



2012-2013 Sustainability Report

Flowserve Corporation



Experience In Motion

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About This Report

This report is the 2013 Annual Sustainability Report for Flowserve Corporation, including information regarding the Flowserve Flow Control Division (FCD), the Engineered Product Division (EPD) 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 2012 and 2013 data. Some of the data used in this report is based on a limited number of facility locations and is subject to further revision and refinement. This report represents the most current data available.

The report highlights information specific to FCD, EPD and IPD for various performance indicators and metrics, using the Global Reporting Initiative (GRI) reporting framework and guidelines, version G3.1, and for the first time includes data from our foundries. 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, a focus was placed on indicators related to safety, energy usage, emissions and waste generation. As stated above, the data collection is based on a limited number of facility locations, and has been expanded from previous reports to include a broader range of quantitative and qualitative information from multiple locations around the world. This report includes various types of Flowserve operating facilities and provides a more 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 from both 2012 and 2013.

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



We are pleased to share our accomplishments in sustainability and safety through this 2012-2013 Flowserve Sustainability Report.

Flowserve products and services allow companies in the oil and gas, power generation, chemical, water and general industries to move fluids with efficiency and confidence. 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 through Flowserve and our heritage companies for more than 200 years.

We treat our employees with respect and fairness, along with a strong, continued focus on safety in the workplace. We strive to protect the environment through constant improvement of our own environmental performance, and by offering products and services that help our customers to be more environmentally responsible as well. In addition, we are committed to making positive contributions to the communities where we do business.

Our pumps, valves and seals – backed by our industry expertise and aftermarket services – serve to keep critical processes working and vital fluids moving without the fear of loss or leaks. We seek to make our operations, and those of our customers, more sustainable in the marketplace, and we are proud that sustainability principles are at the heart of much of what we do at Flowserve every day.

Mark Blinn

*President and CEO
Flowserve*



Flowserve designs, manufactures, distributes and services a broad portfolio of pumps and related products, mechanical seals, industrial valves and automation solutions. We strive to make our facilities sustainable by emphasizing the safety of our people, reducing costs by conserving resources, minimizing potential environmental impacts, and supporting our local communities. We are pleased to share our progress through this 2012-2013 Flowserve Sustainability Report.

With manufacturing sites and service facilities around the globe and professional partnerships with leading distributors, Flowserve seeks to serve its customers by offering experienced technical support and unmatched service wherever flow management and control is required.

The renowned reliability of Flowserve products ensures extended service life, especially when combined with on-site and off-site service and industry-leading aftermarket services.

Based on our high quality and service-oriented approach and through the commitment of our associates working in more than 200 facilities worldwide, we have successfully integrated sustainability principles into our products, services, and operations. We look forward to continued success and 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, but it's increasingly important to our customers, employees, suppliers, investors and the public. We are committed to communicating relevant information transparently.

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

- Marketplace
- Workplace
- Environmental
- Community

Marketplace

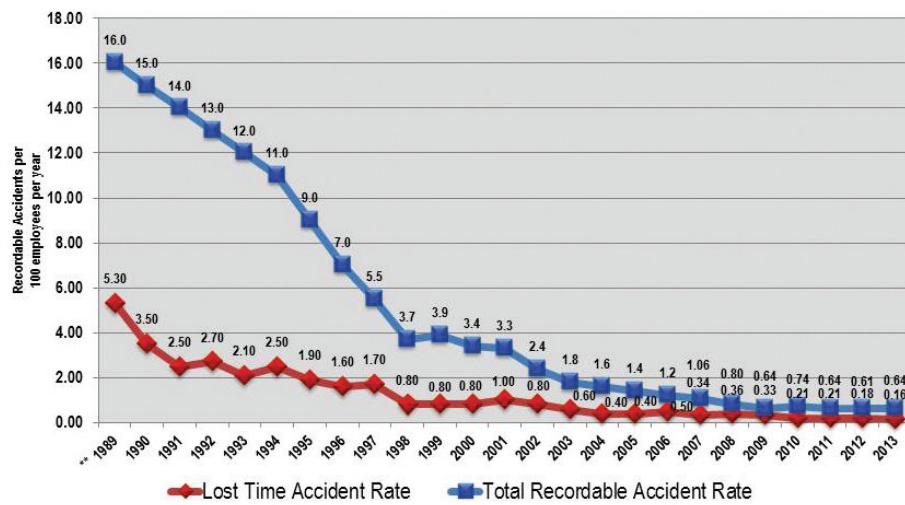
Flowserve plays a critical role with products and solutions that help our customers achieve their corporate responsibility goals.

Workplace

Flowserve is committed to the health and safety of its driven, dedicated and focused workforce of more than 18,500 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 25 consecutive years.

The screenshot shows the Flowserve website with a red header. The navigation bar includes links for PRODUCTS, SERVICES & SOLUTIONS, INDUSTRIES, SUPPORT, Investor Relations, Careers, About Flowserve, and Contact Us. A search bar is also present. The main content area features a large image of a sunset over a field. Below the image, the breadcrumb navigation shows Home > About Flowserve > Corporate Sustainability. The section title is "Corporate Sustainability". A sub-section title "Message from CEO" is visible, along with a thumbnail of a man and a link to "Read message". Other sections include "Governance", "Annual Sustainability Report", and images labeled "WORKPLACE" and "MARKETPLACE".

Flowserve Corporate Accident Rates – History *



Lost Time Accident Rate: Number of accidents resulting 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)

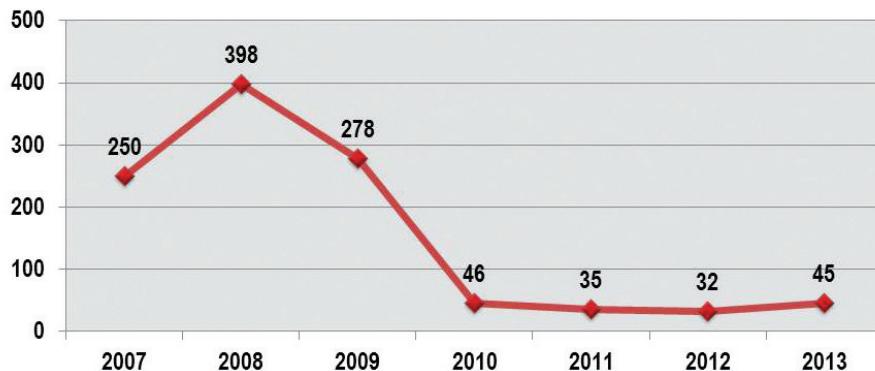
* Acquisitions not included in years prior to acquisition

** 1989 Estimated due to uncertain international data

Environmental

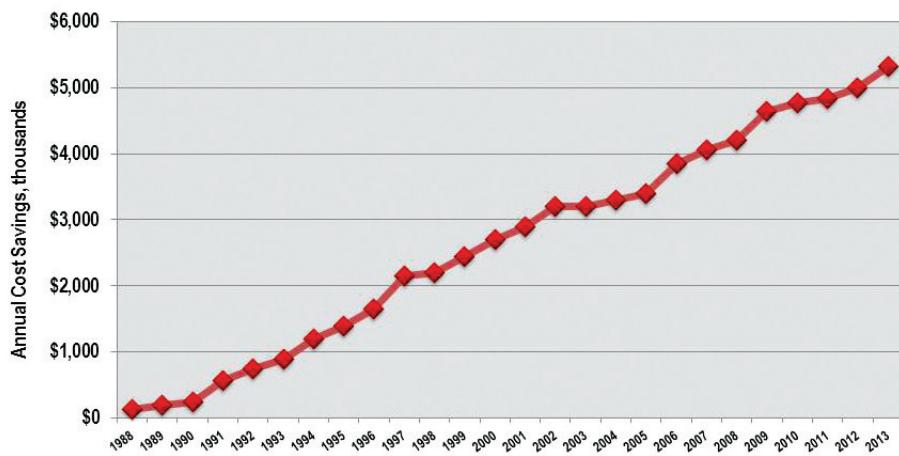
A top priority at Flowserve is protecting the environment for future generations. We do this by providing our customers with quality products which reduce emissions, minimize leaks and enhance efficiency. We continuously strive to diminish the potential effects from our operations. Our more than two-decade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

Flowserve Corporation Hazardous Waste Generation (pounds per \$1 million in revenue)



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 25 years. The aggregate total now exceeds \$60 million and is constantly growing as our associates create, implement and succeed at reducing chemical use, emissions and wastes.

Approximate Annual Savings From Flowserve Proactive Safety and Environmental Management Programs



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

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 conversations. In 2009, we began to publicize these efforts and successes as part of sustainability communications with our stakeholders. We are proud that sustainability principles are integrated within Flowserve — they are at the heart of what we do every day.

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 reports related to our governance procedures, which are available on our corporate website, www.Flowserve.com.

Acting with Transparency and with 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 also 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.

The Flowserve Ethics Hotline is also a critical resource for both our employees and customers that help ensure we deliver on our commitment to an ethical culture. These efforts were substantiated in early 2010 when Flowserve was named one of *Forbes* magazine's 100 Most Trustworthy Companies.

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, and doing all that is reasonable, to provide and maintain safe and healthy working conditions, to 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 with direct responsibility

Code of Business Conduct
U.S. Associates

Ethics Integrity Trust
Our Principles At Work

Experience In Motion

Supplier Code of Business Conduct

Dear Supplier:

The Flowserve commitment to conducting business in an ethical, legal and socially responsible manner extends to our diverse and worldwide supply base. To ensure that the collective Flowserve Supply Chain conducts business with a high degree of integrity and in a socially and environmentally responsible manner, all Flowserve suppliers should adhere to our Supplier Code of Business Conduct.

While we recognize that there are different legal and cultural environments throughout the world, this code sets for the minimum requirements all suppliers should adhere to in order to do, or continue to do, business with Flowserve.

Please use this Supplier Code of Business Conduct as a resource to help maintain our ethical and socially responsible Flowserve culture.

Sincerely,


Mark Blinn
President and Chief Executive Officer

Experience In Motion

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 team, 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 appropriate corrective actions to be taken. Committee members interact with and mentor their peers, while spreading the “safety message” throughout facilities.

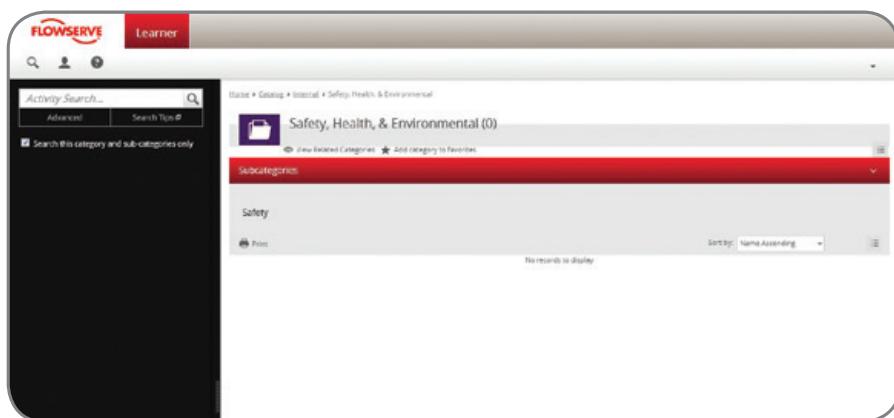
In addition to manager and supervisor involvement, all team members are encouraged to participate in the annual Safety, Health and Environmental Compliance Review performed by a member of the corporate SHEA staff. The wall-to-wall facility and records review consists of two parts: 1) the compliance component and 2) 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 U.S. 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 are scrutinized via a hands-on examination for safety conditions, and evaluated according to how our associates interact with these site operational components.

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 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?			
		e.	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?			
		1	Are lofts or elevated work areas over four (4) feet protected by guardrails?			
1910.24	Fixed Stairs	2	Are openings and entryways to the loft guarded?			
		3	Are lofts guarded with 4 inch toe rails?			
		1	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?			
		5	Are only non-combustible materials stored under stairs?			

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 through the LMS and currently consist of 34 modules which are available in English, Dutch, French, German, Italian, Japanese, Chinese, Portuguese and Spanish. Total languages represent 95 percent of all Flowserve 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.



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.

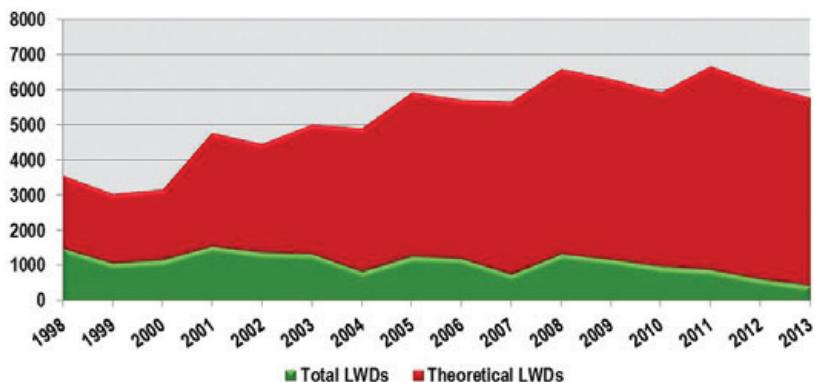
Supporting Our Associates and Communities

Supporting Our Associates

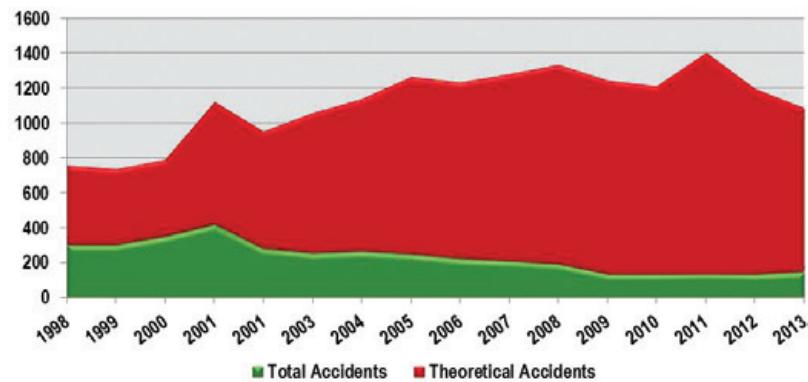
Flowserve associates around the globe are our most important asset. This is more than just a statement – it is something we live by every day. They are treated with respect and fairness, and all benefit from a superior, world-class safety and health program. Their ideas for improving the program are the driving forces behind our success. Flowserve has set safety performance records year-after-year for more than 25 consecutive years, preventing 10,396 recordable injuries and 49,118 days away from work since 1997, based on historical records. Our history of continuous improvement in accident/injury rates spans more than two and a half decades.

In addition, the Flowserve Employee Assistance Program provides support to employees and their families during natural disasters or other times of need. Our efforts on their behalf in the aftermath of Hurricanes Katrina and Ike, the Chilean and New Zealand earthquakes and other natural disasters reflect that commitment to our associates and their families.

Metrics Focus Yields Increased Manufacturing Days



Metrics Focus Yields Reduced Accidents



Communities Where Our Associates and Customers Live and Work

Flowserve is committed to being a responsible corporate citizen and supporting the communities where our associates and customers live and work through corporate and local monetary contributions. The company also encourages associate volunteerism and participation in charitable initiatives. Many associates at locations around the world regularly participate in organized, collaborative efforts to support local at-risk youth and education programs in their communities.



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 to 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.

Summary of Flowserve Safety and Environmental Successes

1988 through 2013

- Recipient of more than 1,150 awards 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 workers' compensation costs from workplace accidents by \$18 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 \$60 million while growing from \$300 million in sales to \$5.103 billion in sales
- Prevented 10,396 recordable injuries (more than half the total number of Flowserve associates) and 49,118 days (189 work-years) away from work, based on historical statistics since 1997

Facility Sustainability Initiative Examples

Arnage, France

Associates recycle wood, paper, cardboard, plastic and bronze chips. There are also several recycling stations set up around the facility to collect these items which are recycled. In 2013, the Arnage facility recycled 147 tonnes of wood, 15 tonnes of cardboard, 11 tonnes of paper, 5 tonnes of plastic and 2.3 tonnes of bronze chips.



In 2013, the Arnage, France, facility recycled more than 180 tons of wood, cardboard, paper, plastic and bronze chips.

Brantford, Ontario, Canada

In the last two years, associates have shown their commitment to the Flowserve Key Strategy of Innovation and Portfolio Management by redesigning the facility's pump testing system. The Brantford team utilizes a test stand system, which uses water as a medium to test pumps. Before each test is conducted, the test loop, including the pump and pipes, is filled with water. As water flows through the system, the pump is tested. When the test is complete, the excess makeup water in the piping is transferred to a holding container, and the pump is removed from the test loop. After several tests, the holding container fills with water and must be emptied and disposed of by a licensed wastewater disposal company. When associates realized improvements could be made to this system, a team came together with an objective to cut the cost of wastewater disposal by reducing the amount of water generated in the pump testing process. The team developed a solution that not only conserved water, but significantly reduced disposal costs. They discovered that, by installing a recovery pump in the system, they could easily recycle test water instead of dumping the excess water after each test. Now, the system reuses the water supply several times before its final disposal. This improved process has resulted in a 77 percent reduction in water usage and wastewater disposal costs.



Brunn, Austria

Associates from the facility implemented an energy savings plan with a goal of reducing energy consumption by 20 percent within four years. As a component of this plan, a heat exchanger for the paint booth was installed. The new heat exchanger has increased the efficiency of the paint booth by more than 65 percent, saving energy equivalent to approximately 300,000 kilowatt-hour (kwh), and has reduced energy costs for heating by approximately 16 percent. Along with the new heat exchanger, the facility's preheating control was updated to enable associates to more efficiently and accurately set the facility to required temperature levels.

Essen, Germany

Over the past decade, Essen employees have formed a partnership with ECOPROFIT, which has given Flowserve associates 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 with others, develop optimization concepts related to best-available techniques, determine improvement potential and conduct trainings to improve procedures. Flowserve Essen has received ECOPROFIT certifications, as their use of ECOPROFIT programs have made measureable improvements in the site's water and energy consumption levels, climate protection standards, and carbon dioxide emissions.

Etten-Leur, Netherlands

The Etten-Leur facility has implemented an improvement plan to reduce energy costs at their site as well as the nearby Etten-Leur test facility. Because of the size and complexity of the pumps tested at the facility, the site can consume a significant amount of power. Over a period of six months, associates determined an energy cost baseline, and analyzed different processes to discover non-value adding activities that could be eliminated. The team determined their standard of using friction to heat lube oil was not efficient, and implemented a new solution to preheat lube oil by placing heaters in the lube oil boxes. The facility has made additional improvements including: changes to the compressed air system; a new tube lighting layout; low-energy boilers; a low-energy oven; compressed air nozzle gun replacements; a painted wall to improve reflectivity; and light switch timers. Energy savings have been realized in lighting, heating and cooling. From 2012 to 2013, these programs resulted in estimated cost savings of \$76,000 through reduced energy consumption and a 200 tonne reduction of greenhouse gas emissions. The next step in the improvement plan is to reduce the energy used at the test facility in Roosendaal, Netherlands, using many of these best practices.

Ettlingen, Germany

The Ettlingen facility held a Safety Day which offered employees practical ways to deal with everyday health issues. Through the facility's partnership with private health organizations, employees received free medical consultations. Specialists offered medical screenings, including tests for blood pressure, eyesight and hearing. A private employee assistance organization also attended the event and shared information about family wellness. Special activities for shop floor workers included skin protection training, a safety quiz and a Nintendo Wii Fit competition.

Haywards Heath, U.K.

Haywards Heath, U.K. installed a 50 kwh solar panel system on the roof of the facility. Estimated energy savings are 100 megawatt-hour (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, U.K. facility. The solar panel system is expected to provide renewable energy at an estimated cost savings of more than 100 mwh of electricity.

Individual Facility Initiatives: Energy Conservation

Recent energy conservation efforts reported by individual facilities include:

- Bangalore, India - Lighting system upgrades and industrial fan replacement to reduce electricity usage
- Brantford, Ontario, Canada - Office window upgrade to reduce energy loss
- Brunn, Austria - Installation of lighting reflectors to reduce lighting load, installation of heat recovery systems associated with the air compressor, paint booth, and improvements to compressed air and hot water piping system
- Castlemaine, Australia - Lighting system upgrades to reduce electricity usage

- Coimbatore, India - Use of solar power systems, downsize diesel generator, upgrade compressor and install of induction lamps
- Cookeville, USA - Lighting system upgrades to reduce electricity usage and compressed air loss audits to reduce energy demands on compressed air
- Desio, Italy - Installation of new roof that allows for reduced interior lighting requirements
- Dong Nai, Vietnam - Conservation program to reduce electricity usage
- Essen, Germany - Lighting system upgrades to reduce electricity usage
- Etten-Leur, Netherlands - Improvements to lighting system, removal of boiler to reduce electricity usage and installation of new doors to reduce energy loss
- Ettlingen, Germany - Installation of new lighting system and compressor control to reduce electricity usage, heat recovery system to reduce natural gas usage, automatic light switches
- Hastings, USA - Continuing implementation of an energy management system
- Hubli, India -Lighting system upgrades to reduce electricity usage
- Newark, U.K. - Refurbishment of wall and roof insulation to reduce natural gas usage
- Springville, USA - Installation of LED lamps to replace compact fluorescent lamps for increased life
- Sulphur Springs, USA - Lighting system upgrades to reduce electricity usage



The Cookeville, Tennessee, facility received 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.

Foundries

Flowserve foundries, located in North America (Dayton, Ohio; Hastings, Nebraska and Kitchener, Ontario, Canada) and Europe (Desio, Italy), produce metal casting components used in various Flowserve products. The Dayton foundry (EPD) is a world-class, high alloy facility specializing in stainless steels, nickel-based alloys and reactive alloys such as titanium and zirconium. The Kitchener foundry (EPD) is a North American leader in quick response manufacturing of large steel, stainless and aluminum bronze castings. The Hastings foundry specializes in steel components for IPD products and the Desio foundry specializes in iron components for EPD products. Each of our foundries makes unique, high quality parts critical to flow control applications around the world.

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) has been expanded in this year's report to include indicator values of Flowserve foundries.

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. Renewable hydrogen is used as an energy source for certain specialized processes at the Dayton foundry, and the Desio foundry uses electricity from renewable sources.

Waste material including sand from casting operations at the Dayton and Kitchener foundries is recycled or reused, accounting for almost 4,780 tonnes of waste that was beneficially used in 2012 and 2013. As with all Flowserve facilities, hazardous waste generation is minimized. In 2012 and 2013, the combined amount of hazardous waste generated in all Flowserve foundries was less than 5 tonnes.

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 also provides community support through local associates and facilities. The 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 the Environmental Protection Agency (EPA) national standards throughout the U.S. 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 also supported by Flowserve, and are currently supporting the stringent rules associated with the European Union's European Integrated Pollution Prevention and Control (IPPC) directive. Flowserve is participating in the U.S. Department of Energy and U.S. Environmental Protection Agency's Superior Energy Program, which seeks to improve the energy intensity of U.S. manufacturing by 25 percent by 2017 through voluntary initiatives. 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	Pumps	Seals
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	Aldrich • Byron Jackson • Calder • Durco • IDP • Lawrence • Pacific • Pleuger • Niigata Worthington • Scienco • Sier-Bath • TKL • United Centrifugal • Wilson-Snyder • Worthington	BW Seals • Durametallic • GASPAC • Interseal • Pac-Seal • Pacific Wietz

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

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



2

Examples of Current Initiatives

As part of our marketplace focus, Flowserve provides solutions to assist various industries to attain their own sustainability goals. Some examples of those solutions follow in the next paragraph.

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 are 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. Recent CSP projects in the U.S. and Spain incorporate Flowserve pump and fluid-handling technology for movement of molten salt as the heat transfer fluid, at temperatures in excess of 500 degrees Celsius (932 degrees Fahrenheit). This includes the Crescent Dunes Solar Energy Project in Nevada and the Gemasolar project in the Andalucía region of Spain.



Wind Power: Flowserve supplies lift 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 Verenium 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.

Geothermal Power: In 2011, Flowserve was awarded a contract to supply a new deep-well submersible pump and motor system to Germany-based Geothermische Kraftwerksgesellschaft Traunreut. Developed in conjunction with the German government to help Germany meet its renewable energy goals, this innovative system is designed to be installed at a depth of 600 m (2000 feet) and used to pump water at temperatures up to 140 degrees Celsius (285 degrees Fahrenheit). The pumped fluids and the resulting steam that is produced will be used to generate electricity from this renewable source.

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 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



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 for a water supply system used to convey water from the source location at the Godavari River, to users as far away as 200 km. 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 a 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, boilers 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 54 sites worldwide, including 38 manufacturing facilities, 17 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 2013, the FCD total recordable accident rate was 0.67, the lost-work-day rate was 0.19, and the lost-time severity rate was 2.5. We continue to see a downward trend in these rates compared to previous years and remain well below U.S. valve manufacturing industry rates.

Energy, Emissions and Waste Management: For all divisions, we have begun 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 2013 was approximately 54 pounds per 1 million U.S. dollars in sales, which is well below our corporate goal of 90 pounds.

Engineered Product Division (EPD)

Products: Our largest business segment is EPD, 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.

EPD 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: EPD has 142 facilities worldwide, including 35 manufacturing facilities, 114 QRC facilities, some of which are co-located with manufacturing facilities, and five engineering facilities. EPD has foundries located in Dayton, Ohio (high alloy and titanium foundries); Desio, Italy (iron foundry); and Kitchener, Ontario, Canada, (high alloy foundry). We provide engineered aftermarket services through our global network of QRCs. A large portion of EPD's service work is performed on a quick response basis, and we offer 24-hour service in all of our major markets.

Safety: In 2013, the EPD total recordable accident rate was 0.49, the lost-work-day rate was 0.09 and the lost-time severity rate was 0.97. There has been improvement year after year and these rates remain well below U.S. pump/seal manufacturing industry rates.

Energy, Emissions and Waste Management: For all divisions, we have begun to compile energy usage and emissions information at the facility level to assist with reporting and identifying areas for improvement.

Hazardous waste generation for EPD facilities in 2013 was approximately 38 pounds per 1 million U.S. dollars in sales, which is well below our corporate goal of 90 pounds.

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-metallic 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 21 facilities worldwide, including 13 manufacturing facilities and 16 QRCs, some of which are co-located with manufacturing facilities. IPD has one steel foundry located in Hastings, Nebraska.

Safety: In 2013, the IPD total recordable accident rate was 0.77, the lost-work-day rate was 0.29, and the lost-time severity rate was 3.5. There were fewer recordable accidents compared to 2012 and these rates are well below U.S. pump manufacturing industry rates.

Energy, Emissions and Waste Management: For all divisions, we have begun 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 2013 was approximately 46 pounds per 1 million US dollars in sales, approximately half of our corporate goal of 90 lbs.



Scope and Boundaries

The following sections of this report provide information regarding safety and environmental performance using Global Reporting Initiative (GRI) indicator protocols and focusing on those aspects that are most relevant to FCD, EPD and IPD operations. The GRI is an organization that has developed the world's leading sustainability reporting framework.

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, 2012, through September 30, 2013, with minor exceptions. The partial data for 2013 was extrapolated as needed to represent the entire calendar year.

In general, the information presented herein reflects the activities conducted by the FCD, EPD and IPD manufacturing, 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 the divisional operations.

Finally, some of the indicator data used in this report is based on a sample of the facilities and is subject to further refinement/revision.

Countries

Flowserve facilities that are included within the reported indicator data are located in the following countries: Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Colombia, Czech Republic, Finland, France, Germany, India, Indonesia, Italy, Japan, Kazakhstan, Madagascar, Malaysia, Mexico, Netherlands, New Zealand, Norway, Peru, Russia, Saudi Arabia, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, 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 220 (including 218 manufacturing and service facilities and two main corporate offices.) In general, all 218 facilities are included within the reported indicator data. In some cases the reported indicator data is based on a sample of facilities as noted above and explained in the following sections of the report.



Workplace

Workplace data collection and reporting in 2012 and 2013 focused on three key aspects (employment, safety and training) and the associated GRI indicators, as outlined in the table below. Our workplace safety performance data and training information is comprehensive and represents the entire organization.

Employment

GRI Indicator LA1

At the end of 2013, the total number of employees was more than 18,000 (based on a total of 220 facilities in four geographic regions), working primarily on a full-time, permanent contract basis. The total numbers of facilities and employees have both increased significantly since the beginning of 2012, reflecting Flowserve's continuing growth.

Flowserve Facilities and Employees by Region – 2013

Region	Number of Facilities	Number of Employees (at end of 2013)
Asia/Pacific	51	3,414
Europe/Middle East/Africa	65	6,503
North America	81	6,182
Latin America	23	2,037
Total	220	18,136

Note: The employee data shown in the above table includes manufacturing/service facilities (218 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 using a sample of facilities in 2012 and 2013. The information is being used to assist in developing plans for future reporting.

Safety

GRI Indicator LA7

Employee safety has always been a key focus for Flowserve. In 2013, the total recordable accident frequency rate was 0.64, the lost-work-day frequency rate was 0.16, and the lost-work-day severity rate was 1.9 for continuing operations (See chart below.). These values are normalized for every 200,000 hours worked based on U.S.

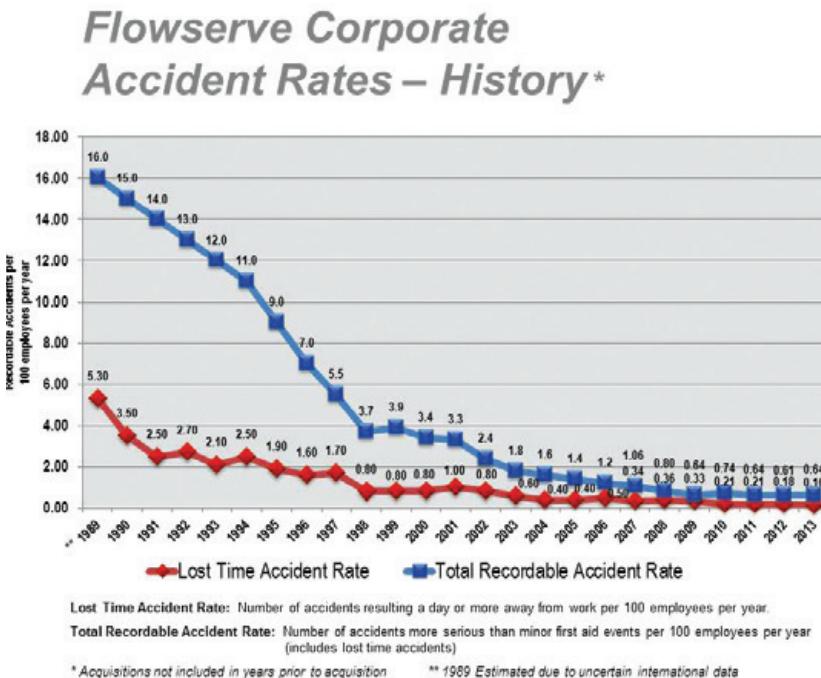
Occupation and Health Administration (OSHA) reporting requirements and those used in other countries. (The system used for compiling the safety data is based on OSHA recordkeeping requirements, for both U.S. and international facilities. Lost work days are determined based on scheduled work days beginning the day following an accident.) There were no fatalities at any Flowserve facilities in 2013. Information regarding overall absentee rates is not available for 2013. The overall rates shown below include accidents and occupational diseases.

Flowserve Facilities Accident Rates – 2013

Region	Total Lost Work Day Accident Rate (Lost Time Frequency Rate)	Lost Time Severity Rate	Doctor Case Frequency Rate	Total Recordable Accident Frequency Rate
US	0.17	3.1	1.2	1.36
International	0.23	2.2	0.3	0.49
Sales/Mkt/Admin	0.02	0.3	0.0	0.05
Overall	0.16	1.9	0.5	0.64

Note: The data shown in the above table includes manufacturing/service facilities (218 total) and two corporate offices.

For comparison purposes, the average Total Lost-Work Day Accident Rate (Lost-Time Frequency Rate) for U.S. manufacturers of pump and valve products is 1.6, and the average Total Recordable Accident Rate is 6.2 (from 2012 U.S. Bureau of Labor Statistics data). The 2013 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-work-day and total recordable accidents. Please see the following chart.



Training

GRI Indicator LA10

Employee training is routinely conducted to provide initial and continuing instruction related to technical, professional, quality, sales, administration, safety/health/environmental and other topics, specific to the 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 32 hours of formal training per employee per year in 2012 and 2013. 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 safety "all hands" 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.

Business Strategy & Operations <ul style="list-style-type: none"> • Process Improvement 	Global Trade Compliance <ul style="list-style-type: none"> • Export Compliance • Import Compliance • On-Boarding 	Marketing <ul style="list-style-type: none"> • Marketing E-learning Catalog • Marketing Essentials 	Professional Development <ul style="list-style-type: none"> • Administrative Support • Business Fundamentals • Business Writing • Communication • Interpersonal Skills • Language Skills • Project Management • Strategic Skills • Time Management • Organization
CIP Yellow Belt Training <ul style="list-style-type: none"> • Team Chartering 	Human Resources <ul style="list-style-type: none"> • Affirmative Action • Development & Retention • Diversity and Inclusion • Human Resources • Interviewing & Hiring 	New Employees	
Computer Skills <ul style="list-style-type: none"> • Flowserv Systems • Microsoft Office 2010 Knowledge Center • SharePoint Training 	Industry Overviews	Personal Development <ul style="list-style-type: none"> • Personal Development • Team Building 	Safety, Health, & Environmental <ul style="list-style-type: none"> • Safety
Distributor Training <ul style="list-style-type: none"> • Flowserv Distribution 	LMS User Guide <ul style="list-style-type: none"> • Administrator • Learner • Manager • Policies • Super Administrator 	Product Technical <ul style="list-style-type: none"> • Application Engineering Development Program (AEDP) • Certified Seal Assembly Artisan Program (CSAAP) • Digital Valve Technology (DVT) • Dual Gas Seals • Introduction to Pump Technology • Parts Group Training • Pump Reliability Specialist (PRS) • Rotating Equipment Specialist Program • Technical Product Training • Technical Service Engineer (TSE) • Technical Training Programs 	Sales/Customer Service <ul style="list-style-type: none"> • Customer Service Skills • Selling Fundamentals • Terms and Conditions
Ethics & Compliance <ul style="list-style-type: none"> • Code of Business Conduct • Ethical Leadership • Financial Integrity • Global Anti-Corruption • Protecting our Integrity 	Management & Leadership Training <ul style="list-style-type: none"> • Advanced Management Topics • First time Manager Supervisory Skills • Flowserv Leadership Training • Leadership Topics • Management Fundamentals 		Supply Chain <ul style="list-style-type: none"> • 2013 Incoterms
Finance & Accounting <ul style="list-style-type: none"> • Accounting Fundamentals • Accounting Policy Training • Advanced Accounting • Finance and Accounting for Non-Financial Employees 			Valtek Controls International - VCI <ul style="list-style-type: none"> • Training Development • VCI Product Technical

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 406 Flowserv coordinators have received initial certification training.

The Flowserv SHEA Certification Program is designed to provide both fundamental and advanced training in SHEA principles as well as knowledge of the Flowserv 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-sized sites within Flowserv. 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 Flowserv 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 and has positively impacted 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 2013, a total of 196 associates have been recertified.

Environmental

Environmental data collection and reporting for Flowserve facilities in 2012 and 2013 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- Electricity and heat is provided from 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% 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, U.K.- 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

Energy Usage

GRI Indicators EN3 and EN4

EPD/IPD/FCD: The estimated total energy usage in 2013 for Flowserve manufacturing facilities is approximately 1.2 million Gigajoules. Direct energy sources account for approximately 30 percent of the total amount of energy used, while indirect energy sources account for 70 percent.

The estimated energy usage for 2012 and 2013 is shown in the tables below.

Estimated Energy Usage (Gigajoules) Flowserve Facilities - 2013



Energy Usage Summary

Flowserve Manufacturing Facilities Energy Usage – 2012				
	Direct Energy (Gigajoules)	Indirect Energy (Gigajoules)	Total Energy (Gigajoules)	Normalized Energy (GJ/MM USD)
EPD	190,303	351,514	541,817	226
IPD	85,022	170,624	255,647	268
FCD	145,081	275,831	420,912	270
Total	420,406	797,969	1,218,376	248

Flowserve Manufacturing Facilities Energy Usage – 2013				
	Direct Energy (Gigajoules)	Indirect Energy (Gigajoules)	Total Energy (Gigajoules)	Normalized Energy (GJ/MM USD)
EPD	170,738	404,434	575,172	227
IPD	65,932	192,611	258,543	272
FCD	126,518	258,297	384,815	238
Total	363,188	855,342	1,218,530	239

As shown in the table above, the estimated overall energy usage in 2012 and 2013 was approximately the same, and the normalized energy usage decreased slightly from 2012 to 2013. The proportion of direct and indirect energy within each division is variable for each year. These variations may be attributed to the estimation methods used and/or differences in the data compilation procedures for each year.

Energy Conservation

GRI Indicator EN5

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 on the previous charts.

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

Water Consumption and Recycling

GRI Indicators EN8 and 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 as much as possible.

The estimated total water usage for 2012 was approximately 653,000 cubic meters (approximately 173 million U.S. gallons) and the estimated total water usage for 2013 was approximately 585,000 cubic meters (approximately 155 million U.S. gallons.) The estimated water usage values for 2012 and 2013 are higher than the amounts estimated for previous years due to increases in Flowserve operations and expanded data collection. However, there was a year-over-year reduction in water usage from 2012 to 2013. (See chart below for an estimated breakdown of water usage for each division for 2012 and 2013.)

Flowserve Manufacturing Facilities Water Usage – 2012 and 2013		
	2012 Water Usage (Cubic meters)	2013 Water Usage (Cubic meters)
EPD	323,428	318,300
IPD	121,939	112,777
FCD	207,775	154,059
Total	653,142	585,136

Climate Change

GRI Indicator EN16

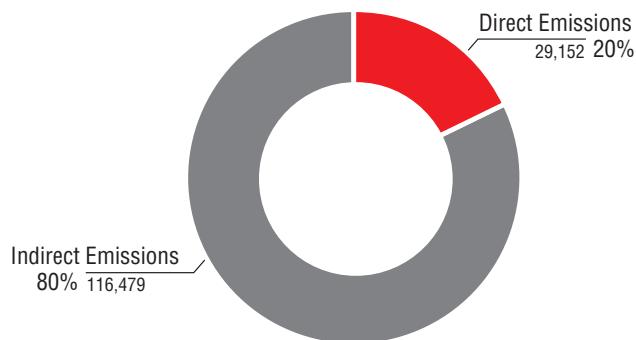
EPD/IPD/FCD: The estimated total equivalent carbon dioxide direct and indirect emissions based on energy usage in 2013 for Flowserve manufacturing operations is approximately 146,000 metric tonnes. Only 20 percent of this amount is attributed to direct emissions.

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 greenhouse gas emissions based on energy usage for 2012 and 2013 are shown in the tables below.

Greenhouse Gas Emissions Summary

Estimated GHG Emissions (Tonnes CO₂e) Flowserve Facilities - 2013



Flowserve Manufacturing Facilities GHG Emissions – 2012

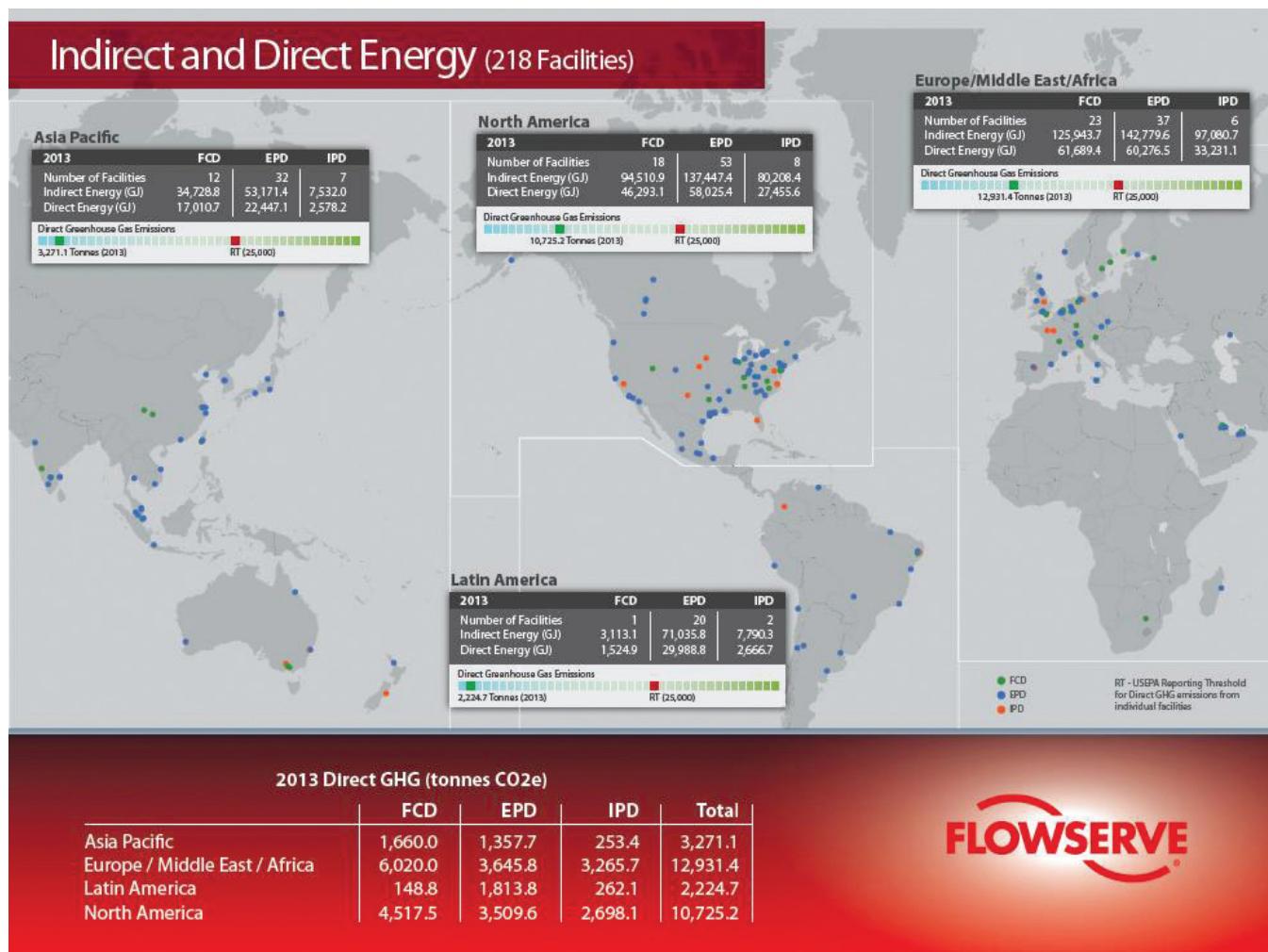
	Direct Emissions (Tonnes CO ₂ e)	Indirect Emissions (Tonnes CO ₂ e)	Total Emissions (Tonnes CO ₂ e)	Normalized Emissions (per MM USD)
EPD	11,587	47,169	58,756	24.5
IPD	4,971	28,860	33,831	35.5
FCD	13,557	29,011	42,568	27.3
Total	30,116	105,040	135,155	27.5

Flowserve Manufacturing Facilities GHG Emissions – 2013

	Direct Emissions (Tonnes CO ₂ e)	Indirect Emissions (Tonnes CO ₂ e)	Total Emissions (Tonnes CO ₂ e)	Normalized Emissions (per MM USD)
EPD	10,327	57,877	68,204	26.9
IPD	6,479	29,070	35,549	37.4
FCD	12,346	29,532	41,878	25.9
Total	29,152	116,479	145,631	28.5

As shown above, the estimated overall GHG emissions and normalized emissions increased slightly from 2012 to 2013. The proportion of direct and indirect GHG emissions within each division is variable for each year. These variations may be attributed to the estimation methods used and/or differences in the data compilation procedures for each year related to energy usage.

Information presented in this report for direct and indirect energy usage for Flowserve manufacturing facilities is shown in the figure below, on a regional basis. The figure also shows the estimated direct greenhouse gas emissions (associated with on-site fuel combustion) relative to the U.S. EPA reporting threshold of 25,000 tonnes carbon dioxide equivalent. (The U.S. EPA threshold relates to individual facilities.) As shown in the figure, the aggregated direct greenhouse gas emissions for the Flowserve facilities within each region are below the 25,000 tonne value (for individual facilities.) In other words, the estimated emissions for individual Flowserve facilities are significantly lower than 25,000 tonnes.



Air Emissions

GRI Indicators EN19 and EN20

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, with one exception, our foundries. One foundry facility reported a small amount of HCFC-22 in 2013. The volatile organic compound (VOC) air emissions for eight reporting facilities ranged from less than 1 to 13.2 tonnes in 2013, and other types of air emissions included small amounts of nitrous oxides, sulfur oxides and particulate matter, which are reported for facilities where data is available.

Water Emissions

GRI Indicator EN21

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

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 2012 and 2013 include flammable liquids, paint waste, parts washer solvents, other waste liquids and batteries.

The estimated total amount of hazardous waste generated for FCD, EPD and IPD facilities in 2013 is approximately 106 tonnes, which was removed for off-site treatment and disposal, or re-use. More than half of the facilities generated no hazardous waste.

The normalized amount of hazardous waste generated in 2013 is 45 lbs/1 MM in sales, which is well below the corporate goal of 90 lbs/MM 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, absorbent materials; general solid waste; abrasive blast cleaning media; containers/drums; packaging materials and wood pallets, and other recyclable material (scrap metal, paper and cardboard). Flowserve has reduced waste machining coolant disposal by 70 percent since 1988, and in most locations, partners with a vendor that recycles the waste coolant into a reusable product. In addition, we have reduced our solid waste disposal quantities by more than 50 percent since 1988 .

The estimated amount of nonhazardous waste generated at Flowserve facilities in 2013 is approximately 72,000 tonnes, of which approximately 85 percent 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 EPD, IPD and FCD

Indicator	Description	Amount (2013)
Sales	Sales Revenue	5,103 MM US \$
LA1	Total workforce by employment type, employment contract, and region Total number of employees by region (see LA1 for breakdown)	18,136
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work related fatalities by region Injury rate (total recordable incidence rate) Occupational disease rate (included above) Lost day rate Lost time severity rate Number of fatalities Reporting system	0.64 0.16 1.9 0 US OSHA
LA10	Average hours of training per year per employee by employee category	32 hours
EN3	Direct energy consumption by primary energy source Total direct energy consumption	363,187 Gigajoules
EN4	Indirect energy consumption by primary source Total indirect energy consumption	855,342 Gigajoules
EN8	Total water withdrawal by source Total volume of water withdrawn (all from municipal supply)	585,136 cubic meters
EN16	Total direct and indirect greenhouse gas emissions by weight Total greenhouse gas emissions – direct and indirect – Carbon Dioxide equivalent	145,631 tonnes
EN19	Emissions of ozone-depleting substances by weight	<1 tonne
EN20	NOx, SOx and other significant air emissions by type and weight (based on total amounts for reporting facilities)	
	NOx	<1 tonne
	SOx	<1 tonne
	VOCs	<20 tonne
	Particulate matter	<50 tonne
EN21	Total water discharge by quality and destination	not quantified
EN22	Total weight of Waste by type and disposal method Total weight of hazardous and nonhazardous waste Total weight of hazardous waste Total weight of nonhazardous waste Total weight of nonhazardous waste disposed to landfill or other treatment Total weight of nonhazardous waste disposed to recycling or other beneficial use	71, 870 tonnes 106 tonnes 71,764 tonnes 10,627 tonnes 61,137 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 that provides associates with 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.

In North America, Flowserve employees from Springville, Utah, rode their bikes to raise money for the National Multiple Sclerosis Society. Each team member raised at least \$125, and those funds were matched by Flowserve. Associates built camaraderie during the event and enjoyed the opportunity to bike over 75 miles together in the scenic Utah countryside while giving back to their local community.

Employees from the Kalamazoo, Michigan, facility participated in running events ranging from a 5K race to a marathon in order to raise funds for a variety of local charities, including the Kalamazoo Boys & Girls Club and the local YMCA. Flowserve also served as a corporate sponsor, donating a total of \$4,910 to the nonprofit organizations.

At the Flowserve facility in Bethlehem, Pennsylvania, an ongoing effort is made to provide supplies to various schools. Associates collect and donate supplies to various low-income schools, in Pennsylvania and Washington, D.C. There were enough supplies donated to last at least one class for a year. Along with school supplies such as stationery, pencils, pens and notebooks, bottle caps, which can be used to purchase supplies through fundraising programs, are also collected and donated to schools. Additionally, employees in Bethlehem give career day presentations at local schools, a volunteer effort that started with associates volunteering through a program called Learning For Life. During the presentations, volunteers discuss engineering as a career and conduct hands-on team building activities to demonstrate various engineering skills.

In Asia, the facility in Bangalore, India, discovered a new way to support Flowserve business standards while giving back to the community. As new computers are brought into facilities, individual Flowserve locations must find sustainable ways to dispose of old computers. The associates from the Bangalore, India, facility found a local organization, the Nasscom Foundation, that accepts donations of old computers for recycling and repurposing. Through their Big Bridge program, the foundation refurbishes donated computers and provides them at low cost to not-for-profit organizations, which give the computers to public schools, free of cost. Associates presented the project to other Flowserve India locations, discussed the process with business leaders, and eventually gained widespread support for the effort. Smaller teams formed at various Flowserve locations to coordinate this donation activity. Flowserve Bangalore's Pump Engineering center donated a total of 30 used computers, and the Flowserve FCD Oil & Gas Bangalore facility donated 57 used computers.

The Flowserve facilities in Kawasaki and Kashiwazaki, Japan, are recycling everyday items, such as pull tabs and PET bottle caps, and bettering communities worldwide at the same time. The tabs and caps are collected at both facilities and sent to nonprofit organizations. The cash generated from the sale of the tabs and caps is used to buy wheelchairs and vaccinations. The collections have resulted in the purchase of eight wheelchairs and vaccines to prevent measles and tetanus which were then sent to Myanmar, Laos and Bhutan.

In Europe, 43 Flowserve employees from Germany joined associates from the U.S., Italy, and Singapore in a 6K race in Dortmund, Germany, to fight childhood hunger, poverty and illness. The B2RUN corporate running series occurred

in several German cities and was a way for Flowserve to promote team building and the health of the employees while giving back to the community. A portion of each entrance fee was donated to a charity.

The Dortmund and Essen, Germany, facilities participated in an educational program known as Girls' Day. Both facilities have hosted a variety of workshops for nearly 40 participating girls, giving them insight into the variety of careers at Flowserve, especially engineering and other technical careers. Hands-on workshops at the facilities allowed the girls to participate in activities that required Science, Technology, Engineering and Math skills.



Awards

Safety

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

For 2013, Flowserve safety management successes have been recognized by the NSC which awarded 177 facilities with recognition accolades for outstanding safety performance during the year. The 2013 recognition brings the total number of NSC awards to more than 1,150 since 1991.

Flowserve merited industry leader distinction from the NSC for 2012 performance with Baton Rouge, Louisiana, Leduc, Alberta, Canada and Santa Clara, Mexico, earning the Industry Leader Award which recognizes safety performance that is 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.

2013 National Safety Council Awards (Part 1)

2013 INDUSTRY LEADER AWARD ⁽¹⁾	MILLION HOUR AWARDS ⁽²⁾
EPD – Baton Rouge, Louisiana	FCD – Bangalore, India (4 million)
EPD – Leduc, Alberta, Canada	FCD – Burgess Hill Consort, U.K. (1 million)
EPD – Santa Clara, Mexico	FCD – Essen, Germany (1 million)
	FCD – Ettlingen, Germany (1 million)
	FCD – Haywards Heath, U.K. (1 million)
	FCD – Lynchburg, Virginia (2 million)
	FCD – Raleigh, North Carolina (2 million)
	FCD – Tuas, Singapore (1 million)
	FCD – Villach, Austria (1 million)
EPD – Coimbatore, India (5 million)	IPD – Chesapeake, Virginia (1 million)
EPD – Coslada, Spain (2 million)	IPD – Newark, U.K. (1 million)
EPD – Bethlehem, Pennsylvania (1 million)	

Notes: 1) Top 5 percent of all NSC member award recipients and one of the safest workplaces in the world

2) More than 1 million work hours without a Lost Time Accident

2013 National Safety Council Awards (Part 2)

PERFECT RECORD AWARDS ⁽³⁾		OCCUPATIONAL EXCELLENCE ACHIEVEMENT AWARDS ⁽⁴⁾	
FCD	EPD	FCD	EPD
Bangalore, India	Al Khobar, Saudi Arabia	Angleton, Texas	Angleton, Texas
Burgess Hill (Consort), U.K.	Al Rushaid, Saudi Arabia	Baton Rouge, Louisiana	Ashland, Kentucky
Burgess Hill (Victoria), U.K.	Bangalore, India	Boothwyn, Pennsylvania	Baton Rouge, Louisiana (pumps)
Chengdu, China	Barcelona, Venezuela	Cookeville, Tennessee	Baton Rouge, Louisiana (seals)
Cookeville, Tennessee	Baton Rouge, Louisiana (pumps)	Corpus Christi, Texas	Beaumont, Texas
Cormano, Italy	Baton Rouge, Louisiana (seals)	Deer Park, Texas	Benicia, California
Dammam, Saudi Arabia	Beaumont, Texas	Edmonton, Alberta, Canada	Bethlehem, Pennsylvania
Deer Park, Texas	Bethlehem, Pennsylvania	Houston, Texas (Limitorque)	Bridgeport, New Jersey
Edmonton, Alberta, Canada	Bridgeport, New Jersey	Houston, Texas (PMV)	Broomfield, Colorado
Essen, Germany	Buenos Aires, Argentina	Houston, Texas (Valbart)	Calgary, Alberta, Canada
Haywards Heath, U.K.	Campo Grande, Brazil	Kingsport, Tennessee	Charlotte, North Carolina
Hubli, India	Caserta, Italy	Louisville, Kentucky	Cincinnati, Ohio
Lynchburg, Virginia	Chennai, India	Lynchburg, Virginia	Coatzacoalcos, Mexico (pumps)
Raleigh, North Carolina	Coimbatore, India	Pittsburgh, Pennsylvania	Coatzacoalcos, Mexico (seals)
Sao Caetano, Brazil	Coslada, Spain	Portage, Indiana	Corpus Christi, Texas
Scoresby, Australia	Dayton, Ohio	Raleigh, North Carolina	Dayton, Ohio
Springville, Utah	Deer Park, Texas	Springville, Utah	Deer Park, Texas
Tuas, Singapore	Dubai, United Arab Emirates.		Dunbar, West Virginia
Villach, Austria	Ellesmere Port, U.K.		El Dorado, Arkansas
	Etten-Leur, Netherlands		Fairfield, New Jersey

2013 National Safety Council Awards (Part 2) *continued*

PERFECT RECORD AWARDS₍₃₎		OCCUPATIONAL EXCELLENCE ACHIEVEMENT AWARDS₍₄₎	
EPD (continued)		EPD (continued)	
Hengelo, Netherlands	Roosendaal, Netherlands	Florence, South Carolina	Rancho Dominguez, California
Houston, Texas	Santa Clara, Mexico (pumps)	Fort McMurray, Canada	Santa Clara, Mexico (pump)
Jakarta, Indonesia	Santa Clara, Mexico (service)	Greer, South Carolina	Santa Clara, Mexico (service)
Kalamazoo, Michigan	Santiago, Chile	Guadalajara, Mexico	Sarnia, Canada
Kawasaki, Japan	Sao Caetano, Brazil	Homer, Alaska	Scarborough, Canada
Kitchener, Ontario, Canada	Scranton, Pennsylvania	Houston, Texas (FEDD)	Scranton, Pennsylvania
Leduc, Alberta, Canada	Shanghai, China	Houston, Texas	Tampa, Florida
Mendoza, Argentina	Suzhou, China	Kalamazoo, Michigan	Tampico, Mexico
Moosic, Pennsylvania	Temecula, California	Kingsport, Tennessee	Temecula, California
Mosquera, Colombia	Tlaxcala, Mexico	Kitchener, Canada	Tlaxcala, Mexico
Niigata, Japan	Tuas, Singapore	Leduc, Alberta, Canada	Tulsa, Oklahoma
Olomouc, Czech Republic	Tulsa, Oklahoma	Midland, Michigan	Vancouver, Washington
Pittsburgh, Pennsylvania	Vernon, California	Montreal, Canada	Vernon, California
Port Arthur, Texas	West Chicago, Illinois	Moosic, Pennsylvania	West Chicago, Illinois
Rancho Dominguez, California	Woodbridge, Canada	Pittsburgh, Pennsylvania	Woodbridge, Ontario, Canada
Rayong, Thailand		Port Arthur, Texas	
IPD		IPD	
Arganda, Spain	Hamburg, Germany	Chesapeake, Virginia	Lakeland, Florida
Arnage, France	Hubli, India	Fresno, California	Plainview, Texas
Chesapeake, Virginia	Newark, U.K.		
CERTIFICATE OF MERIT AWARDS₍₅₎			
EPD			
Cheonan, South Korea			

Notes: 3) Completion of an entire year without a Lost Time Accident

4) Total Lost Workday accident rate less than 50 percent peer group

5) Outstanding safety practice / noteworthy accomplishment

Facility Achievements

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

Baton Rouge, Louisiana

The facility received recognition from Shell-Geismar for working on site at Shell without a lost-time accident in 2013.

Arnage, France

The facility earned the Manual of Improvement of Safety Enterprises (MASE) certification for the second consecutive year in 2013. MASE is a French standard developed to measure safety and environmental systems in business facilities. Used mainly in the chemical, petrochemical, and oil and gas industries, MASE certification is awarded to facilities that follow a very strict safety action plan with a strong zero accidents emphasis. The Arnage facility has also implemented environmental improvements by upgrading the facility's wastewater disposal system, which reduces water consumption by recycling wastewater, and installing a new dry filter paint booth, which improves paint quality and reduces paint consumption and hazardous waste by 90 percent.

Desio, Italy

The Desio facility was honored with the Premio AIMB Sicurezza Ambiente 2013 award for best company of the region for environmental management.



Essen, Germany

The facility received a Flowserve certification for the implementation of a health safety management system in compliance with the Safety Certificate Contractors (SCC) standard. Also, the City of Essen held a certification ceremony as part of the Oko-Profit program. Flowserve Essen was recertified in part based on the reduction of carbon dioxide emissions, which also resulted in significant cost savings to the facility. The successful recertification demonstrates the efforts of Essen FCD to integrate sustainability into its business model.

Irving, Texas

Flowserve honored associates with a reception and awards banquet to celebrate the completion of their recent projects resulting in them receiving Continuous Improvement Process (CIP) Black Belt/Master Black Belt certifications. The associates' projects represented a wide range of CIP subjects, such as cycle-time reduction, Cost of Poor Quality Improvements, casting quality enhancements and on-time performance improvements.

Kashiwazaki, Japan

The plant received the Japan ECO-21 certification for improved environmental practices and overall sustainability program excellence.

Mosquera, Colombia

Flowserve employees in Mosquera, Colombia were honored at the White Cross Merit Medal awards ceremony by the Colombian Safety Council. The facility was recognized for having the highest rated safety program within the Colombian manufacturing sector.

Santa Clara, Mexico

The facility was awarded the ISO14001 Certification for achieving a new level of excellence in environmental care. In early 2012, associates in Santa Clara began working toward the ISO14001 certification by designing and implementing a plan which adhered to an environmental management system. Employees also took classes to learn more about environmental awareness and ISO14001 requirements. The completion of this project, made possible through the combined efforts and support of each of the facility's 465 employees, demonstrates Santa Clara's drive to enforce sustainability principles while providing Flowserve customers with the best service, both locally and internationally.

Tlaxcala, Mexico

The Mexican government recently awarded the plant a state certification award for labor equality between men and women. The Igualdad Laboral entre hombres y mujeres award recognizes Flowserve for respecting equality, not discriminating, and supporting equal, appropriate working environments for both men and women.

Wetherill Park, Australia

Flowserve Wetherill Park QRC in Australia successfully attained the ISO 9001 certification, becoming the fourth ISO 9001 certified site for Flowserve in Australia, following Castlemaine, Mulgrave and Welshpool. The internal auditing program began in 2012 for the purpose of reviewing current systems, identifying gaps and putting programs in place to remedy any issues. With minimal problems identified, programs were established to ensure all documents were registered and identified in the auditing system. A follow-up internal audit took place to confirm that all issues previously identified had been remedied. Following these final stages, SAI Global visited the site to conduct the certification audit and did not find any areas of nonconformance or concern.

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