James A. Bell, Edward D. Breen, Robert A. Brown, Alexander M. Cutler, Jeff M. Fettig, Marilyn A. Hewson, Lois D. Juliber, Andrew N. Liveris, Raymond J. Milchovich, Paul Polman, Dennis H. Reilley, James M. Ringler, Ruth G. Shaw, Lee M. Thomas and Patrick J. Ward. While nominated for re-election, DowDuPont has announced that Mr. Liveris will serve as a director of DowDuPont only through July 1, 2018, at which time he will retire from DowDuPont and the Board. As set forth in the bylaws, the continuing Dow directors will identify a replacement to fill the vacancy at that time.

The former lead independent directors of each of Dow and DuPont (Fettig and Cutler, respectively) serve as co-lead independent directors of the Board with responsibilities set forth in the Corporate Governance Guidelines.

The directors collectively possess a variety of skills, professional experience and diversity of backgrounds that allow them to effectively oversee DowDuPont’s business including: leadership experience, international experience, operational experience in a variety of relevant fields and industries, public company board experience, board or other significant experience with academic research and philanthropic institutions and trade and industry organizations, and prior government or public policy experience. Each director’s relevant experiences and attributes collectively provide the Board with a balance of perspectives that contribute to its effectiveness in overseeing the business, preparing for the intended business separations, and advising DowDuPont on navigating the regulatory environment for the intended business separations.

### Board Committees

The Board maintains an Audit Committee; Compensation Committee; Corporate Governance Committee; and Environment, Health and Safety Committee (the “Standing Committees”). In addition to the standing committees, three advisory committees were established to oversee the business and affairs of each of DowDuPont’s Agriculture, Materials Science and Specialty Products divisions in preparation for the intended business separations. The responsibilities of each standing committee and advisory committee are stated in the bylaws as well as in their

respective charters.

More information on corporate governance, including the Corporate Governance Guidelines, Board Committee charters and Code of Business Conduct, is available at [www.dow-dupont.com/investors/corporate-governance](http://www.dow-dupont.com/investors/corporate-governance).

### Dow Leadership

The Dow executive leadership team drives an operationally excellent culture focused on executing against the Company’s strategic priorities, managing governance and enterprise-level decisions for the Materials Science Division, and achieving its sustainability goals that create value for all stakeholders. The Board periodically reviews progress made by Dow through the Environment, Health & Safety (EH&S) Committee, and makes recommendations to ensure the continued application of the Company’s high ethical standards and sustainable growth as it pursues the Intended Business Separations. The Dow executive leadership team facilitates the strong connection between Dow and DowDuPont, collectively enabling the highest standards for governance.

### The Dow Executive Sustainability Team

The Executive Sustainability Team serves as Dow’s management governance body for the Company for sustainability, environment, health & safety.

- Assures adherence to the corporate Environment, Health & Safety Policy and revise and approve when deemed necessary.
- Decision-making for EH&S issues and strategic direction that need corporate management level approval (e.g., corporate-elevated product and process risk management reviews, compliance plan performance).
- Ensures continued progress is made toward achieving Dow’s sustainability goals.
- Provides strategic direction and oversight to Dow’s corporate reputation to ensure the respect of our stakeholders.
- Provides oversight on behalf of the Dow executive leadership team for the following corporate management committees: Corporate Reputation Team, Crisis Management Team, Public Issue Strategy Board, Remediation Strategy Board, and Corporate Contribution Committee.

**2017 Members of the Dow Executive Sustainability Team**

**Neil Hawkins (Chair):** Corporate Vice President, Chief Sustainability Officer, Environment, Health & Safety

**Jim Fitterling:** Chief Executive Officer-Elect, Dow, and Chief Operating Officer, DowDuPont Materials Science Division

**Peter Holicki:** Corporate Vice President of Manufacturing and Engineering and Environment, Health & Safety Operations

**Duncan Stuart:** Deputy General Counsel - Corporate Transactions & Asset Centric Businesses Legal

**Diego Donoso:** Business President, Packaging and Specialty Plastics

**Neil Carr:** Business President, Dow Coating Materials, Performance Monomers & Plastics

**Matt Davis:** President, Dow North America, Senior Vice President, Global Public Affairs & Government Affairs

**Pedro Suarez:** Chief Commercial Officer

**Delegating Authority GRI 102-19**

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

The Dow Executive Sustainability Team then has authority to direct and delegate authority to act in the scope of its responsibilities for sustainability, environment, health & safety for Dow’s business units, functions and process governance teams.

**Executive-Level Responsibility for Economic, Environmental and Social Topics GRI 102-20**

Neil Hawkins, corporate vice president and chief sustainability officer, is responsible for Environment, Health & Safety and leading the Company’s commitment to Set the Standard for Sustainability. Hawkins reports directly to Jim Fitterling, Chief Executive Officer-Elect, Dow, and Chief Operating Officer, DowDuPont Materials Science Division.

**Consulting Stakeholders on Economic, Environmental and Social Topics GRI 102-21**

Stockholders and other parties interested in communicating directly with the Board, executive chairman, co-lead independent directors or other independent directors may do so by writing in care of the office of the DowDuPont Corporate Secretary, 974 Centre Road, Wilmington, DE 19805.

The DowDuPont Proxy Statement describes the requirements for submitting a proposal to be considered for inclusion in the proxy material for a future annual meeting.

Employees also provide input and direction through a Global Employee Opinion & Action Survey (GEOAS).

The Dow EthicsLine is a safe, reliable and convenient avenue to report ethical concerns. Please see more about the Dow EthicsLine on GRI 102-17.

**Conflicts of Interest GRI 102-25**

The DowDuPont Board adopted a Code of Conduct for directors and officers and a Code of Financial Ethics applicable to the chief executive officer, chief financial officer and co-controllers. In addition, the operating subsidiaries of DowDuPont have codes of conduct applicable to their respective employees. The full text of DowDuPont’s Code of Conduct as well as the codes of conduct for Dow and DuPont are available at [www.dow-dupont.com/investors/corporate-governance](http://www.dow-dupont.com/investors/corporate-governance). Further, DowDuPont discloses on its website any waiver of or amendment to the Code of Conduct requiring disclosure under applicable rules.

All legacy 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 conduct.

The DowDuPont Corporate Governance Committee has responsibility for reviewing issues involving director independence and related person transactions using information obtained from directors’ responses to a questionnaire asking about their relationships with DowDuPont, and those of their immediate family members and primary business or charitable affiliations and other potential conflicts of interest, as well as certain data collected by DowDuPont related to transactions, relationships

or arrangements between DowDuPont on the one hand and a director, officer or immediate family member on the other. The process for onboarding new directors also includes an orientation process that includes guidance on how to fulfill their duties as a member of the DowDuPont Board.

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

Other public company board memberships, supplier/purchaser relationships and related party disclosures are disclosed in the relevant SEC filings for DowDuPont including the proxy statement and the Forms 10-K and 10-Q as appropriate.

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

Jeff M. Fettig serves as non-employee executive chairman of the DowDuPont Board, which oversees the management and stewardship of DowDuPont, including periodic review and update of DowDuPont’s strategy and pursuit of the intended business separations.

In addition, the Materials Science Advisory Committee was established to oversee the business and affairs of the Materials Science Division business operations in preparation for the intended business separations. Responsibilities include developing a strategy and operational direction; planning and making recommendations to approve operating and capital budgets; evaluating the performance of the leadership team; receiving reports on financial performance and synergies; and identifying risk areas and assessing risk management, among other responsibilities. The Materials Science Advisory Committee is comprised of eight members of the DowDuPont Board who are former members of the Dow Board; the chief executive officer of DowDuPont; and former members of the Dow Board who are not members of the DowDuPont Board and who serve in an ex officio capacity by virtue of their prior service on the Dow Board.

The mission, vision, values and strategy of the Materials Science division are reviewed during Strategy Week, which is held twice a year, and any modifications are proposed to the Materials Science Advisory Committee for consideration. The Materials Science Advisory Committee review and approves the proposed mission, vision, values and strategy on a semi-annual basis.

**Evaluating the Highest Governance Body’s Performance GRI 102-28**

The Board and each of its committees make an annual self-evaluation of its performance with a particular focus on overall effectiveness. The Corporate Governance Committee is responsible for overseeing the self-evaluation process.

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

The DowDuPont Board is responsible for overseeing the overall risk management process. Risk management is considered a strategic activity within DowDuPont and responsibility for managing risk rests with executive management while 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 and monitoring management’s execution of the corporate and business plan, and each Standing Committee is responsible for oversight of specific risk areas relevant to their respective charters. This process includes an assessment of potential cyber-attacks and the ongoing review of DowDuPont’s comprehensive cyber security program.

| Standing Committee                     | Area(s) of Risk Management Oversight Responsibility  |
|--|--|
| Compensation Committee                 | DowDuPont’s executive compensation practices   |
| Audit Committee                        | Management and effectiveness of accounting, auditing, external reporting, compliance and internal controls, and cyber security |
| Corporate Governance Committee         | Director independence, potential conflicts of interest and other ethics and compliance   |
| Environment, Health & Safety Committee | Emerging regulatory developments related to safety, health and environment   |

Although each Standing Committee is responsible for overseeing the management of certain risks as described above, the full Board is regularly informed by the Standing Committees about these risks. This enables the Board and the Standing Committees to coordinate risk oversight and the relationships among the various risks faced by DowDuPont.

### Review of Economic, Environmental and Social Topics and Communicating Critical Concerns **GRI 102-31, GRI 102-33**

The oversight responsibility of the Board and Standing Committees is enabled by an enterprise risk management model and process implemented by management that is designed to identify, assess, manage and mitigate risks. The Audit Committee is responsible for overseeing that management implements and follows this risk management process and for coordinating the outcome of reviews by the other Standing Committees in their respective risk areas. In addition, the enterprise risk management model and process are reviewed with the Board annually, and the Board recognizes that risk management and oversight comprise a dynamic and continuous process.

The strategic plan and critical issues and opportunities are presented annually to the Board by the CEO and senior management. Throughout the year, management reviews any critical issues and actual results compared to plan with the Board and relevant Standing Committees. Members of executive management are also available to discuss DowDuPont's strategy, plans, 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.

From January 1, 2017 until the closing of the merger transaction on August 31, 2017, Dow held eight Board meetings and seventeen Standing Committee meetings. From September 1, 2017 through December 31, 2017, DowDuPont held three Board meetings and eight Standing Committee meetings. All of the Directors attended more than 75% of the sum of the total number of Board meetings and the total number of meetings of the Standing Committees on which the Director served during the past year. The Directors are encouraged to attend all Annual Meetings of Stockholders, and in 2017 all thirteen Directors then serving on the Dow Board attended the Dow Annual Meeting of Stockholders held on May 11, 2017.

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

The Business Risk Review (BRR) Work 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 that there is an activity or opportunity that potentially poses a risk to people or the environment and that is a candidate for a risk evaluation.

The Dow Executive 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 define those activities or opportunities that carry levels of risk which the Sustainability Team wants to review and approve or reject. They are intended to be "evergreen" and subject to modification and refinement based on experience with their use.

Thirteen principal risks were disclosed in the 2017 Dow 10-K. See the 2017 Dow 10-K, PART I, Item 1A for a more complete discussion of Risk Factors.

### Remuneration Policies for the Highest Governance Body and Senior Executives **GRI 102-35**

#### 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 our longer-term success. The primary objectives of Dow's executive compensation program are as follows:

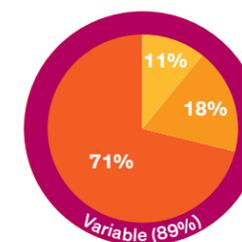
- Support the achievement of Dow's vision and strategy
- Motivate and reward executives when they deliver desired business results and stockholder value
- Attract and retain the most talented executives to succeed in today's competitive marketplace
- Create an ownership alignment with stockholders

#### Pay Mix

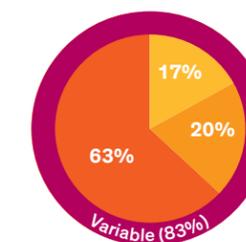
2017 was a unique year, as both Dow and DuPont operated as standalone companies prior to the merger transaction, each with its own executive compensation and benefit programs and practices. Given the intended business separations within a relatively short period of time after the closing of the merger transaction, a decision was made to not develop separate executive compensation programs at the DowDuPont level for 2017. Rather, the executive officers of DowDuPont continue to be employees of, and participants in, the compensation and benefit programs of Dow and DuPont, respectively.

The Dow executive compensation programs deliver value through three primary forms of compensation: base salary, annual incentives, and long-term incentives. The compensation outcomes under the programs' annual and long-term incentives are determined by Dow's performance. Executive compensation is linked strongly to the financial and operational performance of the business. On average, approximately 90 percent of the executive chairman's and the CEO's target annual total compensation is at risk, while more than 80 percent of the other Named Executive Officers' compensation, on average, is at risk.

Executive Chairman and CEO Target Annual Total Compensation for 2017 (Average)



Other NEO Target Annual Total Compensation for 2017 (Average)



■ Base ■ Annual Incentive ■ LTI

#### Performance Criteria

Consistent with our pay-for-performance philosophy, a significant portion of executive compensation consists of variable performance-based annual and long-term incentives. These 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 percent of the annual incentive award. Environment, Health & Safety metrics are thoroughly embedded in the leadership expectations of Dow executives, and executives are held accountable for environment, health, and safety objectives 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 DowDuPont Executive Compensation Recovery Policy, DowDuPont 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 on pages 64 through 66.

#### 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 DowDuPont Compensation Committee is a subset of the DowDuPont Board. The committee, which is comprised of independent directors, oversees the compensation of the executive officers of DowDupont (or, in the case of both the executive chairman and the CEO, by the Compensation Committee and the independent members of the Board.) The Compensation 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 Committee has retained external compensation consultants, who report directly to the committee. The consultants advise the committee on trends and issues in executive compensation, and provide advice and recommendations in relation to proposed compensation and the design of the legacy compensation programs maintained by each of Dow and DuPont.

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.

#### How Stakeholders' Views Are Sought and Taken into Account Regarding Remuneration GRI 102-37

Both Dow and DuPont have provided stockholders a "say-on-pay" advisory vote on its executive compensation programs since 2011. At the DowDuPont 2018 Annual Meeting of Stockholders, more than 93 percent of the votes cast by our stockholders approved our say-on-pay proposal. We believe the continued support reflects the implementation of feedback from our stockholders in regard to the changes to our long-term incentive award mix, share usage and additional disclosures on our plan metrics and peer groups. Following an Annual Meeting of Stockholders, the Compensation Committee (see GRI 102-36) carefully evaluates the results of the say-on-pay vote at subsequent meetings of the Committee.

Throughout the year, the independent directors and members of the management teams at Dow, DuPont, and DowDuPont continued extensive outreach to stockholders, engaging with investors who collectively held over 50 percent of outstanding shares of each company. Through this outreach, the management teams updated investors on a range of topics such as the merger transaction and intended business separations, the overall business strategy, current business conditions, corporate citizenship and sustainability, corporate governance practices and executive compensation, as well as gained an understanding of the perspectives and concerns of each investor. The Board and management teams carefully consider the feedback from these meetings, as well as stockholder support, when reviewing the business, corporate governance and executive compensation profiles.

#### Defined Benefit Plan Obligations and Other Retirement Plans GRI 201-3

Dow and DuPont did not merge their defined benefit pension plans and other postretirement benefit plans as a result of the merger transaction.

#### 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 2017, the Company contributed \$1.676 million to its pension plans, including contributions to fund benefit payments for its non-qualified pension plans. The Company expects to contribute approximately \$500 million to its pension plans in 2018.

Additional information about pension plans and other postretirement benefits can be found in the 2017 Dow Form 10-K and the DowDuPont 2018 Proxy Statement.

#### Entities Included in the Consolidated Financial Statements GRI 102-45

Subsidiaries of the Company, for which the effective ownership by Dow is 50 percent or more, are listed in the Dow 2017 10-K (Item 1, page 9).

| Principal Nonconsolidated Affiliates at December 31 | Ownership Interest |        |        |
|---|--------------------|--------|--------|
|   | 2016               | 2015   | 2014   |
| Dow Corning Corporation <sup>(1)</sup>              | N/A                | 50%    | 50%    |
| EQUATE Petrochemical Company K.S.C.                 | 42.5%              | 42.5%  | 42.5%  |
| The HSC Group: <sup>(2)</sup>                       |                    |        |        |
| DC HSC Holdings LLC                                 | 50%                | N/A    | N/A    |
| Hemlock Semiconductor L.L.C.                        | 50.1%              | N/A    | N/A    |
| The Kuwait Olefins Company K.S.C. ("TKOC")          | 42.5%              | 42.5%  | 42.5%  |
| The Kuwait Styrene Company K.S.C. ("TKSC")          | 42.5%              | 42.5%  | 42.5%  |
| Map Ta Phut Olefins Company Limited <sup>(3)</sup>  | 32.77%             | 32.77% | 32.77% |
| MEGlobal <sup>(4)</sup>                             | N/A                | N/A    | 50%    |
| Sadara Chemical Company                             | 35%                | 35%    | 35%    |
| The SCG-Dow Group:                                  |                    |        |        |
| Siam Polyethylene Company Limited                   | 50%                | 50%    | 50%    |
| Siam Polystyrene Company Limited                    | 50%                | 50%    | 50%    |
| Siam Styrene Monomer Co., Ltd.                      | 50%                | 50%    | 50%    |
| Siam Synthetic Latex Company Limited                | 50%                | 50%    | 50%    |
| Univation Technologies, LLC <sup>(5)</sup>          | N/A                | N/A    | 50%    |

(1) On June 1, 2016, Dow became the 100 percent owner of Dow Corning.

(2) The HSC Group was previously part of the Dow Corning equity method investment and was added as principal nonconsolidated affiliates in the fourth quarter of 2016.

(3) The Company's effective ownership of Map Ta Phut Olefins Company Limited is 32.77 percent, of which the Company directly owns 20.27 percent and indirectly owns 12.5 percent through its equity interest in Siam Polyethylene Company Limited and Siam Synthetic Latex Company Limited.

(4) On December 23, 2015, the Company sold its 50 percent ownership interest in MEGlobal to EQUATE. MEGlobal is treated as a separate principal nonconsolidated affiliate through the date of divestiture.

(5) On May 5, 2015, Univation, previously a 50:50 joint venture between Dow and ExxonMobil, became a wholly owned subsidiary of Dow.

## Financial assistance received from government GRI 201-4

| Funding Program     | Program Title  | Government Support (\$MM) * |
|---------------------|--|-----------------------------|
| Belgium National    | Fuels and chemicals by fast pyrolysis of biomass   | 2.2                         |
| Dutch National      | Lower olefins from synthesis gas using supported iron catalysts coping with the challenges of selectivity and stability                            | 1.1                         |
| Dutch National      | Energy-efficient valorization of components from process water streams   | 0.9                         |
| Dutch National      | Water Nexus – Securing water supply in delta and floodplain are-as worldwide   | 7.5                         |
| Dutch National      | Low Cost Storage of Heat   | 0.3                         |
| Dutch National      | Debottlenecking of Chromatographic Separations   | 0.9                         |
| Dutch National      | Integrale Mobiele Process Water-OnderzoeksVoorziening voor een Economische Delta   | 0.1                         |
| Dutch National      | Compact Conversion and Storage of Thermal Energy   | 2.4                         |
| Dutch National      | Energy-efficient Combined Heat and Mass Process  | 1.0                         |
| Dutch National      | Steam and Condensate Quality Water Process Technology  | 1.1                         |
| Dutch National      | Development and demonstration of low-carbon technologies to transform CO <sub>2</sub> and CO streams from the steel industry into new value chains | 7.0                         |
| Dutch National      | Isobutene production from waste gases via engineered microbes  | 0.1                         |
| Dutch National      | Waste heat recovery in industrial batch processes: Analysis of combined heat storage and heat pump application                                     | 0.6                         |
| Dutch National      | Sustainable steam production for industry  | 1.0                         |
| Dutch National      | Electrically driven, thermo-acoustic high-temperature steam producing heat pump  | 0.6                         |
| Dutch National      | Energy efficient drying using liquid sorption  | 0.3                         |
| Dutch National      | Mechanical steam recompression   | 2.2                         |
| Dutch National      | Nanofiltration Membranes for Extreme Industrial Conditions   | 0.5                         |
| Dutch National      | Energy Efficient Affinity-driven Molecular Separation  | 0.7                         |
| Dutch National      | Cost Reduction Industrial Heat Pumps   | 0.5                         |
| Dutch National      | Electrons to Close the Carbon Cycle  | 1.1                         |
| Dutch National      | Solvent Tolerant Nanofiltration and Reverse Osmosis Membranes for the Purification of Industrial Aqueous Streams                                   | 1.1                         |
| European Commission | Sustainable multifunctional coating resins for scavenging applications   | 0.6                         |
| European Commission | Innovative tools, methods and indicators for optimizing the resource efficiency in process industry  | 5.2                         |
| European Commission | PU Disruptive Technology to Dramatically Improve Energy Efficiency of Household Appliances   | 2.6                         |
| European Commission | Integrated Process Control-based on Distributed In-Situ Material and Energy Feedstock Rankings   | 8.0                         |
| European Commission | Compact Retrofit Advanced Thermal Energy storage   | 0.6                         |
| European Commission | Formulations & Computational Engineering   | 4.3                         |
| European Commission | Advanced Composite Material Selection Platform with a Seam-less Integration of Material Models and multidisciplinary Design framework              | 4.3                         |
| European Commission | Demonstration of an innovative and versatile recycling scheme for increasing the water efficiency in the petrochemical industry                    | 1.8                         |
| European Commission | Innovative Solutions in the Process Industry for Next-Generation Resource Efficient Water Management   | 6.8                         |
| European Commission | Compressed Natural Gas Transport System  | 13.2                        |

| Funding Program       | Program Title  | Government Support (\$MM) * |
|-----------------------|--|-----------------------------|
| European Commission   | Integrated model guided process optimization of steam cracking furnaces  | 7.6                         |
| European Commission   | European Materials Modelling Council   | 4.3                         |
| European Commission   | Sustainable Production of Industrial Recovered Energy using en-ergy dissipative and storage technologies   | 4.2                         |
| European Commission   | Lignin oxidation technology for versatile lignin dispersants   | 4.8                         |
| European Commission   | Materials Technologies for Performance Improvement of Cooling Systems in Power Plants  | 10.7                        |
| European Commission   | Impact of air pollutants on cutaneous responses in both healthy and compromised skin barrier, and innovative solutions to protect skin against urban pollution | 0.9                         |
| European Commission   | Robotica Smart Tooling   | 2.0                         |
| European Commission   | Commercialization of a full carbon wheel manufactured with an automated high-volume process for the automotive market  | 2.3                         |
| European Commission   | Lignin oxidation technology for versatile lignin dispersants   | 4.8                         |
| German National       | Modeling and optimization of transdermal therapeutic systems   | 0.3                         |
| Spanish National      | Development of new filtration process of water reuse from water with high fouling potential  | 0.7                         |
| State of Pennsylvania | High Resolution Mapping of Size and Surface Charge Distribution of Particle-Stabilized Colloids Used in Architectural Coatings                                 | 0.1                         |
| US-DOD                | Digital Manufacturing & Design Innovation Institute  | 70.0                        |
| US-DOD                | Integrated Scheduling and Control for Real-Time Optimization of Factory Operations   | 0.8                         |
| US-DOE                | New or Improved Polyamide Membranes and Associated Pro-cesses and Technologies   | 1.7                         |
| US-DOE                | US China Clean Energy Research Center  | 12.5                        |
| US-DOE                | Body in White Joining of Aluminum to advanced high strength steel at prototype scale   | 1.5                         |
| US-DOE                | Institute for Advanced Composites Manufacturing Innovation   | 70                          |
| US-DOE                | Integrated Computation Materials Engineering Development of Carbon Fiber Composites for Lightweight Vehicles   | 6.0                         |
| US-DOE                | Ambient pressure XPS for in situ studies of heterogeneous cata-lysts   | 0.3                         |
| US-DOE                | Imaging Model Ziegler Natta Catalysts with Single-Atom Sensi-tivity  | 0.2                         |
| US-DOE                | Atomic Force Microscopy Capability Development   | 0.1                         |
| US-DOE                | Additive Manufacturing of Polyurethane Materials   | 0.04                        |
| US-DOE                | Modeling the Effect of Film Morphology on the Performance of an OLED Device  | 0.04                        |
| US-DOE                | 3D Structure and Organization in Polymeric and Organic Thin Films  | 0.2                         |
| US-DOE                | Bio-Syngas fermentation for C <sub>6</sub> -C <sub>14</sub> alcohol production as a pathway to fuels   | 1.2                         |
| US-DOE                | Rapid Advancement Process Intensification Deployment Manu-facturing Innovation Institute   | 70.0                        |
| US-NSF                | Selective C-H Borylation of Arenes and Heterocycles  | 0.4                         |
| US-NSF                | Improved Association-based Models for Separations in the Bioe-conomy   | 0.4                         |
| US-NSF                | In situ generation of two phase flows to eliminate membrane con-centration polarization and fouling  | 0.4                         |

\* The dollar figure listed is the value of the direct government support for the total program. Several programs have multiple participants receiving assistance. These programs were active in 2017; however, many are multiyear.

**102-12 External Initiatives**

Responsible Care® Management System  
 United Nations Global Compact (UNGC)  
 UNGC Caring for Climate signatory  
 International Coastal Cleanup (ICC)  
 Trash Free Seas Alliance (TFSA)  
 Keep America Beautiful (KAB)  
 Ellen MacArthur Foundation (EMF)  
 Global Reporting Initiative (GRI)  
 Biotechnology Principles  
 GMO Answers  
 Field to Market®  
 The Compact  
 Dow U.S. Apprenticeship Program  
 UN Guiding Principles on Business and Human Rights  
 Carbon Disclosure Project

**102-49 Changes in Reporting**

As a result of review of our materiality assessment, two additional topics were reported for 2017, including GRI 301: Materials and GRI 413 Local Communities. In addition, we have reported indicators for GRI 404: Training and Education to support disclosures for other sustainability ratings that we participate in.

The DowDuPont merger transaction is explained in detail on page 4. For some indicators, particularly those related to

governance, the scope of the disclosure is not strictly Dow as was reported for 2016 because of the merger transaction. Variances from the Dow scope are explained with the individual topics and indicators as needed.

**102-48 Restatements of Information**

Operating costs and Payments to providers of capital for 2016 have been restated in GRI 201-1. The Operating Costs value changed from what was reported in 2016 as \$32,972MM. This amount reflects what was moved from Cost of sales, R&D and SC&A to a new line in the 2017 Dow Form 10-K for integration and separation costs. This occurred as a result of the merger transaction, as certain reclassifications of prior period amounts for The Dow Chemical Company were made to improve comparability with DowDuPont and to conform with the presentation presented for 2017. Payments to providers of capital value changed from what was reported in 2016 as \$3213MM. The prior value reflected "Net interest expense" as reported in the 2016 Dow Form 10-K which included expenses in addition to payments to providers of capital. The updated value is the sum of "interest expense and amortization of debt discount" and "capitalized interest".

Fuel oil consumed was reported for

GRI 302-1 on page 76 of the 2016 Dow Sustainability Report as 479 Million GJ. This value was the result of a mathematical error and should have been 0.479 Million GJ. The amount of fuel oil consumed in 2017 is a similar value, small enough to be excluded from the table on page 94 of this report.



**Independent Assurance Statement to The Dow Chemical Company GRI 102-56**

ERM Certification and Verification Services (ERM CVS) was engaged by The Dow Chemical Company (Dow) to provide limited assurance in relation to The Dow Chemical Company 2017 Sustainability Report (the Report), as set out below.

| Engagement summary                       |   |
|--|---|
| <b>Scope of our assurance engagement</b> | Whether Dow has prepared the report in accordance with the Global Reporting Initiative (GRI) Standards Comprehensive option   |
| <b>Reporting criteria</b>                | Whether Dow's reported progress against its 2025 Sustainability Goals is fairly presented, in all material respects, in accordance with its internal reporting criteria   |
| <b>Assurance standard</b>                | Global Reporting Initiative (GRI) Standards (2016)<br>Dow Chemical 2025 Sustainability Goals  |
| <b>Assurance level</b>                   | ERM CVS' assurance methodology, based on the International Standard on Assurance Engagements ISAE 3000 (Revised).   |
| <b>Assurance level</b>                   | Limited assurance.  |
| <b>Respective responsibilities</b>       | The Dow Chemical Company is responsible for preparing the Report and for the collection and presentation of the information within it.<br>ERM CVS's responsibility is to provide conclusions on the agreed scope based on the assurance activities performed and exercising our professional judgement. |

**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 the completeness of data reported by all the sites and the effectiveness of the internal review (QA/QC processes), including the consolidation process;
  - Review performance during the reporting period against the 2025 Sustainability Goals;
  - Review the materiality determination process including the results of stakeholder engagement;
  - Review a sample of qualitative and quantitative evidence supporting the reported information;

- Checking consistency of financial data and other information with Dow's 2017 10K report;
- Confirming the consistency of the reported information with our understanding of Dow's business, operations, sustainability strategy and prior reporting.
- Reviewing external media reporting relating to Dow to identify relevant sustainability issues in the reporting period.
- Checking 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. It is important to understand our assurance conclusions in this context. Our independent assurance statement provides no assurance on statements in the report regarding future performance or on whether Dow will achieve its stated goals.

**Our independent commentary and observations**

We have provided Dow with a separate confidential Management Report. In addition to, and not affecting our formal assurance conclusion above, we have the following key observations:

- Taking into account the ambitious nature of the 2025 Sustainability Goals and the extensive range of supporting initiatives with a wide range of stakeholders, progress achieved to date demonstrates the positive impacts of Dow's 2025 Sustainability Goals and underlines the effort and resources applied to these commitments. Dow recognises that the collection and reporting of reliable and consistent performance information needed to monitor and measure the progress against each goal is challenging. Further work is needed to define what success and achievement against the 2025 Sustainability Goals will look like for Dow and to ensure stakeholders understand this by continuing to transparently disclose and discuss developments and measures of progress in the public domain.

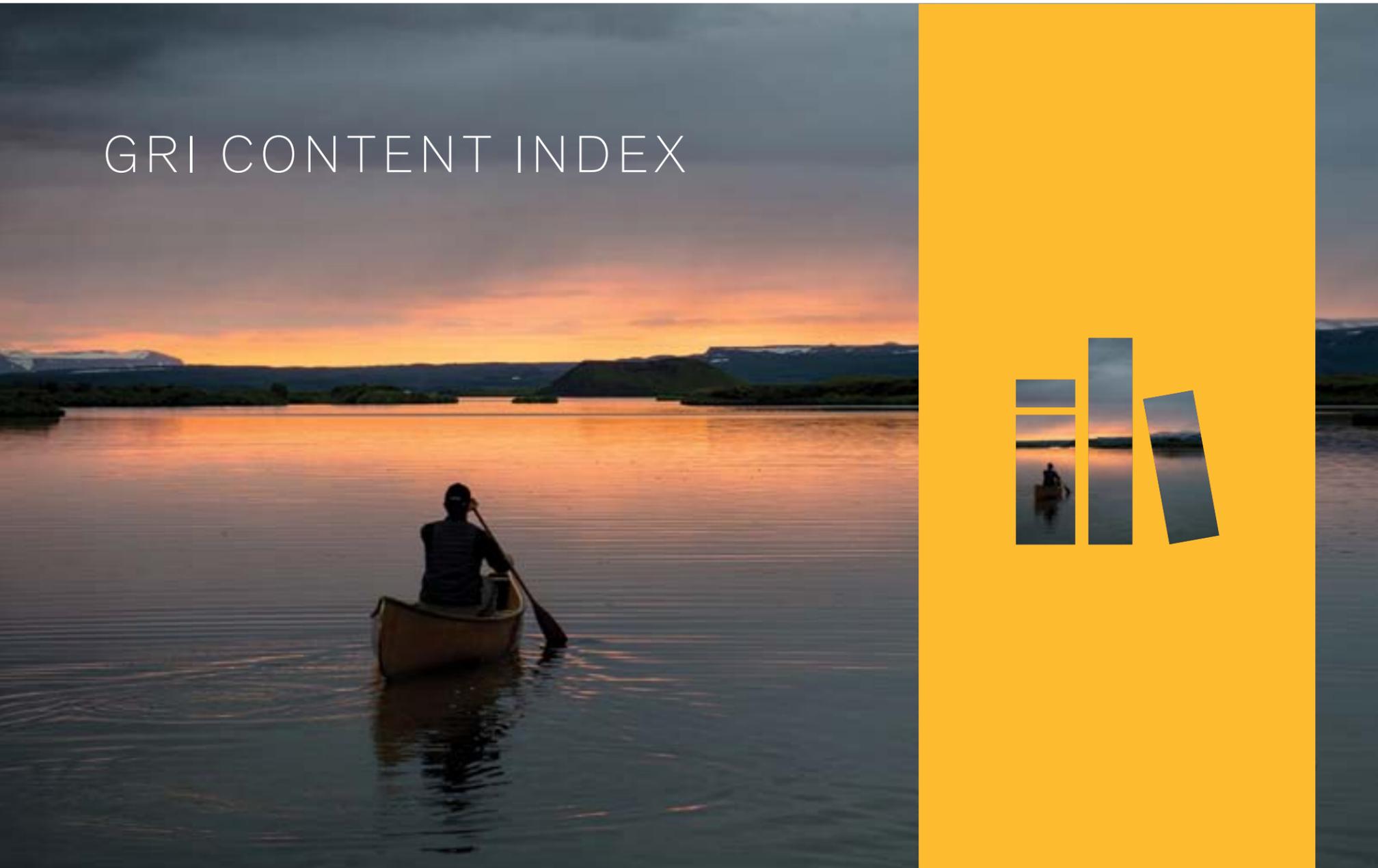
Jennifer Iansen-Rogers  
Head of Corporate Assurance Services  
1 June 2018



ERM Certification and Verification Services, London  
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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



## 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(s)/Location   | Omission |
|----------------------------------|--|---|----------|
| <b>1. Organizational Profile</b> |  |   |          |
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| 102-2                            | Activities, brands, products, and services                   | 57  |          |
| 102-3                            | Location of headquarters                                     | 19  |          |
| 102-4                            | Location of operations                                       | 19  |          |
| 102-5                            | Ownership and legal form                                     | 19  |          |
| 102-6                            | Markets served   | 57  |          |
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| 102-11                           | Precautionary Principle or approach                          | 72  |          |
| 102-12                           | External initiatives   | 22  |          |
| 102-13                           | Membership of associations                                   | 74  |          |
| <b>2. Strategy</b>               |  |   |          |
| 102-14                           | Statement from senior decision-maker                         | 7   |          |
| 102-15                           | Key impacts, risks and opportunities                         | 41  |          |
| <b>3. Ethics and Integrity</b>   |  |   |          |
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| 102-17                           | Mechanisms for advice and concerns about ethics              | 37  |          |
| <b>4. Governance</b>             |  |   |          |
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| 102-19                           | Delegating authority   | 114   |          |

| GRI Standard/Disclosure | Page Number(s)/Location  | Omission   |
|-------------------------|--|--|
| <b>4. Governance</b>    |  |  |
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| 102-21                  | Consulting stakeholders on economic, environmental and social topics         | 114  |
| 102-22                  | Composition of the highest governance body and its committees                | 113  |
| 102-23                  | Chair of the highest governance body   | 112  |
| 102-24                  | Nominating and selecting the highest governance body                         | <a href="http://www.dow-dupont.com/investors/corporate-governance/default.aspx">http://www.dow-dupont.com/investors/corporate-governance/default.aspx</a><br>Corporate Governance Guidelines document, Pages 2-5 |
| 102-25                  | Conflicts of interest  | 114  |
| 102-26                  | Role of highest governance body in setting purpose, values and strategy      | 115  |
| 102-27                  | Collective knowledge of highest governance body                              | <a href="http://www.dow-dupont.com/investors/corporate-governance">http://www.dow-dupont.com/investors/corporate-governance</a>  |
| 102-28                  | Evaluating the highest governance body's performance                         | 115  |
| 102-29                  | Identifying and managing economic, environmental and social impacts          | 41, 50   |
| 102-30                  | Effectiveness of risk management processes                                   | 41   |
| 102-31                  | Review of economic, environmental and social topics                          | 115  |
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| 102-37                  | Stakeholders' involvement in remuneration                                    | 118  |
| 102-38                  | Annual total compensation ratio  | 28   |
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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.

| GRI Standard/Disclosure          | Page Number(s)/Location  | Omission |
|----------------------------------|--|----------|
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| 201-2                            | Financial implications and other risks and opportunities due to climate change | 44       |
| 201-3                            | Defined benefit plan obligations and other retirement plans                    | 118      |
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Confidentiality constraints. We disclosed grants information. However, tax related information for this disclosure is confidential in many instances as we have agreements with governments that in many instances include non-disclosure provisions.

| GRI Standard/Disclosure | Page Number(s)/Location  | Omission   |
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| 302-5                   | Reductions in energy requirements of products and services                     | Not applicable. We don't sell many products that require energy to use (like appliances, cars, computers). |
| <b>303: Water</b>       |  |  |
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| GRI Standard/Disclosure                    | Page Number(s)/Location  | Omission |  |
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| Management Approach                        | 90   |          |  |
| 306-1                                      | Water discharge by quality and destination   | 103      |  |
| 306-2                                      | Waste by type and disposal method  | 105      | Information partially unavailable. Disclosure on Page XX includes total weight of waste, approximate fraction hazardous and non-hazardous, and breakdown of total waste by disposal method. We will review the data process to include the breakdown of hazardous and non-hazardous by disposal method by 2019.                                    |
| 306-3                                      | Significant spills   | 106      |  |
| 306-4                                      | Transport of hazardous waste   |          | Information unavailable. We will be reviewing ways to address this disclosure on a yearly basis as we define the need to capture this information. See page 80 for discussion of our Transportation Safety Index.  |
| 306-5                                      | Water bodies affected by water discharges and/or runoff  | 101      |  |
| <b>307: Environmental Compliance</b>       |  |          |  |
| Management Approach                        | 90   |          |  |
| 307-1                                      | Non-compliance with the environmental laws and regulations   | 106      |  |
| <b>401: Employment</b>                     |  |          |  |
| Management Approach                        | 22   |          |  |
| 401-1                                      | New employee hires and employee turnover   | 24       |  |
| 401-2                                      | Benefits provided to full-time employees that are not provided to temporary or part-time employees                           | 24       |  |
| 401-3                                      | Parental leave   | 24       |  |
| <b>403: Occupational Health and Safety</b> |  |          |  |
| Management Approach                        | 85   |          |  |
| 403-1                                      | Workers representation in formal joint management-worker health and safety committees  | 85       | Disclosure on page 85 describes Environmental, Health and Safety teams, but not an organized program of formal joint management – worker committees.   |
| 403-2                                      | Types of injury and rates of injury, occupational diseases, lost days, and absenteeism and number of work-related fatalities | 86       | Information unavailable. Due to the lack of global data available within a standard and reliable source, the absentee rate and gender breakdown will not be reported. Dow is taking steps to evaluate and implement a data collection platform in the next 3 years to permit the company to more accurately report data on employee absentee rate. |
| 403-3                                      | Workers with high incidence or high risk of diseases related to their occupation   | 87       |  |
| 403-4                                      | Health and safety topics covered in formal agreements with trade unions  | 89       |  |

| GRI Standard/Disclosure                     | Page Number(s)/Location   | Omission  |
|---|---|---|
| <b>404: Training and Education</b>          |   |   |
| Management Approach                         | 22  |   |
| 404-1                                       | Average training hours per employee   | 22  |
| 404-2                                       | Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings | 25  |
| 404-3                                       | Percentage of employees receiving regular performance and career development reviews by gender  | 25  |
| <b>405: Diversity and Equal Opportunity</b> |   |   |
| Management Approach                         | 27  | 49, 50  |
| 405-1                                       | Diversity of governance bodies and employees  | 27  |
| 405-2                                       | Ratio of basic salary and remuneration of women to men  | 28  |
|   |   | Information unavailable. To compare salary and remuneration of women to men, we ran a pay equity study for our professional workforce which is a multi-attribute study (years of service, education, performance, etc). We did not find a pay equity issues for this section of our workforce (~50%). Dow believes this is a comprehensive approach. In future studies (2018) we will work on a process to have our complete employee population represented. |
| <b>413: Local Communities</b>               |   |   |
| Management Approach                         | 107   |   |
| 413-1                                       | Operations with local community engagement, impact assessments and development programs   | 51, 107, 110  |
| 413-2                                       | Operations with significant actual and potential negative impacts on local communities.   | 51, 110   |



