



Experience In Motion

2016 Sustainability Report

Flowserve Corporation



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About This Report

This report is the 2016 Sustainability Report for Flowserve Corporation, including information regarding the Flowserve Flow Control Division (FCD), the Engineered Product Operation (EPO) and the Industrial Product Division (IPD). The report provides general information regarding Flowserve Corporation, including a statement from the CEO, an overview of the Flowserve approach to sustainable development, and information regarding our stakeholders, governance, and marketplace initiatives using 2016 data.

The report highlights information specific to FCD, EPO and IPD for various performance indicators and metrics, based on the Global Reporting Initiative (GRI) reporting framework and guidelines. Key indicators were selected based on review of the overall GRI indicator list, and include those that are relevant to Flowserve manufacturing, service and repair operations. For purposes of this report, focus was placed on indicators related to safety, energy usage, emissions and waste generation. The data collection is based on a broad range of quantitative and qualitative information from multiple locations around the world representing all Flowserve product offerings and countries of operation. This report includes various types of Flowserve operating facilities and provides a comprehensive summary of our corporate sustainability program (e.g., manufacturing for pumps, seals, valves and controls; foundry operations; and service centers), and covers safety and sustainability efforts for 2016.

Topics within the report are organized to reflect the Flowserve overall sustainability approach which addresses market, workplace, environmental and community considerations. Sales information is also included to provide overall context and to assist with normalizing the information for comparability purposes. The report structure considers the use of the information by various stakeholders: employees and management, owners, investors, customers and the general public.

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Flowserve Leadership Messages



Flowserve and our heritage companies provide products and services that enable thousands of global customers to move fluids with efficiency and confidence. At the same time, we have attained numerous achievements in sustainability and safety. We are pleased to share our accomplishments in this 2016 Flowserve Sustainability Report.

Flowserve serves companies in the oil and gas, power generation, chemical, water and general industries. We are committed to remaining an industry leader in sustainable manufacturing practices, just as we have been leaders in the manufacture and service of pumps, valves and mechanical seals for more than two centuries.

As an industry leader, Flowserve remains attentive to the marketplace, the communities where we do business, the environment and our workplace. Based on our high quality, service-oriented approach and through the ongoing commitment of our employees, we have successfully integrated sustainability principles into our products, services and operations.

Our products and services enable customers to operate in an environmentally responsible manner. Simultaneously, we work to protect the environment by monitoring and enhancing our performance each day. In addition, we see the importance of treating our employees with respect and fairness, while helping to make a difference in communities around the world.

Each year, Flowserve maintains a focused approach to keeping our operations, and those of our customers, more sustainable in the marketplace. We look for continued success and accomplishments in safety and sustainability.

Scott Rowe

*President and CEO
Flowserve*



Flowserve strives to make our manufacturing sites and service facilities across the globe sustainable by emphasizing the safety of our people, reducing costs by conserving resources, minimizing potential environmental impacts, and supporting local communities. We are pleased to communicate our progress through this 2016 Flowserve Sustainability Report.

Flowserve designs, manufactures, distributes and services a broad portfolio of pumps and related products, mechanical seals, industrial valves and automation solutions. Our manufacturing sites and services facilities, together with our professional partnerships with leading distributors, enable Flowserve to serve its customers by offering experienced technical support and unmatched services wherever flow control is needed.

The renowned reliability of Flowserve pumps, valves and seals ensures extended service life, particularly when combined with on-site and off-site service. Backed by our industry expertise and aftermarket services, our products serve to keep critical processes working and vital fluids moving without the threat of loss or leaks. In addition to our dedication to serving the marketplace, we cultivate a culture based on workplace safety for employees.

I am proud of our team and their many accomplishments in safety and sustainability.

Thomas Pajonas

*Chief Operating Officer
Flowserve*

Overview

Flowserve has a long history of recognizing the importance of sustainable development, taking into account the need to balance economic, social and environmental considerations as part of our business activities. Our desire to demonstrate our commitment and raise awareness with respect to sustainability considerations is driven by various factors.

We have always been focused on the well-being of our employees, the interests of our stakeholders and the communities in which we live and work. At the same time, we conduct ongoing assessments of the effects of our products and activities. This has allowed us to identify opportunities for enhanced engineering of our products and services, improvements to operations and work practices, and reductions of potential environmental impacts. Furthermore, sustainability is not only important to us, it's increasingly important to our customers, employees, suppliers, investors and the public. We are committed to communicating relevant information with transparency.

Our recognition of the importance of sustainable development principles is exemplified by our programs and initiatives in four key areas:

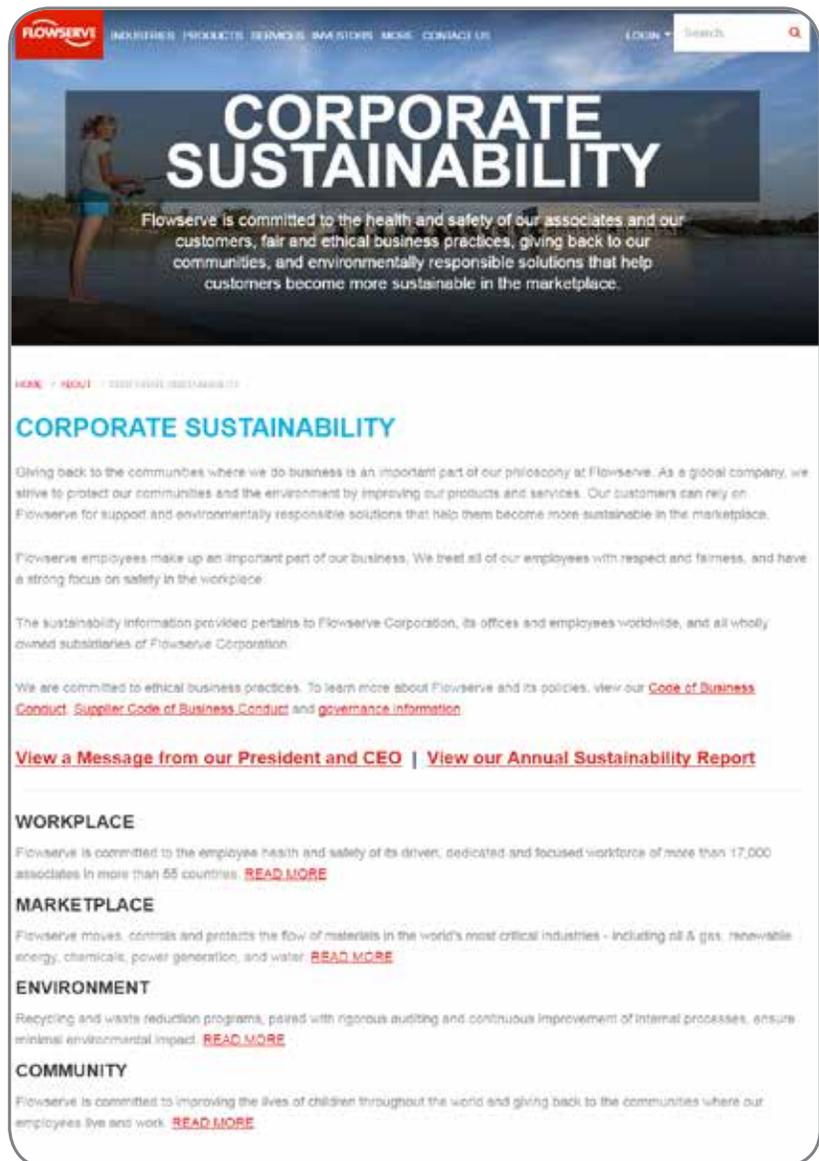
- Marketplace
- Workplace
- Environment
- Community

Marketplace

Flowserve plays a critical role with products and solutions that help our customers achieve their corporate responsibility goals.

Workplace

Flowserve is committed to the health and safety of its driven, dedicated and focused workforce of more than 19,000 associates in more than 55 countries. Flowserve traces its commitment to the safety of our associates back nearly 90 years when a predecessor company joined the National Safety Council (NSC) and began participating in the NSC's safety awareness, training and improvement programs. Our 90-year commitment to decreasing workplace accident rates and our successes in this vital human element is illustrated in the following chart. We have succeeded in lowering associate injury rates for 28 consecutive years.





Most noteworthy is a Workers Compensation expense index that has improved more than two-fold in the past five years. The current rate is one of the lowest in the industry, representing an actual aggregate cost savings of over \$8 million (USD) over five years.

Lost-Time Accident Rate: Number of accidents resulting in a day or more away from work per 100 employees per year
 Total Recordable Accident Rate: Number of accidents more serious than minor first aid events per 100 employees per year (includes lost-time accidents)

* Acquisitions not included in years prior to acquisition

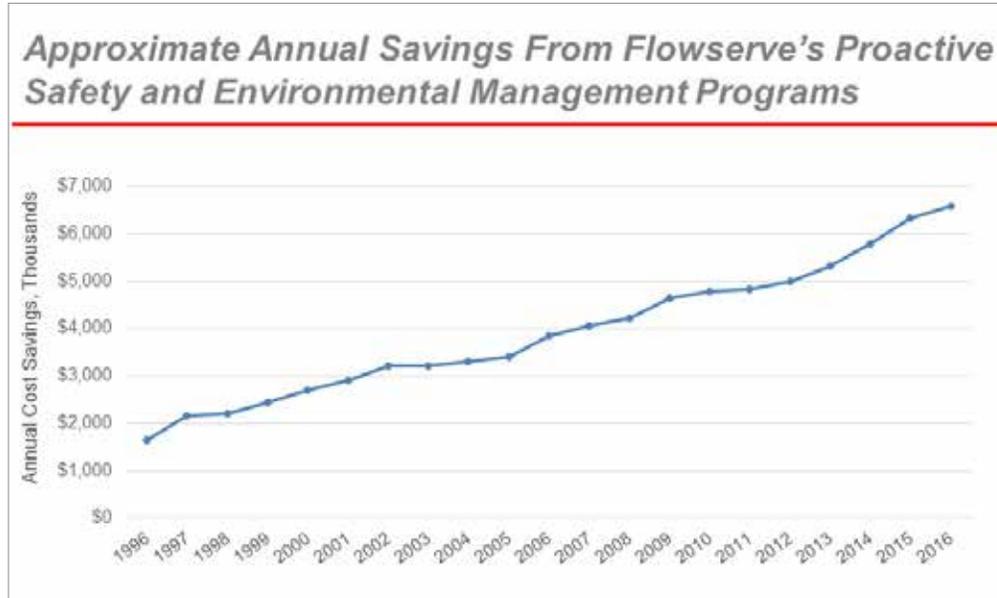
Environment

A top priority at Flowserve is protecting the environment for future generations. We do this by providing our customers with quality products which reduce emissions, minimize leaks and enhance efficiency. We continuously strive to diminish potential effects from our operations. Our more than two-decade record of driving both hazardous and solid waste out of our operational processes – reducing emissions to air and water and eliminating solvents deemed harmful to the environment – demonstrates our long-term commitment to minimizing our environmental footprint.



Our business values include protecting the environment for future generations, and we embed systems and processes into our operating systems to accomplish this objective.

We long ago learned the business advantages of proactive environmental practices and reducing our environmental footprint. The graph below illustrates the operational cost savings we have leveraged from our pollution prevention and waste minimization programs in the past 21 years. The aggregate total now exceeds \$65 million and is constantly growing as our associates create, implement, and succeed at reducing chemical use, emissions and wastes, and our facilities expand their recycle, reuse and repurpose initiatives.



Community

Flowserve is committed to improving the lives of people throughout the world and giving back to the communities where our facilities are located. Giving back to the local areas where we do business is an important part of our philosophy. We believe we have a responsibility to the communities where our employees and customers live and work, and we constantly strive to find ways to give back. From promoting educational programs for children to volunteering at local food banks and supporting worldwide disaster recovery efforts, Flowserve and our associates are committed to efforts that improve their communities.

Stakeholder Engagement

Sustainability principles are integrated within Flowserve – they are at the heart of what we do every day.

Many years ago, Flowserve began efforts to understand the impacts we have as a company on our world, including our associates, communities, environment, investors and customers. The process was extensive: We scrutinized our safety performance; examined wastes and emissions from our operations; surveyed our employees to assist with identifying improvement opportunities; enhanced environmental management systems; and asked our customers for feedback through surveys and direct discussions. We are proud that sustainability principles are integrated within Flowserve — they are at the heart of what we do every day.

Since 2009, we have publicized these efforts and successes in sustainability communications with our stakeholders.

Governance and Ethics

Corporate Governance Highlights

Flowserve is committed to implementing corporate governance practices that are consistent with our high standards of ethics, integrity and transparency, as well as being fully compliant with the Sarbanes-Oxley Act of 2002 and the listing standards of the New York Stock Exchange. These practices reflect the requirement that our Board of Directors oversee the company with a forward-looking governance structure implemented by diverse, independent board members who are focused on serving the interests of all our shareholders. We have developed a series of guidelines, codes of ethical business conduct, policies, corporate bylaws and 14 reports related to our governance procedures, which are available on our corporate website, www.Flowserve.com.

Acting with Transparency and the Highest Ethical Standards

Through our Code of Business Conduct and our Supplier Code of Business Conduct, we provide our associates and suppliers with clear guidance regarding acceptable business conduct, requiring all employees and suppliers to adhere to the company's codes. In addition to regular communications emphasizing the importance of an ethical and transparent work culture, Flowserve commits a week each year to ethics and compliance awareness. During that week, Flowserve facilities around the world hold events that feature training and educational opportunities, emphasizing ethical work practices.

Through year-end 2016, Flowserve has trained more than 4,600 associates as Green Belts, Black Belts, Master Black Belts and Lean Practitioners. Collectively, more than 9,700 projects have been completed and more than \$667 million (USD) in savings has been achieved through the application of CIP tools.

Flowserve has been named to Forbes magazine's 100 Most Trustworthy Companies.

FLOWSERVE

ETHICS & COMPLIANCE IS EVERYONE'S JOB.

Scott Sullivan
Chief Ethics & Compliance Officer
Irving, TX

ETHICS & COMPLIANCE AT FLOWSERVE

Welcome to this year's Ethics & Compliance Awareness Week. Our theme this year is "Ethics & Compliance is Everyone's Job." As the Chief Ethics & Compliance Officer, Ethics & Compliance is, of course, my job, but we need each and every one of you to make Ethics & Compliance your job, too. Our Business Integrity & Compliance team includes 30 professionals around the world who are here to provide guidance and support, but they can't do it alone.

Please take the opportunity during this period to attend your local Ethics & Compliance Awareness Week presentation to learn about what it means to make Ethics and Compliance part of your job. If you have any questions or concerns, please feel free to contact any member of our Business Integrity & Compliance Team – contact information is available under the BI&C tab on Passport.

Safety, Health and Environmental Affairs (SHEA) Policy and Vision

Our philosophy is that safety, health and environmental affairs are integral parts of good management and production, and they cannot be separated. The Flowserve Safety, Health and Environmental Affairs (SHEA) Policy outlines the job titles and responsibilities of Flowserve management to ensure all of our safety, workplace health and environmental management programs are carried out to their maximum potential. The policy applies to all divisions, locations and subsidiaries worldwide, and is designed to ensure compliance with all applicable laws, regulations, standards and best management practices identified by Flowserve. It provides for taking the practical steps necessary to create and maintain safe and healthy working conditions, prevent injuries to employees, prevent environmental impacts through strict adherence to applicable government directives, and engage in environmental best practices. The policy also grants the top-ranking leader at each location direct responsibility for establishing and maintaining an active SHEA program. The program is subject to audits conducted at least once each calendar year by the Corporate SHEA Department. The results of these audits are shared with the Flowserve senior management, who in turn, brief the Board of Directors on SHEA goals and accomplishments.

Flowserve SHEA Programs

Flowserve strives to foster an environment of mutual respect and teamwork in which ethics are a key driver of how all associates treat one another. From the top down, Flowserve associates work together to create and maintain safe, healthy and productive work environments that produce quality products for our customers. Employees participate in a cooperative SHEA infrastructure and maintain high performance through the use of company-required safety committees at each location. Committee members undergo advanced safety training and are empowered with the authority to resolve safety issues and/or arrange for the appropriate corrective action to be taken. Committee members interact with and mentor their peers, while spreading the “safety message” throughout facilities.

In addition to manager and supervisor involvement, all team members are encouraged to participate in the annual Safety, Health and Environmental Compliance Review performed by a member of the corporate SHEA staff. The wall-to-wall facility and records review audit consists of two parts: the compliance component and the audit component. The compliance component includes a three-part, 721-point checklist utilizing the Flowserve Safety, Environmental and Fire Prevention Checklist. This extensive checklist follows U.S. regulations and consensus standards in the United States and other international locations based on country-specific regulations or a modified U.S. checklist with ISO 14000/OHSAS 18000 principles and best practices. This portion represents the safety and environmental infrastructure that Flowserve considers necessary to be in place for long-term continuous SHEA improvement. The audit component measures the day-to-day functional aspects of accident prevention and environmental performance as every machine, building and overall location is scrutinized via a hands-on examination for safety conditions, and evaluated according to how our associates interact with these site operational components.

The goal is world-class regulatory compliance and world-class safety/environmental performance on the factory floor.

Flowserve associates work together to create and maintain safe, healthy and productive work environments that produce quality products for our customers.

More than 7,500 employees worldwide have been trained on our DMAIC Lite problem-solving methodology.

FLOWSERVE U. S. FACILITY SAFETY CHECKLIST					
29 CFR ITEM	CATEGORY	TOPICS	YES	NO	COMMENTS
INSPECTIONS					
1903.2	Posting of Notice	1 Is the current OSHA poster posted in the workplace?			
RECORD KEEPING					
1904.32	Record Keeping	1 Has a summary of all occupational injuries and illnesses been compiled at the conclusion of each calendar year and been reported on OSHA Form 300?			
1904.33	Retention and Updating	2 Have all OSHA records been retained for a period of five years, excluding the current year?			
1904.32	Annual Summary	1 Is the OSHA 300 log posted each for year the months of February through April for the previous year?			
WALKING AND WORKING SURFACES					
1910.22	General Requirements	1 Housekeeping:			
		a. Are all places kept clean and orderly?			
		b. Are all floors kept clean and dry?			
		c. Are mats or special surfaces provided for wet work areas?			
		2 Are aisles clear?			
		a. Are permanent aisles marked?			
		3 Are holes covered or protected?			
1910.23	Lofts and Floor Openings	a. Is the area free of slip/trip hazards?			
		4 Are all storage lofts clearly marked as to their load limit?			
1910.24	Fixed Stairs	1 Are lofts or elevated work areas over four (4) feet protected by guardrails?			
		2 Are openings and entryways to the loft guarded?			
		3 Are lofts guarded with 4-inch toe rails?			
		4 Are stairs at least 22 inches wide?			
		2 Are standard handrails provided on stairs and risers?			
		3 Is a seven (7) foot headspace provided?			
		4 Are stair treads less than 9 inches open at the back?			

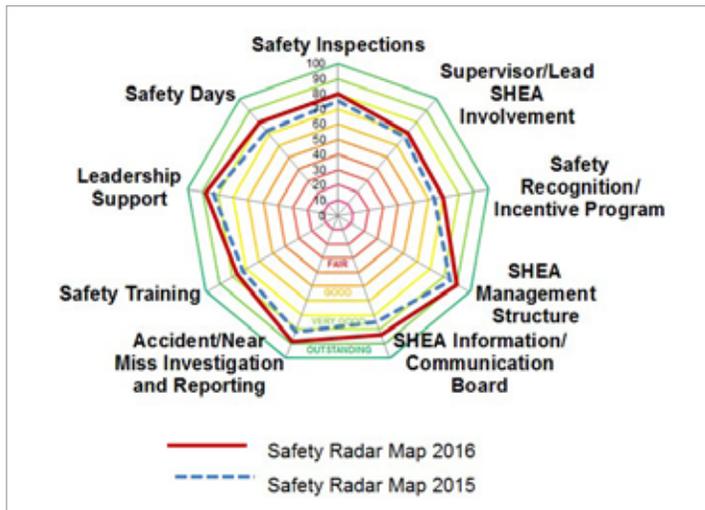
Employee Competency Building

The Flowserve Educational Services Group operates Learning Resource Centers to meet the training needs of our global workforce. Training is standardized, deployed and measured through the use of an online Learning Management System (LMS). Training goals are established each year, including specific safety and environmental training, and are included in individual performance goals and objectives. This promotes competency building, continuous improvement and teamwork.

We use targeted, regularly scheduled training to ensure SHEA excellence. In early 2006, the Flowserve Board of Directors demonstrated their support of SHEA by approving a significant investment in PureSafety customized training programs. The programs are deployed by the LMS and currently consist of 34 modules which are available in English, Dutch, French, German, Italian, Japanese, Chinese, Portuguese and Spanish. PureSafety modules are available in languages spoken and understood by 95 percent of our associates. In addition to online training, safety training is further enhanced at the local level through the use of “All Hands” meetings and “Toolbox Talks,” which are conducted frequently on the shop floor. Additionally, Flowserve has hundreds of internally developed training resources, available to all associates through our company intranet site. These resources are updated on a continuous basis.

Site SHEA coordinators also participate in advanced SHEA training, including an overview of the SHEA Policy and Procedures manual; workplace safety and health expectations; accident reporting, goals and performance; environmental management and reporting; audits; safety committees; associate training and self-inspections; and an internal certification program. In recent employee surveys, Flowserve associates have consistently ranked their SHEA training and the overall commitment of Flowserve to its safety principles with extremely high scores. In a 2016 engagement survey of Flowserve associates worldwide, 86% of respondents agreed that leadership demonstrates through their actions that safety is a top priority.

Flowserve uses a highly developed set of leading indicators and metrics within our SHEA program related to training, inspections, management, supervision, communication and reporting. This is reflected in the Safety Radar Map rollup for all Safety, Health and Environmental Compliance Reviews of facilities in 2015/2016.



We have improved our safety performance nearly 1.5 times during the past five years, and current performance levels are 15 times better than industry averages.

The Safety Radar Map was introduced in 2014 to our Safety/Sustainability metrics toolbox and has been proven to drive continuous improvement throughout the corporation.

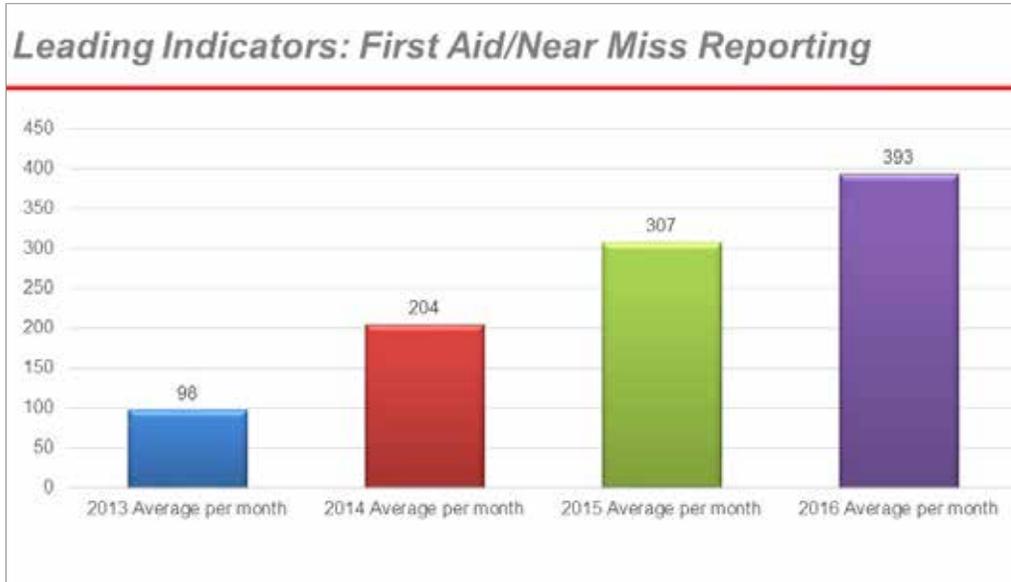
At Flowserve, we are constantly examining old and new ways to improve our safety performance to reduce workplace accidents and empower our employees to go home safely to family and loved ones each day. One of the more important initiatives in recent history is our 2015 Hand Safety Assessment and Improvement effort, a targeted campaign to reduce hand injuries by 10 percent per year for each of the next five years. In 2016, there was a 12% reduction in hand cuts and hand pinch/crush injuries.

This block displays four key components of the Hand Safety initiative:

- Assessment:** A 'Hand Safety Assessment Form' with sections for 'Date', 'Site', 'Assessor', and 'Type of Review'. It includes a checklist of 10 items related to hand safety practices.
- Site Glove Boards:** A photograph of a red board at a site displaying various types of work gloves (green, black, white) and safety information.
- Awareness:** A poster titled 'Hand Safety - FYE' (Focus Year End) with the subject 'Hand Safety - FYE'. It contains detailed text and graphics about hand safety.
- Training:** A stack of training cards with the slogan 'SAFETY IS IN YOUR HANDS'. One card features the text 'NOT WORK!' and images of hands being cut by a blade.

Since the beginning of 2013, we have increased the rate of near-miss reporting nearly four-fold.

As a global corporation, we recognize the importance of being a “learning organization” and taking advantage of every opportunity to enhance safety and sustainability performance across the company. One way we do this is through a global initiative to increase leading indicator or “near-miss” safety or environmental incident reporting. By focusing on this critical method of incident capture, we have engaged associates more fully than ever before in our safety and sustainability efforts, which in turn drives continuous improvement. By reporting, correcting and sharing the lessons learned from near misses and observations, we utilize an extremely valuable tool for keeping people safe and protecting property.



We also seek to be a global learning organization by capturing sustainability “best practices” worldwide and share those practices throughout the corporation to further drive our sustainability accomplishments and successes. As each best practice is shared and implemented throughout the company, we reduce our potential for employee accidents/injuries, reduce our environmental footprint, increase recycling/reuse and enhance our sustainability success.



Improve Pedestrian Safety

In noisy workplace environments, or when traversing around blind corner, it can often be difficult to be aware of approaching forklifts. One good way to improve the visibility of approach trucks is to fit them with a blue light.

These solutions can cost as little as \$200, but they go a long way to improving shop safety.

Internet search “Forklift Blue Light” for local suppliers, and ensure they are fitted by an approved Technician.

Improvement: Guarding on Spindle of Lathe



A rubber guard that can move along with the tool slide was put in front of the spindle to prevent injury.

Finally, Flowserve devotes time each year to an increased focus on safety and sustainability. Sites hold Safety and Sustainability events that are greatly anticipated as the latest safety lessons, sustainability successes and new goals for performance improvement are shared with associates on a worldwide basis.

The Seri Kembangan, Malaysia, facility presented a “Get To Know The Premises” quiz, with the goal, of helping associates remember the location of the paper recycling bin and various safety devices.

Other highlights included health screenings and healthy food choices, a General Manager-led walk around the facility premises to encourage exercise, AED training, and safety equipment displays by various vendors.

Each year, individual Flowserve sites present a multitude of creative safety exercises. At the Cookeville, Tennessee, site for example, a meeting room was staged with numerous minor hazards. After viewing a safety video that detailed the importance of correcting such hazards, associates were asked if they had walked into the room without considering the potential for injury. The hands-on exercise helped generate more safety awareness among participants.



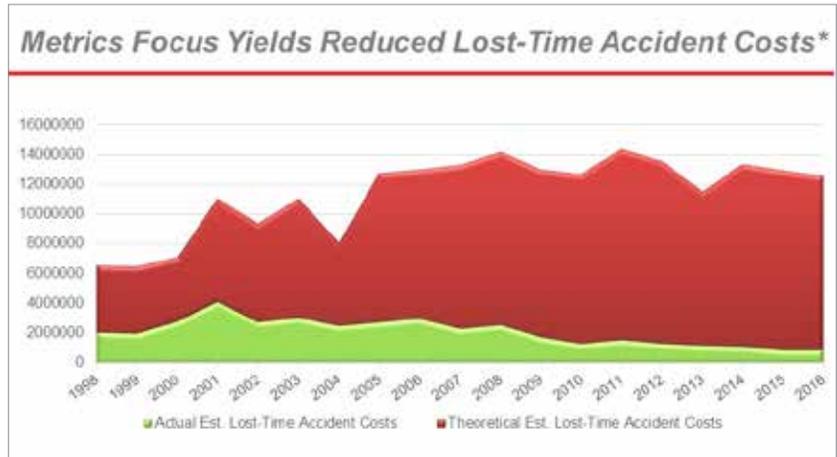
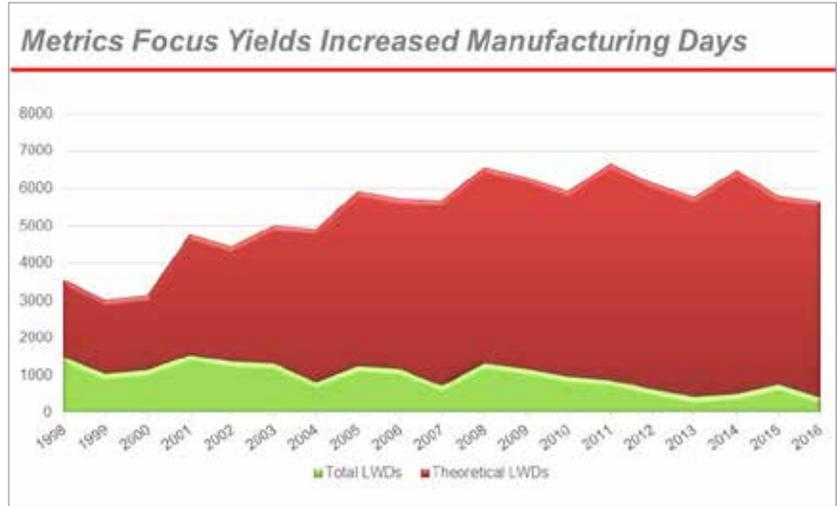
The annual coloring contest for associates' children, grandchildren and other loved ones during Safety and Sustainability Week provided an opportunity to share the importance of this initiative with families. The coloring contest always earns high participation and favorable feedback.



Supporting Our Associates and Communities

Supporting Our Associates

Flowserve associates around the globe are our most important asset. This is more than just a statement — it is something we live by every day. They are treated with respect and fairness, and all benefit from a superior, world-class safety and health program. Their ideas for improving the program are the driving forces behind our success. Flowserve has set safety performance records year-after-year for more than 27 years. For example, these charts show how our SHEA and Sustainability programs have prevented 13,788 recordable injuries and 63,773 days away from work since the 1997 creation of Flowserve, based on historical records.



For many years, the Flowserve Employee Assistance program has provided support to employees and their families during natural disasters or other times of need. Our efforts on their behalf in the aftermath of the Fort McMurray wildfire in Alberta, Canada, the Ecuador earthquake disasters and the widespread flooding in Baton Rouge, Louisiana, during 2016 continue that commitment to our associates and their families.

In Baton Rouge, Flowserve operates three Quick Response Centers that employ approximately 150 associates. As the floodwaters rose in August 2016, Flowserve staff immediately got to work to assist fellow employees and customers in the area. Those who could get to the plants worked tirelessly to reach all associates until everyone was accounted for and safe. Despite experiencing personal challenges related to flood damage at home, Flowserve employees continued working to meet commitments to Flowserve customers.

Flowserve provided air conditioners and found temporary housing for those with the most critical need. Generators, gas cans, flood lights and emergency radios from company-stocked "hurricane recovery containers" located at company plants in southern Texas were quickly transported to Baton Rouge for distribution to associates. In true Flowserve spirit, associates at other sites, from Texas to Pennsylvania, also offered assistance, sending mops and brooms, buckets, cleaning supplies, first aid kits, non-perishable foods and activity books for associates' children.



Communities Where Our Associates and Customers Live and Work

Around the world, Flowserve is committed to being a responsible corporate citizen and supporting the communities where our associates and customers live and work. We encourage associate volunteerism and participation in charitable initiatives, and support these endeavors through the Flowserve Volunteer Time Off program, which permits approved time off from work for associates to give back to their communities.

Among other charitable causes, volunteer hours by Flowserve associates and company financial contributions help students stay in school, foster lifelong learning through the use of technology, and provide scholarships and support to at-risk youth so they can grow up to live happy, successful lives.

Protecting the Environment

The Environment

Flowserve products and services enable companies in the oil and gas, power generation, chemical, water and general industries to move fluids, gases, and other materials with efficiency and confidence, minimizing loss or leaks to the environment. Flowserve products are built to last, providing outstanding value for our customers. Internally, recycling and waste reduction programs are paired with rigorous auditing and continuous improvement of internal processes to ensure minimal environmental impact. Waste reduction and elimination, recycling, emission controls, and pollution prevention programs have been, and remain, a strong focus at Flowserve.

Waste reduction and elimination, recycling, emission controls, and pollution prevention programs have been, and remain, a strong focus at Flowserve.

CORPORATE SUSTAINABILITY: ENVIRONMENT

Flowserve is committed to the health and safety of our associates and our customers, fair and ethical business practices, giving back to our communities, and environmentally responsible solutions that help customers become more sustainable in the marketplace.

CORPORATE SUSTAINABILITY: ENVIRONMENT

Recycling and waste reduction programs, paired with rigorous auditing and continuous improvement of internal processes, ensure minimal environmental impact.

Our products industry-leading products for our customers that meet the highest levels of emissions control.

Flowserve Cookeville: Committed to supporting the environment

Cookeville facility rewarded for participating in energy efficiency project

Our Cookeville, Tennessee, facility was recently recognized and rewarded for participating in a project that helped further the Flowserve sustainability philosophy and make positive changes in support of the environment.

Cookeville received a \$50,000 check from the Tennessee Valley Authority (TVA) for their participation in organization's Energy Right Solutions for Business and Industry Energy Efficiency Program. This check was just one of the financial rewards the Cookeville facility has identified as a result of the collaboration between Flowserve Cookeville, TVA, local electric companies and EnerNOC.

TVA is a federally owned U.S. corporation created to provide navigation, flood control, electricity generation and fertilizer management to most of Tennessee and parts of Alabama, Georgia, Mississippi, Virginia, North Carolina and Kentucky. EnerNOC's energy management services and software promote energy efficiency, reduce greenhouse gas emissions and offer consulting services for energy supply management.

The Energy Right Solutions for Business and Industry Efficiency Program was created to encourage industrial manufacturers to reduce energy consumption, creating a win-win situation for both the energy user and the supplier. Manufacturers gain financial incentives for their participation, while a decrease in the use of electricity allows TVA to more easily keep up with electrical demand and eliminates the need for a costly new facility.

Highlights of this sustainability and cost savings collaboration include:

- Brighter nights for a safer manufacturing work environment
- Reduced energy costs as evidenced by a 10% increase in production (2011 over 2008) with a corresponding 42% decrease in electric costs
- Financial incentive checks from TVA and EnerNOC which total \$60,000
- Federal tax credit of approximately \$30,000
- Annual light bulb replacement savings of \$7,000
- 24% reduction in Electrical Demand Costs since 2008

Cookeville maintenance supervisor, and his team promoted this project in an effort to affirm our commitment to increasing sustainability efforts. Other Flowserve associates were also greatly involved in supporting this project. Director and general manager of EnerNOC and TVA in Raleigh, who formerly held the same position in Cookeville, says "The results for increased

Summary of Flowserve Safety and Environmental Successes

1988 through 2016

- Recipient of more than 1,500 awards from the National Safety Council (NSC)
- Presented Corporate Culture of Safety Award in 2011 from the NSC
- Named one of America's Safest Companies in 2010 by *EHS Today* magazine
- Reduced lost-time accident rate by more than 95 percent (more than 70 percent less than our peers)
- Reduced lost workday severity by more than 96 percent
- Achieved workers' compensation costs of more than 75 percent less than the U.S. manufacturing average of 3.21 percent of payroll
- Reduced U.S. workers' compensation costs by \$69.7 million
- Reduced solvent emissions from going into the air by 90 percent
- Reduced hazardous waste and machining coolant shipments by 70 percent
- Reduced solid waste disposal by 50 percent
- Achieved a total environmental savings of more than \$65 million while growing from \$300 million in sales to \$4.56 billion in sales
- Prevented 13,788 recordable injuries and 63,773 days away from work, based on historical statistics since 1997

In addition, Flowserve placed in the top third of eligible companies in Newsweek Magazine's 2014 Green Rankings and was added to the NASDAQ Global Sustainability Index in November 2015. Also, Flowserve was named the 2016 Manufacturing Sector Sustainability Leadership Award winner by the Business Intelligence Group. This organization honors those companies, groups and individuals who have made sustainability an integral part of their business practices. In addition, Flowserve was awarded the Silver recognition level from EcoVadis, a leading provider of sustainability assessments.

Flowserve was listed on the NASDAQ Global Sustainability Index and CDP Analytics in 2015 for environmentally conscious investors. This is the ultimate community recognition for our sustainability efforts and results.

Warranty Week magazine recognized Flowserve as a leader (top 18 companies) in warranty management and improvement two times in 2015.

Facility Sustainability Initiative Examples

Ahaus, Germany

The facility received ISO50001 certification for its energy management system and has introduced energy efficiency improvements with LED lighting and a new air compressor. These improvements save 50,000 kWh per year at a savings of \$12,400 (USD) annually, while eliminating the burning of 26 tons of coal, or 505,000 cubic feet of natural gas, and gases that may contribute to climate change.

Arnage, France

Associates recycle wood, paper, cardboard, plastic and metal. There are also several recycling stations set up around the facility to collect these items, which are recycled. In 2016, the Arnage facility recycled approximately 455 metric tons of these materials.



In 2016, the Arnage, France, facility recycled approximately 455 metric tons of materials.



ENVIRONMENT

FLOWERVE
ARNAGE FACILITY

WASTE MANAGEMENT PRESENTATION

WASTES			METALS		HAZARDOUS WASTES
PLASTIC WRAPPINGS	PAPER	WOOD	CHIPS	REJECTED PIECES	<p style="text-align: center; font-size: 8px; margin: 0;">PAINT WASTES</p> <p style="font-size: 8px; margin: 0;">OIL, VARNISH, DILUENTS, USED PAINT REMOVER, USED FILTERS, CONTAMINATED RAGS</p> <p style="font-size: 8px; margin: 0;">BATTERIES, USED LIGHTS, AEROSOLS, ANTIFREEZE, MACHINING SLUDGE, SHOTBLAST, PRINTER INK-CARTRIDGE, ELECTRICAL WASTES</p>
CARDBOARD	HOUSEHOLD WASTES		IRON SCRAP	OTHERS: cables & motors	
					
					

RESPECT WASTE SORTING AND STORAGE AREAS

Brunn, Austria

Associates from the facility implemented an energy savings plan in 2011, with a goal of reducing energy consumption by 20 percent by 2015. The improvements include a heat exchanger for the paint booth for energy recovery, new LED lighting, a new heating control system, employee training related to energy conservation and other items. As a result of the improvements, the total energy consumption in 2015 was 43 percent lower than the 2010 baseline, and the energy cost has been reduced by 32 percent over the same period. The energy used at the facility is from renewable electricity production and biofuel for heating.

After Brunn installed LED lighting in the main building and the shop floor area, energy reduction was 247,000 kWh per year, which reduced energy costs by 34,000 Euro/\$38,000 (USD).

Suzhou, China

Safety and recognition go hand-in-hand at the FSG Suzhou manufacturing facility in the People's Republic of China, which received the 2015 Government Safety Award. The award recognizes companies with excellent safety performance and no incidents.



Ettlingen, Germany

Flowserve Ettlingen implemented a combined heat and power unit. It is used to provide as much heat (498 kW) as the previous burner, and also produces power (363 kW), which can be consumed at the site or injected into the power network to earn money.

A 25 m³ water tank was also installed to increase the operation up to 5,300 hours per year and cover one-third of the power consumption. The subsidies from this efficient technology help make the project extremely profitable. These initiatives enable Flowserve Ettlingen to help protect the environment by saving 350,000 kg of carbon dioxide through this heat and power unit.

Essen, Germany

During the past decade, Essen employees have formed a partnership with ECOPROFIT, which has provided access to the world's most current energy, water, wastewater, hazardous waste, and residual waste best practices and training. By collaborating with other ECOPROFIT partners, associates exchange experiences, develop optimization concepts related to best-available techniques, determine improvement potential and conduct training to improve procedures. Flowserve Essen has received ECOPROFIT certifications several times, most recently for 2013/2014, which included recognition for reductions in energy usage, carbon dioxide emissions and wastewater discharges.

Bremen, Germany

Bremen is a participant in "Professionelles Energieeffizienz Netzwerk," a professional organization of approximately 10 to 15 companies in the same region that work together to develop, share and learn about initiatives to improve energy efficiency.

Etten-Leur, Netherlands

Operations at the Etten-Leur facility use energy primarily for machining, welding and testing. To effectively manage electricity consumption, the facility continues to look for new ways to reduce energy consumption using an approach based on transparent monitoring and controlling. Using the data, the facility implemented several projects to control cost and improve performance. During the past few years, these projects resulted in an estimated cost savings of \$86,500 (USD) through reduced energy consumption, and a 200-tonne reduction of greenhouse gas emissions. Future plans include inquiries into the possibilities of using voltage regulators in manufacturing and LED lighting to further reduce energy consumption.

Haywards Heath, UK

Haywards Heath installed a 50 kW solar panel system on the roof of the facility. Estimated annual energy savings are 26.64 megawatt-hours (mwh) of electricity. This renewable energy source reduces the facility's carbon footprint, having a positive impact on the environment.



A solar panel roof system was installed at the Hayward Heath, UK, facility. The solar panel system is expected to provide renewable energy at an estimated cost savings of more than 26.64 mwh of electricity.

Coslada, Spain

Coslada implemented energy reduction measures including new LED lights throughout the plant and heating/air conditioning upgrades that generated savings of 240 kw/h and \$36,000 annually. The plant also reduced solvent usage by more than 50% by replacing it with more environmentally-friendly solutions, lowering VOC emissions.

Madrid (Pozuelo), Spain

The facility utilizes a portable AVIA system to recycle coolant at each machine tool, reducing the costs to purchase new machine coolant and waste disposal. New energy efficient air compressors were installed in the facility, reducing energy consumption and greenhouse gas emissions. The estimated cost savings are \$46,000 per year.



Hamburg, Germany

Hamburg installed a water treatment system with chlorination and filtration components that allow unlimited recycling of water used for pump testing operations. This system results in significantly reduced water consumption and disposal.

Roosendaal, Netherlands

Roosendaal's company vehicles use hybrid diesel engines, resulting in fuel savings of more than 50 percent, compared to regular diesel-powered vehicles.

Villach, Austria

Villach initiated a change in their energy supply by switching from natural gas heating to imported district heating from a local supplier. The district heating plant uses a combination of fuel, biomass and waste heat, resulting in reduced greenhouse gas emissions. The reduction is estimated to be approximately 70% by using the district heating, compared to the previous natural gas system.

Individual Facility Initiatives: Energy Conservation

Energy-efficiency projects and cost savings achieved at individual facilities in 2016:

ENERGY SAVINGS (2016)			
SITE	SAVINGS	SAVINGS TYPE	IMPROVEMENT PROJECT
Ettlingen	\$110K	Gas, Electric	LED lighting, heating system optimization, more efficient use of air compressor
Ettlingen	\$217K	Water, Electric	Replacement of central washing machine
Greer	\$40K	Electric	Lighting upgrade
Suzhou (Weixin)	\$23K	Electric	Reuse of waste heat
Madrid (Pozuelo)	\$46K	Electric	New energy efficient compressors, LED lights
Perth	\$20K	Gas, Electric	More efficient air conditioning, lighting timers
Coslada	\$36K	Gas, Electric	LED lights, heating and air conditioning upgrades
Dortmund	\$10K	Electric	LED lights
Hamburg	\$7K	Electric	LED lights
Hastings	\$6K	Electric	LED lights
Raleigh	\$25K	Electric	Energy efficient lighting for shop
Etten-Leur	\$88K	Gas, Electric	Energy reduction at test facility
Desio	\$32K	Electricity	Natural light ceiling panels
Raleigh	\$25K	Electric	New energy efficient lighting for shop
Haywards Heath	\$8K	Electric	Solar panels



The Cookeville, Tennessee, facility added lighting system upgrades designed to reduce electricity usage in the facility.



In Desio, Italy, a new roof equipped with lights is structured to increase transparency and reduce interior lighting requirements. (Interior lights are off.)

November 2016 was devoted to a series of Sustainability messages distributed globally. Topics included water conservation, saving energy, recycle/reuse, office sustainability, the impact of plastic bottles on the environment, heating/cooling savings and reducing our environmental footprint.

This presented an opportunity to raise awareness of global environmental issues by sharing information about the finite nature of our water resources. The graphic shows the earth and two blue spheres. The large sphere represents all water found on the earth, and the small sphere represents fresh water only, which illustrates the importance of water conservation and protection.



<https://water.usgs.gov/edu/earthwherewater.html>

The SHEA team in Bangalore, India, designed a poster, "Think Before You Print," distributed globally to all Flowserve locations.



Foundries

Flowserve foundries located in North America (Hastings, Nebraska) and Europe (Desio, Italy) produce metal casting components used in various Flowserve products. Each of our foundries makes unique, high-quality parts critical to flow control applications around the world, with the following specialties: Hastings – steel components for IPD products, and Desio – iron components for EPO products. In 2016, Flowserve discontinued its operations at two other North American foundries (Dayton, Ohio – high alloy, and Kitchener, Ontario – steel and aluminum).

Flowserve has developed and implemented rigorous safety and sustainability programs designed specifically for the challenges of foundry operations which ensure the safety of our associates, environmental protection and resource conservation. The key indicator data collection and reporting (for safety, energy, water, emissions and waste) includes information for Flowserve foundries.

By focusing our attention on sustainability, Flowserve has saved more than \$800,000 at our sites around the world during the past year alone.

Flowserve has initiated energy conservation programs at facilities and foundries to reduce energy consumption of primary and ancillary equipment, such as installations of energy-efficient lighting. The Hastings facility implemented an energy management system in 2005 which has saved approximately \$50,000 annually. Electricity from renewable sources is used at the Desio facility.

Waste material, including sand from casting operations, is recycled or reused as noted above. As with all Flowserve facilities, hazardous waste generation is minimized. In 2016, the combined amount of hazardous waste generated in Flowserve foundries in Hastings and Desio was less than 1 tonne (1.1 ton).

Recycled Input Materials

Flowserve's manufacturing operations involve the extensive use of recycled metal alloys for production of castings and other metal components. A sample of U.S. facilities indicates over 3.41 million pounds (1.55 million kg) of metal castings, comprising recycled materials used in 2015.

Marketplace

Flowserve moves, controls and protects the flow of materials in some of the world's most critical industries – including oil and gas, power generation, renewable energy, chemicals and water – and we use our market-leading pumps, valves and mechanical seals to move, monitor and control these vital resources. In doing so, Flowserve makes direct and important contributions to economic development in numerous countries where we have customers.

Flowserve provides community support through local associates and facilities. Our marketplace presence is closely tied to societal commitments and environmental responsibility, consistent with sustainable development principles. This includes, for example, taking into account the environmental regulatory requirements in various jurisdictions that apply to our products and affect our customers' operations. As a result, Flowserve continues a commitment to industry leadership by following Environmental Protection Agency (EPA) national standards throughout the United States. The implementation of German environmental regulations with sealing solutions that meet the strict requirements of the 2002 Technical Instructions on Air Quality Control (TA LUFT) is supported by Flowserve, which also supports the stringent rules associated with the European Union's European Integrated Pollution Prevention and Control (IPPC) directive. In the past, Flowserve has participated in the Fluid Sealing Association's "Sealing Systems Matter" initiative that helped to "promote educated decision-making based on total life cycle costs... associated with energy consumption, water usage and environmental monitoring."

Flowserve Heritage Brands	
Valves	
Accord • Anchor/Darling • Argus • Atomac • Automax • Durco • Edward • Gestra • Kämmer • Limitorque • Logix • McCANNA/MARPAC • NAF • Noble Alloy • Norbro • Nordstrom • PMV • Serck Audco • Valbart • Valtek • Vogt • Worcester Controls	
Pumps	Seals
Aldrich • Byron Jackson • Calder • Durco • Halberg • IDP • LaBour • Lawrence • Pacific • Pleuger • Niigata Worthington • Scienco • Sier-Bath • SIHI • Sterling • TKL • United Centrifugal • Wilson-Snyder • Worthington	BW Seals • Durametallic • GASPAC • Interseal • Pac-Seal • Pacific Wietz

Flowserve makes direct and important contributions to economic development in numerous countries where we have customers.

Flowserve delivers reliable solutions for demanding technical challenges and customer applications, backed by local on-site field repair services that are readily available to serve our customers.

Services and Solutions for Industry

Services and Solutions for Industry

Flowserve services and solutions integrate hydraulic, mechanical and materials engineering knowledge with creative operating and business solutions to:

- Create the best solutions for our customers' most challenging applications
- Improve equipment reliability and performance
- Reduce energy consumption
- Manage inventories
- Maintain flow management equipment
- Increase plant availability and output
- Develop and enhance workforce knowledge
- Improve the safety and environmental impact of operations



Manufacturing Innovation

Flowserve SIHI earned the prestigious Technical Innovation of the Year Award as part of the 2016 Pump Industry Awards, in association with the British Pump Manufacturers Association. The award was presented for SIHI Boost, which provides improved performance with less power and a smaller footprint by harvesting kinetic energy of the rotors and hydraulic optimization.

Support for the Nuclear Industry

As an industry supporter, Flowserve participated in the annual meeting of the Nuclear Industry Check Valve Group (NIC) in Raleigh, North Carolina. Associates provided maintenance and engineering training to more than 40 participants at the event.

NIC is a forum of nuclear utility companies that formed 27 years ago to address check valve issues at nuclear power generation plants. Members exchange technical information about the application, testing and maintenance of check valves to help increase reliability and safety in the nuclear industry. The group's mandate is to share experiences – both good and bad – and solutions, and learn from them. NIC membership is limited to utilities, but vendors and consultants, including Flowserve, are invited to take part in the conferences.

*Nuclear Industry
Check Valve Group
gathering attracts
utilities, vendors and
consultants*

Flowserve associates addressed a variety of topics, including check valves and their basic characteristics/maintenance requirements, installation criteria, design features, sealing characteristics, water hammer and surge protection, and nuclear check valve design evolution. They also took attendees on a tour of the Raleigh facility.

Bringing a Famed Fountain to Life

The majestic Alster Fountain in Hamburg, Germany, is sparkling again – with new technology from Flowserve.

Flowserve Hamburg, a long-term supporter of the fountain since its installation in 1987, donated a new, high-efficiency water pump to the fixture. The pump is operated by a modern, permanent-magnet underwater motor. The landmark, funded by sponsors through the Binnenalster Foundation, shoots 60 meters (196 feet) into the air. It serves as a dramatic focal point to the panorama at Binnenalster Lake.

The new motor technology provides energy savings of up to 10% compared to the previous model. The energy-saving motor requires a frequency converter that enables the fountain's height to be adjusted. The height of the water will be contained to prevent passers-by from receiving an unwanted shower in high winds.



Examples of Current Initiatives

As part of our marketplace focus, Flowserve provides solutions to assist various industries in attaining their own sustainability goals. Some examples follow.

Oil & Gas

Methane to Markets: Natural gas transmission systems convey gas under pressure, utilizing compressor station technology, which is subject to losses of gas to the atmosphere at various stages. Flowserve has developed solutions to these problems that incorporate technological improvements for compressor seals, dump valves, rod packing and pneumatic devices. Not only do these solutions make sense from an economic and energy efficiency/conservation standpoint, they also reduce atmospheric emissions of methane, the primary component of natural gas, which has a global warming potential around 20 times that of carbon dioxide.

Industrial, Chemical and Power Generation

Carbon Dioxide Capture: Flowserve is a pioneer in carbon capture and storage (CCS). In 1984, we provided the first centrifugal pumps used for carbon dioxide pipeline and injection service. Since then, Flowserve products have been used on numerous projects to remove carbon dioxide from process streams in gas plants, refineries, and chemical and petrochemical plants. Flowserve is also actively participating in pilot projects to study carbon dioxide capture from industrial flue gas streams. Flowserve was recently chosen to supply process pumps to be used in the carbon dioxide capture process at Mississippi Power's Kemper County Integrated Gasification Combined Cycle (IGCC) power station project.

Renewable Energy

Solar Power: Flowserve pumps are used in concentrated solar power (CSP) designs. In one design, a large number of parabolic mirrors is used to concentrate the sun's energy onto receivers positioned at the focal point of each mirror. In another design, sun-tracking mirrors (called heliostats) are used to focus sunlight on a receiver at the top of a centrally located tower. In both designs, heat transfer fluid is heated and used to create steam, which is then supplied to a turbine to generate electricity. CSP projects in the United States, Spain and Africa incorporate Flowserve pump and fluid-handling technology for movement of molten salt as the heat transfer fluid, at temperatures in excess of 600 degrees Celsius (1,100 degrees Fahrenheit). This includes the Crescent Dunes Solar Energy Project in the United States, the Gemasolar project in Spain and the Ouarzazate Solar Power Station in Morocco.



Wind Power: Flowserve supplies lift pumps (submersible motor pumps), water circulation and treatment pumps for transformer cooling systems for offshore wind turbine applications.

Cellulosic Ethanol: Cellulosic ethanol production is based on extracting sugars from plant materials such as cost-efficient, renewable corn and sugarcane. Flowserve provides all of the products needed for each step of the chemical conversion process through other similar industrial applications. In addition, Flowserve collaborates with Verenum Corporation on a 1.4 million gallon per year demonstration scale facility in Jennings, Louisiana, which is designed to process sugarcane bagasse (waste) into cellulosic ethanol.

Water

Desalination: Flowserve delivers advanced products and services required in the worldwide demand for fresh water. Applications such as desalination — the conversion of salt water to fresh water — and the ability to move large volumes of water from the source to the area where it is needed are both critical to this need. Flowserve has supported the desalination industry with products used in thermal and membrane processes for more than 50 years. Flowserve expanded its products and advanced technologies to the growing global desalination markets through the acquisition of CALDER AG. Through this heritage product, Flowserve now specializes in the design, engineering and supply of energy recovery equipment and related proprietary technologies for the reverse osmosis process used in desalination plants around the world. Energy recovery equipment is critical technology within reverse osmosis that captures and reuses waste energy, which significantly lowers net energy consumption in the desalination process.

Recent desalination projects include:

- Provision of Calder energy recovery technology for a large desalination plant in Singapore
- Provision of Calder Dual Work Exchanger Energy Recovery (DWEER) units for the Sorek desalination plant in Israel, with a capacity of 150 million cubic meters per year, making it the largest of its kind
- Provision of pumping system for the seawater reverse osmosis (SWRO) desalination plant in Carlsbad, California
- Upgrade of the existing desalination plant in Larnaca, Cyprus, to optimize efficiency with improved high-pressure (HP) pumps, DWEER™ energy recovery devices and related state-of-the-art technologies.



Water Supply: Flowserve also provides solutions for water supply systems in other types of demanding conditions. In India, Flowserve recently provided a mechanical sealing solution to a water supply system used to convey water from the source location at the Godavari River, to users as far away as 200 kilometers. The solution was PSS III Split seal with specific design enhancements due to the very large diameter pump shaft and split seal components. A main requirement of this application is to utilize a split seal option so that seal change-outs could be made without disturbing the large pump drive and bearing assemblies, allowing for more efficient, energy-saving operation.

Flowserve Products and Services

Flow Control Division (FCD)

Products: FCD designs, manufactures, distributes and services a broad range of industrial valves and automation solutions, including isolation and control valves, actuation, controls and related equipment. In addition, FCD offers energy-management products such as steam traps, boiler controls and condensate, and energy recovery systems. FCD leverages its experience and application knowledge by offering a complete menu of engineering and project management services to complement its expansive product portfolio.

FCD products are used to control, direct and manage the flow of liquids and gases, and are an integral part of any flow control system. Our valve products are most often customized and engineered to perform specific functions within each customer's unique flow control environment. Our flow control products are primarily used by companies operating in the chemical (including pharmaceutical), power generation (nuclear, fossil and renewable), oil and gas, water management, and general industries, including aerospace, pulp and paper, and mining.

Our valve, automation and controls product and solutions portfolio represents one of the most comprehensive in the flow control industry. The products are used in a variety of applications, from general to the most severe and demanding services, including those involving high levels of corrosion, extreme temperatures and/or pressures, zero fugitive emissions and emergency shutdown.

Our "smart" valve and diagnostic technologies integrate sensors, microprocessor controls and software into high-performance integrated control valves, digital positioners and switchboxes for automated on/off valve assemblies and electric actuators. These technologies permit real-time system analysis, system warnings and remote indication of asset health. These technologies have been developed in response to the growing demand for reduced maintenance, improved process control efficiency and digital communications at the plant level. We are committed to further enhancing the quality of our product portfolio by continuing to upgrade our existing offerings with cutting-edge technologies.

Operations: FCD has 57 sites worldwide, including 39 manufacturing facilities, 15 Quick Response Centers (QRCs), some of which are co-located with manufacturing facilities, and two Research and Development facilities. The QRCs provide rapid response, fast delivery and field repair on a global scale for our customers.

Safety: In 2016, the FCD total recordable accident rate was 0.35, the lost-workday rate was 0.14, and the lost-time severity rate was 2.1. We continue to see improvement compared to previous years and these rates remain well below U.S. valve manufacturing industry rates.

Energy, Emissions and Waste Management: For all divisions, we continue to compile energy usage and emissions information at the facility level to assist with reporting and identifying areas for improvement. Hazardous waste generation for FCD facilities in 2016 was approximately 85 pounds (38.5 kg) per \$1 million (USD) in sales, which meets our corporate goal of 90 pounds (41 kg).



Engineered Product Operations (EPO)

Products: Our largest business segment is EPO, through which we design, manufacture, distribute and service engineered pumps and pump systems, mechanical seals, auxiliary systems, replacement parts and related equipment. The business primarily consists of long lead-time, highly engineered, custom-configured products, which require extensive test requirements and superior project management skills.

EPO products and services are primarily used by companies that operate in the oil and gas, power generation, chemical, water management and general industries. We market our pump and mechanical seal products through our worldwide sales force, regional service and repair centers, or through independent distributors and sales representatives. A portion of our mechanical seal products are sold directly to other original equipment manufacturers for incorporation into rotating equipment requiring mechanical seals.

Our pump products are manufactured in a wide range of metal alloys and with a variety of configurations to meet the critical operating demands of our customers. Mechanical seals are critical to the reliable operation of rotating equipment in that they prevent leakage and emissions of hazardous substances from the rotating equipment, and reduce shaft wear on the equipment caused by the use of non-mechanical seals.

Flowserve Services and Solutions integrates our global service network, engineering knowledge and technologies to offer creative operating and business solutions to:

- Improve equipment reliability and performance
- Reduce energy consumption
- Manage inventories
- Maintain flow management equipment
- Increase plant availability and output
- Develop and enhance workforce knowledge
- Improve the safety and environmental impact of operations

Operations: EPO has 139 facilities worldwide, including 34 manufacturing facilities, 113 QRC facilities, some of which are co-located with manufacturing facilities, and five engineering facilities. EPO has an iron foundry in Desio, Italy. We provide engineered aftermarket services through our global network of QRCs. A large portion of EPO's service work is performed on a quick response basis, and we offer 24-hour service in all of our major markets.



Safety: In 2016, the EPO total recordable accident rate was 0.32, the lost-workday rate was 0.13 and the lost-time severity rate was 2.3. We continue to see improvement compared to previous years, and these rates remain well below U.S. pump manufacturing industry rates.

Energy, Emissions and Waste Management: For all divisions, we continue to compile energy usage and emissions information at the facility level to assist with reporting and identifying areas for improvement. Hazardous waste generation for EPO facilities in 2016 was approximately 29 pounds (13 kg) per \$1 million (USD) in sales, well below our corporate goal of 90 pounds (41 kg).

Industrial Product Division (IPD)

Products: Through IPD, we design, manufacture, distribute and service pre-configured engineered pumps and pump systems, including submersible motors, for industrial markets. Our globalized operating platform, low-cost sourcing and continuous improvement initiatives are essential aspects of this business.

IPD's standardized, general purpose pump products are primarily utilized by the oil and gas, chemical, water management, power generation and general industries. We manufacture approximately 40 different active types of pumps available in a wide range of metal alloys and non-metallics, with a variety of configurations to meet the critical operating demands of our customers.

We market our pump products through our worldwide sales force, regional service and repair centers, or through independent distributors and sales representatives. We provide an array of aftermarket services including product installation and commissioning services, spare parts, repairs, re-rate and upgrade solutions, advanced diagnostics, and maintenance solutions through our global network of QRCs.

Operations: IPD has 48 facilities worldwide, including 42 manufacturing facilities and 13 QRCs, some of which are co-located with manufacturing facilities. IPD has one steel foundry located in Hastings, Nebraska.

Safety: In 2016, the IPD total recordable accident rate was 0.53, the lost-workday rate was 0.15, and the lost-time severity rate was 0.50. We continue to see improvement compared to previous years and these rates remain well below U.S. pump manufacturing industry rates.

Energy, Emissions and Waste Management: For all divisions, we continue to compile energy usage and emissions information at the facility level to assist with reporting and identifying areas for improvement. Hazardous waste generation for IPD facilities in 2016 was approximately 32 pounds (14.5 kg) per \$1 million (USD) in sales, well below our corporate goal of 90 pounds (41 kg).



Scope and Boundaries

The following sections provide information regarding safety and environmental performance based on Global Reporting Initiative (GRI) indicator protocols and focusing on those aspects that are most relevant to FCD, EPO and IPD operations.

Flowserve has adopted this framework for this report, including the use of GRI guidelines and indicator protocols presented in the following sections. Data was collected from various facilities based on records from January 1, 2016, through September 30, 2016. The partial data for 2016 was extrapolated as needed to represent the entire calendar year.

In general, the information presented herein reflects the activities conducted by the FCD, EPO and IPD manufacturing and service facilities, and foundries in the course of their operations within, but not outside, the physical facility limits. The activities conducted by suppliers and outside contractors are not within the scope of the data collection program. Also, sales and administrative offices external to the manufacturing and service facilities are not included.

In some cases, operations for multiple Flowserve product divisions are conducted within individual facilities. The labor and environmental indicator data used in this report is for the entire facility, without any distinction between divisional operations.

Countries

Flowserve facilities included within the reported indicator data are located in these countries: Argentina, Australia, Austria, Belgium, Brazil, Bolivia, Canada, Chile, China, Colombia, Czech Republic, Finland, France, Germany, Hungary, India, Indonesia, Italy, Japan, Madagascar, Malaysia, Mexico, Netherlands, New Zealand, Norway, Peru, Philippines, Russia, Saudi Arabia, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, United Kingdom, United States of America, Venezuela and Vietnam.

Number and Type of Facilities

The current total number of Flowserve facilities is 245 (including 243 manufacturing and service facilities and two main corporate offices). In general, all 245 facilities are included within the reported indicator data. In some cases, the reported indicator data is based on a sample of facilities. This report also includes data for heritage SIHI facilities following the 2015 acquisition.

Workplace

Workplace data collection and reporting in 2016 focused on three key aspects (employment, safety and training) and the associated GRI indicators, as outlined in the tables and text below. Our workplace safety performance data and training information represents the entire organization.

Employment

GRI Indicator LA1 (G4-10)

At the end of 2016, the total number of employees was more than 17,775 (based on 245 facilities in four geographic regions), working primarily on a full-time, permanent contract basis. Approximately 30 percent of that total were covered by a collective bargaining agreement.

Flowsolve Facilities and Employees by Region – 2016		
Region	Number of Facilities	Number of Employees (end of 2016)
Asia/Pacific	49	3,478
Europe/Middle East/Africa	87	7,029
North America	80	5,363
Latin America	29	1,905
Total	245	17,775

Note: Employee data shown in the above table includes manufacturing/service facilities (243 total) and two corporate offices.

Compilation of quantitative information regarding employment types (full time or part time), contract types (permanent or temporary), and supervised workers was initiated for previous data collection and continues using a sample of facilities. The information is being used to assist in developing plans for future reporting.

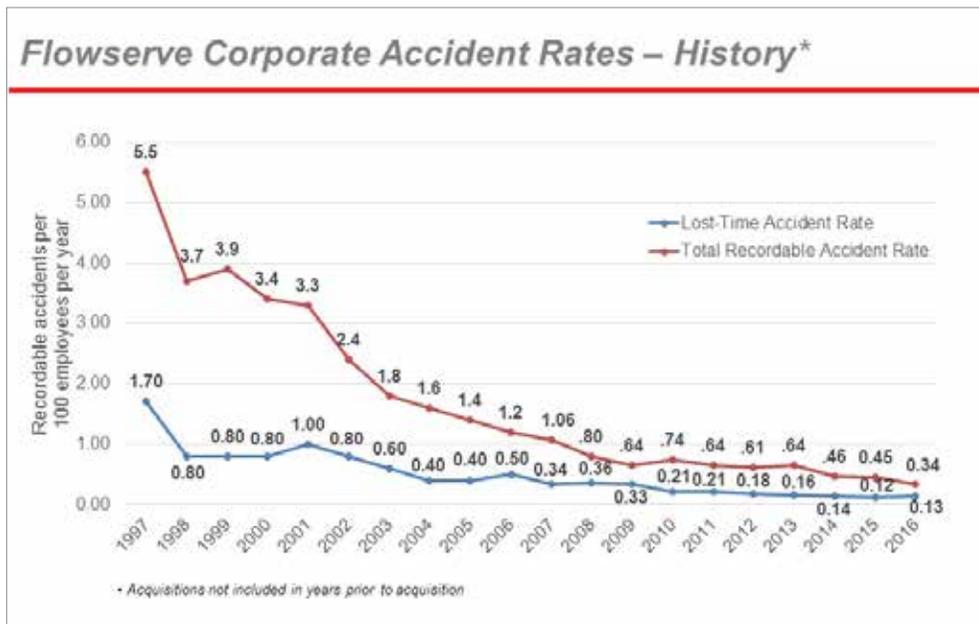
Safety

GRI Indicator LA7 (G4-LA6)

Employee safety has always been a key focus for Flowserve. In 2016, the total recordable accident frequency rate was 0.34, the lost-workday frequency rate was 0.13, and the lost-workday severity rate was 2.0 for continuing operations. (See chart below.) These values are normalized for every 200,000 hours worked, based on U.S. Occupational Safety and Health Administration (OSHA) reporting requirements and those used in other countries. (The system used for compiling the safety data is based on OSHA recordkeeping requirements, for both U.S. and international facilities. Lost workdays are determined based on scheduled workdays beginning the day following an accident.) There were no fatalities at any Flowserve facilities in 2016. Information regarding overall absentee rates is not available. The overall rates shown below include accidents and occupational diseases.

Flowserve Facilities Accident Rates – 2016				
Region	Total Lost-Workday Accident Rate (Lost-Time Frequency Rate)	Lost-Time Severity Rate	Doctor Case Frequency Rate	Total Recordable Accident Frequency Rate
U.S.	0.14	3.2	0.4	0.57
International	0.16	1.9	0.2	0.32
Sales/Mkt/Admin	0.03	0.4	0.0	0.03
Overall	0.13	2.0	0.2	0.34

For comparison purposes, the average Total Lost-Workday Accident Rate (Lost-Time Frequency Rate) for U.S. manufacturers of pump and valve products is 2.8, and the average Total Recordable Accident Rate is 5.1 (from 2015 U.S. Bureau of Labor Statistics data). The 2016 rates for Flowserve facilities are well below these industry averages, as has been the case for many years. Our safety record is a reflection of the commitment of our employees and the diligence of Flowserve safety programs and professional staff, and is exemplified by the historical decrease in lost workday and total recordable accidents. (See chart.)



Employee safety has always been a key focus for Flowserve.

Lost-Time Accident Rate: Number of accidents resulting in a day or more away from work per 100 employees per year

Total Recordable Accident Rate: Number of accidents more serious than minor first aid events per 100 employees per year (includes lost-time accidents)

* Acquisitions not included in years prior to acquisition

Training

GRI Indicator LA10 (G4-LA9)

Employee training is routinely conducted to provide initial and continuing instruction related to technical, professional, quality, sales, administration, safety/health/environment and other topics, specific to employees’ needs. This is tracked for various employee categories (management, professional, manufacturing, service/repair, application engineers, sales and office). A sample of approximately 50 global facilities indicates approximately 25 hours of formal training per employee per year in 2016. The actual value is higher when taking into account other types of on-the-job training.

For example, Flowserve employees participate in an estimated average of 10 hours of formal safety training per year. Additional training takes place informally and frequently on the shop floor during safety Toolbox Talk sessions and “all hands” safety meetings (between four and eight sessions per month) for a total of 22 safety training hours per year. The catalog of employee training modules includes a broad list of topics as shown below.

Flowserve PureSafety Training Suite Content	
(English, Spanish, French, Portuguese, Italian, Mandarin, Dutch, German and Japanese)	
Access to Medical and Exposure Records	Office Safety
Asbestos Awareness	Personal Protective Equipment (PPE) Part One — Introduction
Basic Rigging Part 1	PPE Part Two – Head Protection
Basic Rigging Part 2	PPE Part Three – Eye and Face Protection
Bloodborne Pathogens	PPE Part Four – Hand and Arm Protection
Environmental Overview	PPE Part Five – Body Protection
Fire Extinguisher Safety	PPE Part Six – Foot Protection
Flammable and Combustible Liquids	PPE Part Seven – Hearing Conservation
Hand, Wrist and Finger Safety	PPE Part Eight – Respiratory Protection
Hand, Wrist and Finger Safety Around Heavy Equipment	PPE Part Nine – Electric Protective Devices
Hazard Communication	PPE Part Ten – Levels of Protection and Protective Gear
Housekeeping on the Job	Preventing Back Injury
Industrial Ergonomics	Preventing Slips, Trips and Falls
Lockout/Tagout	Recognizing Electrical Hazards
Machine Guarding	Returned Goods Safety
Materials Handling	Safety Orientation
Office Ergonomics	Stormwater Pollution Prevention

Local SHEA coordinators and managers also participate in advanced SHEA trainings, including an overview of the SHEA Policy and Procedures manual, workplace safety and health expectations, accident reporting, accident goals and performance, environmental management and reporting, audits, safety committees, associate training and self-inspections, and an internal certification and recertification program. A total of 715 Flowserve associates have completed Manager or Coordinator-level certification training.

The Flowserve SHEA Certification Program is designed to provide both fundamental and advanced training in SHEA principles, as well as knowledge of the Flowserve system for implementing these principles on a global basis. The program has two certification levels.

Level I is designed for individuals who function as site SHEA Coordinators. These individuals have more than one area of responsibility and often perform multiple functions at small-to-mid-size sites within Flowserve. The two-day Level I course is intended to provide these individuals with the basic principles of human safety management, accident prevention, electrical/chemical/mechanical safety and environmental protection, as well as how Flowserve applies these principles to achieve world-class SHEA performance. At the conclusion of the program, the attendee will understand and be able to apply these principles at their assigned location.

The Level II certification is designed for those individuals from larger facilities whose primary role is site SHEA Manager. Level II certified associates will attend the Level I program and take the exam, plus a third day of more intensive training and application of SHEA management principles. This program has been very successful with a positive impact on overall safety performance.

The Flowserve SHEA Recertification Program was developed to enable local SHEA coordinators and managers to maintain high levels of SHEA competence. In addition to classroom training, participants have the opportunity to interact with peers, which enhances their knowledge base. Through 2016, a total of 316 associates have been recertified.

Environmental

Environmental data collection and reporting for Flowserve facilities in 2016 focused on six key aspects (energy usage, water consumption, climate change, air emissions, water emissions, and waste disposal and recycling) and the associated GRI indicators, as outlined below.

Energy Sources

Energy sources used by Flowserve facilities include direct sources (e.g., combustible fuels) and indirect sources (e.g., purchased electricity). Natural gas represents the main source of direct energy, with some facilities also reporting the use of other fuels including heating oil, fuel oil, kerosene, diesel, gasoline, propane, LPG and acetylene. Indirect energy sources for each facility include purchased electricity, generated in part from renewable sources. At some facilities, indirect energy (e.g., heated water and electricity) is also provided via combined heat and power plants and district heating systems.

Examples of Flowserve facilities that use combined heat and power (CHP) and/or renewable energy sources include:

- Brunn, Austria — 100 percent of its heating and electrical consumption is from renewable sources, including hydroelectric power and a local CHP plant that uses biomass material only
- Coimbatore, India — Solar power systems are used at the site for lighting and water heating
- Desio, Italy — Approximately 30 percent of the electrical power provided to the facility is generated from renewable sources
- Essen, Germany — Electricity and heat is provided from a local CHP plant
- Haywards Heath, UK — Energy is provided from a solar power system using roof panels
- Linköping, Sweden — District heating and electricity from a local CHP plant, which uses renewable biomass material and municipal waste, provides most of the energy used at the facility
- Villach, Austria — District heating is provided from a local plant that uses biomass and waste heat

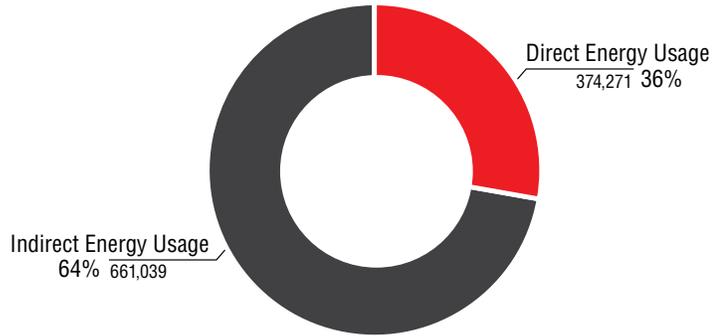
Energy Usage

GRI Indicators EN3 and EN4 (G4-EN3)

Total energy usage in 2016 for Flowserve manufacturing facilities is approximately 1.2 million Gigajoules. Direct energy sources account for approximately 36 percent of the total amount of energy used, while indirect energy sources account for 64 percent.

Energy usage for 2016 is shown in the following table.

**Estimated Energy Usage (Gigajoules)
Flowserve Facilities - 2016**



Energy Usage Summary

Flowserve Manufacturing Facilities Energy Usage – 2016			
	Direct Energy (Gigajoules)	Indirect Energy (Gigajoules)	Total Energy (Gigajoules)
EPO	171,110	325,324	496,434
IPD	79,277	126,786	206,063
FCD	123,884	208,929	332,813
Total	374,271	661,039	1,035,310

The estimated overall energy usage for 2016 is lower than the amounts for 2014 and 2015, although the 2016 dataset includes a larger number of facilities. The estimated normalized energy use for 2016 is 255 Gigajoules per million USD in sales, which is a decrease from the previous reporting period.

Energy Conservation

GRI Indicator EN5 (G4-EN6)

Flowserve facility personnel have undertaken efforts to identify energy conservation opportunities at individual facilities. These efforts have resulted in reductions in energy usage at multiple facilities, which is reflected in the reported energy usage described above.

See also the Facilities Sustainability Initiatives section of this report for more information regarding energy conservation measures being implemented at individual Flowserve facilities.

Flowserve facility personnel have undertaken efforts to identify energy conservation opportunities at individual facilities.

Water Consumption and Recycling

GRI Indicators EN8 and EN10 (G4-EN8, G4-EN10)

Water sources at Flowserve facilities are almost exclusively provided from municipal supply sources. Typical water uses include potable supply, cleaning and limited process operations. In some facilities, water is also used for cooling purposes. Additionally, water is recycled or reused as much as possible. Many Flowserve facilities utilize closed systems for recycling water needed for pump testing operations.

The estimated total water usage for 2016 is approximately 726,000 cubic meters (approximately 192 million U.S. gallons). The 2016 water consumption is greater than the previous two years; however, this is related to the increase in the number of facilities included in the scope of the 2016 data collection program.

Flowserve Manufacturing Facilities Water Usage – 2016		
	2016 Water Usage (Cubic meters)	2016 Water Usage (Cubic gallons)
EPO	369,609	97,640,339
IPD	131,492	37,736,451
FCD	224,941	59,423,215
Total	726,042	191,800,005

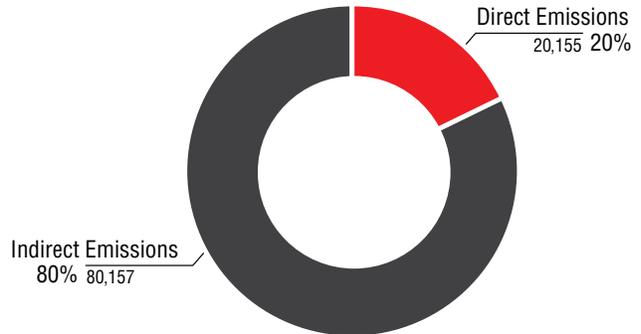
Climate Change

GRI Indicator EN16 (G4-EN-15, G4-EN16)

The estimated total equivalent carbon dioxide direct and indirect emissions based on energy usage in 2016 for Flowserve manufacturing operations is approximately 100,000 metric tons (“tonnes”). Only 20 percent of this amount is attributed to direct emissions.

Calculations were performed using Greenhouse Gas (GHG) Protocol methods. Emissions related to direct energy usage were calculated using standard factors based on the type of fuel. Emissions related to indirect energy usage were calculated based on regional and country specific emission factors for power utilities.

**Estimated GHG Emissions (Tonnes CO2e)
Flowserve Facilities - 2016**



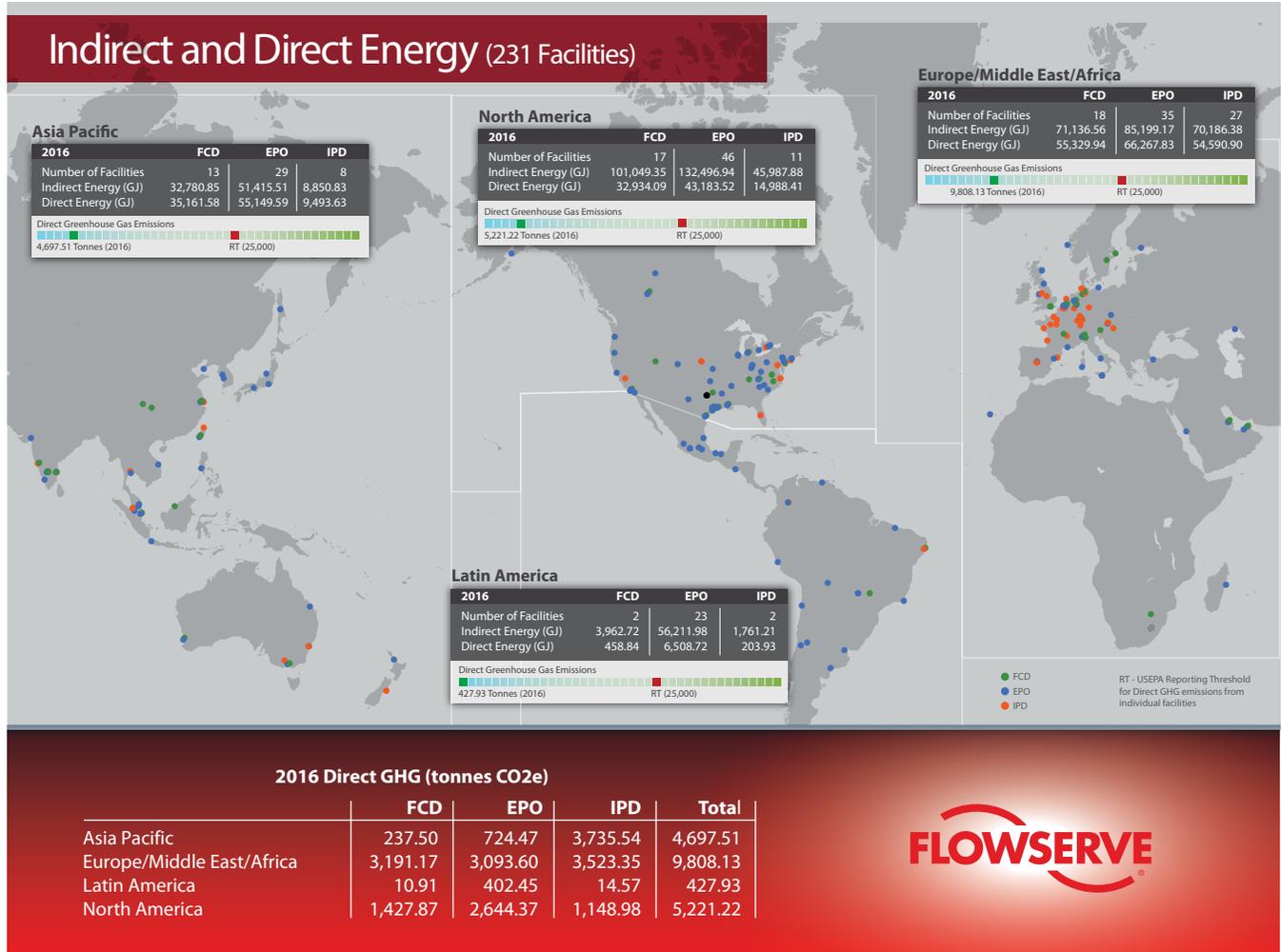
Estimated greenhouse gas emissions based on energy usage for 2016 are shown in the table below.

Greenhouse Gas Emissions Summary

Flowserve Manufacturing Facilities GHG Emissions – 2016			
	Direct Emissions (Tonnes CO2e)	Indirect Emissions (Tonnes CO2e)	Total Emissions (Tonnes CO2e)
EPO	6,865	34,900	41,765
IPD	8,422	16,256	24,679
FCD	4,867	29,001	33,869
Total	20,155	80,157	100,312

The estimated overall GHG emissions for 2016 are lower than the amounts for 2014 and 2015, although the 2016 dataset includes a larger number of facilities. The estimated normalized emission amount for 2016 is 24.7 tonnes carbon dioxide equivalent per million USD in sales, which is a decrease from the previous reporting period.

Also, the estimated direct greenhouse gas emissions (associated with on-site fuel combustion) for individual Flowserve facilities are all well below the U.S. EPA reporting threshold of 25,000 tonnes carbon dioxide equivalent. Moreover, the estimated total direct greenhouse gas emissions for Flowserve facilities worldwide for 2016 are below the 25,000 tonne threshold.



Air Emissions

GRI Indicators EN19 and EN20 (G4-EN20, G4-EN21)

Air emissions at Flowserve manufacturing facilities are associated with process activities and routine building operations. Air emissions are monitored in accordance with facility-specific permits as applicable for compliance purposes. Flowserve conducts annual reviews for all facilities to determine compliance with regulatory requirements, permits and authorizations. Ozone depleting substances (i.e., CFCs, HCFCs, halons and methyl bromide) are not used in any Flowserve facility process operations. The volatile organic compound (VOC) air emissions for our facilities ranged from less than 0.1 to approximately 3 tonnes in 2016, and other types of air emissions included small amounts of pollutants, nitrous oxides, sulfur oxides and particulate matter, which are reported for facilities where data is available.

Water Emissions

GRI Indicator EN21 (G4-EN22)

Water emissions from process operations at Flowserve facilities are discharged to municipal sewer systems in accordance with local authorizations. Prior to discharge, wastewater is pretreated, if necessary, and monitored as required to meet municipal requirements. Flowserve conducts annual reviews for all facilities to determine compliance with regulatory requirements, permits and authorizations.



Waste Disposal and Recycling

GRI Indicator EN22 (G4-EN23)

The wastes that are generated at Flowserve manufacturing facilities include both hazardous and nonhazardous wastes, all of which are managed and disposed of in accordance with applicable regulatory requirements and Flowserve Policy and Procedures. Examples of hazardous wastes generated in 2016 include flammable liquids, paint waste, parts washer solvents, other waste liquids and batteries.

The estimated total amount of hazardous waste generated for FCD, EPO and IPD facilities in 2016 is approximately 47.1 tonnes (based on U.S. waste definitions), which was removed for off-site treatment and disposal, or re-use. Many facilities generated no hazardous waste.

The normalized amount of hazardous waste generated in 2016 is 35 pounds per million dollars in sales. This is well below the corporate goal of 90 pounds/million (USD). Flowserve has reduced global hazardous waste creation and disposal by more than 70 percent since 1988.

Examples of nonhazardous wastes include cutting fluids, coolants, lubricating oils and absorbent materials; general solid waste; abrasive blast cleaning media; containers/drums; packaging materials and wood pallets; and other recyclable material (scrap metal, paper, cardboard). Flowserve has reduced waste machining coolant disposal by 70 percent since 1988, and, at most locations, partners with a vendor who recycles the waste coolant into a reusable product. In addition, we have reduced our solid waste disposal quantities by over 50 percent since 1988.

The estimated amount of nonhazardous waste generated at Flowserve facilities in 2016 is approximately 22,700 tonnes (from 2016 metrics, which use 2015 full year data), much of which was sent for recycling or other beneficial use. Variability between waste quantities among individual facilities has been noted and appears to be related to inclusion of operational waste and event waste within the overall quantities, subject to review of additional data when available.



Summary of Safety and Environmental Indicator Data for EPO, IPD, FCD

Indicator	Description	Amount (2016)
Sales	Sales Revenue	3.99 MM (USD)
LA1 (G4-10)	Total workforce by employment type, employment contract and region	
	Total number of employees by region (see LA1 for breakdown)	17,775
LA7 (G4-LA6)	Rates of injury, occupational diseases, lost days and absenteeism, and number of work-related fatalities by region	
	Injury rate (total recordable incidence rate)	0.34
	Lost day rate	0.13
	Lost time severity rate	2.0
	Number of fatalities	0
	Reporting system	U.S. OSHA
LA10 (G4-LA10)	Average hours of training per year per employee by employee category	25 hours
EN3 (G4-EN3)	Direct energy consumption by primary energy source	
	Total direct energy consumption	374,271 Gigajoules
EN4 (G4-EN3)	Indirect energy consumption by primary source	
	Total indirect energy consumption	661,039 Gigajoules
EN8 (G4-EN8)	Total water withdrawal by source	
	Total volume of water withdrawn (all from municipal supply)	726,042 cubic meters
EN16 (G4-EN15)	Direct greenhouse gas (GHG) emissions (Scope 1) – carbon dioxide equivalent	20,155 tonnes
EN16 (G4-EN16)	Energy indirect greenhouse gas (GHG) emissions (Scope 2) – carbon dioxide equivalent	80,157 tonnes
EN20 (G4-EN21)	NOx, SOx and other significant air emissions by type and weight (based on total amounts for reporting facilities)	
	NOx	<1 tonne
	SOx	<0.1 tonne
	VOCs	<20 tonnes
	Particulate matter	<10 tonnes
	HAPs	<3 tonnes
EN22 (G4-EN23)	Total weight of waste by type and disposal method	
	Total weight of hazardous and nonhazardous waste	24,100 tonnes
	Total weight of hazardous waste (per U.S. waste definitions)	47.1 tonnes

Community, Employee Volunteerism and Giving

Around the world, Flowserve is committed to being a responsible corporate citizen and supporting the communities where our associates and customers live. We encourage associate volunteerism and participation in charitable initiatives, even offering a Volunteer Time Off program where associates can use approved time off to volunteer in their communities.

Among other charitable causes, Flowserve employee volunteer hours and financial contributions help students stay in school, foster lifelong learning through the use of technology, provide scholarships and support at-risk youth so they can grow up to live happy, successful lives. Following are just a few examples.

Commitment to Continuing Education

Flowserve Roosendaal, Netherlands, graduated four candidates from its Company School – a two-year program that provides young people with education and training in conventional machining. The Company School began in 2012 and is led by former associates who teach knowledge and skills amassed in four decades of employment at Roosendaal.



In Desio, Italy, Flowserve partners with technical schools to offer Desio Flowserve Academy to local students. The academy provides theory, practical training and plant tours to enhance students' knowledge of lean manufacturing, safety, technical drawing and other skills. Besides educating young people, this corporate/social responsibility endeavor paves the way for a positive relationship between the local community and Flowserve.



Sixteen engineering students graduated after successfully completing Flowserve Engineering College, sponsored by the company's Mendoza, Argentina, plant. The college is a partnership with local colleges and universities to provide technical training, leadership and innovation coaching.



For more than a decade, Research & Development (R&D) engineers from the Bethlehem, Pennsylvania, facility have sponsored learning opportunities through the Penn State Learning Factory. The industry-sponsored program enables engineering students to gain hands-on experience by working on client-based design projects.



Community Support

From putting a smile on the face of an underprivileged child to providing a meal to someone who is hungry, associates at Flowserve Coslada, Spain, are committed to giving back to their community. Employees regularly sponsor a variety of activities to benefit Sonrisa Digna (Dignified Smile), a Non-Governmental Organization (NGO). Sonrisa Digna provides food, clothing, baby products and furnishings to low-income residents of the Spanish villages of Coslada and San Fernando.

Flowserve is committed to being a responsible corporate citizen and supporting the communities where our associates and customers live and work.

Flowserve associates in Bethlehem, Pennsylvania, have organized a Special Events Group to coordinate events and innovative fundraisers to help others throughout the year. Beneficiaries of their efforts include the Second Harvest Food Bank of the Lehigh Valley and the VIA, a non-profit agency that services children and adults with disabilities. Other activities included volunteering at a local elementary school, where associates talked to students about the field of engineering.



Associates from Flowserve's World Headquarters and Global Technology and Training Center in Irving, Texas, laced up their running shoes and donned specially-designed Flowserve T-shirts to participate in the 2016 Komen Race for the Cure. The event took place in October, which is Breast Cancer Awareness Month. Flowserve's team included 60 employees and 76 friends and family members. The company donated money for each team participant as a way to support the cause.



The Pasadena, Texas, Campus Quick Response Centers (QRCs) partnered with the Pasadena Volunteer Fire Department in its Toys for Tots program, brightening the holiday season for many deserving families.

Associates at the company's Scranton and Moosic, Pennsylvania, facilities collected food items for the Feed-a-Friend program that provides meals to families in need. Approximately 40 associates helped fill a 55-gallon barrel and two large cardboard boxes with food items for their local communities.



In Taneytown, Maryland, an employee blood drive collected 22 pints of blood for the Red Cross. In another charitable endeavor, a spirit of friendly competition with another local manufacturing plant helped drive food donations for a local food pantry. Taneytown collected 9,845 food items and the other company's employees collected 2,700 pounds of food to benefit local families in need.

The annual Safety Poster Contest also continued in 2016 at Taneytown, promoting safety associated with outdoor summer activities for children and grandchildren of Flowserve associates.

Flowserve has partnered with Texas A&M University's globally recognized undergraduate research organization, the Talent Incubator Program (TIP). TIP enables a rigorously selected group of students to interview for internships by sponsored companies. The organization enables participants to gain not just theoretical knowledge in the classroom, but real application-oriented experience through participation in research projects with topics ranging from Best Practices in Equipment Management to Internet Sales Channel Strategies.



The Flowserve, Santa Clara, Mexico, site was recognized by the Mexican Social Prevision and Labor Secretariat as a “Family-Responsible Company.” This award recognizes a company’s efforts to offer its employees compatibility between job and family. The recognition promotes best labor practices that benefit working people, including family balance, gender-equal opportunities, and the prevention of workplace violence and sexual harassment. The award was presented during an official ceremony presided by Federal Government Mexican Authorities.



In Hamburg, Germany, 30 Flowserve associates and family members laced up their sneakers and participated in the HSH Nordbank Run. The event raises money to help underprivileged children gain the benefits of joining sports clubs. Flowserve associates and family members ran with 23,100 other participants, who in total, raised €155,000 for the cause.

In Desio, Italy, Flowserve associates were recognized by the European Network for Workplace Health Promotion ((ENWHP). The organization, which identifies good health promotion in European workplaces, acknowledged the Desio site for its commitment to promoting healthy living and well-being of facility personnel.



Diversity and Inclusion



As a multinational company, Flowserve benefits from having an organically diverse employee base and a dynamic work environment. But it's not enough to just acknowledge the natural diversity of our workforce, which represents more than 55 countries. Flowserve also values and leverages the different styles, heritages and backgrounds of our associates by tapping into their unique perspectives to solve business challenges, share knowledge and foster greater innovation. Diversity and inclusion is and will remain a key business strategy.

Diversity and inclusion initiatives take place at facilities globally. In addition, several diversity and inclusion events were held throughout the year at Flowserve's World Headquarters: The first Women's Employee Resource Group (ERG) meeting, the Emerging Leaders ERG sponsorship of a Professional Photo Day, and the Veteran's ERG Fitness Day, Memorial Day and Veteran's Day events.

World Headquarters concluded the year with a four-day event hosted by the Irving, Texas, Local Inclusion Council. Family Day – one of the more unique events during the special week – focused on "including" and recognizing family members and significant others whose support and sacrifices enable associates to contribute to the company's success. The event encouraged employees to bring family members to the office for a workday of fun, food and activities, and a chance to learn about some of the work of Flowserve employees.



Awards

Safety

Flowserve has a long history of U.S. and international recognition for safety and environmental accomplishments. Most notably, each year since 1991, Flowserve has participated in the U.S.-based National Safety Council (NSC) award and recognition program. The award program recognizes participating member companies for key safety performance milestones.

For 2016, Flowserve safety management successes were recognized by NSC, which awarded 185 facilities with recognition accolades for outstanding safety performance during the 2015 year. The 2016 recognition brings the total number of NSC awards to more than 1,500 since 1991.

Flowserve merited industry leader distinction from the NSC in 2016, with Moosic, Pennsylvania, earning the Industry leader Award, which recognizes safety performance in the top 5 percent of all NSC member award recipients. All locations that earn the Industry Leader Award are considered among the safest workplaces in the world. This is the 24th time Flowserve has earned this distinction.

Flowserve also received the following honors:

- 17 sites earned the Million-Hour Award for more than 1 million work hours without a lost-time accident
- 4 sites received the Milestone Award for various periods of time without a lost-time accident. This included a facility that has now worked over 20 years without a lost-time accident
- 84 sites received the Perfect Record Award for an entire year without a lost-time accident
- 79 sites earned the Occupational Excellence Achievement Award for a total lost-workday accident rate less than 50 percent in their peer groups

In 2016, Flowserve received 185 National Safety Council Awards, including one Industry Leader Award.

Safety Performance

Flowserve Earns 185 National Safety Council Awards for 2015-2016 Performance

2015 Industry Leader Award

(Top 5% of all NSC member award recipients and one of the safest workplaces in the world)

- **EPO – Moosic, Pennsylvania**

Million Hour Awards

(Greater than 1 million work hours without a Lost-Time Accident)

- | | |
|---|--|
| ▪ EPD – Etten-Leur, Netherlands (5 million) | ▪ FCO – Hubli, India (1 million) |
| ▪ FCO – MMNagar, Tamil Nadu, India (3 million) | ▪ EPD – Kashiwazaki, Japan (1 million) |
| ▪ FCO – Bangalore, India (2 million) | ▪ EPD – Lawrence, Massachusetts (1 million) |
| ▪ AMSS – Bethlehem, Pennsylvania (2 million) | ▪ EPD – Mendoza, Argentina (1 million) |
| ▪ AMSS – Chennai, India (2 million) | ▪ FCO – Raleigh, North Carolina (1 million) |
| ▪ AMSS – Kalamazoo, Michigan (2 million) | ▪ AMSS – Sao Caetano, Brazil (1 million) |
| ▪ FCO – Springville, Utah (2 million) | ▪ AMSS – Tlaxcala, Mexico (1 million) |
| ▪ EPD – Suzhou, China (2 million) | ▪ FCO – Suzhou, China (1 million) |
| ▪ AMSS – Changl, Singapore (1 million) | |

2015-2016 National Safety Council Awards

2016 Industry Leader Award

(Top 5% of all NSC member award recipients and one of the safest workplaces in the world)

Services & Solutions Operations: Moosic, Pennsylvania

Million Hour Award

(Greater than 1 million work hours without a lost-time accident)

Engineered Pump Operations: Etten-Leur, Netherlands (5 million) Lawrence, Massachusetts (1 million)
Suzhou, China (2 million) Mendoza, Argentina (1 million)
Kashiwazaki, Japan (1 million)

Flow Control Operations: Tamil Nadu, India (3 million) Hubli, India (1 million)
Bangalore, India (2 million) Raleigh, North Carolina (1 million)
Springville, Utah (2 million) Suzhou, China (1 million)

AMSS Seal Operations: Chennai, India (2 million) Sao Caetano, Brazil (1 million)
Kalamazoo, Michigan (2 million) Tlaxcala, Mexico (1 million)
Changi, Singapore (1 million)

AMSS Services & Solutions Operations: Bethlehem, Pennsylvania (2 million)

Perfect Record Awards

(Completion of an entire year without a lost-time accident)

CORP: Irving, Texas – Learning Resource Center

Engineered Pump Operations: Brantford, Ontario, Canada Hengelo, Netherlands
Campo Grande, Brazil Kashiwazaki, Japan
Caserta, Italy Kawasaki, Japan
Coimbatore, India Lawrence, Massachusetts
Coslada, Spain Santa Clara, Mexico
Etten-Leur, Netherlands Suzhou, China

Flow Control Operations: Ahaus, Germany Pasadena, Texas
Bangalore, India Raleigh, North Carolina
Burgess Hill, Consort, England Sao Caetano, Brazil
Cookeville, Tennessee Springville, Utah
Cormano, Italy Suzhou, Baiyu, China
Dammam, Saudi Arabia Suzhou, Fangzhou, China
Haywards Heath, England Suzhou, China
Hubli, India Tamil Nadu, India
Jebel Ali, U.A.E. Tuas, Singapore
Johannesburg, South Africa Veerasandra, India
Linkoping, Sweden Villach, Austria
Lynchburg, Virginia

Industrial Pump Operations: Arganda, Spain Hubli, India
Chonburi Thailand Newark, England
Guelph, Ontario, Canada Shanghai, China
Hamburg, Germany Taneytown, Maryland
Hastings, Nebraska

AMSS Seal Operations:	Baton Rouge, Louisiana Bridgeport, New Jersey Buenos Aires, Argentina Changi, Singapore Chennai, India Chennai, Sanmar, India Damman, Saudi Arabia Dubai, U.A.E. Kalamazoo, Michigan Olomouc, Czech Republic	Pasadena, Texas Port Arthur, Texas Roosendaal, Netherlands Santiago, Chile Seoul, Korea Shanghai, China Tarragona, Spain Temecula, California Tulsa, Oklahoma Woodridge, Illinois
AMSS Services & Solutions Operations:	Abu-Dhabi, U.A.E. Al-Khobar, Saudi Arabia Bangalore, India – Engineering Center Barcelona, Venezuela Bethlehem, Pennsylvania Bridgeville, Pennsylvania Coacalco, Mexico Deer Park, Texas Gohren, Germany Houston, Texas	Jakarta, Indonesia Kaohsiung, Taiwan Leduc, Alberta, Canada Moosic, Pennsylvania Newcastle, England Rancho Dominguez, California Rayong, Thailand Scranton, Pennsylvania Tuas, Singapore
Occupational Excellence Achievement Awards <i>(Completion of an entire year without a lost-time accident)</i>		
CORP:	Irving, Texas – Learning Resource Center	
Engineered Pump Operations:	Brantford, Ontario, Canada Charlotte, North Carolina Lawrence, Massachusetts	Memphis, Tennessee Santa Clara, Mexico
Flow Control Operations:	Baton Rouge, Louisiana Boothwyn, Pennsylvania Cookeville, Tennessee Corpus Christi, Texas Edmonton, Alberta, Canada Houston, Texas – Valbart Houston, Texas – Limitorque Houston, Texas – PMV	Kingsport, Tennessee Louisville, Kentucky Lynchburg, Virginia Pasadena, Texas Port Arthur, Texas Portage, Indiana Raleigh, North Carolina Springville, Utah
Industrial Pump Operations:	Addison, Illinois Chesapeake, Virginia – Scienco Fresno, California Guelph, Ontario, Canada Hastings, Nebraska	Lakeland, Florida Pasadena, Texas Plainview, Texas Taneytown, Maryland

Seal Operations:	Angleton, Texas Ashland, Kentucky Baton Rouge, Louisiana Benicia, California Bridgeport, New Jersey Broomfield, Colorado Cincinnati, Ohio Coatzacoalcos, Mexico Corpus Christi, Texas Dayton, Ohio Foundry Dayton, Ohio-Titanium Casting Operations Edmonton, Alberta, Canada El Dorado, Arkansas Florence, South Carolina	Ft. McMurray, Alberta, Canada Guadalajara, Mexico Homer, Alaska Kalamazoo, Michigan Midland, Michigan Pasadena, Texas Port Arthur, Texas Rancho Dominguez, California Scarborough, Ontario, Canada Tampico, Mexico Temecula, California Tlaxcala, Mexico Tulsa, Oklahoma Woodridge, Illinois
Services & Solutions Operations:	Beaumont, Texas Bethlehem, Pennsylvania Bethlehem, Pennsylvania Field Services Bridgeville, Pennsylvania Coacalco, Mexico Corpus Christi, Texas Dayton, Ohio – Global Tech Center Deer Park, Texas Greer, South Carolina Houston, Texas – FEDD	Houston, Texas Kingsport, Tennessee Leduc, Alberta, Canada Moosic, Pennsylvania Rancho Dominguez, California Sarnia, Ontario, Canada Scranton, Pennsylvania Vancouver, Washington Villahermosa, Mexico Woodbridge, Ontario, Canada
Milestone Awards		
<i>(Completion of at least 30 consecutive days without a lost-time accident)</i>		
	Ahaus, Germany (1000 days) Campo Grande, Brazil (5 years)	Martigues, France (20 years) Sao Caetano, Brazil (10 years)

Other Notable Awards

- Arnage, France, earned the Manual of Improvement of Safety Enterprises (MASE) certification. MASE is a French standard developed to measure safety and environmental systems in business facilities.
- Suzhou manufacturing facility in the People's Republic of China received the Government Safety Award. The award recognizes companies with excellent safety performance and no incidents.
- Desio, Italy, was recognized by the European Network for Workplace Health Promotion (ENWHP) for their efforts and commitment to promoting healthy living and well-being of facility personnel.
- Kashiwazaki, Japan, received the Japan ECO-21 certification for improved environmental practices and overall sustainability program excellence.
- Tlaxcala, Mexico, earned "Igualdad Laboral entre hombres y mujeres," a state certification award for labor equality between men and women. Award recipients are best-in-class for ensuring equal opportunities and equal conditions for training and development for all employees in a company.
- Teurneuzen, Netherlands, received the Esteemed Contractor Safety Award from Dow Chemical Company for 2015 performance.
- In the Newsweek Sustainability Ranking, Flowserve placed 131st on the U.S. list (an improvement of 215 places) and 14th in the Industrials Sector, Capital Goods Industry Group (an improvement of 17 places).

- Flowserve was named the 2016 Manufacturing Sector Sustainability Leadership Award winner by the Business Intelligence Group. This organization honors those companies, groups and individuals who have made sustainability an integral part of their business practices.
- Flowserve was awarded Silver recognition level from EcoVadis, a leading provider of sustainability assessments.

Facility Achievements

In addition to the achievements listed, Flowserve facilities have been recognized locally for their safety and environmental accomplishments, including the following examples:

Brunn, Austria

Flowserve Brunn has completed certification for quality, environmental and safety management under ISO 14001:2015 and recertification to OSHAS 18001, as well as EMAS Eco-Management.

Essen, Germany

Flowserve Essen has received ECOPROFIT certifications several times, most recently for 2013/2014, which included recognition for reductions in energy usage, carbon dioxide emissions and wastewater discharges.

Hastings, Nebraska

Flowserve's Hastings plant and foundry earned the Nebraska Safety Council's Spirit Award, recognizing their efforts in the promotion of safety, health and environmental initiatives and prevention of occupational injuries.

Haywards Heath, UK

Flowserve Haywards Heath has attained certification for environmental and safety management under ISO 14001 and OHSAS 18001 standards.

Mezzago, Italy

Flowserve Mezzago has attained certification for environmental and safety management under ISO 14001 and OHSAS 18001 standards.

Suzhou, China

Flowserve Suzhou has attained certification for environmental and safety management under ISO 14001 and OHSAS 18001 standards.

Villach, Austria

Flowserve Villach has attained certification for quality, environmental, energy and safety management under ISO 9001, ISO 14001, ISO 50001 and OHSAS 18001 standards. The facility also received a National Award for "Best Apprentice Company" related to job training.

Many other Flowserve facilities have also attained certification or recognition for their management systems and achievements, some of which include:

- ISO 14001: Coimbatore, India, Coslada, Spain, Ettlingen, Germany, Santa Clara, Mexico, Tamil Nadu, India, Tlaxcala, Mexico, Veerasandra, India
- OHSAS 18001: Coimbatore, India, Mosquera, Colombia, Tamil Nadu, India, Trappes, France, Veerasandra, India
- ISO 50001: Ahaus, Germany
- Safety Certificate Contractors (SCC) standard: Roosendaal, Netherlands
- Locations in parenthesis are being verified. (Antwerp, Belgium; Etten-Leur, Netherlands; Gohren, Germany; Hengelo, Netherlands;; Terneuzen, Netherlands)



Experience In Motion

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