

2016
SUSTAINABILITY
REPORT

Sustainable to the core



Paul Haesackers, a laboratory infrastructure coordinator for Hexion in Rotterdam, The Netherlands, embodies our to-the-core commitment to sustainability.



Paul on his way home from the lab – a 25km ride that winds through the countryside.



Craig Rogerson
Chairman, President & CEO

Message from our CEO

Sustainability is not a “program” or a department. For the people at Hexion, sustainability is a mindset that guides the decisions we make and the relationships we establish. It is integrated into the core of our business, extends to the people we touch every day, and drives our commitment to responsible chemistry.

Building a business around sustainability takes more than good intentions. It involves persistent focus on safety and operational excellence. It relies on partnerships with like-minded organizations. And, it demands engagement. Everyone must be involved, from our colleagues at work, to our families at home. Only by working together can we achieve our goals.

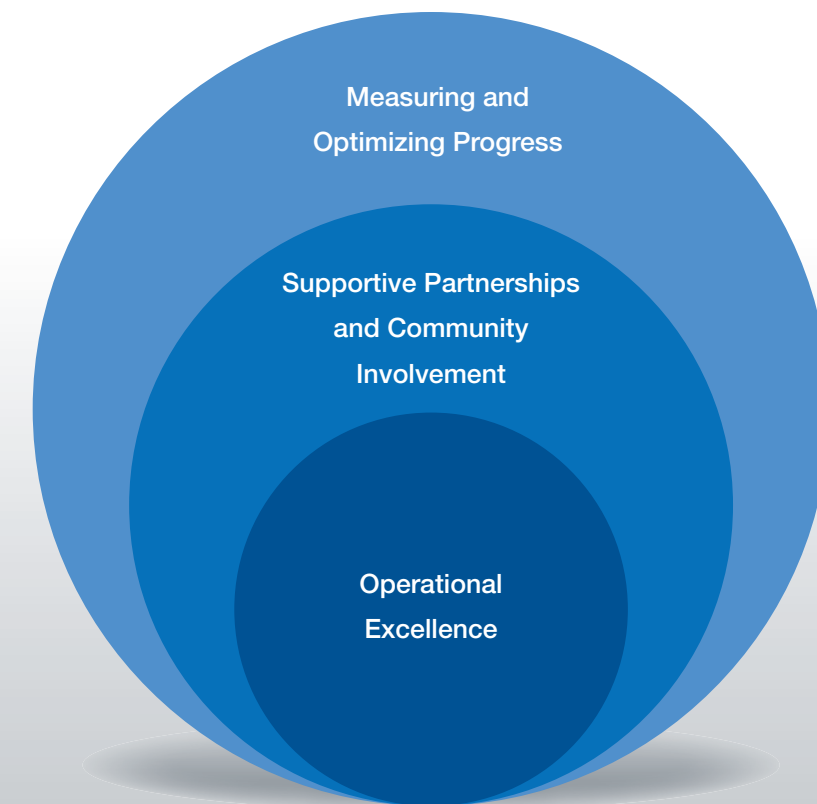
Finally, for a materials company like Hexion, sustainability is advanced by innovation.

Innovation creates safer processes. It finds material breakthroughs that make our world cleaner and safer. Through our innovations, our customers can create safer and more sustainable products.

Sustainability is at the core of who we are. It has to be. Because it's the only real path to a brighter future.

Taking a Holistic Approach

Our approach is built around achieving operational excellence within our business, extending our impact through partnerships with like-minded organizations and continuously measuring and improving our performance.





Joseph Craycroft
Maintenance Mechanic
Louisville, Kentucky

Operational Excellence

Putting sustainability at the core of our business means building from the inside out. That starts with the values that guide us and extends to how we operate in every plant every day.

Values that enable performance

From operating with the highest ethics and integrity to ensuring health and safety to working as teams to develop creative solutions that contribute to our customers' success, our values enable a continuous focus on sustainability.

Our Core Values

Ethics and integrity We do the right thing. We say what we mean and we do what we say.

Safety, health and environmental stewardship Each of us owns safety. Our work is never more important or urgent than performing it safely. We stand for sustainability and the elimination of all incidents.

Customer focus Customer success is at the core of our existence. We invest in growth and breakthrough customer solutions to achieve market-leading positions.

Creativity Limitless imagination and commitment to innovation are our competitive advantage.

Our people We are engaged, developed and empowered. We continually learn and achieve our highest level of performance. We create our future.

High-performance teamwork Collaboration, within the organization and with our customers, is essential to consistent excellence.

An environment that enables innovation

Our Manufacturing Excellence program creates an environment for learning, problem solving and engagement that supports our values. As a member of the American Chemistry Council, Hexion fully supports the Council's Responsible Care® program through:

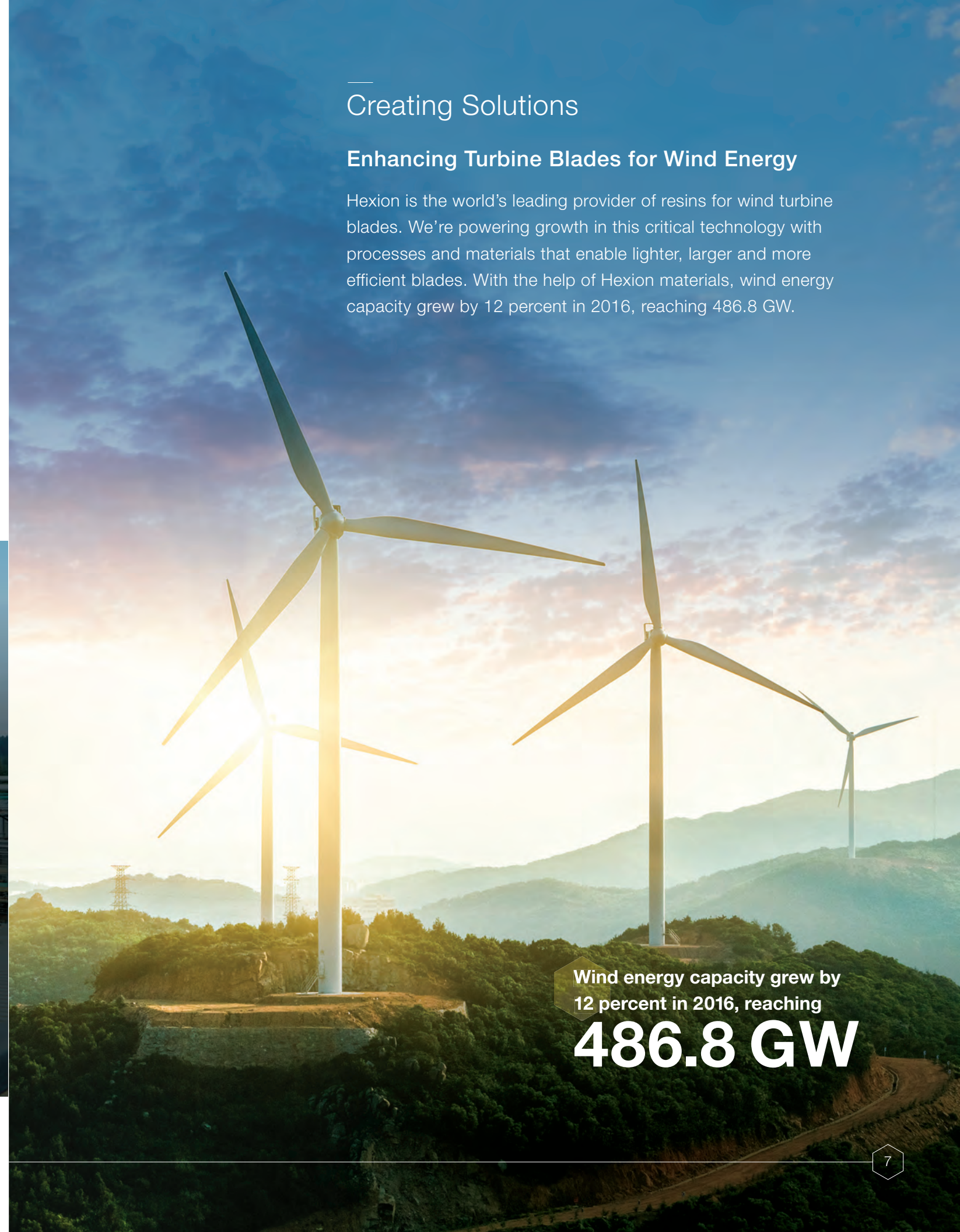
- Measuring and publicly reporting performance;
- Implementing the Responsible Care Security Code;
- Applying the Responsible Care management system elements to achieve and verify results; and
- Obtaining independent certification that a management system is in place and functions according to professional standards.



Creating Solutions

Enhancing Turbine Blades for Wind Energy

Hexion is the world's leading provider of resins for wind turbine blades. We're powering growth in this critical technology with processes and materials that enable lighter, larger and more efficient blades. With the help of Hexion materials, wind energy capacity grew by 12 percent in 2016, reaching 486.8 GW.



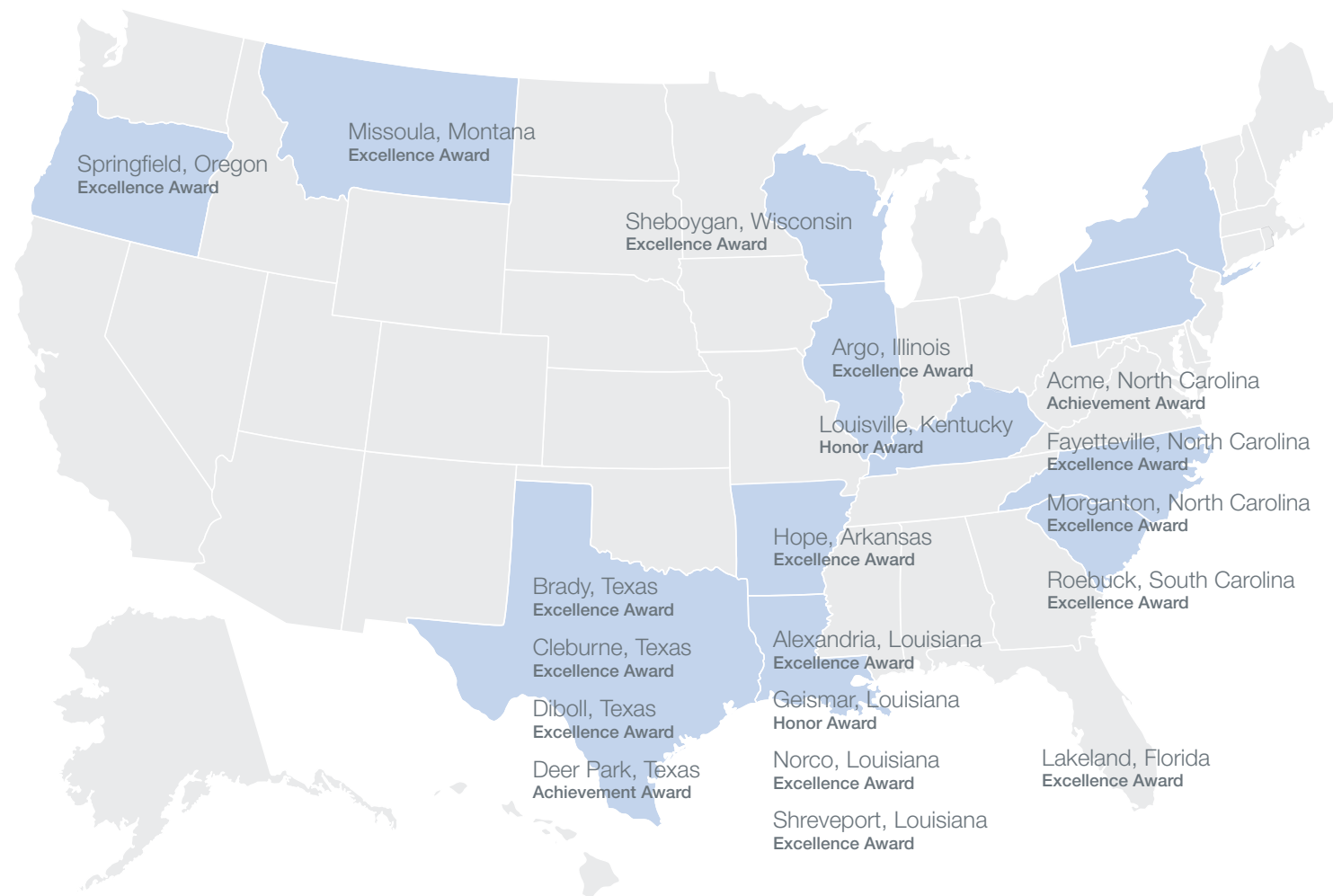
Wind energy capacity grew by
12 percent in 2016, reaching
486.8 GW

Achieving an incident-free workplace

At Hexion, we have a clear priority around working safely and are committed to the possibility of an incident-free environment for all of our associates and stakeholders. We are responsible, engaged and focused on reducing exposures across the value chain. Our people continuously look for ways to eliminate exposure and work to create a culture that supports trust, open communication and continuous learning.

Award-winning safety

In 2016, the American Chemistry Council recognized 19 of our sites across the United States for excellence in safety and performance. They include:



We also have our own recognition program to encourage environmental responsibility and safety across our organization. The 2016 Environmental Health and Safety (EHS) awards (Gold, Silver and Bronze) are based on levels of achievements associated with: injury rate and EHS compliance performance; avoidance of major spills and process safety management incidents; industrial hygiene performance; and implementation of corporate EHS standards, culture programs, audit findings and more.

Sixteen sites received Gold EHS awards in 2016, including:



Creating the infrastructure for innovation

Innovation is central to our approach to sustainability. We are continuing to make investments across our organization to fuel innovations that enhance the safety and sustainability of our customers' products, including:

- Expanding our forest products technology center in Edmonton, Alberta, including the opening of a “pilot plant” to support expansion in the use of sustainable, carbon-sequestering wood in applications that previously used steel or concrete. The expanded facility will focus on developing next-generation resin chemistry for panel production that will complement our EcoBind™ lower emitting resin technology and build on the inherent flame, smoke and toxicity (FST) properties of our current resin systems. The expanded lab will also focus on emerging phenolic resin technology that substitutes phenol with bio-based raw materials, such as lignin. An abundant, natural polymer, lignin is an organic material that has significant potential as an adhesive substitute in wood panel production.
- Our Innovation Summit in December, 2016 in Belgium brought together Hexion associates from different businesses, functions and geographies to share best practices, learn from the best in the industry, and better understand the barriers to innovation. The Summit has helped advance a culture capable of delivering breakthroughs that will drive success for our customers and our organization.

Driving Operational Excellence

Reducing waste in manufacturing

The Hexion team at our Deer Park, Texas facility used a combination of hardware and software upgrades and improved employee training to significantly reduce the creation of undesired byproducts in its production processes. The improvements reduced waste by 400,000 pounds in 2016, resulting in a savings of \$400,000. Just as importantly, the project created more ownership from the ground floor in thinking and acting to minimize waste production and helped reduce operational complexity and the potential for mistakes.

Reduction of waste in 2016

400,000
pounds



Supportive Partnerships and Community Involvement

We focus on relationships. Whether suppliers, customers or other organizations, we're constantly seeking partners who support our values and amplify the impact of our efforts to improve materials and products.

Industry leadership

Hexion is an active member of the American Chemistry Council, and supports the Council's Responsible Care program. But we don't stop there. In 2016, we also:

- Participated in the Global Environmental Management Initiative on a strategic map depicting industry-specific supply chain sustainability and developing third-party data platforms to create a global picture of the breadth of activities. The project will define foundational elements for engaging supply chain sustainability evaluation activities, such as supplier audits and surveys.
- Presented "A Case Study in Green Chemistry Implementation" at the Green Chemistry & Engineering Conference hosted by the ACS Green Chemistry Institute.
- Through our research and development center in Alberta, partnered with Alberta Innovates, a program designed to help diversify the Alberta economy by accelerating growth of the bio-industrial sector. In addition to this investment, Hexion remains committed to providing independent emissions testing as well as consulting on wood product development at its Advanced Testing Services laboratory in Springfield, Oregon.
- Supported the Elytra Filament Pavilion, an innovative and artistic moveable outdoor shelter, with specialized materials. Integrating design with engineering, an interdisciplinary group at the University of Stuttgart created the forest-like structure entirely of wound glass and carbon fiber composite filaments based on Hexion's advanced epoxy resin technology.

Building Partnerships

Locating manufacturing to reduce transportation

Locating our manufacturing adjacent to Monsanto's site in Luling, Louisiana eliminated the need for rail car shipments between the sites, cutting over 2,000 metric tons of CO₂ per year. This partnership also reduced the risk of potential environmental releases and health and safety risk at both sites by eliminating the handling and the need to steam rail cars after unloading, further reducing the site's energy consumption and indirect greenhouse gas emissions.

Eliminating CO₂
emissions per year by

2,000+
metric tons

Community engagement

Through a variety of outreach activities, Hexion and more than 1,700 of our associates have impacted more than 460,000 people, and raised and/or donated more than \$650,000. Our sites continue to make progress toward our goal of 100 percent participation in community engagement programs.

Our efforts have supported a variety of non-profit organizations in Central Ohio and other select cities, such as the United Way, American Red Cross, American Heart Association, Nationwide Children's Hospital and Children's Hunger Alliance. Other beneficiaries of Hexion's community engagement programs include:

- Local First Responders
- Community Shelter Board
- 4-H
- World Youth Day
- The James Cancer Hospital and Solove Research Institute
- Little League Baseball

Some highlights of our local community engagement efforts include:

- A team from our Deer Park, Texas facility participated in the Wounded Warriors Half Marathon in Dallas to support the men and women that have served their country. Hexion staffed a watering booth to provide water and sports drinks for race participants and cleaned up cups and trash after the run.
- Our Columbus, Ohio associates are working with the staff and students at an elementary school serving underprivileged children by providing school supplies and supporting an ongoing reading mentorship program. Our Columbus team has also been active in Pelotonia, a bicycle ride to raise money for cancer research. In 2016, Hexion had 34 participants who raised \$67,000.
- Since 2010, Hexion associates in Montenegro, Brazil, have partnered with school and community leaders to establish environmental education programs.



Sonia Clemons – Communication Specialist, leads the American Heart Association Heart Walk in Columbus

- Our associates in Montenegro also organized a Better Life: Healthier Habits, Happier Life event open to the entire community, celebrating World Health Day with several activities, including health checks and a better health orientation from specialists. The Hexion team also hosts the annual It's Good to be Well event to assist in the recovery of the physical and mental health of a group of elderly people identified as the most in need. Activities included pet visits, dance, painting workshop and a visit from Santa.
- Hexion volunteers pitched in to create a new area designed to promote outdoor learning at Sully Primary School in Sully, Wales, UK. The new outdoor area includes a mural that combined the winning entries from a student contest.

- Our team in Brady, Texas collected food for the local food bank, which was used for holiday distributions. They also engaged in joint hazard training with the local EMS (Emergency Medical Services) and fire departments to help them improve their skills. The team also participated in the “Mission in Brady” charity where more than 20 associates joined with local church groups to work on improving six homes in the local community. The Brady team continues to work with local churches to restore homes for the needy by painting and installing windows, roofs and handicap-accessible ramps. In addition, they helped the local Cub Scouts earn their first responder pin and cooked for the Cub Scout Blue and Gold Banquet.
- The Cleburne, Texas team hosted the Cleburne Fire, Rescue and EMS units. A training exercise was conducted that allowed the fire department to perform aerial rescue training from the top of Hexion’s silos. Firefighters participated in a confined-space rescue using a weighted dummy.
- Hexion took to the streets of Montenegro during National Traffic Week, distributing informational material about traffic education. Hexion developed a communication campaign to promote recycling and reusing of everyday objects. The campaign included a play, “The Adventures of Lilly and Little Johnny,” with the theme of recycling and care for the environment.

Building Partnerships

Partnering to create lighter weight automobiles

Even small reductions in vehicle weight can translate into significant energy savings. That’s why we’re partnering with major auto manufacturers to develop innovative materials and processes that support their lightweighting efforts with safe, durable components.

Significant energy savings by reducing
weight



Measuring and Optimizing Progress

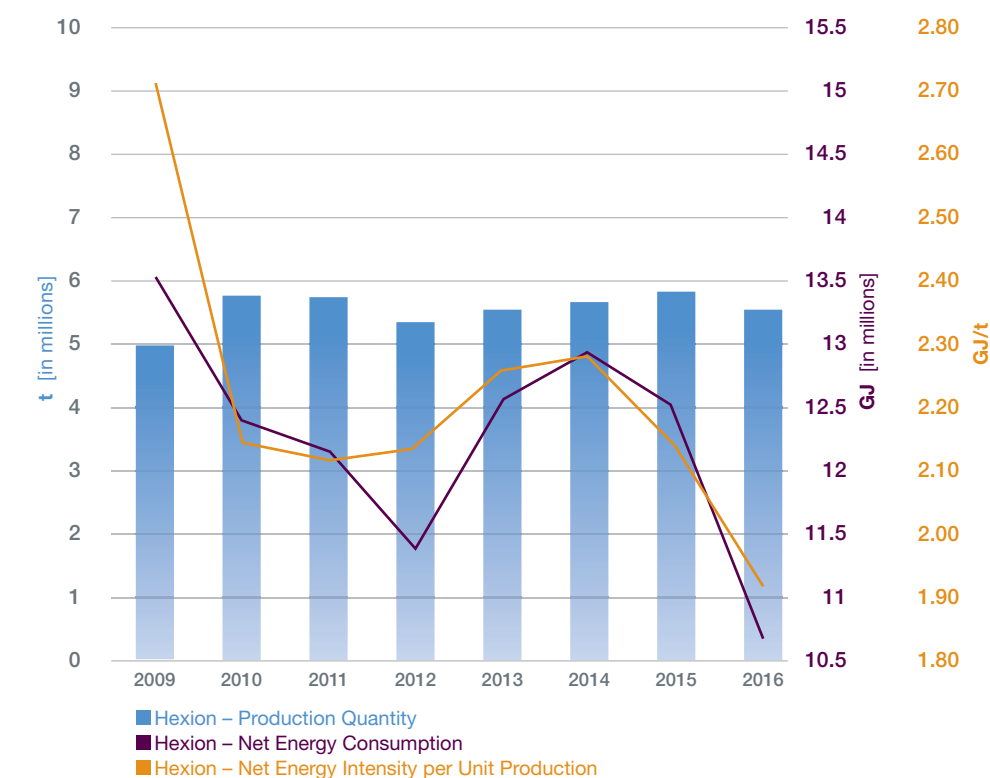
Ultimately, our approach to business is about having a measurable, positive impact on the environment, our customers and the communities in which we operate.

Improving energy efficiency

Here are some of the highlights of our ongoing efforts to improve energy efficiency:

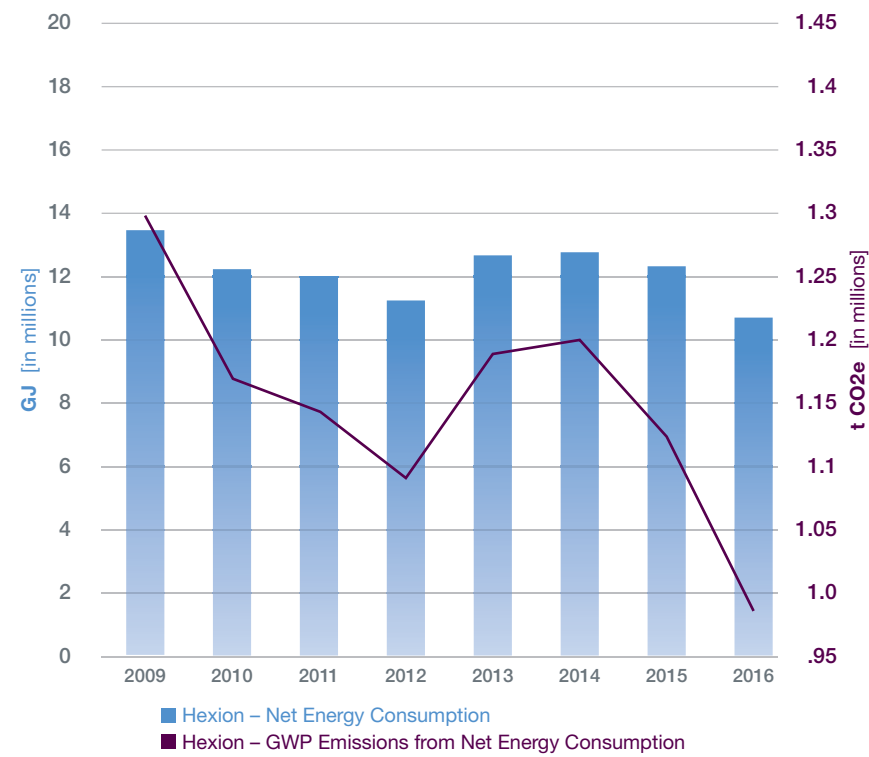
- **Fayetteville, North Carolina:** Energy consumption at the Fayetteville formaldehyde plant increased 60 percent in 2014 without a corresponding increase in production. An internal evaluation found a new product mix required additional steam for production. The team devised a solution that included distillation improvements at a second Hexion site, allowing the new mix to be handled there without increasing energy consumption. This production shift resulted in a 50 percent reduction in energy consumption at Fayetteville with no increase at the second site.
- **Moreau, New York:** The team identified an opportunity to significantly reduce consumption by shifting from two plants operating five days a week, 24 hours a day, to a single plant operating seven days a week around the clock. The shift reduced the need for natural gas for steam production, cutting natural gas use by 51 percent year-over-year. It also reduced electrical consumption for approximately 700 horsepower of process equipment, improved cooling water efficiency and reduced outside services for security and maintenance. The site added new operators to execute the revised operating schedule.
- **Sheboygan, Wisconsin:** The Sheboygan site replaced two aging cooling towers – representing 26 percent of total electric usage – with a single tower engineered with significant energy efficiency upgrades. Intelligent controls paired with variable frequency drives on all the motors in the tower yielded a 21.1 percent reduction in cooling tower electric usage on a normalized basis and reduced total site consumption by 6 percent.
- **Bedford Park, Illinois (Argo):** The site converted high-pressure sodium lights in the process area to 68W LED lights and converted metal halide lights in the warehouse to 78W LED lights, reducing total energy consumption in those areas by 162,700 kWh.

Net Energy and Production



In 2016 Hexion sold seven sites and closed one other site. Production at the seven sites sold was offset by increased production at other sites. However, one of the sold sites was consistently one of the largest energy consuming (and GWP gas emitting) sites, which contributed to a decrease in energy consumption and energy intensity.

Energy and Global Warming Potential (GWP)



By selling a site that was consistently one of the largest GWP gas emitting sites due to the combustion of coal, Hexion achieved a decrease in GWP emissions and GWP Intensity

Safety

- **Lantarón, Spain:** The site was awarded the “0 Bidean” prize by the leading labor-related accidents insurer in the region for the greatest reduction in lost-time incidents.
- **Zhengjian, China:** The site was recognized by the local government for advanced environmental management in 2016.

Creating Solutions

Advancing the use of water-based coatings

Industrial coaters continue to rely on petroleum-based coatings due to their performance and durability. But we’re changing that. By producing water-based coatings that perform as well as petroleum-based products, we’re leading a movement to displace petroleum with water in industrial coatings, reducing CO2 emissions.

**Water-based
resins**

production reduces CO2 emissions

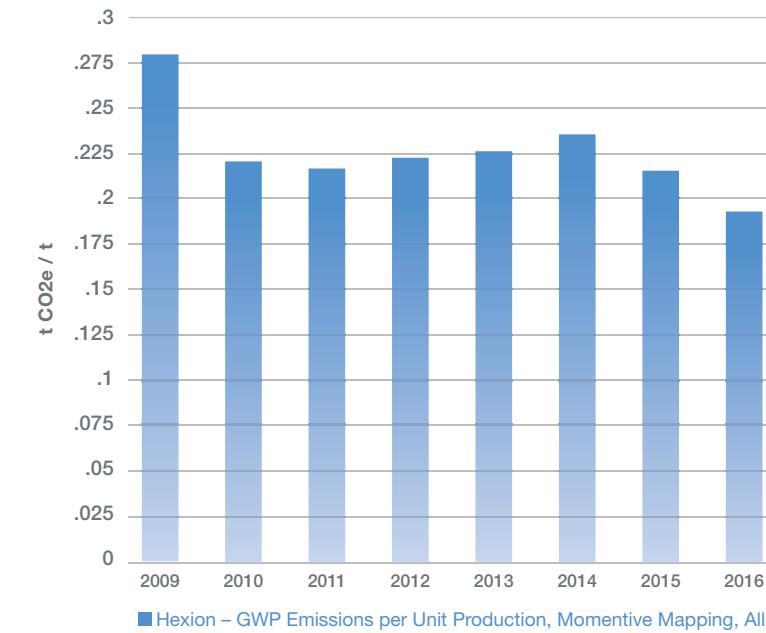
Waste minimization, reuse and recycling

- **Deer Park, Texas:** As noted on page 11, the team used combined technology upgrades and enhanced associate training to reduce undesired byproducts to significantly reduce the creation of undesired byproducts in its production processes.

The team also implemented several process improvements designed to reduce the 41,000 pounds of disposed crude resin the site produced per month. From the end of 2015 through 2016, crude resin disposals were eliminated. This created significant savings related to disposal as well as material costs as the recycled resin was put to use. The improvements required no new equipment or capital costs; rather, the key was creating better operating procedures and improving employee accountability.

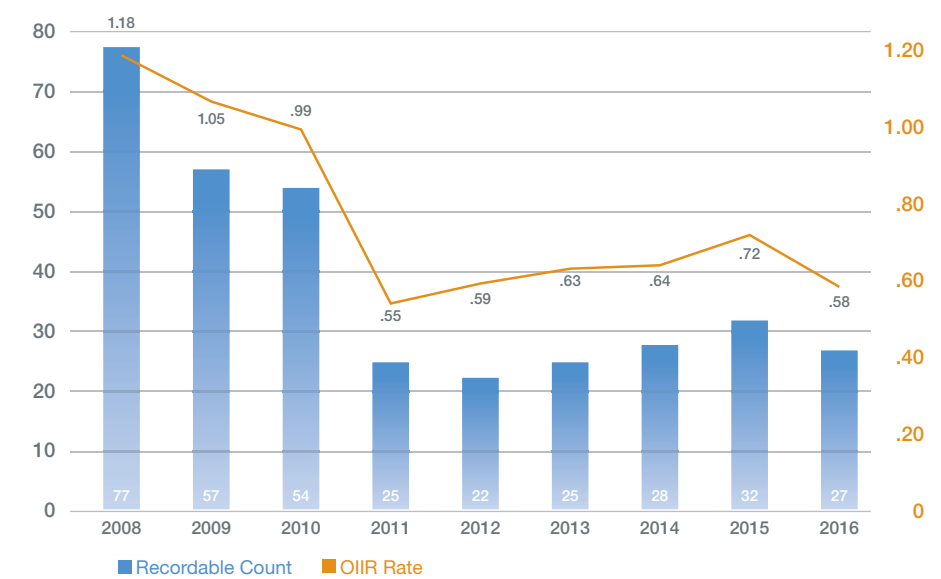
- **Kitee, Finland:** The plant uses lake water to cool resin reactors and the formaldehyde plant with two cooling water supply pumps. One pump ran 24 hours a day without flow control. The project team installed a control for one cooling water pump, and automated the cooling water flow valves on both condensers. In addition, operating procedures were updated to shut down the cooling water pump when there was no demand. With the changes, the site realized a \$114,000 annual cost savings on electricity, and reduced pumped water from 4.5 million cubic meters to 2.5 million cubic meters.
- **Curitiba, Brazil:** The plant reduced reactor fouling which cut cleaning costs by \$60,000, reactor downtime by 960 hours and serious incident frequency.

GHG Intensity



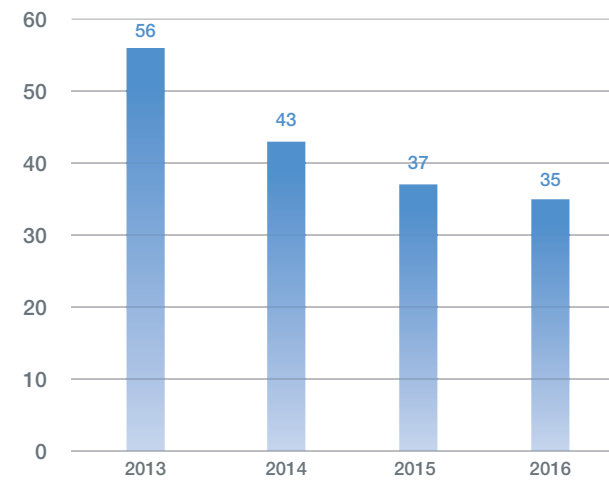
Over the past few years the GWP Intensity (Global Warming Potential Emissions divided by Total Production) has varied as the mix of products produced has changed to meet market demands, and as facilities have been added or removed from our production portfolio.

Safety Performance



The Occupational Injury and Illness Rate (OIIR) had been on a steady decline until 2011. The company has embarked on a safety culture and risk reduction initiative to reduce this rate.

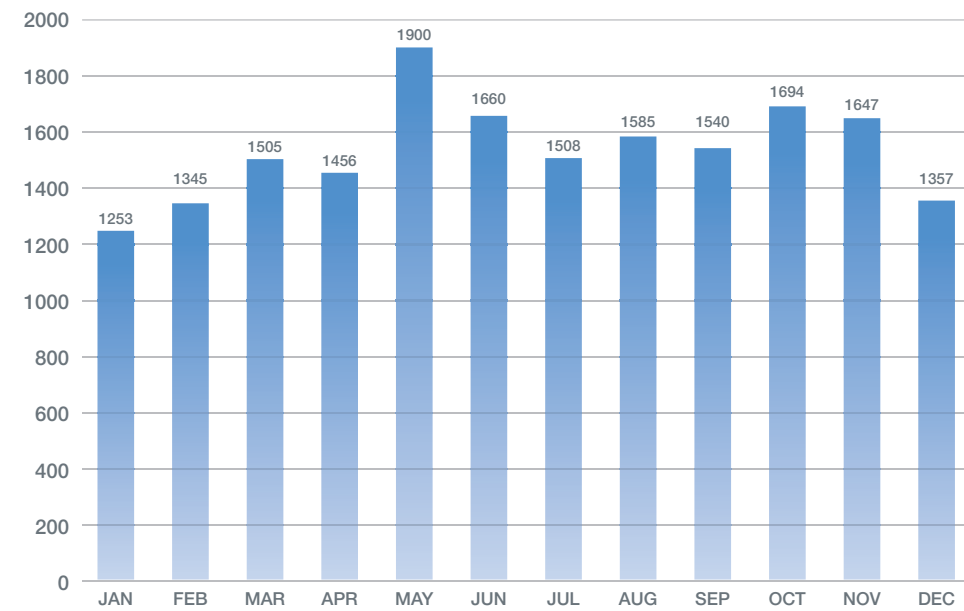
Environmental Events



Total Environmental Events – Exceedances, FRQ Spills, HRRs, PSM Spills

Through focused efforts to reduce spills and releases, and improved permit compliance, the Environmental Events metric has steadily declined and held steady in recent years.

Concern Reports



Hexion has increased and maintained the reporting of near-miss and employee concerns to be proactive in addressing safety issues. Those involving Severe Incident Factors (SIFs) are also identified to help reduce these critical exposures.



World Headquarters

180 East Broad Street
Columbus, OH 43215-3799
hexion.com

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