

2018 Sustainability Report

Executive Summary



Celebrating Our 135th Anniversary

We protect and beautify the world™



Michael H. McGarry
Chairman and Chief Executive Officer

To our stakeholders,

Our celebration of PPG's 135th anniversary in 2018 provided an opportunity to reflect on how far we have come and the great promise that our future holds.

Sustainability is an important part of that future. During 2018, we built upon our efforts to drive sustainability deeper into our global operations. Highlights of our 2018 sustainability performance are shown on the following page.

Our employees continued to enhance and strengthen our sustainable operations around the globe. During the year, we recognized 233 projects through our internal sustainability awards initiative. These projects, which we estimate saved nearly \$7 million, helped us reduce our energy consumption, waste, water use and emissions.

As our portfolio continues to evolve, we are evaluating our businesses and striving to achieve even more impactful, sustainable business practices. In 2018, we launched **aggressive goals** that will further guide and increase our use of sustainable business practices.

In addition to advancing our own sustainability, we are developing innovative products and processes that provide environmental and other sustainability benefits to our customers. In 2018, 32 percent of our total sales were derived from sustainably advantaged products and processes. Our goal is 40 percent by 2025.

We know that our purpose and commitment extend beyond the boundaries of commerce. That's why we have continued to grow our partnerships in communities where we operate across the world through our **COLORFUL COMMUNITIES® initiative** and other community engagement programs. We invested more than \$9 million in communities worldwide in 2018, supporting hundreds of organizations across 28 countries.

One of PPG's greatest strengths is the diversity of our people, whose unique perspectives enable us to meet challenges quickly, creatively and effectively. This provides a significant competitive advantage in today's global economy.

Through extensive recruiting and hiring efforts, we are committed to attracting, hiring and retaining future generations of diverse and talented employees. Our efforts were again recognized by FORBES® Magazine, with PPG named one of the Best Employers for Diversity in early 2019.

We have made significant progress in sustainability, but we remain focused on continuous improvement. I encourage you to learn more by reading our **2018 Sustainability Report** and **2018 Community Engagement Report**.

A handwritten signature in black ink, appearing to read "MH McGarry".

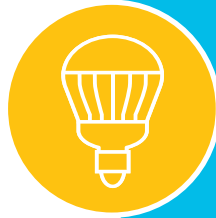
Michael H. McGarry
Chairman and
Chief Executive Officer

2018 sustainability progress



32% **OF SALES**

from sustainably advantaged products and processes



2% **REDUCTION**

in energy intensity



4% **REDUCTION**

in greenhouse gas emissions intensity



6% **REDUCTION**

in waste disposal intensity



7% **REDUCTION**

in water intensity



28% **IMPROVEMENT**

in the spills and releases rate



10% **REDUCTION**

in the injury and illness rate



\$3.7 **MM**

invested in the *Colorful Communities* program through 2018



PPG sustainability

Vision

We are committed to delivering lasting value for stakeholders and customers by operating with integrity, working safely, respecting the contributions of our people, preserving the environment and supporting the communities where we operate.

Values

1. Operate safe, healthful workplaces that value diversity, promote teamwork and reward performance.
2. Conduct business and operations in an ethical and compliant manner.
3. Minimize the impact of our operations on the environment.
4. Deliver inventive products and solutions that help our customers maximize the performance of their assets, minimize environmental impact and preserve and protect the environment.
5. Partner with suppliers and customers to create value.
6. Deliver positive change in the communities where we operate.

2018 HIGHLIGHT

The lightweight pouch package and super-concentrated formula for our OLYMPIC™ SmartGuard multi-surface waterproofer deliver a sustainability trifecta – decreased energy consumption, resource use and waste. We anticipate the product will reduce fuel consumption by 4.25 percent, tree consumption for pallets by 3.92 percent and stretch wrap usage by 13 miles (21 kilometers) compared to traditional stains. The sealer earned a 2018 R&D® 100 award in the mechanical devices/ materials category.



Sustainability at PPG

Our culture of continuous improvement in every aspect of our business underpins our approach to sustainability. Whether it is increasing the efficiency of our operations or developing our people, our improvement efforts naturally extend to many areas that impact our sustainability performance.

We have a formal structure to ensure continuous improvement in the sustainability of our global operations. Our sustainability vision and values provide the foundation for all of our sustainability efforts. Our Sustainability Committee establishes policies, programs, procedures and

goals to address sustainability in our business practices. Most of the committee's members, who are appointed by our Executive Committee, are officer-level employees, providing leadership support and visibility.

Our sustainability goals serve as a guide for our businesses and locations to embed sustainability into their day-to-day operations and measure their progress. We launched a new set of goals in 2018 to ensure they represent the challenges and opportunities of our current business portfolio and also to reset goals that we had achieved earlier than anticipated.

Goal	2018 Progress
40 percent of sales from products and processes that have improved sustainability over products being replaced by 2025.	32 percent
25 percent reduction in total waste disposal intensity by 2025 from a 2017 baseline.	5.6 percent reduction from 2017
Achieve zero landfill status from process waste at 35 percent of PPG manufacturing and research and development locations by 2025.	29 percent of locations achieved zero landfill status
Reduce energy consumption intensity by 15 percent by 2025 from a 2017 baseline.	2.2 percent reduction from 2017
Increase renewable energy to 25 percent of total electricity usage exclusive of greenhouse gas (GHG) reductions by 2025.	16.3 percent renewable energy
Reduce GHG emissions intensity by 15 percent measured in total tons discharged by 2025 from a 2017 baseline.	4.3 percent reduction from 2017
On our path to eliminating spills, ensure that we achieve at least a 65 percent improvement in our spills and releases rate by 2025 from a 2017 baseline.	28.3 percent improvement from 2017
20 percent reduction in water intensity by 2025 from a 2017 baseline.	7.3 percent reduction from 2017
Zero injuries. On our path to zero injuries, ensure that we achieve an improvement of at least 5 percent per year in our injury and illness rate.	Rate of 0.26 was 10.3 percent below the 2017 rate — a record low for the number of injury cases across the company
Active wellness programs at 100 percent of PPG facilities globally by 2025.	58 percent of our locations with 50 or more employees had a wellness program in 2018
Implement the community engagement framework globally by 2025.	70 percent of our facilities met the framework requirements in 2018
Invest at least \$10 million by 2025 through the <i>Colorful Communities</i> initiative.	\$3.7 million invested through 2018
Eliminate lead from remaining non-consumer coatings formulations by 2020.	By the end of 2018, eliminated 91 percent of the remaining non-consumer products



Minimizing our environmental impact

Sustainably advantaged products

Environmental stewardship has driven our research and development for more than a century. In the last decade, a strategic realignment to focus our product portfolio almost entirely on paints and coatings has enabled a concerted and disciplined approach to developing sustainably advantaged products and processes that provide environmental and other sustainability benefits to our customers.

Our coatings, materials and technologies reduce corrosion, extending the life of our customers' products. We also help our customers reduce energy usage and emissions, protect their employees and minimize waste and water consumption through the use of our products.

In 2018, 32 percent (\$5 billion) of our total sales were derived from sustainably advantaged products and processes. Our goal is 40 percent by 2025.

2018 HIGHLIGHT



Before we introduced our new low-cure paint technology in 2018, approximately 70 percent of total energy consumption at an automotive assembly facility took place in the paint shop. The new technology uses up to 39 percent less energy through a next-generation clearcoat that cures at about 175° F (80° C) compared to nearly 285° F (140° C) for current systems.

Waste

The more efficient we are in using materials to make our products, the less waste we produce, the fewer resources we consume and the more money we save. That is why we first work toward absolute material utilization throughout our manufacturing processes followed by eliminating, minimizing, reusing and recycling the waste materials we do produce.

We disposed of 134,100 metric tons of waste in 2018, which was a 5.0 percent reduction from prior year. Our total waste disposal intensity was 3.2 metric tons per 100 metric tons of production, which was a 5.6 percent decline from 2017. Of our manufacturing and R&D locations, 29 percent had zero landfilled process waste.

2018 HIGHLIGHT



Our Industrial Coatings facility in Tianjin, China, designed and began using a special plastic liner in 53-gallon (200-liter) drums, allowing the drums to be reused with minimal cleaning rather than disposed of as a hazardous waste. The liner also has allowed for better recovery of residual product through squeezing. Although disposal of the liners results in 705 pounds (320 kilograms) of hazardous waste annually, that amount is offset by the 75 metric tons eliminated due to drum reuse.

Total Waste Disposal Intensity

Metric tons per 100 metric tons of production

2014	4.87
2015	4.50
2016	4.16
2017	3.41
2018	3.22

Excludes waste associated with a 2017 furnace rebuild at our Lake Charles, Louisiana, plant. Changes to the 2017 baseline data from prior reporting reflect adjustments for acquired and divested locations.

Spills and releases

Our facilities have strong management practices in place to prevent spills and releases, and our corporate spill-elimination standard requires the establishment of a spill-elimination program at each facility.

Our goal is at least a 65 percent improvement in our spills and releases rate by 2025 from a 2017 baseline. Our 2018 rate of 1.32 spills and releases per 1,000 employees was 28.3 percent lower than prior year.

A 2018 analysis of our past spills revealed the top three causes were the movement of containers, transfer of liquids from one tank to another and equipment failure. To close these gaps, we conducted additional employee training; set new requirements for forklifts and increased their corporate auditing requirements; and required each location to have an active preventative maintenance program in place.

We also continued the Walk the Line initiative, which requires operators to walk the production line prior to transferring a liquid from one point to another to identify potential causes of spills.

Spills and Releases Rate

Total spills and releases per 1,000 employees

2014	2.08
2015	1.66
2016	1.48
2017	1.84
2018	1.32



Water

We feel it is our responsibility to optimize water use not only in water-stressed regions of the world but in all of our facilities through conservation and reuse.

In 2018, our water intensity was 4.22 cubic meters per metric ton of production, which was 7.3 percent lower than 2017. Globally, we withdrew 17.6 million cubic meters of water during the year, a 6.5 percent reduction compared to prior year.

Much of the water we use is for equipment cleaning rather than products, and we are improving our processes to require less cleaning while maintaining our high quality standards. We continue to evaluate additional opportunities to reuse wash water in our processes and products.

2018 HIGHLIGHT



A reverse-osmosis water filtration unit installed at our Delaware, Ohio, facility will reduce water use by 720,000 gallons (2,725 cubic meters) annually. The unit also will save 38,000 kilowatt hours of electricity and 1.4 million cubic feet (39,600 cubic meters) of natural gas per year.

Water Intensity	
Cubic meters per metric ton of production	
2014	4.20
2015	4.23
2016	3.85
2017	4.55
2018	4.22

Changes to the 2017 baseline data from prior reporting reflect adjustments for acquired and divested locations.



Energy

Most of our manufacturing processes are not energy-intensive, but we are committed to reducing our energy consumption to minimize our greenhouse gas (GHG) emissions, reduce costs and create more efficient facilities.

We consumed 13.04 million gigajoules of energy in 2018. Our energy intensity was 3.13 gigajoules per metric ton of production, a 2.2 percent decrease over 2017. While our direct energy intensity remained stable, we achieved a 5.3 percent reduction in our indirect energy intensity.

In 2018, 4.3 percent of our total energy consumed came from renewable sources. For electricity usage, renewable sources comprised 16.3 percent.

2018 HIGHLIGHT



More than 180 solar panels installed on three buildings at our Aerospace Applications Support Center in Tullamarine, Australia, provide 70,000 kilowatt hours of power. The panels reduce the center's annual electricity consumption by 27 percent and related costs by 38 percent.

Energy Intensity			
Gigajoules per metric ton of production			
	Total	Direct	Indirect
2014	6.02	4.23	1.79
2015	5.51	3.78	1.73
2016	4.59	3.07	1.52
2017	3.20	1.89	1.31
2018	3.13	1.89	1.24

Energy intensity includes all types of energy consumed within the organization related to manufacturing and research and development. Changes to the 2017 baseline data from prior reporting reflect adjustments for acquired, divested and closed locations. Other data changes are due to the conversion of data from British thermal units to gigajoules.



Emissions

The composition of our air emissions is unique to each PPG facility due to the varying products produced and manufacturing processes used. For all emissions, we are focused on reduction through improved operating practices, product reformulations and, where necessary, emissions control equipment. We are reducing our greenhouse gas emissions primarily by lowering our energy consumption.

We emitted 930,000 metric tons of direct (Scope 1) and indirect (Scope 2) GHGs in 2018, which is a 2.1 percent reduction from prior year. Our GHG emissions intensity declined 4.3 percent in the same period.

Greenhouse Gas Emissions Intensity

Metric tons of emissions per metric ton of production

	Total	Direct (Scope 1)	Indirect (Scope 2)
2014	0.46	0.25	0.21
2015	0.43	0.22	0.21
2016	0.37	0.18	0.19
2017	0.23	0.09	0.14
2018	0.22	0.10	0.12

Total intensity data include direct and indirect emissions. We report greenhouse gas as carbon dioxide equivalents for carbon dioxide, methane and nitrous oxide. Changes to the 2017 baseline data from prior reporting reflect adjustments for acquired and divested locations.

2018 HIGHLIGHT



Machine parts coated in a particularly sticky polyurethane are now cleaned through immersion in an ultrasonic bath at our Aerospace facility in Bezons, France. The switch from using an oven to bake off the material completely eliminated associated air emissions and reduced energy consumption for part cleaning by 65 percent.



Creating inclusive and safe workplaces

Diversity and inclusion

One of our greatest strengths is the diversity of our people, who represent wide-ranging nationalities, cultures, languages, religions, ethnicities, lifestyles, and professional and educational backgrounds. To ensure our people feel valued and respected, we are committed to providing a workplace that embraces a culture of diversity and inclusion and is free from harassment and bullying.

In 2018, we released our Workplace Gender Identity and Transition Guidelines to address the needs of transgender employees and clarify how situations should be handled where questions may arise about how to reasonably accommodate employees who are transitioning. The goal is to ensure the safety and fair treatment of transgender employees while maximizing their workplace integration and minimizing stigmatization.

Female Representation Percent					
	Total Workforce	Management Positions			
		Total	Junior	Top	Revenue-Generating Functions
2014	24.0	20.4	23.3	15.6	14.3
2015	23.8	20.7	23.1	16.2	13.5
2016	24.4	22.0	24.1	17.8	14.8
2017	24.7	22.9	24.9	18.8	15.3
2018	25.3	23.5	24.9	20.3	16.4

Our business and functional leaders set goals related to diversity and monitor progress on a regular basis. In Europe, for example, we have a focused initiative to hire, develop and retain female talent. Actions taken in 2018 included ensuring there is a focus on females when hiring, having women make up 50 percent of the candidate slate for promotions and conducting an equal pay review.



Health and safety

We are committed to operating safe and healthful workplaces.

To ensure progress against our goal of zero injuries, we strive to achieve an improvement of at least 5 percent per year in our injury and illness rate. Our 2018 rate of 0.26 was 10.3 percent below prior year.

Historically, motor vehicle accidents are one of our highest-severity injury risks. We offer safe driver training and education programs to ensure our operations in every country have the tools and resources to manage this safety risk. The importance of these efforts was reinforced when an employee in Denmark lost his life in 2018 due to a traffic accident while on company business.



Global Health and Safety Performance						
Employees and Supervised Workers						
	Fatalities		Injury and Illness Rate	Total Recordable Incident Rate	Lost Workday Rate	Occupational Disease Rate
	Number	Rate				
2014	0	0	0.35	1.86	1.35	N/A
2015	0	0	0.31	1.41	0.91	N/A
2016	0	0	0.31	1.47	0.98	0.07
2017	0	0	0.29	1.26	0.90	0.05
2018	1	0.0019	0.26	1.25	0.85	0.09

A new data management system enabled a more comprehensive collection of occupational disease data beginning in 2016.

2018 HIGHLIGHT



Employees at PPG's packaging coatings facility in Bodelshausen, Germany, earned the 2018 PPG Ergonomic Award for eliminating the manual removal and cleaning of heavy paint stirrers. The equipment is now lowered into a basin that is filled with cleaning solvent and moved into position.

Wellness

Our vision is to create a global culture of health, where our people and their families become responsible for their individual well-being through informed, active participation in health and wellness activities.

Supporting this vision is our goal to have active wellness programs at 100 percent of our facilities globally by 2025. In 2018, 58 percent of our locations with 50 or more employees had a wellness program. The decline from 2017 was due to the addition of newly acquired sites.

Our approach to wellness is based on our Four Wellness Absolutes – nutrition, exercise, health screenings and mindfulness/stress management – that research identified as key to our people's overall well-being. Every wellness program and tool we offer addresses one or more of these absolutes to help our people benefit from lifestyle improvements.

2018 HIGHLIGHT



Employee Edgar Gonzalez credits a free onsite physical at our Automotive OEM facility in Cleveland, Ohio, with catching his early-stage prostate cancer.



Bringing color and brightness to communities

Every day, PPG and the PPG Foundation collaborate and engage with employees, community partners and other stakeholders to make our vision of bringing color and brightness to communities a reality. We dedicate financial contributions, apply our products and use the power of our employee volunteers to address the needs of our local communities and transform lives.

Our global giving totaled more than \$9 million in 2018, supporting hundreds of community organizations across 28 countries. To ensure this investment had the greatest impact, we focused our resources on the areas that we are best positioned to support — education, community sustainability and employee engagement.

Learn more on the [PPG Community Engagement website](https://www.ppg.com/sustainability).



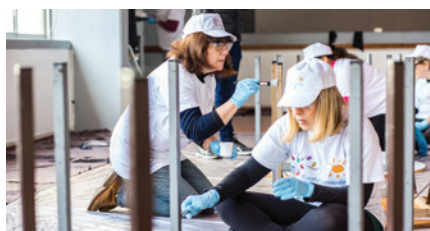
Education

Helping young people develop the skills needed to succeed in manufacturing, research and development, information technology and other science, technology, engineering and mathematics professions.



Community sustainability

Revitalizing local buildings, updating community spaces and meeting other pressing needs.



Employee engagement

Supporting and encouraging our talented employees as they seek to make a meaningful difference every day in the communities where they live and work.



Colorful Communities program

A brightly-colored bus is now a mobile science, technology, engineering and math laboratory, traveling daily to one of 93 kindergartens in Ümraniye, Turkey. Women and children experiencing homelessness in Sylmar, California, now have a warm, inviting sanctuary. In Pretoria East, South Africa, 160 adults with disabilities have brighter living spaces and a Tree of Remembrance mural to honor residents who have passed.

These are just a few examples of how we brought color and vitality to more than 70 schools, health facilities and other shared community spaces in 2018 through the Colorful Communities program. The program provides PPG volunteers, paints, coatings, specialty materials and financial contributions to brighten communities where we operate around the world.

Read more about our [Colorful Communities projects](#) around the world.

COLORFUL COMMUNITIES PROGRAM BY THE NUMBERS AS OF JANUARY 1, 2019

5.2MM+ students, seniors, teachers, patients and community members impacted

74,000+ volunteer hours

204 projects completed in 30 countries, transforming playgrounds, classrooms and community spaces in need of brightness

\$3.7MM+ in PPG funding to support the program

11,150 enthusiastic employee and community volunteers

21,790 gallons (more than 82,480 liters) of PPG paint products used to protect and beautify our communities

Read the full report at sustainability.ppg.com.

We encourage you to provide feedback on this report and our sustainability performance via email, a short online survey or a letter.

Email: mediarelations@ppg.com
Subject: 2018 PPG Sustainability Report and Performance Feedback

Survey: surveymonkey.com/r/PPG2018Sustainability

Letter: PPG, Corporate Communications, One PPG Place, Pittsburgh, PA 15272, USA

The PPG Logo and Colorful Communities are registered trademarks and *We protect and beautify the world* is a trademark of PPG Industries Ohio, Inc. *Olympic* is a trademark of PPG Architectural Finishes, Inc. *R&D* is a registered trademark of Advantage Business Media LLC. *Forbes* is a registered trademark of Forbes, LLC. ©2019 PPG Industries, Inc. All rights reserved.



We protect and beautify the world™