THE POWER OF CUMMINS
SUSTAINABILITY PROGRESS REPORT 2014-2015
ABOUT THE COVER

One of the most visible signs of the “Power of Cummins” is the Company’s QSK95, the largest high-speed diesel engine Cummins has ever built. The engine was chosen by Siemens to power its Charger locomotive in the United States. Siemens won a multi-state, $225 million contract to build 35 diesel-electric locomotives.

Cummins employees are shown pushing the QSK95 into a test cell at the Company’s Seymour Engine Plant in Seymour, Indiana (U.S.A.). You can learn more about the Company’s big year in passenger rail on page 18.

The QSK95, by the way, is also powering a new line of generators. You can learn more about that on page 40.
ABOUT THIS REPORT
Cummins’ 2014-2015 Sustainability Progress Report is presented in the spirit of the Global Reporting Initiative (GRI). The GRI’s goal is to develop a consistent way for companies across the globe to voluntarily report on their environmental, social and economic performance.

The report reflects Cummins’ broad view of sustainability, including safety, diversity, employee development and governance in addition to the Company’s environmental initiatives, its community service programs and Cummins’ financial performance.

The theme of this year’s report is “The Power of Cummins.” The Company’s power isn’t limited to its products or its record financial year. The Company uses its strength in many other ways, ranging from its push for environmental sustainability, to its efforts to build stronger communities, to its ability to serve customers in remote locations such as Myanmar and Madagascar.

As we hope you’ll see from reading this report, Cummins is a global company that wants to make a difference for all of its stakeholders, today and in the future.

This report was posted in May 2015 and is the Company’s 12th annual edition.

EXECUTIVE SUMMARY
Cummins has prepared an Executive Summary of this report. The summary includes some of the most important statistical material in the full report as well as a number of condensed versions of the stories within this report.

You can get the Executive Summary by going to www.cummins.com/sustainability.

Look on the left-hand menu for a link to “Past Reports.”

CUMMINS DATA BOOK
Cummins will introduce its first Sustainability Data Book in June 2015. This report will include all of the data in our Sustainability Progress Report plus additional data, especially as it pertains to Cummins’ environmental performance. It is designed for those who want a complete statistical look at the Company. The Data Book will be posted at www.cummins.com/sustainability where we will also post Cummins’ submission to the Carbon Disclosure Project.

You can find more financial data about the Company’s performance in Cummins’ annual 10-K report. It is available in the Investor Relations section at cummins.com. You can find a link to that report at www.cummins.com/sustainability.

ABOUT OUR WEBSITE
Cummins has a website dedicated to its sustainability efforts at www.cummins.com/sustainability. The site includes past reports dating back to 2003, sustainability-related videos and more. Cummins posts its answers to the Carbon Disclosure Project there and the Company’s new Sustainability Data Book will be posted there as well. If you have suggestions for the site, please contact Blair Claflin, Director – Sustainability Communications, at blair.claflin@cummins.com.
KEY PERFORMANCE INDICATORS

Cummins takes a broad view of sustainability, including the environment, corporate responsibility, safety, diversity, employee development and governance. The Company uses a number of key performance indicators (KPIs) to evaluate how it’s doing. You will find them listed throughout this report.

1 Primary energy excludes sold electricity and associated fuel usage
2 Intensity defined as adjusted for sales (energy / GHG) or hours worked (water)
3 Reduction includes consolidated entities only
# SUSTAINABILITY PROGRESS REPORT

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A NOTE FROM THE CHAIRMAN

I sometimes surprise people when I tell them Cummins is a high-tech company, rivaling anything they might find in Silicon Valley.

The outside of our engines look much as they did when our founder Clessie Cummins first experimented with diesels more than 95 years ago. But the cutting-edge technology on the inside enables our customers to get the power they need with near zero emissions to do business in some of the most competitive, demanding applications in the world.

Our fuel injectors, for example, must be in a near perfect cylindrical form to precisely apply fuel at more than 30,000 pounds per square inch (psi) to enhance combustion while reducing emissions. They can’t do their job if there is an error as small as the diameter of a single strand of hair.

Cummins’ turbochargers, spinning at 120,000 revolutions per minute (rpm), boost engine power while providing the heat necessary for chemical reactions in our aftertreatment systems. The aftertreatment converts oxides of nitrogen, a key contributor to smog, into nitrogen and water that can be safely emitted into the atmosphere.

These advances have helped reduce diesel engine emissions in North America by nearly 100 percent over the past 20 years. You can put a handkerchief over the exhaust pipe of a diesel engine today with the proper aftertreatment and it will remain white even after the driver revs the engine.

Our technology has to work in extreme heat and cold, at high altitudes and deep underground. And it must be reliable. Cummins’ on-highway truck engines regularly travel a million miles if properly maintained – almost 10 times what most people expect from their cars. Cummins’ generators can power hospitals, data centers and other critical buildings for tens of thousands of hours.

Like many Silicon Valley companies, Cummins has engineers developing smart and predictive technology for onboard diagnostics. They also help ensure our fuel systems and other components work well together.

But we also have chemists exploring reactions to remove pollutants from emissions. And our experts in computational fluid dynamics and thermal management use advanced computer modeling to simulate the harsh environment inside an engine. They can test an almost limitless number of variables before an engine is ever placed in a test cell.

Cummins is probably best known for diesel engines, but we also design and build engines that run on natural gas, biofuels and diesel-electric hybrids. We are experimenting with everything from 3-D printing to electrification and start-stop technology (page 70).

Our mission demands that “everything we do leads to a cleaner, healthier, safer environment” and in 2014 Cummins adopted its first comprehensive environmental sustainability plan. This plan introduced goals to further reduce our use of water, energy and our greenhouse gas emissions while increasing recycling at the Company. We made significant progress on these goals (page 27) and have established new goals starting in 2015 for our products in use and internal logistics (page 24).
For all of these reasons, technical innovation is critical to Cummins when it comes to sustainability. That’s as true for a very large engine like the QSK95 powering a locomotive (page 18), as it is for the Company’s new 5.0L V8 Turbo Diesel for pickup trucks (page 68).

We operate in a unique business environment. A significant portion of Cummins’ customers build their own engines. When they buy ours, it is usually because the innovation and quality we provide gives them a competitive advantage.

The Company invested a record $754 million in research and development in 2014, up more than 7 percent from the year before, and launched more than one new or improved product each week to ensure we continue to provide a competitive advantage for our customers wherever they operate.

Cummins’ global reach positions us to take advantage of an exciting opportunity that exists in our industry today. A growing number of countries are adopting more stringent emissions regulations to protect their natural resources. We believe Cummins’ technical expertise, and a proven record for providing the right solution at the right time and place, will help us continue to expand globally.

Clessie might not recognize all of the high-tech features added to Cummins engines today, but I think he’d be pleased to see that innovation and quality continue to be integral to everything we do.

Tom Linebarger
Chairman and Chief Executive Officer
Cummins Inc.
SUSTAINABILITY PROGRESS REPORT // INTRODUCTION

Here’s a look at some of what was happening at the Company around the world in 2014-2015.

COLUMBUS, INDIANA (U.S.A.)
Cummins announced in January 2015 that Distribution Business President Pamela Carter, the first woman to lead one of the Company’s four main business units, was retiring. Carter, who became Indiana’s first African-American woman Attorney General in 1993, had been with Cummins since 1997. She initially served as the Company’s Vice President – General Counsel and Corporate Secretary. She then held several key positions before becoming President of the Distribution Business Unit from 2007 until she retired.

KENT, UNITED KINGDOM
Cummins Power Generation Kent received the Export Award in September 2014 at the UK Best Factory awards for a second year in a row. The plant was also highly commended in the supply chain category.

JUÁREZ, MEXICO
In June 2014, Cummins Filtration was named “PACCAR Mexico 2013 Supplier of the Year.” PACCAR leaders said Cummins exceeded their expectations in sales, field support, operational logistics, customer service and parts delivery.

JAMESTOWN, NEW YORK (U.S.A.)
The Jamestown Engine Plant celebrated its 40th year in production in 2014. JEP opened in 1974 as a component manufacturing plant for Cummins and didn’t produce its first engine (the L-10) until 1979. Today, the 1 million-square-foot plant employs 1,500 people and produces 480 engines per day.

BUENOS AIRES, ARGENTINA
Three Cummins ISZ13 powered Ginaf Rally Power Trucks were part of the 2015 Le Dakar race across Argentina, Chile and Bolivia. The aim of the three-year project between Ginaf and Cummins was to develop a new rally truck platform that is lighter and easier to maneuver than its predecessor.
PHALTAN, INDIA
The Cummins India Foundation launched a skills development program in June 2014 for residents around the Company’s Megasite. Working with the Yashaswi Institute of Technology, the program is designed to build skills in employment and entrepreneurship.

CASABLANCA, MOROCCO
Cummins officially opened its newly expanded and renovated North Africa regional office in Casablanca, Morocco in March 2015. The office will serve as a dedicated regional hub for customers in 19 countries. It was first established in Casablanca in 2011 and has been growing ever since.

PUNE, INDIA
Cummins India partnered with Tata Motors to compete in the popular T1 Prima Truck Racing Championship in 2014. The massive and powerful Tata Prima trucks, powered by Cummins ISL engines, proved to be popular among India’s many race fans.

QUEENSLAND, AUSTRALIA
The first installation of a Cummins QSK95 generator in a commercial project outside North America took place at the new $1.8 billion Sunshine Coast Public University Hospital. Four QSK95 generator sets were delivered to the new hospital in early December 2014, where they will provide standby power. The hospital is under construction and will open at the end of 2016.

SHANGHAI, CHINA
Cummins and Jardine Engineering officially began operations in the power solutions business during a ceremony in January 2015. It is the 16th joint venture involving Cummins in China. The business will develop, sell, deliver and service gas powered generation projects in China.

This map includes Cummins plants, offices and distributors.
OUR RECOGNITION

Cummins received several awards in 2014 and 2015 that touched on the sustainability of the Company.

CORPORATE RESPONSIBILITY / ETHICS

Cummins was named one of the WORLD’S MOST ETHICAL COMPANIES in 2015 by the Ethisphere Institute. The institute recognizes a company’s commitment to ethical leadership, compliance practices and corporate social responsibility. This was the eighth straight year that the institute selected Cummins for its list.

Cummins in 2014 was named a member of the FTSE4GOOD INDEX, a stock market indices, which measures for investors the performance of companies demonstrating strong social, governance and environmental practices.

Cummins was one of 11 global companies named winners of the 2014 GOLDEN PEACOCK AWARD for Excellence in Corporate Governance by the Institute of Directors. The group initiated the Golden Peacock awards in 1991 to establish a benchmark for corporate excellence in areas such as sustainability, human resources, corporate social responsibility, health and safety, governance and the environment.

ENVIRONMENT

Cummins was named to the DOW JONES SUSTAINABILITY INDEX FOR NORTH AMERICA in 2014. The Company has been on the North American Index since 2006. The survey measures a company’s sustainability in a wide range of areas including the environment, corporate responsibility, human resources, finance and more.

Cummins was ranked 105th among the 500 largest public companies in the United States in NEWSWEEK’S 2015 GREEN RANKINGS.

In 2014, Cummins facilities in the United Kingdom won two National Recycling Awards for their waste minimization and recycling efforts – CORPORATE RECYCLER OF THE YEAR and the WASTE PREVENTION AWARD.

The awards are sponsored by Materials Recycling World in the U.K. Cummins facilities in the U.K. reduced their total waste generated by almost 31 percent or 8,729 metric tons between 2012 and 2013 and increased their recycling rate from 96.4 percent to 98 percent.

Cummins India won the SPARSHA – BEST PROJECT AWARD in 2014 for its efforts to conserve water across the Company’s facilities in India.

The award was presented by the Lakshya Corporate Social Responsibility program organized by the National Institute of Industrial Engineering, a pioneering academic institute for higher education.
DIVERSITY / WORKPLACE

In 2014, Cummins received a perfect score for a 10th consecutive year in the 2015 CORPORATE EQUALITY INDEX awarded by the Human Rights Campaign. The group is the largest U.S. civil rights organization for lesbian, gay, bisexual and transgender (LGBT) employees.

Cummins, in 2015, was named 21st in Forbes magazine’s list of the TOP 25 EMPLOYERS IN AMERICA. The list was based on a survey of more than 20,000 American workers at large U.S. firms or institutions.

Cummins was named one of the TOP 50 COMPANIES FOR DIVERSITY by DiversityInc magazine for a ninth consecutive year in 2015. Cummins ranked 21st on the magazine’s list.

The Minority Corporate Counsel Association (MCCA) named Cummins the 2014 EMPLOYER OF CHOICE FOR THE MIDWEST REGION OF THE UNITED STATES. MCCA’s Employer of Choice Award honors general counsels and their law departments for their success in internal and external diversity and inclusion initiatives.

BUSINESS

Cummins was recognized in 2014 by Chrysler Group LLC as one of its 2013 SUPPLIERS OF THE YEAR during the Company’s 2014 Annual Strategy Meeting and Supplier Awards ceremony. Cummins was recognized in two categories, marking the first time it received two awards in the same year. Cummins was recognized as the Powertrain Supplier of the Year and the Technical Cost Reduction Supplier of the Year.

Frost & Sullivan recognized Cummins with its 2014 U.S. OVERALL BEST HEAVY-DUTY TRUCK ENGINES PRODUCT LEADERSHIP award based on the results of a survey distributed by the consulting firm. According to Frost & Sullivan, the majority of respondents said they think Cummins is the “best” brand of heavy-duty truck engines for their fleets.
WHO WE ARE

Cummins Inc., a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems.

WORLD HEADQUARTERS
500 Jackson Street
Columbus, IN 47201

STOCK SYMBOL
(traded on New York Stock Exchange)
CMI

FOUNDED IN 1919

WEB SITE
www.cummins.com

FORTUNE 500 RANKING
(2015)
154

SALES / EARNINGS

In 2014, Cummins earned
$1.65 billion on revenues of
$19.2 billion.

EMPLOYEES
Worldwide, approximately
54,600 people.
More than 60 percent of the
Company’s employees are
located outside the United States.

CUSTOMERS
The Company’s customers are located in approximately 190 countries and territories that Cummins reaches through a network of more than 600 company-owned and independent distributor locations and approximately 7,200 dealer locations.
VISION, MISSION, VALUES AND PRINCIPLES

OUR VISION
Making people’s lives better by unleashing the Power of Cummins.

OUR MISSION
We unleash the Power of Cummins by:
» Motivating people to act like owners, working together.
» Exceeding customer expectations by always being the first to market with the best products.
» Partnering with our customers to make sure they succeed.
» Demanding that everything we do leads to a cleaner, healthier, safer environment.
» Creating wealth for all stakeholders.

OUR VALUES
INTEGRITY // Strive to do what is right and what we say we will do.
INNOVATION // Apply the creative ingenuity necessary to make us better, faster, first.
DELIVER SUPERIOR RESULTS // Exceed expectations consistently.
CORPORATE RESPONSIBILITY // Serve and improve the communities in which we live.
DIVERSITY // Embrace the diverse perspectives of all people and honor both with dignity and respect.
GLOBAL INVOLVEMENT // Seek a world view and act without boundaries.

OUR STRATEGIC PRINCIPLES
Leverage Complementary Businesses // Cummins is a family of complementary businesses that create value for our customers by leveraging relationships and applying innovative technology across business boundaries.

Increase Shareholder Value // Cummins’ financial success is measured by growth in shareholder value. We will focus on ROE / ROANA and Earnings Growth (not Revenue Growth) as the principal drivers of shareholder value.

Seek Profitable Growth // Cummins will seek profitable growth by leveraging our assets and capabilities to grow in market segments with favorable industry dynamics and where Cummins can establish an advantage.

Relentlessly Pursue Cost Leadership // Cummins will pursue an operational strategy of cost leadership.

Lead in Critical Technologies // Cummins will be the market leader in technologies most critical to our customers’ success and our Company’s performance.

Create the Right Work Environment // Cummins will assure that the physical and cultural work environment is conducive to excellent performance and continuous improvement.
HOW WE DO IT

Cummins is organized into four business units:

CUMMINS ENGINE BUSINESS
The Engine Business manufactures and markets a complete line of diesel and natural gas engines for on-highway and off-highway use. Markets include heavy- and medium-duty trucks, buses, light-duty trucks and industrial uses such as agricultural, construction, mining, marine, oil and gas and military equipment.

CUMMINS POWER GENERATION BUSINESS
Power Gen is a global provider of power generation systems, components and services in standby power, distributed power generation, as well as auxiliary power in mobile applications. It also provides a full range of services including long-term operation and maintenance contracts and turnkey and temporary power solutions.

COMPONENTS BUSINESS
- Cummins Emission Solutions designs and manufactures exhaust aftertreatment technology and solutions for the light-, medium-, heavy-duty and high-horsepower engine markets.
- Cummins Filtration designs and builds heavy-duty air, fuel, hydraulic and lube filtration and chemical and exhaust system technology products.
- Cummins Fuel Systems designs and manufactures new fuel systems.
- Cummins Turbo Technologies designs and builds turbochargers to boost engine power and related products.

CUMMINS DISTRIBUTION BUSINESS
Cummins Distribution sells and services the full range of Cummins products for over 20 application segments in over 190 countries around the globe.
OUR KEY TOOLS

Cummins is a company with operations across the globe. To help ensure the Company operates smoothly, Cummins relies on three primary tools:

**SIX SIGMA**

Cummins is a major proponent of Six Sigma, using the business improvement tool to save the Company and its customers billions of dollars.

Since it was initiated at Cummins in 2000, Six Sigma has provided a common process and language for employees to solve problems and develop new products and processes.

Six Sigma uses data-based analysis to identify defects and variation in a wide range of manufacturing and business situations. Here’s a quick look at what Six Sigma has meant to Cummins:

» As of the end of 2014, approximately 21,000 people had been trained how to use Six Sigma tools at the Company since the process was introduced.

» An estimated $5.78 billion in savings have been identified at the Company since Six Sigma started at Cummins 15 years ago.

» Cummins customers have saved an estimated $1.15 billion through Six Sigma since it was first offered to them in 2005.

Cummins also uses Six Sigma in its community involvement work, helping its community partners improve their efficiency and address major problems. In 2014, Cummins employees completed 156 Community Impact Six Sigma projects.

**CUMMINS OPERATING SYSTEM**

The Cummins Operating System helps develop common practices and approaches to improve customer satisfaction. The 10 practices are:

» Put the customer first and provide real value.

» Synchronize flows (material, physical and information).

» Design quality in every step of the process.

» Involve people and promote team work.

» Ensure equipment and tools are available and capable.

» Create functional excellence.

» Establish the right environment.

» Treat preferred suppliers as partners.

» Follow common problem-solving techniques.

» Use Six Sigma as the primary process improvement method.

**CUMMINS BUSINESS MODEL**

The Cummins Business Model is a simplified view of how the Company is organized that starts and ends with customers and the business.

The business model was updated in 2013 to more accurately reflect how Cummins delivers products and services to our customers around the world through an integrated supply chain. The new model more clearly represents how we work together to meet or exceed customer expectations.
Cummins has a rich history, replete with examples of innovation, entrepreneurship and vision.

Here’s a look at some highlights over the last 95 years:

**OUR HISTORY**

- **1919**
  - Clessie Cummins creates the Cummins Engine Company based in Columbus, Indiana (U.S.A.). William G. Irwin, who employed Cummins as a driver, supplies nearly all of the $50,000 in startup capital.

- **1929**
  - Cummins takes Irwin for a ride in a used Packard limousine that he equipped with a diesel engine on Christmas Day, convincing Irwin of the engine’s potential. Irwin invests a much-needed infusion of cash.

- **1932**
  - Cummins barnstorms across the country, demonstrating the power and fuel efficiency of the diesel engine in his Coast to Coast Cummins Diesel Test Bus.

- **1934**
  - J. Irwin Miller, great-nephew of W.G. Irwin, becomes general manager of Cummins at the age of 24.

- **1937**
  - Cummins earns its first profit.

- **1942**
  - Miller becomes Executive Vice President of Cummins.

- **1944**
  - Miller becomes Chairman of the Cummins Board.

- **1945**
  - Clessie Cummins leaves Cummins and moves to California where he continues inventing until his death in 1968.

- **1951**
  - Miller is commissioned as a lieutenant in the Navy Air Corps, where he served aboard the carrier Langley during World War II. He saw action in the Marshall Islands and New Guinea.
Miller lays out his thinking on Corporate Responsibility in Cummins’ 1972 Annual Report. “While some still argue that business has no social responsibility, we believe that our survival in the very long run is as dependent upon responsible citizenship in our communities and in the society as it is on responsible technological, financial and production performance.”

Cummins begins operations in India, first as a joint venture with one plant in Pune. Today, the Company owns all or part of 20 manufacturing facilities in the country and employs nearly 14,000 people.

Miller helps Dr. Martin Luther King, Jr. with some of the organizing behind the 1963 March on Washington. Miller was acting as leader of the National Council of Churches.

Cummins acquires Holset, a British turbocharger manufacturer. Turbochargers today play a key role in a number of engine functions.

Cummins enters China as part of a deal involving heavy construction equipment with Cummins engines.

President and Chief Operating Officer Tom Linebarger succeeds Tim Solso as Chairman and CEO on Jan. 1, 2012. During Solso’s 10 years leading Cummins the Company experienced record growth.

Cummins establishes its Mission and Values around its Vision of “Making people’s lives better by unleashing the Power of Cummins.”

Cummins purchases 86 percent of the Onan Corporation in suburban Minneapolis, Minnesota (U.S.A.), which would become the basis for its Power Generation Business.

Miller retires as Chairman of the Board, although he remains active with the Company until his death in 2004.

Cummins names Rich Freeland President and Chief Operating Officer in July 2014. Freeland had been the Engine Business Unit President since 2010.
CUMMINS HELPS PASSENGER RAIL PICK UP SPEED IN NORTH AMERICA

From its Ontario-inspired shades of green to its custom seats, handy power outlets and Wi-Fi, the UP Express will have plenty to keep passengers talking about as it whisks visitors from Toronto’s Pearson International Airport to Union Station downtown for the Pan American Games in 2015.

Few people, however, will likely notice over the 25-minute trip what’s beneath Nippon Sharyo’s state-of-the-art railcars. Cummins’ underfloor QSK19-R diesel engine will power the new service, but Company leaders say they’ll understand if riders focus instead on the new train’s passenger amenities and eye-catching exterior.

Toronto’s new rail service, when fully implemented, is expected to remove more than one million cars annually in and around Canada’s largest city. (Photo courtesy of METROLINX.)
"At Cummins, we are all about partnering in our customers’ success," said Melina Kennedy, the Company’s General Manager – Global Rail and Defense Business. “We’re very pleased that our ultra-clean diesel technology is seen as a way to help move people more efficiently while significantly reducing emissions and improving the environment.”

Powering the 18 railcars included in Toronto’s UP Express is merely one example of how Cummins is playing an increasingly important role today in passenger rail in North America. Other projects in the works include:

- **Cummins’ QSK19-R will power** 14 Nippon Sharyo railcars headed to the Sonoma Marin Area Rail Transit (SMART) system north of San Francisco, California (U.S.A.), as part of a more than $200 million project to expand rail service between Santa Rosa and San Rafael, California.

- **Cummins’ QSK95 engine**, the largest high-speed diesel engine the Company has ever built, is the preferred engine for Siemens’ new Charger locomotive. Siemens won a multi-state, $225 million contract in 2014 to build 35 diesel-electric locomotives now in development for intercity projects in the United States.

- **Siemens’ Charger locomotive** with the QSK95 will also power All Aboard Florida, the first privately owned, operated and maintained passenger-rail system in the United States. The service, which will eventually connect Miami and Orlando, Florida (U.S.A.), is expected to begin operations in late 2016 from Miami to Fort Lauderdale and West Palm Beach.

Cummins is following a familiar path in each of these endeavors. The Company is combining more than 90 years of diesel engine know-how with a rich tradition of innovation and a deep technical knowledge of the fuel systems, aftertreatment and other components critical to meeting demanding emissions regulations in North America.

When these passenger rail initiatives started looking for a fuel-efficient engine meeting the U.S. Environmental Protection Agency’s (EPA) stringent Tier 4 Final regulations that went into effect Jan. 1, 2015, Cummins had the right product at the right time to deliver the power and torque they needed to succeed.

“With over 100 Tier 4 locomotive, switcher, and railcar installations already on order, this means that Cummins will power almost every Tier 4 passenger rail project underway in North America and we have hundreds of additional installation options under consideration," said Randy Nelson, Manager – Cummins Rail Business Development.

### BUILDING ON PROVEN SUCCESS

For the QSK19-R, Cummins is building on a platform with a long history of success.

The engine powers more than 1,700 railcars currently in use in intercity operations in Germany, the United Kingdom, Australia, China and elsewhere. The cars are self-propelled, with the engine typically installed under the car. They usually run in pairs with the ability to add non-powered cars in between to increase passenger capacity.

The QSK19-R was the first railcar engine produced in North America certified to meet EPA’s Tier 4 Final emissions standards, the toughest
in the world. The underfloor QSK19-R is the latest generation of the 19-liter, 6-cylinder engine manufactured at the Cummins Seymour Engine Plant in Seymour, Indiana (U.S.A.).

To meet Tier 4 Final regulations, and the equivalent Stage IIIB standards for railcars in Europe, the engine is fully integrated with Cummins’ Selective Catalytic Reduction (SCR) aftertreatment system that reduces exhaust emissions to extremely low levels.

SCR-based systems convert oxides of nitrogen (NOx), which can cause smog, into nitrogen and water that can be safely emitted into the atmosphere. With the use of SCR aftertreatment, engine combustion can be optimized to improve fuel efficiency. Engines with Cummins’ SCR package have delivered up to 6 percent better fuel economy.

The QSK19-R also has very fast torque response. This allows railcars to achieve rapid acceleration from idle – an important advantage in reducing trip times on routes with short distances between stations.

Smart electronic engine controls and advanced combustion techniques result in a smooth delivery of power, providing a comfortable travel experience for passengers even when a railcar is running at its top speed of 90 mph (145 km/h). The engine runs quietly with minimal vibration due to an upgraded common-rail fuel system that can precisely balance fueling across the engine’s six cylinders.

When the service is fully implemented in Toronto, the UP Express is expected to remove the equivalent of more than a million vehicles annually in and around Canada’s largest city.

The 18 railcars that are part of the service will have a flexible seating capacity of 173 for a three-car configuration. Additional space for standing passengers is also available during busy periods. Air conditioning is generated from the QSK19-R by means of a high-efficiency drive shaft, eliminating the need for an additional engine.

A very similar configuration will also power the railcars for the Sonoma...
Marin Area Rapid Transit system. SMART wants to build a line serving Sonoma and Marin counties, north of San Francisco. Eventually leaders want to link the project to Larkspur, California, with ferry connections between Larkspur and San Francisco. The project also includes an extensive bicycle and pedestrian path.

The initial operating segment between Santa Rosa and San Rafael is slated to open in late 2016.

**INNOVATION IN A BIG WAY**

While relatively new, the QSK95 has been quickly making a name for itself. Introduced in November of 2011, the engine is eight feet tall, 14 feet long and capable of producing up to 4,400 horsepower (2,983 kW) – the largest high speed diesel Cummins has ever built.

Dubbed the “Hedgehog,” the engine was developed after Company leaders saw potential markets for a bigger engine in the Company’s

Cummins’ QSK95 engine (left) will power Siemens’ Charger locomotive (below) in several large North American projects. (Rendering courtesy of Siemens.)
portfolio for rail, marine, mining and other industries. The QSK95 is also powering the largest generator ever built by Cummins Power Generation, which was introduced in the final quarter of 2014 (page 40).

Working from a “clean sheet,” with lots of flexibility to innovate, engineers designed the QSK95 not only to meet EPA Tier 4 emissions regulations, but with remanufacturing in mind to ensure a long life. Advanced electronics enable custom calibration for specific duty cycles. The engine also features SCR technology and includes all of the fuel economy benefits associated with Selective Catalytic Reduction.

The engine is ideal for passenger rail, providing clean power in a relatively small footprint compared with heavy, medium-speed diesels traditionally used in locomotive applications.

It was the perfect fit when Siemens, known for its precision engineering, decided to enter the passenger rail industry in North America. Siemens chose the QSK95 when it needed an American-made engine to complete a new locomotive it planned to build at its solar-powered rail manufacturing hub in Sacramento, California (U.S.A.).

Siemens’ new diesel-electric Charger locomotive is technically based on the company’s Eurosprinter, Eurorunner and Vectron locomotive platforms, and will be capable of reaching speeds up to 125 miles per hour.

When officials from Illinois, California and Washington (state) jointly bid a contract for 35 diesel-electric locomotives with an option for another 222 locomotives for regional and mainline trains, Siemens was the winner. The trains will also serve parts of Missouri and Michigan. The 35 locomotives are scheduled to be delivered starting in 2016.

WHY PASSENGER TRAINS ARE GOOD FOR THE ENVIRONMENT

Passenger trains are generally considered more efficient than cars because of their relatively high occupancy. A car may have only a single occupant.

According to U.S. Bureau of Transportation Statistics, a passenger train in 2012, the most recent numbers available, used about 1,561 Btu’s per passenger mile compared with around 3,861 Btu’s per passenger mile for cars.

When a new passenger rail service begins, supporters expect a certain number of drivers will give up their cars and switch to the train, resulting in an environmental benefit.
The $225 million, multi-state contract isn’t the only big development in Siemens’ rail efforts in the United States. The company’s Charger locomotive with the QSK95 will also power a ground-breaking initiative called All Aboard Florida.

The privately owned, operated and maintained passenger rail service will eventually connect Miami and Orlando, making intermediate stops in Fort Lauderdale and West Palm Beach. Service from Miami to West Palm Beach is scheduled to begin in late 2016 and from West Palm Beach to Orlando in 2017.

The initial five trainset purchase to serve the Miami to Fort Lauderdale and West Palm Beach segment will consist of two diesel-electric locomotives, one on each end of four passenger coaches.

All Aboard Florida’s leaders expect, when fully implemented, the passenger rail service will remove 3 million cars from the road annually.

**LOOKING TO THE FUTURE**

Even with all of these developments taking place, passenger rail will still be relatively limited in North America – especially when compared with Europe and other parts of the world. Skeptics question whether North Americans will ever be willing to give up their cars in large numbers to travel by train.

But advocates say as traffic congestion grows on North American highways and concern increases about managing natural resources wisely, the climate improves significantly for passenger rail.

“This is a very exciting and important time for passenger rail,” Cummins’ Kennedy said. “Our hope is the high technology we’re developing coupled with our deep knowledge of engines will help Cummins customers develop successful solutions to moving people quickly and efficiently, with as little impact on the environment as possible.”

**RAIL BUSINESS WINS GOLDEN SPANNER AWARDS**

Cummins’ rail business in 2014 celebrated achievements in powering customers in the United Kingdom, winning several prestigious Spanner Awards in London.

The awards, hosted annually by industry magazine Modern Railways, recognize the work of the U.K. Rail Maintenance Depots located throughout the country in maintaining the vehicles that transport thousands of passengers every day in the United Kingdom.

The awards divide train fleets into categories and award the best operators from each category: Golden Spanners for the most reliable fleet, Silver Spanners for the most improved fleet and Bronze Spanners for the fleet with the fastest incident recovery. The assessment is based on performance data for reliability and engineering performance in the rail industry.

Cummins-powered train fleets scored big in the 2014 awards ceremony with a total of three Gold Spanners, two Silver Spanners and two Bronze Spanners.

“The team at Cummins provides innovative and reliable power and support to our award-winning customers so they can be successful in their business goals as they serve thousands of passengers every day,” said Cummins Rail and Defense Business General Manager Melina Kennedy.

“These awards are due to the successful collaboration, hard work and partnerships among many people and organizations and exemplify Cummins’ promise of dependability to our customers,” she added.
Cummins is establishing new goals to address two of the Company’s biggest environmental opportunities, improved efficiency of its products in use and more efficient logistics within Cummins’ own operations.

“Going forward, Cummins will continue to be a catalyst for environmental action,” said Chairman and Chief Executive Officer Tom Linebarger. “Our vision and mission demand it, our business success depends on it, and the ingenuity and energy of our employees can make it happen.”

The new goals are in addition to the goals the Company set publicly for waste, water and energy in 2014 (page 27).

Cummins’ Action Committee for Environmental Sustainability (ACES) has been working on the new goals for the past year, which, like the 2014 goals, are timed to 2020.

Here’s a look at the new goals:

**PRODUCTS IN-USE GOAL**

Partner with customers to improve the efficiency of our products in use, reaching by 2020 an annual reduction of 3.5 million metric tons (MMT) of carbon dioxide (CO₂), saving 350 million gallons of fuel.

Cummins produced 1.1 million engines in 2014 (including joint ventures), and carbon dioxide emissions from these engines in use represent 99 percent of its CO₂ footprint.

The Company knows it can make a difference in this area, having done more than 100 fuel-economy projects with Cummins customers using Six Sigma tools since 2004. Those projects saved customers more than 100 million gallons of fuel and prevented the release of more than 1 million tons of CO₂ into the atmosphere.

The projects included optimizing vehicle specifications and engine operating parameters, fleet and driver training and advanced engine integration with the vehicle.

Market research studies show fuel efficiency is one of the most significant factors when a customer buys equipment that uses fuel. Fuel efficiency projects with customers not only saves them money while reducing greenhouse gases (GHGs), it also upholds Cummins’ promise of dependability and customer support.

It is not uncommon for the Company’s engines to run one million miles or more over their lifetime, so there is plenty of opportunity to help customers keep their engines running longer and more efficiently.

Cummins defines products in-use engines as those that are currently in operation or a new original equipment manufacturer (OEM) installation that incorporates new approaches for fuel efficiency. These new approaches can be applied at the OEM, with customers at their location after they purchase the product from an OEM, or at a distributor branch.

In 2014 alone, the Company’s fuel-efficiency work reduced CO₂ emissions from products in use equal to the CO₂ footprint of Cummins’ global facilities.
CUMMINS’ ENVIRONMENTAL FOOTPRINT

Cummins conducted a thorough environmental impact analysis to determine its environmental footprint.

PRODUCT LIFECYCLE

01 RAW MATERIALS & PROCESSING

02 CUMMINS FACILITIES

03 LOGISTICS & TRANSPORTATION

04 PRODUCTS IN USE

05 END OF LIFE

The Company’s new goal presents an opportunity for Cummins’ products in-use team to do this work faster and expand beyond current initiatives. Having a public goal as part of the Company’s global Environmental Sustainability Plan also keeps Cummins accountable to its external stakeholders.

The Company made significant progress in 2014 and completed projects reducing nearly 700,000 metric tons of CO₂. The team has worked across regions and market segments to identify opportunities and accelerate fuel-efficiency improvement efforts with a project list numbering close to 200 from 2014 to 2020. In the past year, the team has also trained more than 450 people in fuel-efficiency improvement work globally.
LOGISTICS GOAL

Use the most efficient method and mode to move goods across the Cummins network to reduce CO₂ per kilogram of goods moved by 10 percent by 2020.

Transportation is a key element of the logistics process that impacts the supply chain from suppliers to customers. Transforming how Cummins moves raw materials and finished goods across the supply chain is at the core of the Company’s transportation, logistics and warehouse strategy as well as an important priority area for its global environmental sustainability plan.

Cummins spends close to $442 million in transporting goods across the Cummins network. In 2014, the Company adopted a transportation network optimization initiative to get the most out of its transportation system as part of Cummins’ larger supply chain transformation.

The Company is now using a global transportation management system to improve the speed and visibility of goods moved and have better analytics to manage the process. Adding a goal for CO₂ reduction not only will quantify the environmental benefit that Cummins expects to achieve through this system, but accelerates and expands its efforts globally.

The main focus of the Company’s goal is on shipments from suppliers to Cummins facilities and shipments between Cummins own facilities, as its business units supply each other.

The transportation management system will help Cummins reduce the total number of miles goods travel by combining shipments of different products going to common locations. The Company will also be able to reduce the number of less-than-full truckload shipments.

The management system will also help Cummins’ logistics professionals choose the most efficient way — whether by road, rail or sea — to ship them. As a result of these efforts, the Company expects to save $40 million to $64 million annually.

Cummins is taking a phased-in implementation approach, which began as a pilot in North America in 2014 followed by a European launch in January 2015, with India integration occurring in the third quarter of 2015.

The logistics team is working with the Company’s many internal business unit and external stakeholders to achieve this goal as Cummins transitions from third-party providers to a self-managed process. Working with carriers in India, Brazil and Asia-Pacific is a priority, as those are regions where Cummins can achieve the biggest CO₂ reductions.
CUMMINS MAKES PROGRESS ON ENVIRONMENTAL GOALS

Cummins made significant progress on all of the goals it established in 2014 to reduce its use of water and energy and the waste it produces in its facilities.

The Company is close to its energy goal, which is tied to 2015, and is already close to its overall target for water consumption by 2020. But officials say it remains to be seen if the Company can reach its water goal over an extended period of time.

“We want to show we can consistently meet these goals before we develop new ones,” said Mark Dhennin, Cummins Director of Energy Efficiency and Environment. “We’re off to a good start and there’s been some great work done, but there is still a lot of work ahead before we can say we met our 2020 goals.”

Here’s a 12-month progress report on each of the six goals Cummins established:

WATER GOALS

Reduce direct water use across Cummins by 33 percent by 2020, adjusted for hours worked.

Achieve water neutrality at 15 Cummins manufacturing sites where water is in short supply, also by 2020.

BASELINE YEAR: 2010

Cummins used 972 million gallons of water in 2014. While this is an increase of 14 million gallons from 2013, the number represents a 9 percent decrease in water use intensity since last year. Since the goal’s baseline year of 2010, direct water use is down by 14 percent, while water use adjusted for hours worked is down by 36 percent.

As the Company prepared to establish its water goals, some sites began their efforts even ahead of the announcement. In fact, four sites including three engine plants in China and the Technical Center in Columbus, Indiana (U.S.A.), saved more than 67 million gallons, about 7 percent of the Company’s total water use in 2014. These achievements have placed Cummins ahead of its 33 percent goal, but the Company is not yet ready to claim success.

With several new facilities open that are continuing to ramp up production, Cummins must ensure it continues producing results through the next phase of growth and production demands.

The Company’s water neutrality work is progressing as expected. Working toward achieving this goal is promoting awareness about the connection between water use in the Company’s plants and the needs in its communities.

Cummins defines water neutrality as off-setting the Company’s own water use at a particular location through conservation and with community improvements that either conserve water or make new water sources available.

Because the Company is still validating its calculations, Cummins is not yet prepared to confirm sites as water neutral, but has approximately six sites, primarily in India, that have implemented significant projects toward achieving water neutrality.

The Company’s efforts already underway range from expanding water reservoirs in Pune, India; to creating...
reservoirs and improving irrigation practices in Cummins India’s Model Village program in Nandal village (page 54); to digging a new well for a school in Xiangyang, China, establishing a rain water harvesting system and teaching students the importance of using water wisely.

**WASTE GOALS**

**Waste**

Increase recycling rate from 89 percent in 2014 to 95 percent by 2020.

Reach “zero disposal” status at 30 sites by 2020 where 100 percent of waste is recycled in a useful manner.

**BASELINE YEAR: 2010**

Cummins continues to make progress on its public waste management goals. In fact, the Company’s sites in the United Kingdom have already achieved a collective 99 percent recycling rate. The Company all together recycled 90.4 percent of its total waste generated in 2014, equivalent to approximately 165,000 metric tons of waste.

Since the baseline year of 2010, Cummins’ total waste disposed decreased by about 22 percent in absolute terms, while experiencing a 41 percent reduction in disposal adjusted for hours worked. Compared with 2013, Cummins’ total waste disposed in 2014 decreased by 2,000 metric tons on an absolute basis or 20 percent, adjusted for hours worked.

Facilities and operations staff have updated some waste management processes to ensure goal success. The team is conducting “deep dive” waste evaluations at the 10 sites that account for 50 percent of the Company’s waste disposal. A waste reduction toolkit will be included in the formal waste reduction plan at those sites. Concurrent quarterly waste reviews by business unit and region are expected to provide greater insight into progress and facilities best-practice sharing.

As with the Company’s water neutrality goal, Cummins has formalized its definition of “zero disposal.” Four sites have been validated as zero disposal under this criteria. There is currently one site awaiting validation as zero disposal.

Under Cummins’ definition of zero disposal, waste can only be burned for energy recovery after reasonable efforts have been made to reduce, reuse or recycle, and then only if there is a net energy gain, creating more energy than is needed merely to sustain combustion.

**ENERGY AND GHG GOALS**

Reduce energy use and greenhouse gas (GHG) emissions by 25 percent and 27 percent, respectively, compared to a 2005 baseline and adjusted to sales, by 2015.

**BASELINE YEAR: 2005**

The focus on energy and greenhouse gas was the first company-wide initiative of its kind at Cummins, targeting a specific set of environmental impacts around the globe. An initial goal was set for 2010. Achieving the second goal by 2015 will require the Company to double its energy efficiency reductions at the same time Cummins’ business is changing.

The Company is adding several new buildings that will use energy but not produce revenue, engage in more joint ventures in the engine business, and produce more high-horsepower engines, which require a lot of fuel to test.

These changes have been challenging, but Cummins is on track to meet both its energy and GHG goals. The Company is leveraging lessons from programs such as the ISO50001 energy management system and the Department of Energy’s Superior Energy Performance program.

In 2014, the Company’s GHG emissions both increased on an absolute basis (up 8.6 percent) and decreased when adjusted for sales (down 2 percent) from the prior year. Compared with the energy / GHG goal baseline year of 2005, emissions have decreased 35 percent, while increasing by 10 percent on an absolute basis.
ENVIRONMENTAL GOAL PROGRESS

Cummins’ water and waste facility goals have a goal year of 2020, while the energy and GHG goals are set to be met in 2015.

The charts to the right show the Company’s goal progress visually, while the data table below gives more detail.

WHAT IS THE IMPACT?

Since 2010, Cummins substantially reduced facility water and waste, adjusted for hours worked, and GHG emissions, adjusted for sales. The Company avoided impacts equivalent to these real-life examples.

Emissions equal to taking 46,700 passenger cars off the road annually

Water for drinking, sanitation and hygiene for 284,000 people for a year

3,500 garbage trucks full of waste

ENVIRONMENTAL PERFORMANCE

Includes all consolidated operations and joint ventures subscribing to Cummins’ Enterprise Environmental Management System.

<table>
<thead>
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<th>Environmental Performance</th>
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<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<td>Energy consumption (thousands of MMBtu)¹</td>
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<td>12,263</td>
<td>11,711</td>
<td>12,077</td>
<td>12,746</td>
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<tr>
<td>GHG emissions (thousands of metric tons CO₂e)</td>
<td>760</td>
<td>783</td>
<td>729</td>
<td>750</td>
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<td>Generated waste (thousands of metric tons)</td>
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<td>Disposed waste (thousands of metric tons)</td>
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<td>25</td>
<td>21</td>
<td>20</td>
<td>18</td>
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<td>Recycled waste (thousands of metric tons)</td>
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<td>Recycling rate (%)</td>
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<td>U.S. hazardous waste (metric tons)</td>
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<td>101</td>
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<td>Water use (millions of gallons)</td>
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<td>Number of Enterprise ISO 14001 certified entities</td>
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<td>Number of Enterprise ISO 14001 certified manufacturing sites</td>
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<td>55</td>
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<td>Net sales (millions U.S. dollars)</td>
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<td>Energy intensity reduction since 2005 (%)²,³</td>
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<td>Water intensity reduction since 2010 (%)²</td>
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<td>22</td>
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</tbody>
</table>

¹ Primary energy excludes sold electricity and associated fuel usage
² Intensity defined as adjusted for sales (energy / GHG) or hours worked (water)
³ Reduction includes consolidated entities only
CUMMINS PRODUCTS ALWAYS HAVE THE ENVIRONMENT IN MIND

Products are at the center of the Company’s vision to make people’s lives better by unleashing the power of Cummins. From powering fire trucks that keep communities safe, to heavy-duty trucks that deliver goods, to generators supporting hospitals, Cummins makes a difference around the world by working to meet the needs of all of its stakeholders.

The Company’s technology leadership and innovation enable Cummins to meet increasingly more stringent emissions regulations across the globe. The Company’s customers have come to depend on Cummins’ clean technology for the power and reliability they need to succeed, whatever the job.

Product stewardship means the Company has an environmental mindset about its products as employees think about their design, use, remanufacture and end of life.

Here is Cummins’ view of product stewardship:

ENVIRONMENTAL IMPACT ANALYSIS

After an intensive study and analysis, Cummins adopted its first-ever comprehensive environmental sustainability plan in 2014 that builds on the good work the Company has previously done in this area.

This new plan prioritizes actions by Cummins to address its biggest environmental opportunities, from the materials the Company buys to the emissions of its products. Cummins examined its entire environmental footprint, focusing on the key areas of water, waste, energy and greenhouse gases (GHGs).

It was clear from this analysis that the Company’s top priority must be products, both in design and in use.

The analysis led Cummins to establish its products in-use goal and design for environment initiative.

PRODUCT DESIGN

There will always be a need for moving goods and providing power for the world to do important work, and it is critical to develop technologies that will do those in the cleanest and most efficient way possible. Cummins engineers are thinking about ways to make the Company’s products even more environmentally friendly in the future.

Seventy percent of a product’s environmental footprint is determined during the earliest phases of the design process, according to the U.S. Environmental Protection Agency (EPA). So Cummins has tremendous potential to reduce both the resources used to make a product as well as how much fuel is burned when that product is put to use.

After the Company completed a lifecycle analysis (LCA) on its flagship ISX15L engine in 2013, Cummins continued to approach product stewardship with a lifecycle mindset. Since the material-embodied energy-to-weight ratio is consistent across all engine sizes, the Company is using this comprehensive information to develop Cummins’ design for environment strategy. The Company will continue to perform LCAs on other Cummins products as necessary.

The Company’s design for environment strategy will focus on materials and fuel efficiency. Improving fuel efficiency not only means reducing the fuel consumption of Cummins products, but also includes designing for alternative energy sources as well as
reducing the amount of fuel burned in the Company’s development testing.

Material efficiency includes designing with less material and designing with circular material flow in mind, such as recycled material use and remanufacturing.

Cummins is beginning to integrate tools and training programs into its new product development process to take into account the environmental impacts of all phases of the product lifecycle, including raw material extraction, manufacturing, product use and end of life. Cummins expects to report more on its design for environment strategy in 2016.

**PRODUCTS IN USE**

While Cummins products can change the world for the better, the Company must also ensure it minimizes the environmental impact of its products in use, helping customers reduce their own environmental footprints.

On-highway transportation represents approximately 20 percent to 30 percent of the world’s GHG emissions. Greenhouse gas emissions from Cummins products in use are the Company’s largest environmental impact and represent 99 percent of Cummins’ greenhouse footprint due to fossil fuel use, which emits carbon dioxide (CO₂).

Cummins biggest opportunity to expand its product stewardship beyond the upfront design will be working with customers to improve the efficiency of its products in use. This is a win-win as it saves customers money for fuel and it reduces greenhouse gas emissions. And through the Company’s products in-use goal, Cummins can make a difference right now (page 24).

The Company has partnered with customers on fuel-efficiency projects for many years. As part of Cummins’ Environmental Sustainability plan, the Company has added more people and tools to accelerate and expand this important work. High-horsepower engines in use are a priority given the large amount of fuel they burn and the corresponding CO₂ emissions.

Based on previous Cummins fuel-efficiency projects, the Company expects that a 3 to 5 percent reduction in fuel usage can be achieved for many customers through optimization tools, system-level expertise and various fuel-economy engine features.

**REMANUFACTURING**

Cummins’ remanufacturing is the Company’s “green business.” Remanufacturing maximizes benefits for customers and the environment by planning and designing Cummins products to have a long and increasingly more fuel-efficient life.

In 2014, some 50 million pounds of Cummins product was put back into use thanks to remanufacturing. Remanufacturing requires about 85 percent less energy than manufacturing the same product with new parts. Water is saved since new metal does not need to be extracted.

On-highway and mining engines account for 74 percent of Cummins product CO₂ emissions. Eighty percent of product CO₂ emissions come from engines fewer than 10 years old.
operations include nine global facilities and offer about 4,500 part numbers.

Through the common application of salvage technology, component re-use guidelines and remanufacturing-specific policies and procedures, the Company has become increasingly sophisticated in what it can remanufacture and for how long it can extend a product’s life.

In many cases, remanufactured products today are “upcycled” to include design, emissions, fuel economy and quality upgrades.

Lighter, more compact engine designs combined with new materials (compact graphite and aluminum) and special coatings are changing Cummins’ approach to remanufacturing and making engines more fuel efficient. The Company is also developing specific rebuild kits to improve fuel economy at time of rebuild.

The old methods of grinding and machining are gradually being replaced with additive technologies, specialized coating technologies and more. The emerging field of mechatronics, which combines mechanical and electrical engineering and computer science, is creating new systems such as robotics and digitally controlled combustion engines.

The Company is also investing in technologies to assess remaining useful life. The expanding number of emissions control components, such as diesel particulate filters, also present business opportunities for remanufacturing.

**REGULATORY INTEGRITY**

Cummins’ product stewardship is underpinned by the Company’s commitment to regulatory integrity, advocating now for cleaner and more efficient products for the future, and ensuring improvements intended by regulation are delivered in the real world.

Cummins has a long history of supporting regulatory actions to make the environment cleaner, going back to the 1970s as a strong advocate for the Clean Air Act in the United States.

The Company continues to advocate globally for sound public policy and regulations that are tough, clear and enforceable.

There is growing public demand for better environmental regulations of all kinds by governments in almost every country. Customers increasingly need Cummins’ products to meet new environmental regulations and provide the power and reliability that helps them compete and win. By getting out in front of regulations and participating in the rule-making process, the Company is in a very good position to not only comply but excel.

As more regions around the world consider regulating greenhouse gas emissions (GHGs) and fuel consumption, Cummins sees an opportunity for technological innovation that can benefit vehicle owners and the environment. The Company supports a separate engine standard in these regulations to provide a clear direction for innovation, addressing the component that burns all the fuel and emits the carbon dioxide (CO₂).

It ensures enforceable requirements.

A regulatory framework that includes a combination of engine and vehicle standards is also the most cost-effective way for customers to realize fuel savings and retain their ability to choose the right powertrain and vehicle to purchase in order to do their work.

**MATERIAL COMPLIANCE**

Material compliance is a key component of Cummins’ product stewardship. The Company maintains a comprehensive corporate policy regarding the use of prohibited and restricted substances in its products. Cummins’ policies take into account key global environmental regulations as well as very specific ones driven
Cummins’ efforts resulted in a process both compliant to Section 1502 of the Dodd Frank Act in the United States on conflict minerals, and one that sets the expectation of responsible sourcing practices throughout the Company’s supply base. Conflict minerals are mined in conditions of armed conflict and human rights abuses in the Democratic Republic of Congo and adjacent countries.

U.S. laws require companies that are publicly traded on U.S. exchanges to disclose whether they use specified minerals from those countries such as tungsten, tantalum and gold in their products. (page 117).

**PRODUCT SAFETY**

Cummins’ Mission demands that everything the Company does leads to a “cleaner, healthier, safer environment.” That makes product safety a top priority. Cummins Product Safety Policy says:

» Cummins will design, manufacture, sell, distribute and service all products so that they are safe to use for the described and intended purpose.

» Cummins will provide its customers, partners, employees and society with products that are safe to operate, maintain, adjust and repair when used as intended.

» Each Cummins employee will regard product safety as a top priority.

» Each Cummins employee is responsible for applying the policy in his or her individual and collective work activity.

» Each Cummins employee is expected to adhere to the spirit as well as the letter of the Product Safety Policy.

Cummins has a set of standardized corporate and local policies and procedures in order to meet the Corporate Product Safety Policy. Each Cummins Business Unit has a Product Safety Committee that is accountable for applying the policies and procedures in its area.

These Product Safety Committees integrate into the Corporate Product Safety Council, which is managed by the corporate Director of Product Safety. This network allows for collaboration and rapid communication on safety-related matters.

In compliance with the Company’s Product Safety Policy in 2014, Cummins voluntarily initiated five product safety campaigns impacting approximately 91,000 Cummins engines and/or Cummins components. These campaigns were reported to the relevant public agencies as required by applicable laws and improvements were made on each of the products at issue.
SUSTAINABILITY PROGRESS REPORT // ENVIRONMENT

BEST PRACTICES
The ongoing work Cummins does with customers for on-highway truck and bus, construction equipment and mine vehicles helps the Company incorporate best-practice improvements in subsequent installations.

POWERSPEC
Cummins’ PowerSpec is a powerful electronic tool that supports customer fuel efficiency beginning at the ordering process and continuing through the life of the vehicle. The tool can optimize equipment set-up during the order, tailor operation of the engine by customizing electronic parameters and provide real-time data and information for optimal in-use performance.

CUSTOMER SPECIFIC PROJECTS
Cummins and its distributors work with end-user customers, often including their partners and suppliers, on projects that are tailored to each customer application and operation. Project scope includes data collection, analysis and specific improvement recommendations.

DRIVETRAIN AND EQUIPMENT OPTIMIZATION
Cummins collaborates extensively with vehicle and equipment manufacturers and suppliers, such as Eaton and Allison Transmission, to design products that meet customer needs while improving efficiency. This work also includes hybrid and start/stop technology.

ENGINE IMPROVEMENTS AND FEATURES
Cummins continually improves engine calibrations and increases the options available to customers such as recent additions ADEPT (idle cruise management, page 38), naturally aspirated air compressors and Connected Diagnostics (page 38).

PARTNERING WITH CUSTOMERS FOR BETTER FUEL EFFICIENCY
Cummins provides a complete set of collaborative solutions to help customers maximize their fuel efficiency and reduce greenhouse gas emissions. From the development of products that are optimized for specific market segments, to the use of software to assist in the truck specification process, to the ability to customize electronic engine settings and parameters, Cummins helps customers reduce their carbon footprint throughout the life of the truck.

BEST PRACTICES
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NEW PRODUCTS REFLECT CUMMINS’ COMMITMENT TO ENVIRONMENT

Cummins had another good year bringing new products to market in 2014. The Company introduced more than 60 products or product updates, many addressing emissions, fuel efficiency or both.

The Company has a distinct advantage when it comes to designing and building clean, fuel-efficient engines and generators that provide the power customers need to succeed while meeting the regulations applicable in any particular market.

Cummins is the only independent engine manufacturer with the in-house capability to produce all of the critical subsystems required to build an engine or generator. The Company believes its technical expertise gives it a competitive advantage as more countries enact stricter regulations to protect their air, land and water.

The Company recognizes that its products must deliver real economic benefits to Cummins’ customers, including not just the performance customers have come to depend upon but also reliability, durability and low cost of ownership, too.

Here’s a look at some of the major environmental sustainability developments in Cummins products over the past year, organized by business segment.

ENGINE BUSINESS

Cummins produces engines for on-highway use, off-highway use and high-horsepower engines for mining, rail, marine, oil and gas, and power generation applications. On-highway engines range from engines for pickup trucks to the engines for large tractor-trailers hauling freight. Off-highway engines include engines for construction, agriculture and industrial uses.

Tremendous strides have been made in engine emissions in North America since the U.S. Environmental Protection Agency (EPA) began regulating them in the 1970s. On-highway diesel engine emissions, for instance, are down more than 95 percent for particulate matter (PM) and oxides of nitrogen (NOx), reaching near-zero emission levels.

Advances in fuel economy, meanwhile, have greatly reduced the output of carbon dioxide (CO₂), a key contributor to global warming.

Cummins has been a pioneer in clean diesel technology, advances in combustion, electronic controls, fuel systems, filtration, air handling, exhaust aftertreatment and more to reduce emissions and improve fuel economy. It has achieved these advances both working on its own and in partnership with others.

For example, in the highly competitive North American Heavy-Duty Truck engine market, Cummins and Eaton introduced a new powertrain package for the ISX15 on-highway engine in 2013 that produced industry-leading fuel economy. Through hardware and software enhancements, the package integrated power and fuel-shifting strategies to provide an estimated 3 percent to 6 percent improvement in fuel economy.

The two companies announced in 2014 that the SmartAdvantage Powertrain package (page 44) was being expanded to include applications for the ISX12, a smaller engine ideal for regional hauling.

In addition to diesel, the Company has also been a leader in the development of engines that run on biodiesel, natural gas and other alternative fuels to provide customers with the option that best works for them to meet their own sustainability goals.

All this knowledge comes together in the Company’s Engine Business Unit. Some of the most significant environmental sustainability developments in the business in 2014 and early 2015 start on the next page.
ENGINE EFFICIENCY

Cummins in March 2015 announced plans for a mobile showcase of its products and technologies available for customers in the North American truck market to help them operate more efficiently. The Cummins Redefining Tour will visit dozens of cities across the United States and Canada beginning in the summer of 2015 (see www.cumminstour.com for schedule).

QUOTABLE:
“We are very excited to announce the 2015 Redefining Tour,” said Amy Boerger, Vice President – North American Engine Business. “The Cummins powered fleet not only demonstrates our products in a real-world application, it also allows us to bring product demonstrations and displays directly to our customers – some of whom we don’t have the opportunity to engage with on a regular basis.”

NOTABLE:
During the tour, customers will have an opportunity to interact with Cummins experts to learn about current and future products and technologies including real 2017 prototype engines powering the truck fleet for the tour, as well as engine system displays representing the Company’s product lineup for the North American truck market.

Cummins announced its Redefining Tour at the Mid-America Trucking Show in Louisville, Kentucky (U.S.A.), in 2015. Company experts will meet with customers on the tour to talk about current and future products.
Cummins has more than doubled the number of engines 10 liters and above that it has remanufactured since 2008.

**QX15**

Cummins announced in February 2015 the start of production of the QX15 for John Deere 9R/9RT Series Tractors. The 15-liter engine, which meets EPA Tier 4 Final and European Union Stage IV emissions standards, is the largest horsepower engine in the John Deere four-wheel-drive tractor range.

**NOTABLE:**
The QX15 features more horsepower and industry-leading hydraulic capacity in a durable platform. The QX15 is manufactured at Cummins’ Jamestown Engine Plant in Jamestown, New York (U.S.A.), the heart of heavy-duty engine manufacturing at Cummins. Typically, more than 400 engines are built per day at the plant.

**QUOTABLE:**
“The Jamestown Engine Plant plays an important role in our Company’s ability to produce a broad range of engines for different customers around the world serving a wide variety of markets,” said Hugh Foden, Executive Director – Off-Highway Business.

**QSK50**

Cummins announced in November 2014 the availability of its QSK50 marine engine for variable speed diesel-electric applications.

**NOTABLE:**
Cummins is applying its experience in diesel electric to introduce optimized ratings for variable speed diesel-electric technology that is ideal for low-load applications such as offshore support vessels, ferry boats, passenger vessels and fishing boats. Early reports show significantly reduced fuel consumption, reduced carbon dioxide (CO₂) emissions and lower system weight compared to fixed speed diesel applications.

**QUOTABLE:**
“Cummins will play a critical role in the advancement of this more efficient technology, supplying engines to system integrators for packaging into complete variable speed diesel electric packages,” said Waldemar Marchetti, Director of Strategic Growth – Offshore.

**ISB6.7 AND ISL9**

Allison Transmission Holdings and Cummins announced in March 2015 that they had received certification from the California Air Resources Board (CARB) to sell the model year 2015 Allison H 40/50 EP hybrid propulsion system paired with the Cummins ISB6.7 and ISL9 diesel-electric hybrid engines for transit buses and coaches. The pairing was first announced in November 2014.

**NOTABLE:**
Allison’s H 40/50 EP hybrid propulsion system is used for both straight and articulated transit buses. It has improved fuel economy up to 25 percent over similar diesel buses. Additionally, its regenerative braking capability can significantly extend the brake change interval by as much as 350 percent.

**QUOTABLE:**
“Cummins is pleased the hybrid system has received 2015 certification from the ARB as it will provide transit customers another viable solution designed to meet their business needs,” said Laura Chasse, general manager of the North American Bus Business.
6.7L TURBO DIESEL

Cummins announced in August 2014 that its 6.7L Turbo Diesel was the first diesel engine in a medium-duty vehicle certified to meet Low Emission Vehicle III standards from the California Air Resources Board (CARB).

**NOTABLE:**
The new standard applies to all vehicles under 14,000 pounds Gross Vehicle Weight Rating. The Cummins 6.7L Turbo Diesel powers the Ram Heavy-Duty lineup.

**QUOTABLE:**
"Being the first in this segment to certify to these new standards demonstrates our commitment to the environment and meeting more stringent requirements without hardware changes allows us to maintain the proven capability and reliability that our customers have grown to expect," said Jeff Caldwell, General Manager – Global Pickup and Van Business.

CONNECTED DIAGNOSTICS

Cummins announced in February 2015 details surrounding Connected Diagnostics, the first application within the Connected Solutions suite that has been designed to work with leading telematics providers. Cummins Connected Solutions is a group of products that utilize the connection of a Cummins electronic engine to a vehicle’s on-board telematics system.

**NOTABLE:**
Connected Diagnostics gathers engine data to provide customers with immediate expert recommendations in response to engine fault information. Connected Diagnostics utilizes Cummins’ expert guidance to provide thorough recommendations so customers can make the most informed decision at the time of the notification. This will help maintain productivity and maximize uptime for customers.

**QUOTABLE:**
"Cummins is excited to provide this service for our customers to help enable their success," said John Malina, Executive Director of Connectivity and Data Integration. "We are committed to continuing our promise of providing exceptional customer support, and Connected Diagnostics is one more tool that allows us to deliver on this promise."

ADEPT TECHNOLOGY

Cummins in March 2015 introduced ADEPT technology (Advanced Dynamic Efficient Powertrain), a new suite of electronic features that will deliver fuel-economy gains of up to 3 percent initially for ISX15 customers operating with automated manual transmissions.

**NOTABLE:**
ADEPT utilizes load-, speed- and grade-sensing technology to initiate adjustments to speed, power and transmission gear to take advantage of vehicle momentum for better fuel economy. The technology also eliminates unnecessary downshifting to keep the engine operating in the most fuel-efficient “sweet spot.” The first ADEPT package will be available in the third quarter of 2015, and customers will be able to upgrade as future packages are released.

**QUOTABLE:**
"The release of ADEPT in 2015 signifies Cummins’ commitment to deliver customer-focused innovation as soon as it is ready for market," said Amy Boerger, Vice President – North American Engine Business.
NATURAL GAS ENGINES

Cummins’ goal is to provide customers with the engine that makes sense for their particular sustainability needs. That’s why the Company makes engines that run on a variety of fuels, including natural gas.

Cummins has been developing a full line of natural gas engines both through its Engine Business and through Cummins Westport Inc. The joint venture partnership was established with Westport Innovations Inc. of Vancouver, British Columbia (Canada), in 2001.

Cummins Westport’s natural gas engines are available as factory-installed options from more than 50 truck and bus manufacturers, establishing the joint venture as the leading North American provider of natural gas engines for on-highway commercial vehicles.

Independent of the joint venture, Cummins Engine Business has been building natural gas engines for many years, especially in the Company’s High-Horsepower business, primarily for power generation and gas compression customers.

REMANUFACTURING

Remanufacturing of engines and parts provides customers with a high-quality, sustainable option that’s good for the environment and good for their bottom line.

Instead of sending tons of metal to landfills and the scrap heap, remanufacturing recycles and reuses resources, providing customers with significant savings while greatly reducing the need to mine new materials.

This conserves natural resources and minimizes the greenhouse gas emissions associated with excavating, refining and machining materials used for new parts. A Cummins remanufactured engine or part requires about 85 percent less energy than manufacturing a new engine or part. Cummins reclaims about 50 million pounds of product annually, avoiding 200 million pounds of greenhouse gas emissions per year.

Every remanufactured engine or part is completely disassembled, cleaned, inspected, fully restored and tested to meet original specifications or better. If an upgrade has been made from the original design or material of a particular part or engine, it will be added as it is remanufactured.

TO LEARN MORE

You can learn more about Cummins’ complete line of engines at cumminsengines.com.
POWER GENERATION

Cummins Power Generation is committed to providing products that minimize their impact on the environment. The business unit is developing cleaner combustion techniques with natural gas and diesel reciprocating engine generators, plus factory-integrated exhaust aftertreatment that allows these products to meet stringent global emissions standards.

As part of its global emissions strategy, Cummins Power Generation focuses on meeting or exceeding U.S. EPA and European Union emissions standards, as these standards are the world’s most stringent and all-encompassing. This strategy assures end-users of the best power generation solution for their application, regardless of country or continent.

Cummins Power Generation has been in the forefront of the move to cleaner, quieter and more efficient diesel engine-powered generator sets, improving the fuel efficiency of all its engines because less fuel consumed means fewer emissions overall.

Sophisticated electronic engine controls have virtually eliminated visible smoke, and better engine design has reduced lubricating oil consumption to only 0.15 percent of fuel consumed – the best in the industry. Power Gen’s lean-burn gas engine generators used in combined heat and power applications significantly reduce wasted energy and overall emissions.

Here’s a look at some of the key sustainability developments at Cummins Power Generation over the past year.

QSK95 SERIES

Cummins Power Generation in November 2014 introduced the QSK95 Series, a new line of high-performance generator sets engineered with the highest kilowatt per square-foot ratio in its class, resulting in a smaller footprint that achieves a 20 percent improvement in power density.

NOTABLE:
The new series uses Cummins’ most powerful engine to offer best-in-class fuel economy. Over the course of 8,000 hours of operation, the QSK95 can achieve fuel savings of more than $400,000. Fewer maintenance requirements, longer service intervals and 25,000 hours to major overhaul make these generator sets ideal as primary sources of power, but they are also excellent for standby power with their smaller footprint and higher power density.

QUOTABLE:
“The QSK95 Series produces up to 3.5 megawatts of power, occupying less floor space than lower-rated generator sets. They are designed to lower the total cost of ownership by reducing installation expenses, fuel costs and maintenance requirements—all while maintaining Cummins’ high standards of reliability,” said Tony Satterthwaite, then president of Cummins Power Generation. (He has since taken a new position leading the Company’s Distribution Business Unit.)
GRID CODES

Cummins Power Generation announced in January 2015 that certified Grid Code Compliant generator sets had been delivered successfully to a customer in Germany. Grid Codes have been introduced in Europe to help improve the stability of today’s power grids that have become increasingly reliant on numerous renewable energy sources.

NOTABLE:
Transmission and distribution system operators in Europe are defining sets of rules that specify how grid-connected power sources must perform, including generator sets and their associated components. These rules, known as Grid Codes, require embedded generation schemes to stay connected to the grid during certain grid faults, unlike the traditional approach where generator sets could come off the grid at such times.

QUOTABLE:
"With the growing demand to meet Grid Code requirements in Europe, the introduction of Cummins Grid Code Compliant products means power providers can continue to rely on one manufacturer for their generator set needs," said Andrew Stone, Cummins Director of Global Project Companies.

GRID CODE ALTERNATOR RANGE

Cummins Generator Technologies (CGT), a division of Cummins Power Generation, announced in July 2014 the availability of a range of “Grid Code Ready” STAMFORD and AvK alternators. Customers will benefit from exclusive access to a certification modelling tool, which can be used with any prime mover when used in conjunction with real-time practical data.

NOTABLE:
The new Grid Code Ready line of alternators was engineered to meet global Grid Code regulations ahead of the German certification deadline. Ranging between 25-10,000 kVA, the Grid Code Ready alternators are designed to help generator set manufacturers meet the global Grid Code legislation roll out that started in Germany on Jan. 1, 2015, before progressing to the rest of Europe and beyond.

TO LEARN MORE
You can learn more about Cummins Power Generation’s complete line of generators and related products at power.cummins.com.

Cummins Generator Technologies’ complete line of alternators and related products can be found at cumminsgeneratorentecologies.com.
COMPONENTS

Four units within the Company’s Components Business Unit play a critical role in helping the Company’s engines operate efficiently and with near zero emissions: Cummins Emission Solutions, Cummins Filtration, Cummins Turbo Technologies and Cummins Fuel Systems. Here’s a look at some of the sustainability highlights from the Components group:

CUMMINS EMISSION SOLUTIONS

Cummins Emission Solutions (CES) designs, manufactures and integrates exhaust aftertreatment systems. It has grown into a more than $2 billion operation since it was created in 2002, propelled in part by the growing regulation of engine emissions around the world.

ECOFIT SINGLE MODULE

Cummins Emission Solutions announced in March 2015 that it was introducing the first of its next generation of ultra-high efficiency aftertreatment systems, the EcoFit Single Module. The EcoFit Single Module is up to 60 percent smaller and 40 percent lighter than the EPA 2013 solution it supersedes, while improving emissions reduction performance.

NOTABLE:
The smaller size enables better heat management and retention for improved fuel economy capability, while the simple single-pass exhaust flow design meets customer requests for a simpler, easier-to-integrate solution.

QUOTABLE:
“We’ve achieved incredible results with this product through an entirely new engineering approach to aftertreatment systems,” said John Carroll, General Manager – CES’ Global On-Highway Business.

TO LEARN MORE
You can learn more about Cummins Emission Solutions at cumminsemissionsolutions.com.

CUMMINS FILTRATION

Modern diesel engines require extremely clean fuel and lubrications to support the very precise equipment that helps engines run efficiently and reduces engine emissions and noise. Cummins Filtration has been an industry leader in both fuel and lube filters.

FLEETGUARD LF14000NN

Cummins Filtration announced in February 2015 the release of the Fleetguard LF14000NN lube filter for Cummins ISX15 diesel engines. It is the Company’s first lube filter with NanoNet media, a patented polymeric nanotechnology-based synthetic media originally developed for Fleetguard fuel filter applications.

NOTABLE:
NanoNet filtration media removes and retains 98.7 percent of all particles as small as 4 microns (12 times smaller than the smallest particle visible to the human eye). That process is critical to keeping engines running cleanly and efficiently.

QUOTABLE:
“Many of the characteristics that make NanoNet media so successful in fuel filter applications translate well to lube filters,” said Brad Long, Senior Engineering Technical Advisor, Cummins Filtration. “By pairing NanoNet with our proven StrataPore synthetic media, we can offer a lube filter that’s suited to meet the needs of today’s advanced engine platforms and lubricants.”

TO LEARN MORE
You can learn more about Cummins Filtration at cumminsfiltration.com.
CUMMINS FUEL SYSTEMS

Cummins Fuel Systems help enable engines to meet increasing emissions regulations while maximizing fuel-economy standards. The group’s world-class technologies help deliver fuel at the pressure levels necessary for outstanding results.

In both new product production and remanufacturing, the group is a critical partner to Cummins engine applications and other key external partners.

HEAVY-DUTY FUEL PUMP

At a trade show in Germany in September 2014, Cummins revealed a selection of next generation innovations capable of improving the fuel efficiency of modern diesel engines. The selection included a new Heavy-Duty Fuel Pump.

NOTABLE:
The new high-pressure oil-lubricated pump for heavy-duty engines, which complements the Company’s robust injectors, offers industry-leading injection pressure of 2600 bar and a leak-free system design that reduces parasitic loss, increasing fuel economy. The pump offers a highly modular and adaptable design which is lighter than previous pumps, allowing for flexibility in customer integration.

QUOTABLE:
“Over the last few years we have seen continued demand for smaller, lighter, high-quality components to drive diesel engine efficiency improvements, as well as the industry requirement from manufacturers for equal and higher power outputs,” said Suzanne Wells, Executive Director – Sales and Marketing, Components Business.

CUMMINS TURBO TECHNOLOGIES

Turbochargers boost power and efficiency with a minimum of weight, and produce heat for chemical reactions critical to some exhaust aftertreatment systems. Cummins Turbo Technologies (CTT) produces durable and innovative turbochargers to meet the global challenges of emissions reduction, fuel consumption and total cost of ownership.

TWO-STAGE TURBOCHARGER

Cummins Turbo Technologies in March 2015 officially launched its new Two-Stage Turbocharger. The Two-Stage system with Rotary Turbine Control is Cummins’ most sophisticated turbocharger to date, delivering high efficiency and low emissions levels.

NOTABLE:
This integrated technology was developed in partnership with Cummins Engine Business and Nissan, specifically for use on the 2016 Nissan TITAN XD pickup truck (page 68). The technology was developed at the Company’s technical centers in Huddersfield in the United Kingdom and Columbus, Indiana (U.S.A.). It offers a flexible architecture that efficiently integrates and packages two turbochargers in series to deliver high performance levels.

QUOTABLE:
“Advances in air handling technology and improved system integration continue to provide new turbocharging solutions that enable customers to achieve their emission and efficiency targets without compromising engine performance,” said Jonathan Wood, Executive Director – Research and Engineering.

TO LEARN MORE
You can learn more about Cummins Turbo Technologies at cumminsturbotechnologies.com.
CUMMINS’ SMARTADVANTAGE PROVIDES FUEL ECONOMY FOR CUSTOMERS

One of the Company’s most recent fuel-efficiency successes has been focused on engine and transmission integration.

The SmartAdvantage Powertrain takes the power of Cummins ISX15 and ISX12 engines with SmartTorque2 and combines it with the smooth shifting of the Eaton Fuller Advantage 10-speed automated transmission for improved fuel economy. The engine and transmission share critical data, determining the torque required to deliver the power level that drivers need without wasting fuel.

Customer feedback on fuel-economy savings and overall performance has been excellent and there have been numerous media accolades, including “top product” lists by publications such as the Commercial Carrier Journal, Heavy Duty Trucking and Today’s Trucking.

Customer fuel-efficiency improvements using SmartAdvantage count toward meeting Cummins’ products in-use environmental sustainability goal (page 24). Average customer fuel-efficiency improvement was 3.3 percent in 2014, which in 2015 will translate into savings of about 2.3 million gallons of fuel, 23,400 metric tons of carbon dioxide avoidance and $9.4 million.

CalArk is a 650-truck fleet based in Little Rock, Arkansas (U.S.A.), whose trucks deliver goods in the 48 contiguous United States and Canada. The fleet has 100 International trucks equipped with SmartAdvantage and 50 more on order.

“We chose SmartAdvantage for the miles per gallon savings, plain and simple,” said Vernon Nance, who oversees CalArk truck purchasing as President of Arkansas Equipment Leasing, Inc. “Our drivers like the trucks overall and with help from Cummins we are still making changes in the settings that should help our drivers even more.”

CalArk saw a 5 percent total increase in fuel economy from using SmartAdvantage with a late 2013 ISX15 engine. Nearly half came from drive fuel economy from the engine and the rest from the benefits of the total SmartAdvantage package. The improvement is based on comparisons with trucks in the fleet that have an early 2013 ISX15 engine with Eaton’s Ultrashift Plus transmission.

Cummins made improvements to CalArk’s earlier 2013 ISX15 engines using lessons it learned from the SmartAdvantage package.
CUMMINS’ PRACTICES HELP PROTECT ENVIRONMENT

Cummins is constantly working to shrink the Company’s environmental footprint with a special focus on the waste, water and energy Cummins uses in the production process.

The Company’s Enterprise Environmental Management System (EMS), created in 2003, plays a critical role in Cummins’ global environmental footprint reductions and other improvements. The Company adopted a model that includes a common framework to ensure a similar look, feel and fundamental approach throughout the organization. The EMS has the flexibility to allow individual sites and businesses to address risks and opportunities most important to them. Cummins has integrated health and safety processes and procedures with the environment since 2007, in accordance with the international standard OHSAS 18001 Occupational Health & Safety Management System, to create the Enterprise Health, Safety and Management System (HSEMS) (page 49).

Here’s a look at some of the Company’s key practices and strategies in this important area:

WATER STRATEGY
Cummins’ global water strategy goes beyond conservation to address water as a business risk and a key consideration in building stronger communities, a central goal of the Company’s Corporate Responsibility initiative.

The water strategy, adopted in 2011, establishes four priority areas:

» Water conservation.
» Water risk management in business operations.
» Water and community engagement.
» Water in the supply chain.

The Company recognizes that water is vital to food production, sanitation, power generation and more. So conservation is a goal at all Cummins sites. But the Company also recognizes water as an operational risk, especially in parts of the world where water is scarce. Cummins’ environmental leaders provide scorecards, expert advice and more to help sites manage that risk.

The Company’s strategy also takes into account the important role water plays outside of Cummins’ operations in water-scarce communities. Cummins works with community leaders in those locations to help them establish their own conservation initiatives.

Finally, Cummins’ strategy identifies the critical role water plays in the Company’s supply chain.
Almost 90 percent of Cummins’ water footprint exists in the supply chain, mostly associated with the extraction and production of metals. The Company is beginning to address this challenge by considering water in its material selection practices and promoting awareness of water management techniques with its supply base and in its purchasing processes.

As part of its strategy, Cummins has developed tools to help the Company better understand and prioritize its water management opportunities. Perhaps the most important tool is the water balance. By thoroughly understanding everywhere water goes in a facility, Cummins facility leaders can often spot prime opportunities for improvement.

For more detailed analysis, Cummins has developed true cost and risk analysis tools. Each of these tools help provide more insight into the often hidden costs of water. On-site costs include factors such as pumping, heating and chemical usage, which are often not considered when evaluating a project.

However, the most significant consideration can be the risk of impacting production. By understanding this exposure, Cummins is working to promote equipment selection and management choices that mitigate risks where Cummins operates in water-scarce environments.

WASTE STRATEGY

Cummins global waste strategy is built around the belief that through waste reduction, reuse and recycling, the Company can drive improvements in processes and procedures. It was developed after an in-depth study of the Company’s waste footprint in 2011. Cummins has a robust database that contains waste metrics as far back as 2005.

The Company uses a waste hierarchy consistent with current industry standards:

» Cummins’ first priority is to avoid the generation of waste.

» The Company’s next priority is the reuse of waste.

» Recycling of waste is Cummins next priority.

» Finally, waste to energy through incineration is only considered after reasonable efforts have been made to reduce, reuse or recycle.

Reducing packaging or “right-sizing” incoming parts are examples of ways Cummins tries to avoid the generation of waste. Reusing waste might involve reusing pallets or finding an alternative use without any reprocessing. Recovery and reuse of solvents is another example. The recycling of metals, paper or wood also reduce the amount of waste that has to be disposed.

The Company’s ultimate goal is “Zero Disposal” at Cummins’ facilities.
The Company defines Zero Disposal as completely avoiding the disposal of waste according to Cummins’ waste hierarchy. Waste to energy is only considered if there is no other option and it produces a net energy gain, creating more energy than needed to merely sustain combustion.

Cummins is also committed to avoiding the production of hazardous waste and properly handling hazardous materials in the workplace.

The definition for what constitutes hazardous waste varies widely by country. For U.S. sites that do produce hazardous waste, however, Cummins has a formal pre-qualification process to ensure the waste is handled properly.

**ENERGY STRATEGY**

Saving energy has bottom-line benefits. Cummins also recognizes the link between energy conservation and reducing greenhouse gases (GHGs). Reducing energy use is both a win for the Company and a win for the environment, too.

The Company’s strategy focuses on four key areas:

» Saving and conserving energy by improving existing facilities

» Building energy conservation into new construction

» Optimizing manufacturing and product testing processes

» Enhancing energy management

Cummins is improving its existing facilities by installing high-efficiency “smart” lighting and energy-efficient windows, doors, walls and roofs to reduce heat gain or loss. High-efficiency heating, cooling and recirculation systems also create significant savings as well as energy-efficient boilers and burners.

Cummins has also been working to recover energy generated by engines and generators in its test cells by installing equipment that can capture that power for use by the plant or for sale to a local utility.

The Company has established ASHRAE 189.1 international standards developed by the U.S. Green Building Council and others as Cummins’ minimum standard for global construction.

Cummins is also committed to obtaining certification for the ISO 50001 international energy management standard at 15 key facilities by 2016. Three of the 15 have been certified.

The Company will partner with the government under its strategy to

---

**Iron and steel** 56%
**Wood** 13%
**General refuse** 9%
**Cardboard** 9%
**Liquids** 5%
**Process-derived** 4%
**Composted** 2%
**Other** 2%

**Energy use by facility type**
in millions of British thermal units

<table>
<thead>
<tr>
<th>Facility type</th>
<th>Electricity</th>
<th>Diesel</th>
<th>Natural gas</th>
<th>Other fuels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing - Heavy</td>
<td>4,931,252</td>
<td>970,398</td>
<td>808,611</td>
<td>83,187</td>
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<tr>
<td>Manufacturing - Light</td>
<td>2,217,688</td>
<td>92,115</td>
<td>363,379</td>
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<tr>
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<tr>
<td>Distribution / Services</td>
<td>554,561</td>
<td>39,136</td>
<td>146,507</td>
<td>6,195</td>
</tr>
<tr>
<td>Warehouses</td>
<td>397,606</td>
<td>10,931</td>
<td>72,149</td>
<td>1,335</td>
</tr>
<tr>
<td>Offices / Data centers</td>
<td>461,582</td>
<td>2,914</td>
<td>34,645</td>
<td>6</td>
</tr>
</tbody>
</table>

*Includes generation, transmission & distribution losses
Cummins is a partner in the U.S. Department of Energy’s Better Buildings Challenge, which includes the Jamestown facility (page 58). The Company committed to a 25 percent reduction in U.S. energy efficiency intensity by the end of 2015, and achieved a 42 percent reduction by the end of 2014.

GLOBAL BUILDING STANDARD
Cummins has nearly 550 facilities encompassing more than 34 million square feet across the globe. As of the first quarter of 2015, 47 major new projects were under way at the Company with a planned capital expense of $800 million over multiple years.

Having efficient buildings is not only a good return on investment, it is critical to reaching Cummins’ energy and greenhouse gas (GHG) goals.

Cummins’ global building standard is based on the international standard established by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) 189.1 to ensure implementation of energy and water efficiency.

While the Leadership in Energy and Environmental Design (LEED) Silver standard is an industry-respected norm, Cummins is a market leader with the adoption of ASHRAE 189.1.

Both the ASHRAE and LEED standards have been recognized by the U.S. Green Building Council. Cummins expects ASHRAE 189.1 to provide better realized returns and allow the Company to consider the total cost of ownership in its buildings. ASHRAE 189.1, with its more international scope, is also a better fit for Cummins buildings.

ASHRAE 189.1, with its more international scope, is also a better fit for Cummins buildings.

Cummins’ global building standard applies not only to new construction, but to renovations of older buildings as well, incorporating green features such as efficient lighting and water fixtures. The former Irwin Bank headquarters in Columbus, Indiana (U.S.A.) underwent a major renovation in 2014 when Cummins took over the property for office and conference space.
At a minimum, all new buildings will be ASHRAE 189.1 compliant or LEED Silver equivalent unless business cases prove otherwise. In most instances, Cummins’ ASHRAE 189.1 compliant buildings would fall between the silver and gold LEED standard.

As part of Cummins’ 2015 investment plan to reduce GHGs, the Company will lessen its footprint in new buildings by making four considerations when choosing a building site:

» The region’s climate
» The carbon intensity of the building and site
» The cost of the energy source
» The carbon intensity of the energy source

Taking these four factors into account with the ASHRAE 189.1 standard, Cummins expects its buildings will yield about a 21 percent emissions reduction.

HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM

Cummins Health, Safety and Environmental Management System (HSEMS) ensures a common approach to implementing the Company’s environmental standards at its sites worldwide. The system has served as the framework for driving continual improvement and efforts beyond compliance at Cummins operations around the world. Cummins expects all sites to comply with policy, procedures and initiatives.

Cummins’ HSEMS model deploys a common framework to ensure a similar look, feel and fundamental approach throughout the organization, with flexibility to allow individual sites and businesses to address opportunities and risks most important to them.

Broad objectives and targets are set at the corporate level to establish direction for critical corporate initiatives. Cummins’ business units and sites then build upon them to

EMPLOYEES CELEBRATE JUNE ENVIRONMENTAL MONTH

Carpooling in San Luis Potosí, Mexico; a facility-wide dumpster dive (pictured below) in Charleston, South Carolina (U.S.A.); community water conservation in Dewas, India; more than 12,000 “Find it. Fix it.” reports in engine plant sites — these are just a few of the actions 10,000 employees took at home, work and in the community during Cummins’ 2014 Global June Environment Month.

The Company celebrated the announcement of its Global Environmental Sustainability Plan by dedicating an entire month to environmental education and action. Cummins asked employees during the month of June to engage in environmental stewardship at work, at home and in the community by reducing personal water and energy consumption and minimizing waste.

These actions are not only consistent with the Company’s environmental mission and vision, but mirrored the goals set forth in the plan. Weekly education materials and project models helped site leaders spread the word and provide guidance.

In 2015, Cummins will add a “personal tracker” tool, which will allow employees to commit to specific environmental conservation actions. The monetary savings and environmental benefits, customized by region, can be communicated back to employees so they can understand the positive environmental impact they are making.
establish site-specific objectives that align with Company priorities but address site-specific needs and challenges.

Cummins policies apply to more than just its employees, also extending to contingent workers, suppliers, contractors and even clients working at Company facilities. Cummins’ expectations extend beyond the Company’s physical boundaries, encompassing maintenance and support services that often occur at customers’ locations or even remote areas where its products are used.

Cummins strategically drives certification to recognized standards. Since 2003, the Company has focused on its manufacturing locations with 90 percent of manufacturing sites certified to ISO14001 and OHSAS 18001. By 2015, Cummins expects the HSEMS Enterprise to consist of dual-certified sites, representing 100 percent of the Company’s manufacturing and distribution locations.

By the end of 2014, the Company’s independent auditor certified 104 entities, representing 347 sites and corporate offices as part of the HSEMS. Cummins’ HSEMS scope has been extended to encompass manufacturing joint ventures and distributors. They are committed to registering their sites by the end of 2015.

By incorporating practices and procedures into the HSEMS to meet the new ISO 50001 Energy Management Standard, Cummins has delivered a common global approach to make energy efficiency a standard practice across the Company.

Broad objectives and targets are set at the corporate level to establish direction for critical corporate initiatives. Cummins’ business units and sites then build upon them to establish site-specific objectives that align with Company priorities but address site-specific needs and challenges. At the Global level, three sites obtained the ISO 50001 certification in 2013 and eight sites worked toward their ISO 50001 implementation in 2014, with a certification target for 2015.

AUDITOR CERTIFICATION PROGRAM

Environmental goals are measured through a structured audit process. A third party auditor, Bureau Veritas Certification (BVC), certifies the health, safety and environment (HSE) management enterprise system and the environmental metrics Cummins collects.

Two of Cummins’ key sustainability stakeholders, the Carbon Disclosure Project and Dow Jones Sustainability Index, consider independent data verification an important factor in their evaluation of environmental performance and transparency. Cummins believes the audit validates its considerable efforts at data quality, placing the Company among a relatively small number that pursue this level of performance and validation.

Cummins supplements the audit sampling conducted by BVC by conducting its own annual audits using internally trained HSE auditors. Every site is audited on an annual basis.

The Company has developed an internal environmental auditor certification process, where employees complete a training course and then a series of audit levels. In 2014, more than 60 people have been trained and there is a pool of 96 HSE leaders certified as HSE Lead Auditors.

This structured audit program validates performance and provides a mechanism for HSE auditors to share best practices. Through these practices, Cummins is not only improving sites – it is building the Company’s next generation of HSE leaders.
Employees at Cummins Turbo Technologies (CTT) in Huddersfield, United Kingdom, don’t have one or two recycling bins to choose from when they separate their waste – they have nine color-coded receptacles.

The plant also has a special waste segregation yard to make sure recycling remains are properly sorted before they are hauled away. And a leaderboard in the plant reports not only on the facility’s progress in recycling, but also encourages some healthy competition among employee groups at the site.

“We continually strive to improve our waste management operations here at Huddersfield,” said Jennifer Hirst, Facilities Energy Engineer at the plant. “We conduct waste dives and welcome overall waste reduction ideas and suggestions. Through positive integration, CTT continues to push the boundaries within sustainable operations.”

It’s perhaps no wonder that the plant won the Campbell Institute’s prestigious Innovation Challenge for the Environment award for 2014.

To say Cummins facilities in the U.K. take recycling very seriously might be something of an understatement. In addition to the Campbell Institute award, Company facilities won two national recycling awards for their waste minimization and recycling efforts – Corporate Recycler of the Year and the Waste Prevention Award – from Materials Recycling World in the U.K.

The group recognizes best practices inside and outside the waste industry in the United Kingdom, including both the public and private sector.

Cummins facilities in the country reduced their total waste generated by 30.76 percent or 8,729 metric tons between 2012 and 2013 and increased their recycling rate from 96.4 percent to 98 percent. These results cover Cummins sites in Cumbernauld, Darlington, Daventry, Huddersfield, Kent and Stamford, as well as offices and regional distribution centers.

Achieving these kind of results are critical if Cummins is to meet its environmental sustainability goals for waste. Those goals call for the Company to increase its recycling rate to 95 percent by 2020 and achieve “zero disposal” status at 30 Cummins’ sites by that same year.

“This recognition is the result of the hard work and commitment exhibited by the many people involved in the region’s waste reduction efforts,” said Ernie Smith, Environmental Affairs Manager and leader of Cummins’ waste efforts. “Congratulations to all.”
EMPLOYEE TEAMS RECOGNIZED THROUGH FACILITIES ENVIRONMENTAL AWARDS

Cummins has challenged employee teams since 2005 to complete improvement projects that reduce the Company’s environmental footprint in the more than 200 Cummins facilities and operations globally.

In appreciation of their efforts, the Chairman’s Environmental Award recognizes employees and teams that implemented outstanding environmental improvements at their sites. Winning projects were chosen based on the greatest environmental impact, economic efficiency, employee and leadership engagement, innovation and replicability.

Of the 30 projects submitted, the New and ReCon Parts project from San Luis Potosí, Mexico, was named the Top Environmental Project. The project saved water by installing water-free urinals, reduced water demand from cooling towers, and saved water, energy and chemicals used during the cylinder head salvage process.

In recognition of their achievement, a team representative presented the project to the Cummins Board of Directors. In addition, representatives from the top three winning projects shared their work during the Six Sigma Expo along with leading Six Sigma and Health and Safety projects.

The winners of the Chairman’s Environmental Award are often viewed as best practices for other facilities to implement because they have been proven effective. As Cummins continues to set environmental performance goals, the Chairman’s Environmental Award-winning projects are important to help the Company find innovative, bottom-up solutions to minimize waste, water and energy.

“A major reason that Cummins has been able to confidently put forth new and ambitious environmental sustainability goals is because of the excellent work that teams like these have been doing in Cummins facilities and operations for years,” said Alan Resnik, Director of Facilities and Operations Environmental Management.

“I congratulate all of the teams for their outstanding results, creativity and continued enthusiasm for the environment,” Resnik said.

The 2014 Chairman’s Environmental Award winners, by category, are as follows:
MULTI-MEDIA POLLUTION PREVENTION

**ENERGY, WATER AND WASTE EFFICIENCY**

*Engine Business Unit (EBU) New and ReCon Parts, San Luis Potosi, Mexico*

Saved water by installing water-free urinals and reduced water demand from cooling towers. Water, energy and chemicals used during the cylinder head salvage process also reduced.

**ENERGY MANAGEMENT**

**CARBON FOOTPRINT REDUCTION**

*EBU India Parts Distribution Center, Phaltan, India*

Engaged employees at all levels to achieve significant and cost-effective energy-efficiency improvements.

Employee teams collaborated to prevent multi-media pollution at New and ReCon Parts in San Luis POTOSi, Mexico. The project earned the team recognition as the Top Environmental Project for the 2014 Chairman’s Environmental Award.

**WASTE MANAGEMENT**

**CV MEDIA RECYCLING**

*Cummins Filtration, Neillsville, Wisconsin (U.S.A.)*

Significant cost savings and waste reduction achieved by collecting and processing CV media polymer waste that can be reused in production, reducing the use of virgin raw material.

**WATER MANAGEMENT**

**WATER CONSERVATION**

*Cummins Generator Technologies (CGT), San Luis Potosi, Mexico*

Achieved water reduction with low-cost solutions such as installing a high-efficiency dishwashing system, changing dish detergent and working with the food services vendor to conserve water.

**SUPPLY CHAIN MANAGEMENT**

**ELECTRONIC LITERATURE WASTE REDUCTION**

*Cummins Power Generation, Fridley, Minnesota (U.S.A.)*

Cross-functional project converted printed product manuals to electronic versions resulting in significant cost reduction improved customer satisfaction and substantial reductions in resource consumption and waste generation.

**GREEN BUILDING**

**GREEN FACILITY SECURES GREEN FUTURE**

*Cummins Turbo Technologies, Wuxi, China*

Project showcased proper application of green building principles during the new plant start-up phase that resulted in high recycling of waste and significant reductions in water and energy use.

*Indicates the top three winners*
MAKING CONSERVATION WORK AT CUMMINS’ MEGASITE

Water is a precious resource in much of India. So when Cummins employees at the Company’s Megasite in Phaltan looked at sustainable water management techniques to meet their water goals, they wanted to make a difference not only at the site but in nearby communities, too.

“Our employees working at the Megasite are going beyond the good they are doing at work to conserve and preserve the water supply for the villagers who live near our site,” said S. Ravichandran, Head of Corporate Responsibility for Cummins India.

“They are helping farmers enhance their living by making water available for drinking as well as agricultural purposes. Our work has helped bring an additional 80 acres of land under cultivation, resulting in increased agricultural output and better incomes to the farmers.”

The site has made significant progress toward water neutrality, which at Cummins means consistently reaching the equivalent of what the Company uses at any particular site either through water conservation at the site, water conservation within nearby communities, developing other sources of water or by some combination of the three. But it’s too early to declare complete success.

The Megasite currently has eight plants in operation in addition to a general administration building housing a health center, childcare center and a gymnasium. The site consumed 14 million gallons of water in 2014. Cummins is working to accomplish water neutrality through a three-fold approach: water conservation within its own operations, within the nearby community and by developing public water bodies.

REACHING OUT

Water conservation at the Megasite itself is being accomplished by limiting the use of treated water, stopping water leaks at the site, using drip irrigation for landscaping so water is released slowly, harvesting rainwater, using low-flow water fixtures and by other steps.

Outside the Company's property, Cummins employees met and spoke to many villagers, farmers and rural government leaders in order to fully understand their water needs and water availability.

Rainfall alone isn’t enough to meet everyone’s needs. Villages lack proper water management techniques and had no initiatives to improve ground

Cummins helped build two storage areas capable of holding 10 million gallons of water for use by the villages near the Megasite in Phaltan, India.
water percolation; so what rain the area received often washed quickly away. Farmers who had land but not enough water were left with no choice but to do other work, impacting agriculture in a significant way.

In Nandal village, de-silting the retention area behind a dam increased the capacity of the tank, resulting in an estimated 10.5 million gallons of water being made available. Cummins helped build two more dams of 38,600 metric cubic feet, which could store another 10 million gallons of water. Teaching villagers how to maintain the improvements was also an important part of making these improvements sustainable. The outreach effort at the village won one of the Company’s 19 Environmental Challenge grants. The Challenge is a competition sponsored by Cummins’ Corporate Responsibility team (see page 77).

**ENERGY MANAGEMENT**

Cummins looks at plant improvements holistically, and while it is ideal to have solutions that save both energy and water, sometimes one must take precedence over another. For example, in the Phaltan high-horsepower plant, non-evaporative coolers were installed to help control the temperature. While not ideal from an energy perspective, they are critical in water-scarce areas because evaporative coolers use a lot of water to achieve their cooling effect.

By installing regenerative dynamometers to capture the energy produced in engine test cells, the plant was able to save both energy and reduce cooling load. This allows cooling systems to be smaller. With the reduced cooling demand and the recovered power, the Phaltan location was able to implement air cooling systems that, while less efficient by themselves, give an integrated solution that improves energy and water positions for the site as a whole across both media. High-horsepower engines require of a lot of testing fuel because of their large size.

In traditional testing, energy from the engine is dissipated, and therefore wasted, through evaporative cooling towers. Cummins uses the AC regenerative dynamometer to capture the mechanical energy of the motor and return (or regenerate) it to the AC power source. Through this project, the Company saved $35,036, 1.2 million liters of water and achieved a 12 percent reduction in greenhouse gases.

It’s steps like those, Megasite leaders say, that will help them reach the Company’s Environmental Sustainability goals.
CUMMINS’ PARTNERSHIPS PRODUCE GREEN RESULTS

Cummins’ partnerships have helped the Company meet its product emissions goals, use energy more efficiently and much more. Cummins’ policy advocacy has helped bring environmental solutions to the marketplace.

Four of the Company’s 10 environmental sustainability principles focus on partnerships with legislative and regulatory entities to develop sound public policy to reduce Cummins’ impact on the environment. They are:

» Help develop responsible regulations
» Promote technology development
» Advocate for incentives to accelerate progress
» Support a balanced global approach

Cummins worked closely with the U.S. government and a variety of stakeholders to develop the Phase 1 rule, the first-ever greenhouse gas (GHG) and fuel-efficiency standards in the U.S. for medium- and heavy-duty commercial vehicles. The Company is now working with regulators to build on the success of Phase 1 and help shape the next stage of GHG and fuel-efficiency standards known as Phase 2. A key aspect for Phase 2 is to maintain the same regulatory structure with separate standards for the engine and the rest of the vehicle. Separate standards are critical for the regulation to achieve environmental and user benefits while recognizing the diversity and complexity of the commercial vehicle sector.

RESEARCH AND DEVELOPMENT COLLABORATION

Cummins longstanding partnerships with the U.S. Department of Energy (DOE) and other federal and state agencies directly support the United States’ goal of reducing greenhouse gas (GHG) emissions and net oil imports. The partnerships also help the U.S. achieve further improvements in energy productivity while sustaining a steady reduction in criteria emissions from the nation’s transportation and distributed power generation fleet.

The Company’s current and recently completed public-private projects involving DOE, except where noted, include:

» The SuperTruck Project team significantly exceeded its engine and vehicle freight efficiency targets and completed its 55 percent brake thermal efficiency (BTE) technology scoping and demonstration efforts. The team identified two clear BTE pathways, one using diesel fuel and another using alternative fuels.

» The ATLAS (Advanced Technology Light Automotive Systems) project team significantly exceeded its 40 percent fuel economy improvement target, at Tier 2 / Bin 2 criteria emission levels, by delivering a 60 percent improvement in Corporate Average Fuel Economy.
(CAFE) compared to the program’s gasoline engine powered baseline ½ ton pickup truck. Numerous innovative engine features delivered outstanding performance and emissions while weighing 80 pounds less than the all-aluminum gasoline baseline engine, including aftertreatment.

» The SLTNR (Sustained Low Temperature NOx Reduction) project was launched in early 2015 to develop and demonstrate catalyst and reductant delivery technologies capable of improving the robustness of high-performance NOx (oxides of nitrogen) aftertreatment over temperature-challenged real-world-duty cycles.

» The EDPCI (E85/Diesel Premixed Compression Ignition) project was also launched about the same time, building on learning from SuperTruck (see page 70), to develop and demonstrate high-efficiency dual-fuel engine operation in Class 8 trucks that commonly haul freight on North American highways.

» The Ultra-Low Carbon Powertrain program (also known as ETHOS, see page 70), a partnership with the California Energy Commission, significantly exceeded its 50 percent greenhouse gas (GHG) emission reduction target through a downsized medium-duty engine/powertrain optimized for E85 ethanol. Vehicle tests completed in Sacramento, California (U.S.A.), showed a 50 percent to 80 percent GHG reduction, depending on the drive cycle and type of ethanol feedstock.

» The HD Ultra-Low NOx Natural Gas program, a partnership with California’s South Coast Air Quality Management District (SCAQMD) and other California entities, is developing 0.02 gram/bhp-hr NOx technologies, while maximizing engine efficiency. This technology addresses the needs of regions in California and other places worldwide where significant ambient air-quality issues persist.

Underlying Cummins’ system-integration programs is a valuable portfolio of collaborative research and development agreements that team, and fund, world-class researchers at the DOE’s system of national laboratories with their counterparts at Cummins. They jointly work on such things as combustion modeling and diagnostics, materials science, catalysis fundamentals, hybridization and more.

ENVIRONMENTAL DEFENSE FUND

Cummins continues to collaborate with the Environmental Defense Fund (EDF) to learn more about fugitive methane emissions from natural gas vehicles and the fuel supply chain. Through the sponsorship of a series of 16 independent studies, EDF is coordinating the work of close to 100 universities, research facilities and industry partners that are contributing to this research including Cummins and the joint venture Cummins Westport.

Information is being collected in several core areas: production, gathering lines and processing facilities, long-distance pipelines and storage, local distribution and commercial trucks and refueling stations.

As producers of natural gas engines, Cummins and Cummins Westport are contributing to the study of fugitive methane emissions related to evaporative losses and incomplete combustion from vehicles, and fugitive emissions associated with fueling infrastructure. The study is led by West Virginia University. The results of the study will be submitted for peer-review in 2015.

GOVERNMENT RELATIONS

The Company’s Government Relations staff continues to advocate globally for policies, legislation, government research funding and regulatory guidelines that promote products and technologies that benefit the environment.

Cummins’ Government Relations efforts in the United States include working with Congress, the White House, state governments, trade associations and industry to support the Environmental Protection Agency (EPA) in developing greenhouse gas regulations in the U.S. for heavy-duty vehicles, and to broadly educate policy makers about how
regulations, economic development and competitiveness can co-exist if developed properly.

In India, Cummins pushed for new generator emission standards recently released by the federal government for generator engines below 800 kW. Cummins strongly supported the adoption of these new standards, which will help improve India’s air quality.

In the transportation area, the Company is pushing for stronger emissions and fuel-economy rules, along with low sulfur diesel requirements across the country. Cummins also worked with the Society of Indian Automobile Manufacturers (SIAM) to organize the “Emissions Roadmap for the Future” roundtable in Delhi, which was attended by industry and government representatives who discussed the importance of diesel fuel efficiency as well as a clear emissions roadmap for India.

In China, Cummins is advocating for an overall effective enforcement environment for emissions regulations and a non-discriminatory certification/testing mechanism for engines and vehicles. The Company also supports a broad consensus on fuel-economy regulations by working with government, trade associations and industry partners.

Cummins is encouraging the U.S. government to provide technical assistance and share best practices based on its leadership in this area of regulation. The Company is also working with the Chinese government to identify opportunities to promote combined heat and power solutions, telematics, natural gas engine applications and hybrid technology.

In Colombia, Cummins worked with the U.S. and Colombian governments to eliminate barriers for the importation of remanufactured goods. Remanufacturing provides benefits for the environment by using about 85 percent less energy compared to the mining, refining, melting and machining of new material.
Cummins seeks advice from its Science and Technology Advisory Council in developing products to comply with various standards, reduce the Company’s environmental footprint and meet customer demands.

The Council, formed in 1993, has given Cummins access to some of the country’s leading scientific experts and policymakers from the worlds of academia, industry and government. The Council was restructured in 2010 to make it easier to access a broader group of international specialists and align their expertise with specific topics being addressed at a particular time.

The permanent council members are:

- Chairman Dr. Gerald Wilson, former Dean of Engineering at the Massachusetts Institute of Technology
- Dr. Harold Brown, former U.S. Secretary of Defense and former President of the California Institute of Technology

Other senior international scientists and engineers are invited to participate as advisors depending on the topic.

The Safety, Environment and Technology Committee of the Cummins Board of Directors also advises senior leaders and the technical leadership at Cummins regarding:

- Environmental and technological strategies, compliance programs and major projects as they relate to the Company and its products.
- Public policy developments, strategies and positions taken by the Company regarding safety, environmental and technical matters.
- Progress of strategic environmental programs and policies.

**ACADEMIC PARTNERSHIPS**

Cummins has continued to partner with universities around the world to collaborate on important environmental research topics. For example, the Massachusetts Institute of Technology’s Environmentally Benign Manufacturing Group is evaluating the environmental impacts of advanced manufacturing technologies, such as Additive Manufacturing. The university is investigating the process parameters that allow for the most energy efficient Additive Manufacturing, using both metals and polymers. In the future, MIT will assess additional environmental impacts of Additive Manufacturing in the fabrication of engine components.

**BUSINESS COALITIONS AND COUNCILS**


In addition, Cummins is a member of the Business Roundtable’s S.E.E. (Society, Environment and Economy) Change initiative, which encourages member companies to lead by example and adopt business strategies and projects that measurably improve society, the environment and the economy.

Chairman and CEO Tom Linebarger leads the Business Roundtable’s International Engagement Committee and Cummins has been a regular contributor to the Roundtable’s annual sustainability report.

**SUSTAINABILITY REPORTING**

Cummins takes a number of steps to report on its environmental performance to the public and work with other companies to share best practices.

For the past nine years, the Company has participated in the Carbon Disclosure Project (CDP) reporting initiative, supported by an institutional investor consortium that seeks to encourage greater public environmental reporting among companies.

CDP asks companies to provide details on their carbon emissions, their response to the impact of climate change on their markets and regulatory environment, their use of energy and planning for the future.

Cummins has participated in the CDP Water Disclosure Project for the past two years and was one of a handful of companies to agree to have its responses scored. Cummins’ water program was rated in the “leadership” category.
RESEARCH PARTNERSHIP ON EMISSIONS HELPS PROTECT PUBLIC HEALTH

Cummins’ partnerships to address emissions regulations go back many years.

In 1977, the U.S. Environmental Protection Agency (EPA) amended the Clean Air Act to place new controls on diesel emissions and the industry was challenged to adapt to the unprecedented regulation.

At the time, very little was known about the effects of diesel emissions on health. In response to the EPA’s new regulation, then Cummins Chairman and CEO Henry Schacht decided to form a consortium of experts and interested parties to objectively and independently study the health effects of diesel emissions.

Guided by the belief that all of society benefits from objective and rigorous science, Schacht brought the engine and vehicle industries together with then EPA Administrator Doug Costle in 1980 to form the Health Effects Institute (HEI). Funded jointly by the EPA and industry, HEI is a non-partisan and not-for-profit organization committed to providing high-quality, impartial, and relevant science regarding the effects of air pollution on health.

HEI has funded more than 250 studies in North America, Europe, and Asia, producing important research on carbon monoxide, air toxics, nitrogen oxides, diesel exhaust, ozone, particulate matter, and other pollutants. The institute’s work has been published in over 200 research and special reports.
Thirty-five years after the creation of the institute, Cummins’ partnership with HEI is just as strong as it was at the institute’s creation. As it has grown, HEI’s work has continued to investigate health effects in anticipation of regulation. Cummins relies on the institute as a trusted source of information when working with regulators worldwide to create clear, responsible and enforceable emission standards.

“In the inimitable words of Henry Schacht, ‘facts are friendly,’” said Brian Mormino, Cummins Executive Director of Worldwide Environmental Strategy and Compliance. “We aren’t afraid to ask the tough questions. Our currency is credibility and credible health effects science is the bedrock of good regulations.”

The institute posed some tough questions in a recent study that was the first to conduct a comprehensive evaluation of lifetime exposure to exhaust from new technology diesel engines (NTDE). It found no evidence of carcinogenic lung tumors. The Advanced Collaborative Emissions Study (ACES) also confirmed that the concentrations of particulate matter and toxic air pollutants emitted from NTDE are more than 90 percent lower than emissions from traditional older diesel engines (TDE).

“This study is significant because it is the culmination of 30 years of technology development to clean diesel exhaust,” said Cummins’ Rich Wagner, Director of Global Product Certification and Compliance. Cummins’ relationship with HEI is mutually beneficial; the Company often provides technical consultation and guidance to HEI studies. For example, Cummins served on the working group for the lifetime exposure study and helped identify the study’s measurement techniques of emissions levels that are also used in Cummins’ own research and development of emissions technology.

“The lung tissue samples that showed clean results are really a credit to the engineers who were able to bring emissions levels down so low,” said Dan Greenbaum, HEI President, during a health effects panel discussion hosted by Cummins in February 2015.

Even as improvements have been made to diesel emissions, air quality continues to be a serious challenge in many parts of the world. According to the World Health Organization, urban outdoor air pollution is estimated to cause 3.1 million premature deaths per year worldwide.

To reflect this reality, HEI has expanded its research in India and China where ambient particulate matter pollution is the fourth largest disease burden causing premature death and in large cities like Beijing where vehicle emissions are the largest source of dangerous particulate matter.

Other strategic topics for HEI include studying the health effects of biofuels, the toxicity of gas direct injection in passenger vehicles (GDI), and examining the impact of traffic and port emissions on health.

TO LEARN MORE
You can learn more about the Health Effects Institute by going to its website at www.healtheffects.org.

There you can find its annual report, posted in February 2015, and its report on lifetime animal exposure to new technology diesel engine exhaust, which found no evidence of lung cancer.
INNOVATION’S KEY ROLE AT CUMMINS

At Cummins, innovation is one of the Company’s six core values, calling on employees to “apply the creative ingenuity necessary to make us better, faster, first.” That value is almost tangible at any of Cummins’ global network of technical centers.

The Company’s Advanced Engineering and Technology organization looks out six to 10 years and sometimes longer, well upstream of product development. The engineers and scientists who make up this group are discovering, inventing and applying the most advanced technologies in engines, power generation and related products. Their work is vital to Cummins’ sustainability.

It’s a critical time for research and technology. For years, increasingly stringent North American emissions regulations have driven innovation at the Company. Now that engines have reached near zero emissions levels, that’s not as true.

Asked about the future of innovation at Cummins, Dr. John Wall, Vice President – Chief Technical Officer, puts it this way:

“We need to know our markets better than anyone else. We need to know our technologies better than anyone else. And we need to be able to combine these so we can differentiate our products in the eyes of our customers.”

THE CUMMINS COMMITMENT

In just the past five years, Cummins has more than doubled its investment into research and development, increasing its contribution from $362 million in 2009 to $754 million in 2014.

The Company uses very powerful computer models to simulate the harsh environment inside an engine and how an engine works in real-world applications. To get the computing power it needs, the Cummins Technical Center in Columbus, Indiana (U.S.A.), regularly works with Indiana University’s Big Red II super computer, one of the fastest research computers in the world.

Cummins researchers can study many design variables using these computer models before an engine is ever put in a test cell. That saves money on
fuel and other related expenses while also making it possible to develop much more robust designs that simply weren’t possible when the majority of testing was conducted in a test cell.

Computers today can simulate the interaction between the engine and the vehicle while running a specific route almost anywhere in the world, according to Tara Hemami, Director – Systems Performance Analysis. The simulations can even account for different driving styles – fast, slow, or a driver who is more erratic.

Cummins is always studying design advances. For example, it has virtual reality available in technical centers in Columbus, Indiana; São Paulo, Brazil, and at its newest global tech center scheduled to be completed in India by the end of 2015 (see page 73).

**CUMMINS PEOPLE**

The most powerful computer models, of course, won’t get a company far if it doesn’t have the right people using them. The Cummins research and technology team is smart, diverse and dedicated to finding solutions for customers.

Today, most of the new hires in research and technology for salaried positions have doctorates or master’s degrees. The work is so complicated that Wayne Eckerle, Cummins Vice President of Research & Technology, likes to say “You have to love it.” Otherwise, an employee wouldn’t stay with it. Eckerle, by the way, has a Ph.D. in fluid mechanics.

Cummins not only has mechanical and electrical engineers working in research and technology but also chemists who are exploring the chemical reactions necessary to convert pollutants into something that can be safely emitted into the atmosphere.

“There is a chemical plant behind every engine,” said Aleksey Yezerets, Cummins Director of Catalyst Technology who works at the Tech Center in Columbus.

**THE CUMMINS WAY**

With fuel efficiency now getting more attention, Cummins is researching all kinds of alternative fuels as well as electrification. It’s also testing new processes such as 3-D printing and its potential to produce lighter, more complex components.

Over time, Cummins has developed an effective way to conduct its product research. To help ensure general research continues into areas such as combustion and alternative fuels, that work is covered by corporate funds. As an idea becomes ripe for product development, Eckerle says its funding is taken over by the applicable business unit at the Company.

This is true not only in the United States, but for Advanced Technology Teams in India and China.

“We are a global team,” Wall said. “We benefit from the insights and talents of engineers all around the world who work together to deliver innovative technologies and products to our customers.”
JULIUS PERR AWARDS

Fifteen years ago, the U.S. Environmental Protection Agency (EPA) mandated that beginning with the 2007 model year, pollution from heavy-duty highway vehicles would have to be reduced by more than 90 percent.

That requirement meant Cummins’ engineers and scientists had to cut oxides of nitrogen (NOx) in diesel exhaust without compromising power or price.

The result of their hard work: 13 patents that redefined the industry, put cleaner trucks on the road years before they were required, and earned every member of the Cummins team that worked on the effort the prestigious Dr. Julius Perr Innovation Award.

“It was the experience of a career,” said chemist Neal Currier, a 22-year veteran of the Company.

Currier was one of 13 Cummins scientists and engineers who received the Perr Award, given annually to the inventors of Cummins’ technologies that provide great value to the Company.

The team, which was recognized at Cummins’ 2014 Technical Leaders Conference, received a total of 13 patents for NOx reduction technologies and the fundamental know-how developed during this project has since been used in all Cummins products for emissions-critical engine applications.

“We got cleaner trucks on the road years before they were required, and that was beneficial for everybody,” Currier said.

The Perr award is named for Dr. Julius Perr, a Hungarian refugee who made his home in Indiana and spent 41 years as a mechanical engineer at Cummins. Dr. Perr submitted more than 300 U.S. patents to improve engine technology and was named as inventor or co-inventor on 80 patents.

“These 13 individuals have carried on Dr. Perr’s legacy by making Cummins stronger through innovation,” said John Wall, Vice President and Chief Technical Officer.

Here are the Perr award winners and how many of the 13 NOx reduction patents their names are listed on:

- Mike Cunningham (7), Neal Currier (3), Jim Fier (1), Sam Geckler (4), Lyle Kocher (2), Wei Lu (1), Paul Miller (1), Srinam Popuri (5), Mike Ruth (4), Brad Stroia (3), Stewart Sullivan (1), Joan Wills (3), Alex Yezerets (2).
CUMMINS GOES VIRTUAL IN LAUNCH OF QSK95 SERIES

When it came time to introduce the largest generator set Cummins has ever built, the Company opted for a more environmentally friendly approach in keeping with the product’s fuel-saving capabilities.

Rather than invite potential customers, media and Company leaders to travel to the launch of the QSK95 generator series, Cummins brought the launch to anyone interested in the form of a digital trade show.

In early November 2014, Cummins President and Chief Operating Officer Rich Freeland and other senior leaders unveiled the generator sets via three web presentations scheduled during convenient business hours around the world.

Visitors could check out the generator in the virtual Exhibit Hall or talk with Cummins employees and other visitors in the digital Networking Lounge. They could also watch presentations in adjoining rooms about the generator or hear from the Company’s top leaders.

The only thing missing from the typical trade show experience? Tired feet – and who misses that?

Cummins worked with the international company ON24 Virtual Environments to build the online launch for the QSK95 Series.

More than 2,000 participants attended the event, which was followed by more than 500 expert-led group chats and more than 400 private chats about the generator set.

During planning, Cummins estimated the cost of transporting 150 participants and executing an in-person launch at more than $750,000. By comparison, the virtual launch cost less than $100,000 and saved a significant amount of jet fuel with more than 10 times the number of attendees.

“We realized that we could showcase this powerful product and all of its attributes in a way that saved the Company money and made it easier for people to be part of the announcement,” said Craig Wilkins, who worked closely on the launch and now serves as Director of Corporate & Global Strategic Accounts for Cummins Power Generation.

The generator sets are engineered to deliver reliable, mission-critical power protection without interruption. Over the course of 8,000 hours of operation, the QSK95 Series can achieve fuel savings of more than $400,000.

FEATURES OF THE QSK95 SERIES

The QSK95 Series generator sets are engineered with the highest kilowatt per square foot ratio in their class, resulting in a smaller footprint that achieves a 20 percent improvement in power density.

This means customers will need less space in their facilities, which lowers installed costs. And, in multiple-generator applications, fewer generators are required to achieve the desired power output, resulting in substantial cost savings.
Imagine a nation where only 25 percent of the population has electricity and less than 10 percent have a mobile telephone.

Then, the government begins to shift to a more democratic system, and a nation with an extremely limited infrastructure and no global reach is suddenly open for business.

Welcome to Myanmar, where Cummins Power Generation has been working with Irrawaddy Green Towers (IGT) since September 2014 to supply battery hybrid and diesel generator solutions sized from 8 kVA to 80 kVA with extra-large fuel tanks to power hundreds of new cell phone tower sites. Two-thirds of those sites are off the country’s insufficient power grid and located in remote locations.

The end result will be a nation with open, accessible lines of communication.

“With Cummins equipment working on these cell towers, we are empowering people in Myanmar to get connected to the rest of the world,” said J.P. Singh, marketing manager for the project. “Cummins has been developing this hybrid technology for years and is now working in close partnership with our customer in Myanmar to deploy it in a way that will help millions of people.”
Myanmar represents one of the few remaining telecommunications frontiers, but the new government wants to move quickly to expand access, pushing to grow from 10 percent penetration earlier this decade to 80 percent by 2016.

IGT contracted with Cummins to supply and install a power package that includes a generator, hybrid control and renewable battery pack. The Company is also working with IGT to potentially deploy additional renewable technologies.

Cummins’ advanced hybrid power systems are engineered to optimize capital expenditure while lowering total cost of ownership and ensuring uninterrupted operations.

The battery-hybrid model can cut the time the generator must run by more than half, extending its life by as much as two-thirds and significantly lowering diesel fuel usage and carbon dioxide (CO₂) emissions. These attributes are especially critical in a nation with a nascent and unpredictable power grid.

“Leveraging our proven experience in hybrid power, we designed a hybrid product specifically for the telecom industry to provide the best value to our customers,” said Alan Zhao, director of the telecom business at Cummins.

Not only is Cummins technology playing a key role in transforming communications for the 60 million people who live in Myanmar, but the conditions surrounding the installation of these power packages have forced Cummins to adapt in ways that will benefit the Company as it enters other markets with underdeveloped infrastructures.

Small changes can make an installation much faster as the components travel from a central warehouse to a remote project site where local residents must sometimes be enlisted to clear a path just to ensure a truck can access the installation site.

Cummins after-market engineer Kyle Anderson, who has overseen a number of Myanmar installations in country, described the logistics of deploying materials for hundreds of sites as “a little bit overwhelming.”

Anderson recalled one installation where a generator set couldn’t be transported over a bridge because the truck weighed too much. The team ultimately found an alternative. Anderson said teamwork is key to getting through such challenges, and small changes that can speed up the process are enormously helpful.

That’s why engineers working on the Myanmar project added forklift slots and eye bolts to the generators and cabinets to make transportation more uniform and efficient. These design changes have since been used for a rollout in Ethiopia and will be deployed in other challenging territories in the future.

“We worked hard to develop technologies that are helping to open up the telecommunication market and connect a nation to the world,” Zhao said.

“Through that process, we’re also learning on a continuous journey how to make our product better and prepare for future projects,” he added.

“Every challenge is an opportunity to develop solutions that make us stronger as a company, enable our customers to grow and help make the world a greener place.”

Cummins learned many lessons working to power cell phone towers in remote parts of Myanmar.
NEW NISSAN TRUCK INCLUDES CUMMINS’ INNOVATION, COMMITMENT TO EXCELLENCE

When you turn the key on the all-new 2016 Nissan TITAN XD powered by the Cummins 5.0L V8 Turbo Diesel, it almost purrs to life.

Don’t be fooled. The TITAN XD is all tiger, no housecat.

The powerful engine, a clean sheet design, was also developed to meet the latest emissions regulations using Cummins’ most recent innovations: sophisticated turbocharger technology, state-of-the-art filters and Selective Catalytic Reduction (SCR) technology that reduces emissions.

The result: a strong, fuel-conscious diesel engine to power Nissan’s light-duty pickup truck line.

“There is no question that the new TITAN will turn heads, and with the available Cummins 5.0L V8 Turbo Diesel we expect to win new fans and attract buyers looking for this unique configuration,” said Fred Diaz, Divisional Vice President, Nissan Sales & Marketing, Service & Parts, Nissan U.S.A.

The new pickup made its much-anticipated debut at the 2015 North American International Auto Show in Detroit, Michigan (U.S.A.), followed by a celebratory event at the Columbus Engine Plant in January 2015, where the engines will be made.

Bringing the TITAN XD to life, though, has been a decade-long journey and a lesson in perseverance.

First, some background. The Columbus Engine Plant (CEP) was originally built around a two-story Civil War-era house purchased by Cummins co-founders Clessie Cummins and W.G. Irwin in Columbus, Indiana (U.S.A.).

President and COO Rich Freeland praises the dedication of Cummins employees in the development of the 5.0L V8 Turbo Diesel engine.

It served as the Company’s headquarters in the 1920s and has been expanded 26 times, including extensive work in the 1940s during World War II. The building has been at the center of some of the Company’s most important developments.
“It’s difficult to walk from one end of this plant to the other without feeling a little nostalgic,” said Jeff Caldwell, General Manager of Cummins Global Pickup and Van business.

About 15 years ago, however, Cummins stopped making engines at the plant for a variety of reasons. “It was, quite frankly, a sad day for me,” said Cummins President and Chief Operating Officer Rich Freeland, a 35-year Cummins employee, speaking at the January ceremony. “I always felt it left a hole in the heart of this company.”

Until the TITAN XD, that is.

In 2006, the Company announced plans to build a light-duty diesel engine, but then the global economic downturn stalled the project. “We were faced with the recession in 2009, and we came out of that with a great engine, a great plant, great people,” Freeland said. “We were missing one thing: the customer.”

Enter Nissan and the TITAN. Discussions actually began in 2007, but it wasn’t until August 2013 before the partnership became official.

“This is an exciting announcement for our Cummins team,” Cummins Chairman and CEO Tom Linebarger said at the time. “We are bringing our innovation and latest technology in engines and aftertreatment products to a new segment of customers.”

Eighteen months and 150 new jobs later, hundreds of Columbus Engine Plant workers looked on as the truck they’d worked so hard to bring to life finally rolled onto the shop floor.

“We’ve looked back. We’ve looked forward. Here we are today, and this is another big day in the history of the CEP,” Caldwell said.

The 5.0L V8 Turbo Diesel success story would not have been possible without a Southern Indiana workforce and leadership that never gave up.

Freeland highlighted Cummins’ commitment to its employees at the TITAN XD launch in Columbus. “We are committed to winning and growing in Southern Indiana, and we’re committed to do it with our two unions. Other companies are running away from that, we’re running to it because we have terrific leadership and a terrific workforce here,” Freeland said.

Caldwell, the pickup and van general manager, lauded employees for sticking with the project and seeing it through to fruition.

“About the Engine

Cummins 5.0L V8 Turbo Diesel engine has been optimized for the next generation TITAN XD. Cummins also is developing a version of the engine for commercial vehicle customers.

This new engine will offer the right balance of power, performance and fuel economy while delivering the dependability Cummins customers expect. With a torque rating of 555 (lb-ft) and more than 310 horsepower, the Cummins 5.0L V8 Turbo Diesel will provide light-truck customers the combination of towing capacity and mileage that is expected in the highly competitive North American truck market.

The Cummins 5.0L V8 Turbo Diesel will be built at the Columbus Engine Plant in Columbus, Indiana (U.S.A.). This plant has the latest technological innovations to continue the 90-plus-year tradition of building the highest quality Cummins engines.

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CUMMINS’ ETHOS ENGINE SCORES BIG REDUCTIONS IN CARBON DIOXIDE

It may lack a sleek, aerodynamic design, but Cummins’ ETHOS 2.8L Demonstration Vehicle still turned heads like a sports car as it cruised around California’s capital during the summer of 2014.

Built in partnership with the California Energy Commission (CEC), the test vehicle’s engine and powertrain reduced carbon dioxide (CO₂) emissions by as much as 80 percent during testing compared to a baseline, gasoline-powered, medium-duty truck.

CO₂ is the primary greenhouse gas (GHG) emitted through human activities, accounting for the vast majority of GHG emissions in the United States. The ETHOS 2.8L engine is designed to use E-85, a clean-burning blend of 85 percent ethanol and 15 percent gasoline, at diesel-like cylinder pressures to take full advantage of the favorable combustion attributes of the biofuel.

“The Cummins ETHOS engine, developed through a research partnership with CEC, clearly demonstrates that by combining innovative engine design and combustion approaches with low-carbon alternative fuels, we can determine a path to significant reductions in greenhouse gas emissions,” said Wayne Eckerle, Cummins Vice President – Research and Technology.

The engine also delivered the power (up to 250 horsepower) and peak torque (up to 450 lb.-ft.) of gasoline and diesel engines nearly twice its 2.8-liter displacement.

Using corn derived E-85, the high-thermal efficiency and power-to-weight ratio of the engine resulted in 50 to 58 percent lower well-to-wheels CO₂ emissions compared with the gasoline engine baseline. Using second-generation, cellulosic derived E-85, the powertrain’s efficiency features delivered 75 percent to 80 percent lower well-to-wheels CO₂ emissions, depending on the drive cycle.

Cellulosic E-85 uses non-edible plant sources so it is less intensive to produce in terms of land use, tilling, fertilizing and harvesting than corn-based E-85. While not available in high volumes today, cellulosic ethanol represents a promising production pathway for future fuels because non-food feed stocks are dramatically more abundant. Two cellulosic plants started up in 2014 in North America and another was nearing completion in 2015.

The Cummins ETHOS 2.8L engine also incorporates an integrated stop-start system, which further reduces fuel consumption and emissions. In stop-start mode, the engine shuts down after the vehicle comes to a complete stop and the brake pedal remains depressed. As the driver’s foot is lifted from the brake, the system automatically starts the engine to seamlessly allow acceleration from a stop.
Cummins’ system controls, along with a robust starter, smart alternator and sensors, handle the additional stop-start duty cycle and maintain reliable operation over the life of the engine. Cummins worked closely with Allison Transmission to integrate the 2000 Series transmission for smooth and efficient stop-start operation. The transmission is equipped with hydraulic circulation features to ensure smooth operation and quick vehicle launch during stop-start driving.

Additional partners in the project included Valvoline, which provided NextGen engine oils specifically designed for lower CO₂ emissions, and Freightliner Custom Chassis, which provided a prototype MT45 Class 5 step-van vehicle.

A final, on-road validation test phase took place in July 2014 in Sacramento, California (U.S.A.), managed by Cummins Pacific, the California and Hawaii distributor for Cummins. The project team made a final report to the California Energy Board in August of 2014 and prepared an academic paper on ETHOS in October of 2014.

While the ETHOS project is over, it is still generating a lot of inquiries despite relatively low prices for diesel which has removed much of the cost benefits of ethanol. Meanwhile, product developers are looking for ways to incorporate the many lessons from ETHOS into future product designs.

Samuel Geckler, Director – Advanced Systems Integration at the Cummins Technical Center in Columbus, Indiana (U.S.A.), calls the ETHOS project “just outstanding.” But he says it can take some time for commercialization to take place on any initiative of this nature.

There are many factors involved such as the availability of ethanol in general and the availability of the fuel from non-edible sources. That’s the nature of Cummins’s Strategic Principle to “Lead in Critical Technologies.” It requires looking 5 to 10 years ahead.

“It’s not unusual for a project like this to be done and for people to be working on this technology for the next 10 years,” Geckler said. “But I think we have learned a tremendous amount from ETHOS.”

The Cummins ETHOS 2.8L engine was tested in California during the summer of 2014.
UPDATE: SUPERTRUCK’S NEW TRIP

After meeting the president and hosting dignitaries at the U.S. Department of Energy (DOE), the Cummins-Peterbilt SuperTruck is finally getting a rest.

But the most significant part of its more than four-year journey could just be starting.

“We learned a tremendous amount not just about features like waste heat recovery but about the base engine itself,” said David Koeberlein, Cummins Principal Investigator for SuperTruck. “This has been an extremely valuable project.”

Done in partnership with the DOE, SuperTruck started in 2012 to spur innovation in the industry. Cummins partnered with the Peterbilt Motors Company, a division of PACCAR, to lead one of several SuperTruck teams. Their team had several objectives as part of the public-private partnership, including demonstration of a clean and highly efficient engine with an advanced waste heat recovery system and an aerodynamic tractor and trailer.

The Cummins-Peterbilt SuperTruck made headlines in February of 2014 when the companies announced it achieved 10.7 miles per gallon (mpg) under real-world driving conditions. At one time, that would have been considered impossible. Most trucks today get between about 5.5 and 6.5 mpg.

Using the industry leading Peterbilt Model 579 tractor, the Cummins-Peterbilt SuperTruck was powered by an engine based on the Company’s ISX15. It converted exhaust heat into power delivered to the crankshaft, used route information to optimize fuel use, and included many other features.

When U.S. President Barack Obama called for new fuel-efficiency standards for medium- and heavy-duty commercial vehicles in 2014, he did it in front of the SuperTruck developed by Cummins and Peterbilt.

Work on SuperTruck wrapped up in a test cell. The final objective was developing a way for the engine to reach 55 percent Brake Thermal Efficiency (BTE), a key measure of engine efficiency. The engine went from 42 to 50 percent BTE during on-road testing. The Cummins team reached the 55 percent goal and work was completed in June 2014.

It remains to be seen how many of the SuperTruck’s features become commercially available, but Koeberlein says elements are already working their way into product development.

While it may no longer be on the road, he says SuperTruck’s influence could be around for years to come.
NEW INDIA TECH CENTER NEARS COMPLETION

In Cummins’ journey to becoming a global company from a multinational, there is an increased focus on developing India as a global engineering hub for undertaking research and development for the Company worldwide.

Against this backdrop, the Cummins Technical Center India (CTCI), is being established in Pune, Maharashtra, India.

This new building will co-locate laboratories, engineering facilities and engineers from across India. Geared toward strengthening the Company’s capabilities to design technologies for the future, this Center will house over 2,500 engineers and is expected to become fully operational in 2016.

A global, cross business unit technical center, CTCI will provide shared engineering services as well as business unit specific development capabilities and resources. A three-level building, CTCI, once completed, will include 36 engine test cells and various labs along with engine-build and tear-down space and other areas essential to technology and product development, verification and validation work.

Some of the unique architectural features of the design, which also strongly promote the green building concept, are:

» Integration of test cells, labs and office space to create synergy and smoothen interaction and collaboration between all entities. Offices and social areas are well integrated with labs and test cells.

» Large atria with green spines introduced to allow natural light within the building, thus reducing energy consumption.

» The combination of glass and clay tiles for the external façade, which insulates the building from external heat. Reflective surface for flat roofs to reduce heat gain.

» Use of recycled material (e.g. bricks made of fly ash) and use of solar energy for hot water at cafeteria, street lights, etc.

» Energy-efficient air-conditioning system.

» Conducive design allowing easy accessibility to the differently-abled.

» Collaborative work spaces resulting in optimization of space.

» Rain water harvesting.

» Recycled STP (Sewage Treatment Plant) water for gardening and flushing.

Engineers will work together in leveraging their talent to bring about accelerated growth while improving productivity, profitability and maximizing customer responsiveness.

With a vision to be a globally integrated technical organization that serves the needs of all business, both in India and worldwide, the CTCI will be an extension of the Company’s One Cummins approach.
EMPLOYEES TAKE CORPORATE RESPONSIBILITY VALUE TO HEART

Cummins employees continued to leverage engagement to build stronger communities in many ways in 2014, from recycling tires in Mexico to empowering students to speak out on environmental policy in Dubai, to helping women develop technical skills in Turkey.

Cummins’ Corporate Responsibility value calls on the Company and its employees to “serve and improve the communities in which we live.”

Cummins has more than 200 employee-led Community Involvement Teams (CITs) around the world that organize most of the Company’s community service work. Cummins encourages employees to focus on three global priority areas where they can add knowledge, skills and passion:

» Education
» Environment
» Social justice / equality of opportunity

The Company believes building stronger communities ultimately builds stronger markets for its products. This philosophy dates back to visionary CEO J. Irwin Miller, who helped organize Dr. Martin Luther King Jr.’s 1963 March on Washington, D.C. (see Cummins history timeline, page 17).

The Every Employee Every Community (EEEC) program provides employees with at least four hours of Company time to engage in community service work. Established in 2005, EEEC continues to serve as a foundational building block for Cummins to achieve community impact.

In 2014, more than 50,000 Company employees, joint-venture employees and Cummins contractors reported devoting some 364,000 hours to community involvement work as part of the EEEC program.

Participation in the EEEC program increased from 68 percent of eligible employees and contractors in 2013 to 73 percent in 2014. Meanwhile, engagement in another of the Company’s major community involvement programs, the Environmental Challenge, increased by 18 percent in 2014 compared to the previous year.

The Company is keeping its EEEC 2015 goal at 70 percent participation so it can put more focus on improving the quality of that engagement.

The Environmental Challenge was created in 2009 as part of the celebration of the Company’s 90th birthday. The Challenge is a friendly, global competition among community service projects with an environmental component. Project teams can win up to $10,000 from the Cummins Foundation for the charitable entity or non-governmental organization of their choice.

Cummins employees clean a beach in Callao, Peru, as part of an Environmental Challenge project that also included an educational campaign on the importance of clean beaches and healthy ocean ecosystems.
In addition to the increases in participation, the amount of greenhouse gas (GHG) removed as a result of the Environmental Challenge also rose from an estimated 19,000 metric tons in 2013, the previous record, to about 23,700 metric tons in 2014 (page 77).

“Community service initiatives, like the Environmental Challenge, create a global footprint that allows Cummins employees to use their skills to achieve impact and results,” said Gwen Langley, Cummins Director of Global Community Engagement. “These programs help us build stronger communities, and attract and retain the kind of employees we need to succeed as a company.”

Although Cummins’ current metrics focus on employee engagement through EEEC, the Company has challenged its leaders to establish more impactful goals and metrics by region that will both help focus and achieve greater impact from Cummins’ community involvement efforts.

“At Cummins, leaders can be one of the strongest enablers for encouraging employee engagement and driving impact in our communities,” said Mark Levett, Vice President of Corporate Responsibility and CEO of the Cummins Foundation. “In 2014, we saw an increase in leaders who were meaningfully engaged in policy development, coalition building and mobilizing their teams to address tough community issues.”

Overall, Levett said 2014 was a very successful year.

“I think these (participation) numbers illustrate the value we put on growing employee engagement to help solve problems in our communities,” Levett said. “Our employees take our core value very seriously and understand that their work is never truly done.”

Cummins College of Engineering for Women in India serves an underrepresented demographic in the engineering field.
BY THE NUMBERS

Here’s a look at some of the numbers generated by Cummins’ Environmental Challenge program.

**250,000**
Number of adults or children reached by an education component of the 2014 Environmental Challenge projects.

**10,000**
Maximum amount in dollars awarded by the Cummins Foundation to each of the 19 Environmental Challenge winners for use by the charitable or non-governmental group of the winners’ choice.

**82,700**
Trees planted as part of 2014 Environmental Challenge projects.

**63,466**
Hours devoted to 2014 Environmental Challenge projects at Cummins.

**22,370**
Estimated metric tons of greenhouse gas reduced by Environmental Challenge projects.

**8,000**
Estimated tons of garbage diverted from landfills as part of 2014 Environmental Challenge projects.

**5,500**
Olympic-sized swimming pools of water conserved or made fit for use as part of 2014 Environmental Challenge projects.

**UNITED WAY**
Donations from Cummins employees to the United Way in North America also increased from about $2.8 million in 2013 to nearly $3.12 million in 2014.

The United Way’s mission is to improve lives by mobilizing communities to address their key concerns. The organization raises money to support community organizations and launches its own initiatives in areas such as education and social services.

Because Cummins matches the gifts made by its employees to the United Way, more than $6 million was donated to help communities in North America. Nearly 6,000 of the 12,000 eligible employees participated. Employees in Clovis, New Mexico; Elkhart, Indiana; and Miramar, Florida, had 100 percent participation rates.

Cummins has also launched matching-gift programs over the past five years in China, India and parts of Asia-Pacific. These initiatives allow employees outside North America to also support local non-profits whose causes are meaningful to them.

**SIGNIFICANT PARTNERSHIPS**
Cummins continued financial support for several significant partnerships in 2014-2015, addressing a range of community needs.

The Company, for example, supports the Cummins College of Engineering for Women in Pune and Nagpur, India, which serves women who have long been underrepresented in the field of engineering. Cummins also continues to support EARTH University in Costa Rica, which teaches sustainable agriculture to students from around the world.

To see a list of organizations that receive major grants from the Company or its foundations, please go to page 89.

Looking ahead, Levett says while he was pleased with 2014, Cummins will continue to challenge its leaders and employees in 2015.

"Last year (2014) was a very good year for helping our Cummins communities grow stronger," Levett said. "We feel that our continued focus on defining impact and related metrics will improve our communities that much more."
ENVIRONMENTAL CHALLENGE
ENJOYS ANOTHER SUCCESSFUL YEAR

For the sixth year in a row, Cummins employees demonstrated their passion for the environment through the Company’s Environmental Challenge. The numbers say it all.

More than 13,600 employees working on 62 teams in 17 countries removed an estimated 22,370 tons of greenhouse gases (GHGs), a record amount equivalent to taking 4,709 vehicles off the road each year or planting or saving 573,584 trees.

Employees donated more than 63,000 hours, planted more than 82,000 trees and diverted more than 8,000 tons of garbage from landfills. About 55 percent of the Challenge projects had at least some educational component, reaching more than 250,000 children and adults.

Cummins employees included an education component in their cook stove project in China to warn people about the dangers of indoor air pollution from inefficient cook stoves.

About 16 percent of the 2014 Challenge projects involved water conservation or protection. Projects in the Challenge conserved or made fit for use about 3.6 billion gallons of water, enough to fill 5,500 Olympic-size swimming pools.

The Environmental Challenge is a friendly, global competition where Cummins employees take their skills into the community to address environmental problems. Community service projects are evaluated based on their level of employee engagement, environmental impact and ingenuity.

The winning projects, selected by a panel of experts, receive up to $10,000 each for the charitable or non-governmental organization of their choice. But the real winner is the environment.

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Here’s a closer look at three of the 19 global project winners, each with a different focus either on waste, water or energy.

**WASTE: BECOMING RESPONSIBLE FOR THEIR TRASH**

In La Pila, Mexico, it’s not uncommon to find trash littering the street, sidewalks and parks. On average, each resident of La Pila generates 800 grams of waste per day, of which at least 500 grams could be recycled.

The Community Involvement Team (CIT) at Cummins Generator Technologies (CGT) in San Luis Potosí, Mexico, decided to use the 2014 Environmental Challenge as a way to raise awareness about the benefits of waste management and recycling in nearby La Pila.

CGT’s project, “Zero Waste Management,” established a framework for a public waste collection service and promoted waste responsibility through a public campaign called “I am responsible for my waste.”

“Many of La Pila’s residents weren’t committed to maintaining the health of their community, which is why our public campaign centered on individual responsibility,” said Cristina Nava, Corporate Responsibility Leader for Mexico and Cummins’ Central America Area Business Organization (ABO).

The project used a phased approach to address La Pila’s trash problem. First, an employee team established an educational model called “Green Schools” in six schools in La Pila. Shop-floor employees taught more than 2,000 students about the environment and helped them develop a system for separating waste into recycling stations at their school.

Next, employees held an environmental fair and neighborhood cleanup to promote recycling in the community.

Finally, employees helped set up a recycling program to reduce trash in La Pila. When the system is entirely in place, an estimated 74.7 tons of waste will be recycled each year. Because recycling reduces the demand for raw materials, the project will also save an estimated 54,000 gallons of water and 130 metric tons of carbon dioxide (CO2) per year. That’s the equivalent of removing 28 cars from the road or planting 3,367 trees.

The project’s community partner, SEGAM, the Department of Ecology and Environmental Management in San Luis Potosí, will maintain the recycling process to ensure the initiative is sustainable.

**WATER: EVERY DROP COUNTS IN NANDAL VILLAGE**

Water is fundamental for health, sanitation, agriculture and economic prosperity, but just a few years ago, the people of Nandal village near the Cummins’ Megasite in Phaltan, India, did not have a reliable supply to live healthy, productive lives.

“Nandal is a drought-prone area and its people faced severe water scarcity,”

The project’s community partner, SEGAM, the Department of Ecology and Environmental Management in San Luis Potosí, will maintain the recycling process to ensure the initiative is sustainable.

The Cummins team takes a break from their efforts to help La Pila, Mexico, better manage its waste.

A new reservoir is helping India’s Nandal village address its water scarcities.
said Soujanya Veguru, Corporate Responsibility Senior Specialist at Cummins India. “Villagers were dependent on regular water deliveries to meet day-to-day water needs.”

The dire community problem required an ambitious response. Three years later, a team of Cummins employees succeeded not only in improving access to water for the village, but also in completely off-setting the amount of water used by the Company’s own operations in the area (page 54). The Megasite is home to several Cummins plants.

More than 800 Cummins employees went to work installing rain harvesting systems, fixing leaks, implementing drip irrigation and building two dams to manage water for nine villages surrounding the Megasite.

More than 30,000 students were educated about water pollution and water conservation practices, creating a ripple effect moving beyond the classroom into homes and neighborhoods.

In partnership with community schools, local leaders and non-governmental organizations, the project conserved more than 21 million gallons of water, the equivalent of nearly 32 Olympic-size pools. Tankers are no longer needed to supply water, reducing fuel and greenhouse gas emissions from the weekly truck deliveries.

For villagers, these improvements mean their basic drinking water and sanitation needs are now being addressed and water is available to support agriculture and livestock.

ENERGY: THE PERILS OF INDOOR AIR POLLUTION

Some 500,000 people die every year in rural China as a result of indoor air pollution. Many Chinese families burn coal inside their homes while cooking. The lack of ventilation has a significant impact on the air quality inside and outside of their kitchens.

Cummins employees leading an Environmental Challenge project in Yangquan, China, have worked for two years to alleviate this problem by installing cleaner, more efficient cook stoves in 200 homes.

“A cook stove not only improves the livelihoods of villagers, it also reduces carbon dioxide (CO₂) and particulate matter emissions that result from traditional cooking methods,” said Queenie Wang, the Project Leader for this Environmental Challenge winning project.

Modern cook stoves produce environmental benefits and families can save money, too. By using cornstalks instead of coal for cooking fuel in new, more efficient stoves, two metric tons of CO₂ are saved per family each year. Each family can also expect to save around 400 Renminbi (about $64).

This project began in 2012 and leverages the technical knowledge of Cummins employees and multiple community partners. The Global Environmental Institute (GEI), the China Alliance for Clean Stoves (CACS) and the Beijing University School of Chemical Technology have been critical to ensuring the project’s success and sustainability.

The 120 Cummins Emission Solutions Community Involvement Team (CIT) members who worked on this effort don’t plan to stop. In 2015, Wang and her team have already initiated steps to install an additional 2,000 cook stoves in the neighboring county of Ruicheng.

Along with this planned expansion, CIT members are adding environmental education classes in 10 schools to the cook stove project. More than 500 students have already participated in these classes.
ENVIRONMENTAL CHALLENGE WINNERS

In the 2014 Environmental Challenge, there were nine winning projects from China, six from India, two from the United States and one each from Mexico and Peru. Here’s a brief look at each project:

ZERO WASTE MANAGEMENT – FIRST PHASE
This project is establishing a "waste separation culture" in the La Pila suburb near Cummins operations in San Luis Potosi, Mexico, to increase recycling and waste management.

EAGLE CREEK PARK
This project reopened a cove in a reservoir in Indianapolis, Indiana (U.S.A.), which provides the city drinking water. Employees removed invasive species and planted native plants and trees.

BEACH CLEANUP
Employees cleaned beaches in Callao, Peru, and initiated an education campaign on the importance of clean beaches and healthy ocean ecosystems.

GREEN MACHINE
Cummins’ Distribution Business in North America organized a competition among distributors to see who could have the biggest waste cleanup. Eight teams participated, stretching from Fredericton, New Brunswick, Canada, to Honolulu, Hawaii (U.S.A.).

TOWARDS A WATER NEUTRAL MEGASITE
This initiative focused on creating and maintaining water resources in and around Cummins’ Megasite in Phaltan, India. Employees educated villages and schools on the importance of water conservation.

ECOWATER SCHOOL IN MAGANG
This employee project included digging a new well for a school in Xiangyang, China, establishing a rain water harvesting system and teaching students the importance of using water wisely.

SUSTAINING KOTHRUD PLANT WATER NEUTRALITY
This initiative in Pune, India, took a three-pronged approach to improving water supplies in the area, helping to maintain bodies of water, conserving water within Cummins facilities and facilitating education about water conservation in surrounding communities.

TETRA PAK RECYCLE
Cummins employees in Guangzhou, China, developed a recycling program for beverage cartons, working with primary and middle school students.
EMPOWERING THE UNDER-PRIVILEGED

Cummins employees worked with low-income individuals to help them save energy and make other environmental improvements in Pune and Phaltan, India.

COACH THEM YOUNG

This project involved various sites in India and was a continuation of an effort to spread education about environmental conservation to 300,000 school children across the country.

GREEN HOPE ENVIRONMENTAL EDUCATION

This initiative in Beijing, China, established an environmental education program in a school for migrant children who normally wouldn’t have access to environmental curriculum.

PROTECTING THE HAN RIVER

This project in Xiangyang, China, established a biogas plant at a livestock farm near the Han River, providing cooking gas for 240 families and a cleaner alternative to discharging waste into the river.

NATURE ANGEL PROJECT

This initiative by Cummins employees in Shanghai, China, built a campus garden and taught more than 500 migrant children about the importance of protecting the environment.

GOLDEN STRAW

Employees in Shanghai, China, continued a project to reduce the burning of straw and other agricultural waste by helping farmers reuse straw to plant mushrooms and make handicrafts, bringing them additional income.

IMPROVING THE LUOJIAGOU STREAM

This initiative in Chongqing, China, worked with families along the Luojiagou Stream to conserve water and reduce waste discharged into the stream.

CLEAN STOVE PROJECT

Based in Beijing, China, this initiative distributed 200 clean cook stoves to primarily rural residents subjected to pollutants from inefficient stoves. Eventually, another 2,000 stoves will be distributed.

SOLID WASTE MANAGEMENT

This initiative by Cummins employees seeks to promote waste reduction and recycling in Pune, India.

TOWARDS WATER NEUTRALITY

Cummins employees in Dewas, India, implemented a multi-faceted water conservation project, including the construction of soak pits to improve water harvesting and ensure the availability of potable water throughout the year.

RIVER ECOSYSTEM RESTORATION PROJECT

Employees in Shanghai, China, used ecological technology to treat water drained from a polluted river so it could be used safely for street cleaning and the irrigation of nearby parks.
TECHNICAL EDUCATION PROGRAM INCREASES OPPORTUNITIES FOR WOMEN IN TURKEY

There’s a growing gap between the increasingly technical jobs available at companies like Cummins and the number of people who have the skills to succeed in those jobs. Schools across the globe simply aren’t teaching the skills employers need.

That’s why Cummins and the Cummins Foundation are investing in communities around the world through TEC: Technical Education for Communities, which targets the technical skills gap through local vocational education programs.

TEC is built on a five-point educational framework. The standardized education program includes resources, processes and tools to help schools identify and supplement gaps in their existing programs, ensuring a global approach and allowing the implementation of TEC at any site. There are multiple successful pathways from technical education to good jobs.

In 2014, a new TEC program focused on mechatronics launched in Izmir, Turkey. Mechatronics is a multidisciplinary field that includes mechanical engineering, electrical engineering, telecommunications engineering, control engineering and computer engineering.

In TEC, Cummins seeks to partner in each school location with business, government and community organizations to increase access to good jobs and build a stronger and growing employment base in communities across the globe.

“The key to this program is collaboration at local schools among employers that need a skilled workforce,” said Mary Titsworth Chandler, who leads Global Strategic Corporate Responsibility Programs for Cummins.

“Education that addresses the skills gap certainly helps employers, but also improves the quality of life in Cummins communities because more people can access quality jobs with good wages,” Chandler said. “Ultimately, we are helping build stronger communities by building a locally capable and knowledgeable workforce.”

At each TEC school, students are taught skills that are needed in the local labor market. There are also opportunities for workplace learning such as apprenticeships, internships and job shadowing. The TEC program uses Cummins and local employer talent to teach classes, train teachers on new technology and mentor students during their studies.

“Pairing students with experts working in their field of study makes the end result of this program more tangible,” Chandler said.

The global TEC initiative has roots in Indiana (U.S.A.), where Cummins is headquartered.

“Cummins has invested for many years in community education programs where our employees live and work, including in Indiana, working on high-quality early childhood education, improved high school graduation rates and education leading to jobs,” Chandler said. “Education creates opportunity and that is really important to Cummins.”

The work that Cummins has done close to home has allowed the Company to expand education programs to its communities around the world. One important part of the Turkey TEC program has been recruiting women students.
“The number of female students in technical education is very low,” said Semih Gunes, the Higher Education Vocational School Manager at Ege University, a program partner and one of the oldest colleges in Turkey. “Through TEC, we can support the development and employment of female students.”

With Cummins’ assistance, the Ege University TEC Mechatronics program was awarded a quota from the government stating that 50 percent of its students must be qualified females, the first of its kind in Turkey.

“TEC holds great importance in training female students in Turkey to become qualified technical staff,” said Dr. Candeger Yilmaz, Ege University Rector. “Development of such cooperation is very important to improve the collaboration between the university and industry.”

In Turkey, Cummins, Schneider Electric and local Turkish business partners support Ege University with scholarships for students, curriculum, teacher training, guidance counseling and equipment purchases.

“It’s great to see a coalition like this come together to address a critical need,” said Gilles Vermot Desroches, Senior VP Sustainability, Schneider Electric, and General Delegate of the Schneider Electric Foundation.

In Turkey, Cummins, Schneider Electric and local Turkish business partners support Ege University with scholarships for students, curriculum, teacher training, guidance counseling and equipment purchases.

“Global companies and organizations who understand that need have a key role to play in finding solutions – it helps our communities and our businesses to be successful.”

In addition to Turkey, TEC has school programs around the world. The coalition in Nigeria, which began in 2013, marked the first agreement between Cummins and other organizations to support the program, a model that has gained momentum at other global sites, including in China and most recently in Turkey.

TEC also has programs in India, Morocco and Saudi Arabia with plans to expand in 2015 into Australia and parts of South America.

“Industry, government and civil society have a stake in global education,” said Mark Levett, Vice President of Corporate Responsibility and CEO of the Cummins Foundation. “The coalition in Turkey provides skills training and access to good jobs for students, including underrepresented groups such as women.”
CUMMINS HELPS CITY GET WISE ABOUT WASTE

Civic authorities in Pune, India, are looking to a Cummins Corporate Responsibility initiative for help as they work to get the city’s trash problems under control.

A rapidly growing industrial and educational hub that includes several Cummins facilities, Pune has a population of more than 3 million people that is straining the city’s infrastructure. Among its many challenges, the city is finding it difficult to keep pace with the increasing volume of trash.

Until mid-2014, Pune collected and disposed garbage in a landfill close to the city. Then, with garbage volumes growing quickly, producing alarming levels of environmental pollution, residents near the landfill began to protest.

Civic authorities are taking another look at their waste management model, evaluating the possibility of no longer collecting wet garbage from households. That would leave Pune residents with no option but to segregate their waste and build pits to convert wet garbage into compost. With over 1,600 tons of solid waste generated each day, the city has to do something.

Cummins India’s “Zero Garbage Project” is one model being considered for reducing the amount of trash in the city.

The Company has been working on waste management issues in Pune since 2011. Employees won Cummins’ Environmental Challenge competition for extension of their Zero Garbage Project in 2013.

The Company has been partnering with the NGO (non-governmental organization) Janwani, the Pune Municipal Corporation (PMC) and a cooperative (SWaCH) made up Cummins employees raise awareness about the need to reduce the amount of waste sent to a landfill outside Pune.
of low-income residents of the city who collect trash (wet and dry) from doorsteps for recycling.

The Zero Garbage Project converts biodegradable waste into energy and facilitates the recycling of non-biodegradable material. With the successful implementation of the project in the Katraj Ward and then the Baner-Balewadi Ward, which is near the Company’s India campus, civic authorities believe Cummins has a sustainable model that can be replicated across the remaining 46 wards of the city.

The model has worked regardless of a ward’s demographics. The composition of income groups in the Katraj and Baner-Balewadi wards, for example, are diametrically opposed.

The program engages Cummins employees in organized rallies and door-to-door campaigns to create a basic awareness about waste segregation. It also sets up meetings with various housing societies, encouraging households to restart existing pits available for decomposing wet waste so it can be safely used as organic material. The initiative also provides training to the society staff on operating compost pits and converting wet waste into organic matter.

Having gauged that the weakest link in the solid waste management process was unreliable push carts used by trash collectors, Cummins engineers designed a cost-effective, durable, user-friendly push cart through a Community Impact Six Sigma project. Six Sigma is the data-based business problem-solving tool popular at Cummins.

They developed a low-cost push-cart using analysis led design, the same tool that product designers work with at Cummins. The cart is better ergonomically, improving conditions for the waste-collectors and simplifying the process.

The design has been shared with officials at the PMC for replication across various wards in the city.

The program has reached out to over 14,500 households, leading to a 66 percent increase in waste segregation (separating dry and wet waste at the source). The treatment of wet waste in local composting pits has increased by 400 percent to over 2.5 tons per day in the two wards. Meanwhile, 6.5 tons per day of garbage are being processed at a local biogas plant, which can then be converted into electricity using a Cummins generator set. The electricity is being used to power street lights.

Additionally, Cummins has sponsored the Nirmalya project, which uses an annual festival as a key opportunity to promote recycling. In continuation of the project in 2014, Cummins employees successfully prevented river pollution from the traditional immersion of idols and other offerings such as flowers, fruits, spices, honey, coconuts, etc. By immersing these offerings into tanks instead, the material was collected and converted into 156 tons of compost.

With the success of the Katraj and Baner-Balewadi models, Cummins is now ready with a holistically developed model that can be replicated across different demographics within the city. During 2014, 980 Cummins employees logged 4,388 hours completing this project, using their skills and passion to make their communities better places to live.

“In addressing a significant challenge plaguing the city of Pune, that of waste management, it is a tremendously rewarding experience to see how the skills of our employees can be leveraged in developing a change model for different demographics of the city,” said S. Ravichandran, Head of Corporate Responsibility for Cummins India.
BUS PROJECT LOOKS TO HELP SCHOOLS LOWER COSTS

Editor’s Note: Some of the best Corporate Responsibility projects come about when Cummins employees put their job skills to work to address a need. Here are two examples:

A community service project by two Cummins engineers to reduce an Indiana school district’s fuel costs could potentially help schools across the United States save money on transportation.

The project involved finding cost-effective ways to modify the powertrain in buses operated by the school system in Columbus, Indiana (U.S.A.), to maximize fuel mileage without compromising performance or safety.

Research conducted at the Company’s test facilities and under real world driving conditions found certain modifications to the powertrain improved bus fuel efficiency by more than 10 percent.

“Our hope is that this project will allow the Bartholomew Consolidated School Corporation (BCSC) and potentially many other school systems throughout the country to decide if establishing a new bus spec or upfitting existing buses is right for them,” said Steve Bellinger, a Vehicle Integration Engineer at the Columbus Engine Plant (CEP) who worked on the initiative.

In buses, and most other vehicles, engine torque is transferred through the transmission and drive axle or axles to move the vehicle. Optimization of these components is critical to maximizing the performance and fuel efficiency of any vehicle.

The Community Impact Six Sigma project led by Bellinger and Mark Slaton, an Environmental Engineer at CEP, was some three years in the making and ultimately led to hardware and software changes on bus powertrains. Six Sigma is a data-based business problem-solving tool widely used at Cummins.

The project included changes in the transmission shift schedule, the number of forward speeds and the rear axle ratio, which taken together enable a bus to operate more efficiently. The project also reduced the load on the engine when a bus is at a full stop to save fuel.

The Six Sigma project was sponsored by Jeff Caldwell, who leads Cummins’ global van and pickup truck business and also serves as the Bartholomew Consolidated School Corporation’s Board President.

Slaton and Bellinger also worked with Allison Transmission and chassis engineers from the school bus companies. BCSC officials have adopted the recommended changes on all new bus purchases.

“Cummins and BCSC have been working for a long time to make things better and this is just another example of that,” Steve Forster, BCSC fleet services manager, told The Columbus Republic newspaper.
SCHOOL CHILDREN IN INDIA BECOME ‘SUPER HEROES’ FOR THE ENVIRONMENT THROUGH EDUCATION PROJECT

To commemorate Cummins India’s 50th anniversary in 2012, Company employees launched a nationwide environmental education campaign called “Coach Them Young.”

Some 75,000 children at 200 schools in 51 cities watched a video and pledged to be a “True Super Hero” by protecting their environment from waste and pollution.

In 2013, the team expanded the project and used the vast network of the Distribution Business Unit to reach more than 200,000 students in 71 cities. It was an Environmental Challenge winner both years.

But this initial impact was not enough. In fact, it was only the beginning.

“Coach Them Young,” the India Area Business Organization and Distribution Business Unit used new strategies and partners to reach 400,000 students in 80 cities with 518 employees contributing 2,400 hours. The project won Cummins’ Environmental Challenge again in 2014.

The project team worked with IVolunteer, a social enterprise that promotes India’s social development by bringing volunteers and organizations together, to coordinate the 1,600 educational sessions at 700 schools. Active leadership engagement and partnering with joint ventures, dealers, suppliers and customers also led to the project’s expanded outreach.

In addition to gaining new partners, the program turned in a new direction. The focus in 2014 was on conservation of natural resources. Students were shown practical ways to do this, such as closing the tap while brushing their teeth. Even if just one in 10 children takes these simple steps, it results in an annual savings of 3.65 million liters of water and 3.65 million kilowatt hours (kWh) of electricity.

Employees not only put their organizational and time management skills to work, but also leveraged principles more commonly associated with the business world.

“The first step in change management is always to educate,” said Karan Madan, project leader. “School children are the ideal propagators as they are future torchbearers of the world and have significant capability to learn, adapt and implement.”

The hope is that students will not only take personal actions, but become brand ambassadors – super heroes – inspiring their families, friends and neighbors to join them. This is where the project team plans to take the project next. They also plan to focus on empowering teachers and principals.
CUMMINS’ ENGINE FOR GIVING BACK

For Cummins, the fuel for philanthropy is its people. Through their skills and passions, they drive the Company’s financial support to programs, partners and projects in our communities.

Since 2007, the catalyst for Cummins Corporate Responsibility—a Company core value—has been its Every Employee Every Community (EEEC) program. By encouraging employees to volunteer four or more of their work hours, Cummins enables its teams to leverage their interests and abilities in their local communities.

And employees are acting on that opportunity.

In 2014, Cummins’ global priority areas—education, the environment and social justice/equality of opportunity—received record-setting engagement from its employees. EEEC reached 73 percent in 2014, compared with 67 percent in 2013. And in response to that growth came increased financial support from the Company.

Last year, Cummins invested some $18.1 million in its Corporate Responsibility efforts, compared with $15.3 million in 2013. That support was prompted, and granted, based on where and how Cummins employees chose to engage through EEEC.

For example, winners of the Company’s 2014 Environmental Challenge each received a $10,000 grant to give to the non-profit or non-governmental organization (NGO) of their choice.

In North Carolina (U.S.A.), employees worked to improve third-grade reading levels and were granted $245,000 to further that initiative. And, in India, more than $39,000 was devoted to a team-led project with an area NGO focused on educating underserved tribal women.

Such financial support is made possible by the Cummins Foundation, one of the oldest corporate foundations in the United States. Combined with Cummins employees’ EEEC engagement, both comprise the engine that creates lasting impact in communities around the world.

Just as Cummins employees dedicate themselves to producing only the best for their customers, so, too, do they commit their best to giving back to their communities. They are the philanthropic Power of Cummins.
A list of Cummins’ EEEC-inspired contributions and projects from 2014 is included on the following pages:

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<tr>
<td>Kwanbekilanga Secondary School</td>
<td>Support to establish a library</td>
</tr>
<tr>
<td>Lila Poonawalla Foundation</td>
<td>Scholarships for disadvantaged female students</td>
</tr>
<tr>
<td>Wuhan University of Technology</td>
<td>Scholarships for strategic education initiatives in China</td>
</tr>
<tr>
<td>Huazhong University of Science and Technology</td>
<td>Scholarships for strategic education initiatives in China</td>
</tr>
<tr>
<td>Community Education Coalition</td>
<td>Support for Educational Coalition workshop for Rocky Mount, NC and Jamestown, NY</td>
</tr>
<tr>
<td>Pre-K 4 All Committee</td>
<td>Campaign to support Busy Bees Academy and pre-Kindergarten programs</td>
</tr>
<tr>
<td>Lycee Collegial Bouskoura</td>
<td>Funding to support the construction of a student library</td>
</tr>
<tr>
<td>John H. Boner Community Center</td>
<td>An education program for AmeriCorps members to help improve education on the Near Eastside of Indianapolis</td>
</tr>
<tr>
<td>SAE Foundation</td>
<td>Support for development of a STEM curriculum</td>
</tr>
<tr>
<td>Innovation in Science and Technology</td>
<td>Support for hands-on science, engineering and technology programs and events</td>
</tr>
<tr>
<td>School on Wheels Corporation</td>
<td>Support for project-based tutoring at Brookside Elementary (IPS #54) through Striving Academic Readiness (STAR) program.</td>
</tr>
<tr>
<td>LeMoyne-Owen College</td>
<td>Support for a strategic plan for the college’s search for a new president</td>
</tr>
</tbody>
</table>
## COMMUNITY

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>GRANT OR DONATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing Chaoyang Yongxu Global Environmental Institute</td>
<td>Promoting the use of clean stoves using biomass fuel in rural China</td>
</tr>
<tr>
<td>Universidad Autónoma de San Luis Potosí</td>
<td>Building a green roof at the University of San Luis Potosi</td>
</tr>
<tr>
<td>Tree Plantation Project</td>
<td>Addressing the impacts of rapid urbanization and industrialization on forests</td>
</tr>
<tr>
<td>Desilting Project</td>
<td>Project to increase the water storage capacity of Khadakwasla dam, a major source of water for Pune, India</td>
</tr>
<tr>
<td>Charyou Youth Volunteer Service Center</td>
<td>River recovery project to improve the water quality at Expo Houtan Park</td>
</tr>
<tr>
<td>Global Village of Beijing Environment Education Center</td>
<td>Support to improve the water environment of Luqiaogou stream, a tributary of the Yangtze River</td>
</tr>
<tr>
<td>Xiangyang City Association of Environment Protection Green Han River</td>
<td>Support to build a biogas site to dispose of sewage from livestock farming</td>
</tr>
<tr>
<td>Agricultural Development Trust</td>
<td>Partnership to teach the latest agricultural techniques to farmers</td>
</tr>
<tr>
<td>Nirmalya Project</td>
<td>Support for an environmentally friendly solution to the immersion of Nirmalya in rivers during festival times in India</td>
</tr>
<tr>
<td>Xiangyang City Association of Environment Protection Green Han River</td>
<td>Support for a water quality improvement project at Magang Primary school</td>
</tr>
<tr>
<td>Proforestal A.C.</td>
<td>Support for urban forest infrastructure to promote and control urban reforestation</td>
</tr>
<tr>
<td>Shanghai Oasis Ecological Conservation and Communication Center</td>
<td>Development of curriculum to promote environmental education and education equality</td>
</tr>
<tr>
<td>Columbus Park Foundation</td>
<td>Promote, improve and maintain the existing People Trail that runs along Haw Creek between Columbus Engine Plant and Cummins Technical Center</td>
</tr>
<tr>
<td>Husk Power Project</td>
<td>Project to develop an energy system to use the gas from rice husks to produce electricity for use in rural areas</td>
</tr>
<tr>
<td>COMMUNITY</td>
<td>GRANT OR DONATION</td>
</tr>
<tr>
<td>------------------------------------------------</td>
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</tr>
<tr>
<td><strong>Food Waste Project 2014</strong></td>
<td>Pune, India</td>
</tr>
<tr>
<td>Project to create awareness on solid waste management in schools and residential areas</td>
<td>$14,921</td>
</tr>
<tr>
<td><strong>Dissolution of Plaster of Paris Idols Project</strong></td>
<td>Pune, India</td>
</tr>
<tr>
<td>Provide an environmentally friendly solution to restrict water pollution caused by immersion of plaster of Paris idols in rivers during festivals</td>
<td>$13,079</td>
</tr>
<tr>
<td><strong>Zero Garbage Project</strong></td>
<td>Pune, India</td>
</tr>
<tr>
<td>Engineering design services for a waste collection site and a public campaign on the importance of separating waste</td>
<td>$11,053</td>
</tr>
<tr>
<td><strong>Centro de Estudios de Promoción Social Cáritas A.C.</strong></td>
<td>San Luis Potosí, Mexico</td>
</tr>
<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Centro Educativo en Apoyo al Espectro Autista A.C.</strong></td>
<td>San Luis Potosí, Mexico</td>
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<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Charyou Youth Volunteer Service Center</strong></td>
<td>Shanghai, China</td>
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<tr>
<td>Environmental Challenge grant recipient</td>
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<tr>
<td><strong>Cheonan Seobu Free Meal Support Center</strong></td>
<td>Cheonan, Korea</td>
</tr>
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<td>Environmental Challenge grant recipient</td>
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<tr>
<td><strong>SIFE China</strong></td>
<td>Shanghai, China</td>
</tr>
<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Xiangyang City Association of Environment Protection Green Han River</strong></td>
<td>Xiangyang, China</td>
</tr>
<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Xiangyang Charity Federation</strong></td>
<td>Xiangyang, China</td>
</tr>
<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Wuhan Women and Children Activity Center</strong></td>
<td>Wuhan, China</td>
</tr>
<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Aikya Seva Sanstha</strong></td>
<td>Throughout India</td>
</tr>
<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Cummins India Foundation</strong></td>
<td>Maharashtra, India</td>
</tr>
<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Green Thumb</strong></td>
<td>New Delhi, India</td>
</tr>
<tr>
<td>Environmental Challenge grant recipient</td>
<td>$10,000</td>
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</tbody>
</table>
## Social justice / equality of opportunity

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
<th>Community</th>
<th>Grant or Donation</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Way Agencies</td>
<td>Match for donations made by employees in North America to the United Way</td>
<td>North America and Canada</td>
<td>$3,115,183</td>
</tr>
<tr>
<td>Anchor House</td>
<td>Renovation and addition to the Anchor House facility to assist the homeless</td>
<td>Seymour, IN (U.S.A.)</td>
<td>$375,000</td>
</tr>
<tr>
<td>Aeon</td>
<td>Addition of a solar thermal unit, water meter and computerized monitoring system for a mixed-income housing development</td>
<td>Minneapolis, MN (U.S.A.)</td>
<td>$350,000</td>
</tr>
<tr>
<td>John Townsend Trust</td>
<td>Support for Creative Adult Project to provide work skills to adults with disabilities</td>
<td>Kent, UK</td>
<td>$258,000</td>
</tr>
<tr>
<td>Pegode</td>
<td>Support for an initiative to help people with mobility issues access transportation</td>
<td>Niel, Belgium</td>
<td>$118,200</td>
</tr>
<tr>
<td>Willoughby School</td>
<td>Development of an immersive learning environment for students with physical, mental and life limiting disabilities</td>
<td>Lincolnshire, UK</td>
<td>$113,000</td>
</tr>
<tr>
<td>People Serving People</td>
<td>Project to renovate a kitchen and dining hall at the largest family homeless shelter in Minnesota (U.S.A.)</td>
<td>Minneapolis, MN (U.S.A.)</td>
<td>$100,000</td>
</tr>
<tr>
<td>United Community Ministries</td>
<td>Initiative to increase the capacity of the dining and dormitory areas at McDonald Street Soup Kitchen and Emergency Shelter</td>
<td>Rocky Mount, NC (U.S.A.)</td>
<td>$99,899</td>
</tr>
<tr>
<td>NGO Development Project 2014</td>
<td>Creating a framework to develop NGOs that support the underprivileged by focusing on energy conservation, health and safety and development initiatives for the inmates</td>
<td>Pune and Phaltan, India</td>
<td>$90,105</td>
</tr>
<tr>
<td>The Heritage Fund Community Foundation of Bartholomew County</td>
<td>Support for “Engage Columbus,” an initiative that provides community information to new residents in Columbus, Indiana (U.S.A.)</td>
<td>Columbus, IN (U.S.A.)</td>
<td>$90,000</td>
</tr>
<tr>
<td>St. Susan Center</td>
<td>Project to increase the capacity and efficiency of this food pantry and community kitchen</td>
<td>Jamestown, NY (U.S.A.)</td>
<td>$56,500</td>
</tr>
<tr>
<td>New Day Charities / New Day Foster Care</td>
<td>Create an isolation room and new kitchen area at New Day Foster Home</td>
<td>Beijing, China</td>
<td>$54,800</td>
</tr>
<tr>
<td>Rise Inc.</td>
<td>Support the launch of a low-cost supply chain for micro-switches used by people with disabilities</td>
<td>Spring Park Lake, MN (U.S.A.)</td>
<td>$42,821</td>
</tr>
<tr>
<td>Maharashtra Arogya Mandal</td>
<td>Improve education for tribal girls around Padanwadi</td>
<td>Pune, India</td>
<td>$39,058</td>
</tr>
<tr>
<td>Holistic Village Development Project</td>
<td>Holistic transformation of Nandal village by addressing water, agriculture, health and sanitation, education and more</td>
<td>Phaltan, India</td>
<td>$32,267</td>
</tr>
<tr>
<td>The Trussell Trust</td>
<td>Project provides cooking classes and crockpots to 200 families, teaching them to cook and eat healthy</td>
<td>Salisbury, UK</td>
<td>$32,000</td>
</tr>
<tr>
<td>Human Rights Commission</td>
<td>Collaboration project between the Mayors Advisory Council for Disability and Accessibility, Columbus Transition Council and Cummins Assistive Technologies to create a “disability awareness video”</td>
<td>Columbus, IN (U.S.A.)</td>
<td>$25,000</td>
</tr>
<tr>
<td>COMMUNITY</td>
<td>GRANT OR DONATION</td>
<td>CUMMINS FOUNDATION</td>
<td>CUMMINS INC.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Food Bank of Central &amp; Eastern North Carolina</td>
<td>Establish the Weekend Power Pack of food for needy children in Nash, Edgecombe and Halifax counties in North Carolina</td>
<td>Raleigh, NC (U.S.A.)</td>
<td>$25,000</td>
</tr>
<tr>
<td>Immigrant Welcome Center Inc.</td>
<td>Support to help immigrants connect with people, places and resources, helping them build successful lives</td>
<td>Indianapolis, IN (U.S.A.)</td>
<td>$25,000</td>
</tr>
<tr>
<td>Developmental Services Inc.</td>
<td>Support to renovate a kitchen used for cooking classes that instill a healthy lifestyle</td>
<td>Columbus, IN (U.S.A.)</td>
<td>$24,700</td>
</tr>
<tr>
<td>Coach Them Young Project</td>
<td>Launching a national awareness campaign to create awareness among children to protect the environment in a sustainable manner</td>
<td>Multiple cities, India</td>
<td>$23,260</td>
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<tr>
<td>Memphis Cultural Arts Enrichment Center</td>
<td>Support to help broaden programming</td>
<td>Memphis, TN (U.S.A.)</td>
<td>$21,000</td>
</tr>
<tr>
<td>Wuxi Hishan Lezhu Social Work Office</td>
<td>Support for development courses for children of migrant workers at a community school</td>
<td>Wuxi, China</td>
<td>$21,000</td>
</tr>
<tr>
<td>Organization for Livelihood Enhancement Services (OLIVES)</td>
<td>Establish a sanitation facility for Abohema Methodist Primary School in Turkey</td>
<td>Ghana, Africa</td>
<td>$20,000</td>
</tr>
<tr>
<td>Gündoğdu Contemporary Community Volunteers Association</td>
<td>Support for building a training center to create a better educational environment for children</td>
<td>Izmir, Turkey</td>
<td>$20,000</td>
</tr>
<tr>
<td>Sans Souci</td>
<td>Assist the community school supply effort to provide a backpack full of the school supplies to area children in need</td>
<td>Columbus, IN (U.S.A.)</td>
<td>$19,000</td>
</tr>
<tr>
<td>Kids Against Hunger</td>
<td>Funding for a warehouse reconfiguration project to improve the efficiency of the organization</td>
<td>Greenwood, IN (U.S.A.)</td>
<td>$15,002</td>
</tr>
<tr>
<td>Xiangyang Charity Foundation</td>
<td>Support for a matching gifts program in China</td>
<td>Xiangyang, China</td>
<td>$14,361</td>
</tr>
<tr>
<td>Hogar del Niño A.C.</td>
<td>Support for IT equipment and desks for two classrooms</td>
<td>San Luis Potosí, Mexico</td>
<td>$13,550</td>
</tr>
<tr>
<td>Putnam County School</td>
<td>Support for Backpack Buddy food program for disadvantaged students</td>
<td>Winfield, WV (U.S.A.)</td>
<td>$12,500</td>
</tr>
<tr>
<td>Centro de Estudios de Promoción Social Cáritas A.C.</td>
<td>Support to implement an inventory management system and improve the installation of one of the dispensaries</td>
<td>San Luis Potosí, Mexico</td>
<td>$11,000</td>
</tr>
<tr>
<td>Growing Places Indy</td>
<td>Support to help Growing Places program cultivate a culture of urban agriculture and healthy lifestyles</td>
<td>Indianapolis, IN (U.S.A.)</td>
<td>$10,000</td>
</tr>
<tr>
<td>Indiana Civil Liberties Union (ICLU)</td>
<td>Support to assist the ICLU with general operations</td>
<td>Indianapolis, IN (U.S.A.)</td>
<td>$10,000</td>
</tr>
<tr>
<td>John H. Boner Community Center</td>
<td>Support to help the John Boner Community Center improve the quality of life for the Near Eastside of Indianapolis</td>
<td>Indianapolis, IN (U.S.A.)</td>
<td>$10,000</td>
</tr>
<tr>
<td>Local Initiatives Support Corporation of Indianapolis (LISC)</td>
<td>Support to help transform distressed neighborhoods into healthy and sustainable communities</td>
<td>Indianapolis, IN (U.S.A.)</td>
<td>$10,000</td>
</tr>
<tr>
<td>Teach For America</td>
<td>Support for Teach For America’s general operations</td>
<td>Indianapolis, IN (U.S.A.)</td>
<td>$10,000</td>
</tr>
</tbody>
</table>
THE CUMMINS FOUNDATION

The Cummins Foundation is governed by these individuals and committees:

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**Chairman Tom Linebarger**
Chairman and CEO, Cummins

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President and Chief Operating Officer, Cummins

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**Luther Peters**
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**Mark Smith**
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**Rakesh Gangwani**
Director – EMEA Corporate Development, Cummins
CUMMINS REDOUBLES ITS HEALTH AND SAFETY EFFORTS IN 2015

Cummins recorded improvements in three key health and safety metrics in 2014, expanded critical programs and won one of the world’s most prestigious health, safety and environmental awards.

The Company, though, also recorded an increase in its Major Injuries and Dangerous Occurrences (MIDO) Rate in 2014 and missed aggressive goals in two other focus areas.

“We made real progress in implementing our vision that all employees are responsible for health and safety, not just on the job but in all facets of their lives,” said Stan Woszczyński, Cummins Chief Manufacturing Officer and
the Company leader who oversees health and safety. “However, we know when it comes to health and safety, our work is never done.”

Cummins won the prestigious Robert W. Campbell Award from the National Safety Council in 2014 ([page 99](#)).

In a video message to Company employees, Chairman and CEO Tom Linebarger said he felt tremendous pride about winning the award and at the same time a sense of urgency to do even more about safety.

“I came away thinking to myself since safety is the primary duty of a leader… (a goal of) zero incidents is really the only ethically responsible position to take,” Linebarger said.

The Company is using the Campbell Award as a starting point to redouble its health and safety efforts.

“In 2015, Cummins is raising the expectations for health and safety,” said Michelle Garner-Janna, Executive Director – Corporate Health and Safety. “Each of us must be actively engaged in preventing injuries and promoting safe behavior.”

**2014 RESULTS**

In 2014, Cummins saw improvements in three key health and safety performance indicators:

- A 5 percent reduction compared to 2013 in the Company’s Incidence Rate, the relative number of recordable injuries and illnesses per 100 employees.
- A 5 percent reduction in Cummins’ Severity Case Rate, which is based on the number of injuries and illnesses resulting in lost work days per 100 employees.
- A 13 percent drop in the Company’s Ergonomics Incidence Rate. Ergonomics has been a leading cause of injury at Cummins.

But while the ergonomic rate of 0.149 (ergonomic injuries per 100 employees) was significantly under the Company’s goal (0.160), results for the Incidence Rate (0.610) and Severity Case Rate (0.190) were over Cummins’ goals (0.580 and 0.160, respectively).

Nevertheless, the 2014 results for Incidence Rate and Severity Case Rate were better than in 2013.

Meanwhile, the MIDO Rate in 2014 was well above Cummins’ goal (0.057 compared to 0.020). Dangerous occurrences included a technician getting struck by a wind-blown door, another falling off the top step of a truck and an engine dropping when a lifting sling broke. The door and fall resulted in fractured wrists. Thankfully, no one was hurt by the falling engine.

“That underscores why you have to think about safety every time,” said Cummins Occupational Safety Director Pramod Palat. “Sometimes the seemingly safest activities are the ones that result in significant injuries. Safety has to be top of mind, all the time.”

There were 279 lost work days in 2014, 162 First Aid Incidents and sadly one work-related fatality at one of the Company’s joint ventures in China.

**KEY INITIATIVES**

Health and Safety leaders expanded two initiatives in 2014 – the Driver Safety program and a program called “Live It. Lead It.”

“Live It. Lead It.” is designed to strengthen leaders’ personal commitment to health and safety by asking them to share their personal experiences with workplace injuries. Participants shared incidents involving people they were supervising, family members and former colleagues.

Leaders in the “Live It. Lead It.” program are asked to consider every work station in their facilities and whether they would let their mother, father, daughter or son work at those stations. They are also asked to create an action plan detailing how they will personally lead health and safety going forward.

The program has been very effective and safety leaders are working to expand it in 2015 to non-supervisors. Woszczynski, for example, makes it a point to discuss with employees the
need to get actively engaged in health and safety through “Live It. Lead It.” when he speaks before groups around the Company.

“We want everyone to make safety personal,” said Garner-Janna. “That’s why we believe many of the principles in ‘Live It. Lead It.’ apply to every employee.”

The program has been customized for all employees and is being deployed in 2015.

The health and safety team also expanded its global driver safety initiative, sponsoring a special Driver Safety Expo in addition to Driver Safety Week in October 2014. The week includes a focus each day on key topics such as driver fatigue, rural driving, motorcycle driving, safety at intersections and driver attitude.

The Road Safety Expo was a new event held at the end of the week in Columbus, Indiana (U.S.A.), where attendees safely experienced first-hand the dangers inherent in conditions such as distracted driving.

A phased-in effort to identify and work with drivers considered to be most at risk of getting injured driving was expanded and the Company started driver safety initiatives with several joint ventures in South America and Nigeria, said Clint Wernimont, Corporate Road and Safety Project Leader.

The health and safety team also continued its successful Ergonomics Cup, a competition encouraging employees to identify and fix ergonomic problems at Cummins sites around the world. And the Company re-introduced Cummins’ toolbox to prevent slips, trips and falls, another leading cause of injury at the Company.

Garner-Janna believes Cummins has laid a great foundation for a safe 2015.

“We must look out for the safety and well-being of not only ourselves, but every Cummins employee,” she said. “Every injury is preventable, and it’s up to each of us to lead by example.”

POSITIVE TREND LINES

Both the Company’s Severity Case Rate and Incidence rate fell in 2014 compared to 2013. But Cummins did not reach aggressive goals set in those areas.
CUMMINS WINS PRESTIGIOUS HEALTH AND SAFETY AWARD

Health and safety is a job never done, but for a few hours on a September night in San Diego, California (U.S.A.), in 2014, Cummins’ health and safety team took a moment to celebrate its accomplishments.

The Company was named the winner of the 2014 Robert W. Campbell Award by the U.S.-based National Safety Council. The award was presented at the Council’s international Congress and Expo, the world’s largest gathering of health and safety professionals.

The prestigious honor goes to companies that have successfully integrated environmental, health and safety management with their business operations as a cornerstone of corporate excellence. Past winners include Dupont (2013), Firmenich (2012), UTC Fire & Security (2011), The Dow Chemical Co. (2010) and Schneider Electric North America (2009).

According to the Campbell Award’s executive review committee, two of the primary reasons Cummins scored highly is because its leaders commit to safety through the Company’s “Live It. Lead It.” program and Cummins actively engages employees in meaningful and impactful projects in the places they live and work.

“Cummins is a true learning organization that continues to seek opportunities to strengthen its outstanding approach to safety, health and sustainability,” said Deborah A.P. Hersman, President and CEO of the National Safety Council.

The Campbell Award is underwritten by the Exxon Mobil Corporation and named for Robert W. Campbell, a safety pioneer and the first president of the National Safety Council.

“The Campbell Award is terrific recognition for the Cummins employees who have made tremendous progress in health, safety and the environment at our Company,” said Michelle Garner-Janna, Executive Director – Corporate Health & Safety.

Cummins Chairman and Chief Executive Officer Tom Linebarger said he would like to see the Company use the award as a starting point to raise the bar on its initiatives in health, safety and the environment.

“Our work in safety is about caring for our people who work every day to help our Company succeed,” Linebarger said. “...There is much more to do and we will continue to be guided by our Company’s mission to demand that everything we do leads to a cleaner, healthier and safer environment.”
SAFETY AT CUMMINS IS PART OF EVERYONE’S JOB

Cummins Director of Global Manufacturing Engineering Jim Schoeberl remembers vividly the day he walked on a shop floor and an employee stopped him, pointing out he was violating safety rules by wearing a ring.

Schoeberl wasn’t embarrassed. In fact, he couldn’t have been more pleased.

“I told him how much I appreciated what he had done,” Schoeberl said. “I had just forgotten to take my ring off. We all have to look out for each other.”

When Schoeberl was asked to lead the global rollout of a new toolkit devoted to machine guarding safety, he didn’t hesitate. He’s the first Cummins leader outside the safety organization to take ownership of a global safety initiative, but he sees it as a logical extension of his work.

“I’m not doing anything special,” said the 28-year veteran of the Company. “This is all of our jobs. Many of our manufacturing leaders have taken a very active role in safety initiatives within their businesses. This is just following their lead.”

Machine guards are anything that protects an employee from a hazard while operating a machine. They can range from a transparent shield protecting a worker from a lathe to “presence-sensing devices” that automatically shut down machines when any part of a worker strays into dangerous space.

Schoeberl was the sponsor of a Six Sigma project led by Guillermo Castillo, the then Corporate Safety Project Manager, looking at what seemed like a high number of injuries Cummins Director of Global Manufacturing Engineering Jim Schoeberl is leading Cummins’ efforts to improve machine guarding safety.
related to machine guarding or the lack of adequate guards. Six Sigma is the data-driven problem-solving tool widely used at Cummins.

When Castillo moved to another position within the Company, Schoeberl said it made sense for him to take over responsibility for the initiative.

“When you think about it, machine guarding safety is something that my function owns,” he said. “It just makes sense.”

Schoeberl leads a global team of manufacturing engineers with representatives in every business unit and sub-business unit. He was ideally positioned to roll out the toolkit and make sure the work got done.

Machine guarding safety covers a very broad area and there wasn’t a single factor driving the problem. In a few cases, guards were pushed aside to make work easier; in others, the guards were forgotten after maintenance was performed. The problem also stemmed from the use of older equipment with inadequate guarding.

Tremendous strides have been made in modern equipment including safety features like “presence-sensing” technology or “light curtains” capable of shutting a machine down when it determines potentially dangerous behavior is taking place.

Cummins had sent out directives on machine guarding safety, but leaders decided to go the next step by developing a policy on the topic, drawing on national and international standards. Then, the Company developed the toolkit, including:

» A risk assessment tool

» A checklist to determine proper machine guarding

» An implementation plan to improve machine safeguarding

» Training on the topic

Schoeberl said some fixes are as simple as installing some sheet metal while others are more complicated, involving movable or fixed barriers and the presence-sensing technology. Most new equipment includes the latest safety devices but there are retrofits available, too.

The machine guarding toolkit calls for implementing improvements over three phases starting in 2015 through installation of new safeguards in 2017. Schoeberl has been pleased that many Cummins locations are implementing additional safeguards right away after determining their risks.

Pramod Palat, Cummins Occupational Safety Director, says Schoeberl’s involvement is consistent with the Company’s “Live It. Lead It.” initiative. Launched in 2013, the program is designed to strengthen leaders’ personal commitment to health and safety to help drive employee behavior.

“Jim’s role in leading this initiative globally drives home the message that safety is a value for Cummins at every level of the Company,” Palat said.

Safety is something Schoeberl takes very personally. He started as a maintenance engineer at the Rocky Mount Engine Plant in Rocky Mount, North Carolina (U.S.A.), in 1987. As far as he’s concerned, he’s seen too many injuries over his career.

“I’ve taken more than one maintenance technician to the hospital, personally,” Schoeberl said. “It’s very heartrending to see someone get hurt. You become very aware, very conscious of safety. You never look the other way.”

JIM SCHOEBERL
DIRECTOR – GLOBAL MANUFACTURING ENGINEERING
‘KNIGHT KNUCKLE’ INVENTOR
CREATES A SAFER CUMMINS

When Jamestown Engine Plant tool builder Kendrick Knight came up with the idea for a device to improve ergonomics at his workplace, he did not foresee the impact his torque-reducing invention would have.

In the past year, his creation has gone from blueprint to patent-pending reality. Dubbed the “Knight Knuckle,” it has improved ergonomics for engine assembly workers, earned international recognition and has garnered interest from Cummins sites and outside companies alike.

“I can’t believe how well this project has been received,” said Knight, who has worked at the Cummins plant in Jamestown, New York (U.S.A.), for the past two years. “The level of press and enthusiasm is really exciting, and it’s great to think of this tool being used at Cummins manufacturing sites all over the world.”

Knight worked in a manufacturing tool room for five years prior to joining the Company. He realized the need for a new tool when he saw his colleagues at Cummins working on jobs that had a “kick” of torque due to their use of high-torque tools. Any time a bolt or screw is tightened, the tool creates torque once the screw reaches full tightness. The torque is then transferred directly to the operator.

Imagine a hand-held power drill for home use. The drill is easy to hold when the task begins, but starts to push back against the operator’s arm as the screw becomes tighter – or fully torqued – in the wall. High-torque tools are similar, but on a much larger scale and with a much larger impact on the operator’s body.

“We have a lot of applications with high-torque tools,” Knight said. “These tools take a significant amount of time to use, and the process is hard on the employee. I saw the idea of the Knuckle as a way to solve multiple problems with one new tool.”
Kendrick’s invention replaces a typical torque arm tool and allows the operator to work from any angle. In contrast to older torque arm tools that have very limited positioning, the possibilities for usage are greatly increased. Once positioned, the tool locks in place, so when the “kick” occurs, the Knuckle absorbs it, virtually eliminating the transfer of torque to the employee. The tool was conceptualized, designed and fabricated in Jamestown.

The implementation of the Knight Knuckle has significantly reduced ergonomic risk to the operator during high-torque jobs. In addition to reduced strain, the Knight Knuckle shaved eight seconds off the time it takes to complete the job; over the course of a full day, the tool saves approximately 45 minutes. The tool is also durable, having been run through thousands of test cycles without breaking down or failing.

The Knight Knuckle won top honors in the Company’s third annual Ergo Cup competition. Previous first place honors went to a part installation improvement process from Jamestown in 2013 and a power generation hoist improvement from one of the Company’s joint ventures in China.

Out of a record 90 project submissions in 2014 – all dedicated to making ergonomic improvements in the workplace – the Knight Knuckle earned the right to compete in the International Ergo Cup competition at the Applied Ergonomics Conference in Nashville, Tennessee (U.S.A.). Other companies participating in the 2015 International Ergo Cup competition included Volkswagen, Ford, Honda, Gulfstream, Boeing and Caterpillar.

The Knight Knuckle took first place in the engineering category and garnered interest from outside manufacturing companies. The tool will be deployed at multiple Cummins sites in 2015. “Kendrick’s project reinforces that Cummins has incredibly innovative employees,” said Chris Shieldsmith, the Company’s Corporate Ergonomics Specialist. “He devised a simple solution to a problem that has plagued manufacturing for decades and we’re very proud of his accomplishment.”

In the face of so much acclaim, Knight is still focused on one thing: the improvements his tool has made in the lives of other manufacturing employees.

“‘I’m very pleased to see projects that have a real, positive impact on our employees’ lives. This innovation from our manufacturing employees deserves to be recognized.’”

KELLI SMITH
CUMMINS OCCUPATIONAL HEALTH DIRECTOR
CUMMINS STRENGTHENS DIVERSITY VALUE IN 2014

Diversity is a core value at Cummins, which calls for its employees to embrace the diverse perspectives of all people, honoring them with dignity and respect.

In 2014, the Company took steps to deepen its commitment to that value, while at the same time re-examining many of its diversity initiatives to ensure they remain relevant at a growing company where more than 60 percent of its employees live outside the United States.

“We really want to see how we can better work with Cummins Area Business Organizations (ABOs) around the world to ensure the power of diversity is part of everything we do,” said Kelley Bertoux Creveling, the Company’s Executive Director of Global Diversity and Right Environment. “In addition to helping us create innovative products, diversity and inclusion are critical to establishing a solid foundation for future growth and success that will better serve our customers.”

RENEWING OUR COMMITMENT

Cummins’ commitment to diversity could be seen in many ways during 2014 and early 2015. The Indiana Women’s Affinity Group at the Company, for example, sponsored a special session for managers to talk about the Company’s diversity value and the issue of gender diversity in the workplace (to learn more about Cummins’ efforts on gender diversity, go to page 106).

The event, which featured many top leaders in the Company, was streamed live to managers at Cummins facilities in the United States, Mexico and the United Kingdom.

“We’re here to get better,” said Cummins Chairman and CEO Tom Linebarger at the event. “None of us are perfect at managing diversity. None of us are perfect at really any element of leadership and the first minute we acknowledge that and say we want to get better, we’re on the road to greatness.”

The Company also continued posting personal statements from its leaders regarding their own diversity journeys on the Company’s internal website. In 2014, Rich Freeland, Cummins President and Chief Operating Officer; John Wall, the Company’s Vice President – Chief Technical Officer and Mark Osowick, the Company’s Vice President – Human Resources Operations, all posted personal statements.
INVESTIGATING COMPLAINTS

A key part of any company’s efforts to create the right environment for success is the ability to investigate complaints made about employees’ treatment of each other.

Cummins’ diversity value is included in the Company’s Code of Conduct. The Company has Master Investigators stationed around the world to investigate reported abuses of the Code. Employees can file complaints anonymously where allowed by law.

As a growing Company, Cummins saw an increase in complaints in 2014. The Company investigated 1,559 reported Code violations, up from 1,367 in 2013. About 45 percent of those reports came from outside the United States and 32 percent were reported anonymously.

About 48 percent of the total reports were ultimately substantiated in 2014, compared to 50 percent in 2013. Around 29 percent of the substantiated reports resulted in terminations compared to 33 percent in 2013.

The average time to close a case was 13 work days, down one day from 2013.

A dozen leaders have now posted diversity statements since Linebarger kicked off the initiative in January 2013.

“I can’t think of a single time when diversity didn’t contribute to the success of a project I’ve been involved with in my more than 28 years at Cummins,” Wall said in his statement. “Different life experiences and unique sets of knowledge all add up to team members who can best understand our customers’ experiences and see different angles on how to target our innovation more effectively.”

The Company built on the diversity statements by leaders in 2014 by also asking for diversity statements from employees on their personal diversity journeys at work (see more on page 109).

The Company built on the diversity statements by leaders in 2014 by also asking for diversity statements from employees on their personal diversity journeys at work (see more on page 109).

“Through diversity, we can succeed and reach the topmost level,” said Sagarika Dash, Account Specialist – Telecom, in Pune, India. “Look at your present environment and you will definitely find one instance of diversity enhancing our path to success. Every employee should get a chance to work in such a collaborative place as Cummins and get a chance to explore their ideas.”

The Company also continued developing its employee resource groups. Cummins has more than 100 employee groups organized around diversity. Affinity groups are employee formed and led, organized around specific demographic traits such as women, African-Americans or LGBT (lesbian, gay, bisexual and transgender). Local Diversity Councils are site-based groups that are Company formed and leader led, promoting diversity and inclusion in general and working on diversity-related issues at particular sites.

Finally, Linebarger held a focus group with Muslim employees early in 2015 to better understand their experiences and hear their views on how Muslims are portrayed in the news and other public media. Linebarger also reiterated that Cummins is a safe and welcoming place for all employees in keeping with the Company’s core values. Linebarger’s discussion was prompted by his concern over growing anti-Muslim rhetoric in the media and public debate amid growing tensions in the Middle East.

LOOKING TO THE FUTURE

While Cummins took many steps to increase its commitment to diversity and inclusion, Creveling and her staff also spent time in 2014 and early 2015 looking to the future.

The group wanted to make sure the Company’s five-year-old diversity video and its diversity literature still resonated with employees. The group also embarked on a project to update and expand diversity training from its current status as a one-time training at the start of an employee’s career to a layered approach that stretches across an employee’s time at Cummins.

“We recognize the approach to diversity and inclusion may need to change from country to country,” Creveling said. “I want to be sure we’re building strategies and plans around diversity and inclusion in ways that support our common value but allow us to flex around the world and leverage the full, creative power of all our employees to the benefit of our customers looking for innovative solutions to their power problems.”
DIVERSITY HELPS SOLVE HARD PROBLEMS

Opening doors for women begins with an open dialogue and a commitment to workforce inclusion.

“When we do something that helps us create the right environment for women, everybody benefits,” Chairman and CEO Tom Linebarger told more than 1,000 managers at Cummins attending a panel discussion on gender diversity in October 2014.

“It’s not an us vs. them thing,” he said. “It’s us and us.”

Cummins is making progress in its efforts to attract and develop women, but leaders say more can and must be done.

In 2014, women made up about 26 percent of the Company’s total workforce and about 20 percent of the Company’s leadership ranks. In 2009, women made up about 24 percent of the total workforce and about 16 percent of its leadership ranks.

Evidence of the Company’s progress could be seen at that same panel discussion where Linebarger spoke. Joining him on the panel were three senior women leaders: Jill Cook, Cummins Vice President of Human Resources; Tracy Embree, Vice President and President of the Components Business Unit and Kelley Bertoux Creveling, Executive Director of Global Diversity and Right Environment.

The panel discussion was sponsored by the Women’s Affinity Group of Indiana, one of the Company’s more than 100 employee groups organized around different facets of diversity. Local Diversity Councils are site-based groups that promote diversity in general and identify diversity-related issues at particular sites.

The Women’s Affinity Group of Indiana has long offered career development programming to its members, such as mentoring circles, seminars by Cummins leaders and other career enhancement activities. It is one of more than 30 women’s affinity groups at the Company based at locations around the world.

Cummins has also initiated recruiting programs, especially in areas like engineering where women have long been under-represented. For example, the Company has been a major contributor to the Cummins College of Engineering for Women in Pune and Nagpur, India. Cummins India also sponsors a week of activities dedicated to women in recognition of International Women’s Day on March 8. This year’s theme was “Make It Happen.”

In 2014, the Company launched the Technical Women Initiative to help hire, develop and retain women in technical fields as part of a broader corporate commitment to diversity.

WORKING FOR A WELCOMING STATE

For a second consecutive year, Cummins found itself lobbying against legislation that sent a less than welcoming message about its home state of Indiana (U.S.A.).

Senate Bill 101 in the Indiana Legislature was intended to increase legal protections for those with strongly held religious beliefs, but several businesses and advocacy groups were concerned the bill could be used to refuse services to lesbians, gays, bisexuals and transgender (LGBT) individuals.

Cummins, the Indianapolis Chamber of Commerce and other businesses opposed the bill because they said it sent an unwelcoming message and could expose businesses to lawsuits over religious belief claims that existing law already protects. The bill was amended to prevent business litigation concerns, but still did not expressly state it could not be used to deny services.

A media firestorm ensued throughout the United States. Cummins, along with several members of the business and LGBT communities, worked to include language that expressly disallows the use of the Religious Freedom Restoration Act to discriminate on the basis of sexual orientation or gender identity.

The previous year, Cummins opposed a bill that would have banned gay marriage in Indiana’s constitution. The Company maintained it would make it harder to recruit the best employees who often look for diverse places to live. That bill was not brought up for a final vote.
As part of the Technical Women’s Initiative, Cummins has been active in the Clean Energy Education & Empowerment (C3E) initiative. C3E was launched by the 23-government Clean Energy Ministerial in 2010. The Initiative was born out of recognition that the ideas and talents of all members of society are essential to meeting future clean energy challenges.

Since then, the Massachusetts Institute of Technology (MIT) has been the leading institution backing the group in the United States and Cummins has been a corporate sponsor. Starting in 2012, annual symposiums at MIT have provided women working in clean energy with a range of perspectives and expertise on clean energy challenges and opportunities, as well as a chance to network.

Jennifer Rumsey, Cummins Vice President – Engineering, Engine Business, and Joan Wills, the Company’s High-Horsepower Chief Engineer and Program Leader for Tier 4, represented Cummins at the inaugural symposium, where Rumsey spoke as part of a panel discussion on the topic of “Mobilizing Change in the Private Sector.” Hélène Cornils, Engineering Director of Global Lab Operations, has also represented Cummins at C3E events.

Wills currently serves as one of 37 international C3E Ambassadors, executive-level leaders who work together to advance women’s participation and leadership in the sector.

“The group has a variety of educational backgrounds but share a common link of being female leaders working in their area of expertise to both expand the role of clean energy in our collective future as well as increase the representation of women in the field,” Wills said. “As an ambassador, I’m responsible for leading and participating locally, nationally and globally in efforts to increase the representation of women in the field of clean energy.”

Dr. John Wall, Cummins Vice President and Chief Technical Officer, said the Technical Women’s Initiative and groups like C3E are important for several reasons.

“Participation in and our support of the conference promotes our diversity core value and helps us create an inclusive environment by allowing our technical women to share their knowledge and learn from other women in the same field,” he said.

Linebarger says a successful workplace depends on a pipeline of female leaders who are ready and encouraged to move up within the Company.

“Diversity, rather than sameness, is what helps us solve complex problems,” Linebarger said. “There’s a lot of research about this that’s pretty compelling. My personal experience agrees with it. Sameness drives harmony, especially at the front, and diversity solves hard problems.”
DEVELOPING A TRULY GLOBAL WORKFORCE

Diversity at Cummins has long been about more than representation. But as a truly global company, Cummins wants to develop a workforce that closely resembles the demographics in the countries and markets where it does business.

Company leaders pay special attention to some key metrics of under-represented groups at Cummins, such as women. An employee’s country of birth is another key metric to ensure leadership isn’t limited to one country or group of countries. Here’s a look at what’s been happening in these areas from 2008 to 2014.

COUNTRY OF BIRTH FOR THE WORKFORCE

COUNTRY OF BIRTH FOR LEADERS

WORKFORCE BY LOCATION

More than half the Cummins workforce works outside the United States. Here’s a look at where Cummins employees were in 2014.

WOMEN IN THE WORKFORCE

WOMEN LEADERS IN THE WORKFORCE

*Rest of world category includes countries with less than 1,000 Cummins employees.
DIVERSITY AT WORK

To help promote Cummins’ diversity value, the Company collected personal diversity stories from employees around the world. Here are excerpts from three:

"When I was assigned to the Power Electronics organization within PGBU-India, my teammates included people from all over India – North, South and West. The more I worked with them, the more I came to know their nature, their work approach, the different mindsets of each person and the diversity in perceptions.

All of these experiences taught me the quality of the meaning of diversity. It made me believe that, through diversity, we can succeed and reach the topmost level. Look at your present environment and you will definitely find one instance of diversity enhancing our path to success. Every employee should get a chance to work in such a collaborative place as Cummins and get a chance to explore their ideas."

SAGARIKA DASH
Accounts Specialist – Telecom
Pune, India

"Approximately two years ago, my team and I were working on the delivery of our first machine to a key customer. We were at risk to deliver late and we had only one chance to make a good first impression.

I went down to the workshop to see how things were progressing. I witnessed Rauf from Pakistan, Tanmay from India and Dhanushka from Sri Lanka all working together, helping each other to make sure we could deliver on time to our customer. We were a small team and everybody worked well together across functional boundaries – there was no direct managerial direction. A job had to be done and the team just got on and did it.

...Looking back in history, their countries have been fraught with political and diplomatic issues; yet, these three individuals put their respective strengths together to make sure we, and our customer, were successful."

NICOLAS BERTRAND
General Manager – Visig & hybrid
Stamford, Lincolnshire, United Kingdom

"Working for Cummins I had to expand my knowledge, understand that change was inevitable and that I could grow from it rather than fear it. I needed to depend on the strengths and support of co-workers to accomplish the goal.

In 2005, I took a role in the engineering function where the window was opened even wider. Although I haven’t had the opportunity to travel outside the U.S. for work, I have had the pleasure of working with many people throughout the world – through the phone, email and video conferencing. Many of my co-workers grew up in other countries, and through conversation and pictures I’m able to hear about and see their life experiences to better understand diverse views and beliefs.

When I think back to my younger days on the farm, my view of the world was so narrow and I felt that most of the world lived like me. Today, I have a connection to many parts of the world through my co-workers and I find strength in being part of a global team."

KRIS SWENSON
Technical Specialist
Stoughton, Wisconsin (U.S.A.)
DIVERSITY PROCUREMENT CELEBRATES OUTSTANDING YEAR

Cummins’ diversity procurement initiative reached its long-standing goal of $1 billion in spending with diverse suppliers across eight categories in 2014, and laid the foundation for future growth.

Spending with diverse suppliers in 2014 reached $1.2 billion in the U.S., up about 21 percent over the $990 million spent in 2013. Looking just at minority-owned and women-owned businesses, the Company spent about $926 million in 2014.

Meanwhile, Cummins’ efforts continued to show promise outside the United States. Diverse spend connected to Cummins Area Business Organizations (ABOs) reached $291.3 million, sending global spend with diverse suppliers to nearly $1.5 billion.

“We had a very good year in terms of raising the visibility of diversity procurement at Cummins,” said Michelle Taylor, the Company’s Diversity Procurement Director.

“Now we need to leverage diverse suppliers in areas where historically Cummins has not had diverse supplier exposure. This effort will lead to sustainability within the initiative and further supply chain excellence.”

Cummins has long had a robust focus on diversity procurement. By working with diverse suppliers, the Company increases competition for its business, which ultimately decreases costs and improves service. At the same time, diversity procurement develops economic growth in all of the communities where Cummins employees live and work.

COMMUNICATIONS

The Company made communicating with diverse suppliers a top priority in 2014, launching several different initiatives to address that over the course of the year.

A new website is designed to make it easier for diverse suppliers to learn about the opportunities at Cummins. It includes a video featuring Taylor and Cummins Chairman and CEO Tom Linebarger discussing Cummins’ desire to promote diversity procurement.

“The need for diversity is really a priority at every level of the company,” Linebarger says on the video.
Cummins’ spending with diverse suppliers has more than doubled since 2009.

Adding that diversity brings different perspectives, which can contribute to creative solutions that are good for the Company and its customers.

Taylor said having Linebarger part of the video sends an important message, showing suppliers that the Company’s top leadership is serious about diversity procurement.

The website also tells prospective diverse businesses how to work with Cummins. The Company works with diverse suppliers in eight categories—minority business enterprises, women business enterprises, service disabled veteran owned small businesses, lesbian, gay, bisexual, transgender owned businesses; historically underutilized business zone businesses; small disadvantaged businesses and philanthropic enterprises.

The website includes the stories behind diverse suppliers Cummins is already working with to give visitors examples they can study. And a newsletter keeps the supplier diversity community informed about the latest happenings at the Company.

**Symposium**

Cummins in 2014 also sponsored its first diversity procurement symposium since 2006. The event drew some 400 participants including many people in the Company’s purchasing function who got a chance to meet and talk to diverse suppliers.

Linebarger spoke at the event as well as Lisa Yoder, Vice President – Global Supply Chain and Manufacturing, and Timothy Millwood, Vice President – Purchasing. More than 70 potential suppliers who were not doing business with Cummins then had booths as part of the event.

“Our leaders talked about the importance of supplier diversity and then many of our purchasing staff had a chance to meet diverse suppliers so it was a great day for diversity procurement,” Taylor said.

Several Cummins supply chain leaders also showed their commitment to diversity procurement by attending the National Minority Supplier Development Council’s National Conference in 2014 in Orlando, Florida, and Millwood serves on the Board of the Mid-States Minority Supplier Development Council (MSDC), which covers Central Illinois, Indiana and Eastern Missouri.

**Achievements**

The diversity procurement team made progress on its goal of taking diversity procurement outside the United States.

In addition to seeing diverse spending connected with the Area Business Organizations increase to nearly $300,000, Cummins was named Minority Supplier Development Council for the U.K.’s Corporation of the Year for its leadership in diversity procurement in the United Kingdom.

That was not the only award Cummins won in 2014. The Company was also named 2014 Mid-States MSDC Corporation of the Year for its diversity procurement efforts in the United States. It was the second year in a row that Cummins won that honor.
CUMMINS ‘HIRE TO DEVELOP’ PHILOSOPHY

Employee development at Cummins starts with Global OnBoarding and continues through a host of learning opportunities with a special emphasis on leadership.

The Company believes leadership is critical to Cummins’ future and works to develop leadership skills at every level of the Company. Cummins believes all employees provide leadership whether or not they have employees reporting to them.

This approach to employee development is a key part of the Company’s efforts to make Cummins a great place to work.

A LEARNING ENVIRONMENT

Most employees get a full week of onboarding to learn about Cummins’ culture and foundational initiatives such as the Company’s Code of Conduct; Vision, Mission and Values and key initiatives such as Customer Support Excellence.

After that, there are a host of development opportunities for employees not only so they can master their current jobs but look ahead to their next positions at the Company.

These opportunities range from courses on managing direct reports for a population of 5,000 leaders globally to master’s in business administration (MBA) classes for annual cohorts of 30 people offered in collaboration with the Kelley School of Business at Indiana University in the United States.

Cummins also offers ex-patriate assignments so high-performing employees can get experience in different countries and rotational assignments so they can gain experience in different operations within the Company.

In addition, Cummins Learning Center offers numerous online learning opportunities in multiple languages both in and out of an employee’s particular area of expertise. These range from courses within engineering to courses on the business problem-solving tool Six Sigma and courses in leadership.

CRITICAL FEEDBACK

New office and professional Cummins employees are introduced to the Company’s Performance Management System during onboarding classes. The program was created to ensure employees know their managers’ expectations, including both what they need to accomplish and how they should accomplish it.

It uses a web-based tool to facilitate and document the most important part of performance management – meaningful one-on-one conversations between a manager and his or her direct reports. Employees also get...
feedback from a wide range of stakeholders including peers, which becomes increasingly important as they advance and their work environment becomes more complex.

With more than half of Cummins’ employees living outside the United States, the Company takes a global view of workforce development. The Performance Management system is available in multiple languages for about 25,000 office and professional employees.

**LEADERSHIP DEVELOPMENT**

Cummins believes nothing is as career limiting as a bad boss and work that is without meaning. Leaders and managers learn early on that they must master five skill areas that Cummins believes are essential to great leadership:

- How to coach and develop
- Fostering open communications
- Managing diversity
- Talent management
- Thinking strategically / Setting the aim

One of Cummins’ most successful programs has been the “Building Success in Others” initiative. Launched in 2011, this multi-component program includes web-based courses, live webinars and an intensive, three-and-a-half day course focused primarily on helping leaders of professional employees better understand the Company’s expectations for them as leaders and how to develop the skills necessary to fulfill those expectations.

The program has now been implemented in China, India, Singapore, South Africa, South Korea, the United Kingdom and the United States and the Company is looking for ways to extend its concepts to others.

The Global Leadership Development Program is another important leadership development initiative.

Cummins believes all employees provide leadership whether or not they have employees reporting to them.

The 18-month program prepares about 20 high-potential employees from within one specific Area Business Organization at the Company for global leadership roles.

This program plays a major role in developing future leaders from outside the United States. It wrapped up in South America and Africa in 2014 and is moving back to India and China in 2015.

In all these ways and others, Cummins promotes a culture of career-long learning and development so all employees can achieve satisfaction in their work and reach their career goals.

**COMPENSATION / BENEFITS**

Providing a competitive compensation and benefits package is important at Cummins.

The health and well-being of the Company’s employees is a priority at all global locations and Cummins has developed programs tailored to meet the needs of employees and their families.

Compensation, health and retirement benefits vary by location and are designed to be competitive within the local markets and countries where the Company does business. Cummins complies with the law everywhere and establishes market-based wages independent of a person’s gender or any other demographic trait.

Cummins takes an innovative approach in its benefits programs. In healthcare, the Company has hired a chief medical officer to help Cummins build a culture of health and well-being (page 127).
CUMMINS ENCOURAGES BROADER ADOPTION OF ETHICAL PRINCIPLES

Cummins guides employees and suppliers toward ethical behavior through its codes of conduct and related training. But the Company also strives to hold everyone who does business on Cummins’ behalf to the same high ethical standards.

The Cummins Code of Business Conduct outlines 10 Ethical Principles that help make Cummins a sustainable company and a great place to work.

01 We follow the law everywhere.
02 We will embrace diverse perspectives and backgrounds, and treat all people with dignity and respect.
03 We will compete fairly and honestly.
04 We will avoid conflicts of interest.
05 We will demand that everything we do leads to a cleaner, healthier and safer environment.
06 We will protect our technology, our information and our intellectual property.
07 We will demand that our financial records are accurate and that our reporting processes are clear and understandable.
08 We will strive to improve our communities.
09 We will communicate honestly and with integrity.
10 We will create a culture where employees take responsibility for ethical behavior.

Vice President of Ethics and Compliance
Mark Sifferlen discusses creating a culture of ethics with Customer Care Manager Marcy Carter in Nashville, Tennessee (U.S.A.).
The Code of Business Conduct is translated into 16 languages and posted globally on the Company’s internal website and also on cummins.com, the Company’s external website. The Code of Business Conduct includes scenarios regarding each principle to provide real-world context.

All Cummins employees are held to these high standards and have an obligation to report suspected violations. They have multiple ways to report their concerns, including speaking to a manager, a Human Resources representative or a member of the Cummins Ethics and Compliance team. Employees can also report concerns on the Company’s ethics website or on the Cummins Ethics Help Line, a hotline accessible around the world. Phone numbers are available on the ethics website. Employees reporting concerns can remain anonymous where allowed by law.

An area of focus has been working to strengthen compliance in the Company’s distribution channel, especially in emerging markets. Cummins is working with these partners to implement written anti-bribery and export control policies. Ethics and Compliance staff review policies and identify possible gaps. To date, the Company has helped approximately 75 distributors or dealers finalize anti-bribery and export control policies.

Cummins is also helping its distributor partners in emerging markets communicate the policies to their employees and provide them access to the Company’s online anti-bribery training course. More than 500 employees from Cummins’ independent distributors have successfully completed training and the Company plans to share additional training with them in 2015.

In 2014, Cummins acquired seven North American distributors and has offered several in-person trainings.

“We’ve been able to visit many of the newly acquired North American Distributorships in person to help ensure they understand key compliance areas like our Code of Business Conduct and the Treatment of Each Other at Work policy,” said Mark Sifferlen, Vice President of Ethics and Compliance.

Cummins’ long-term goal is to develop a plan to ensure each and every entity that works with the Company abides by the 10 Ethical Principles that make up Cummins’ Code of Business Conduct.
SUPPLIER CODE OF CONDUCT

Cummins’ Supplier Code of Conduct, last updated in 2013, applies to all businesses that provide products or services to Cummins and its subsidiaries, joint ventures, divisions or affiliates. Available in 15 languages, the Supplier Code of Conduct helps Cummins ensure that it’s doing business with other companies around the world that share Cummins’ values for sustainable practices.

All new suppliers receive a copy of the Supplier Code of Conduct and Cummins encourages them to adopt it. If the supplier already has another code that meets the Company’s minimum requirements, Cummins sometimes agrees to let them use their existing code. The Company’s top suppliers, who collectively receive 80 percent of Cummins’ total spending, are required to certify their intent to comply with the Supplier Code of Conduct.

The Supplier Code of Conduct is built around seven principles:

01 Suppliers must follow the law.
02 Suppliers must treat all people with dignity and respect.
03 Suppliers must do business fairly and honestly and avoid conflicts of interest.
04 Suppliers must protect the environment.
05 Suppliers must provide a safe and healthy working environment.
06 Suppliers must protect Cummins technology, information and intellectual property.
07 Suppliers must assist Cummins in enforcing this Code.

TRAINING

To ensure Cummins employees understand the Code of Business Conduct, its underlying Company policies, and their role in adhering to both, Cummins uses a comprehensive compliance training program to target appropriate employee groups.

In 2014, Cummins released two new mandatory online training courses – Careful Communications at Work and Doing Business Ethically – on the Cummins Learning Center, Cummins’ in-house learning management system. Doing Business Ethically combined separate courses on conflicts of interest, export controls and fair competition, while Careful Communications addressed social media usage for the first time, as well as document retention policies and safe handling of intellectual property.

“This consolidated course on doing business ethically gives employees exposure to a number of significant topic areas and drives home important policies in a more cohesive way,” Sifferlen said.

Almost 25,000 employees received these two training courses in 2014. As of March 1, 2015, completion rates were 91 percent for Careful Communications and 86 percent for Doing Business Ethically.

ENFORCEMENT AND CERTIFICATION

The Code of Business Conduct is only effective when it is enforced. Employees understand their obligations to report concerns thanks to regular training and an annual certification process that requires them to certify their compliance with the Code of Conduct and related policies, and report any exceptions to Company policy.

In 2014, 18,979 employees and officers, including all members of the Board of Directors, completed the annual Ethics Certification. That compares to 18,034 completed certifications in 2013. Internal Audit and the Cummins legal staff reviewed any exceptions to ensure they were documented and investigated.

(See page 105 for more on the investigation process.)
COMPLYING WITH NEW LAWS

Another important part of the Ethics and Compliance organization’s job is to monitor any new compliance laws and determine how those laws affect Cummins. In 2014, Cummins complied with a U.S. law requiring publicly traded companies to disclose whether or not they use tin, tungsten, tantalum and gold in their products. These minerals, also known as conflict minerals, sometimes originate from the Democratic Republic of Congo or an adjacent country and may help fund armed groups that are responsible for violence and human rights violations in that region.

A specialized disclosure report is available at cummins.com under Investors and Media > Code of Business Conduct > Conflict Minerals.

Cummins developed and implemented a conflict minerals program, including a policy and related processes to evaluate the use and source of these minerals in Company products. Cummins’ policy is to strive to ensure that minerals in its products come from conflict-free sources.

COMPLIANCE TRAINING

Thousands of employees receive compliance training every year at Cummins. These figures are accumulated enrollments for active Cummins employees going back to when the training courses were first implemented. The oldest courses extend back to 2005.

<table>
<thead>
<tr>
<th>TRAINING</th>
<th>ENROLLED</th>
<th>COMPLETE</th>
<th>PERCENT COMPLETE</th>
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<tr>
<td>Anti-Bribery</td>
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<td>Antitrust and Fair Competition</td>
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<tr>
<td>Doing Business Ethically</td>
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<td>Code of Business Conduct (initial classroom)</td>
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<tr>
<td>Treatment of Each Other At Work (initial classroom)</td>
<td>49,572</td>
<td>46,643</td>
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BOARD LEADS CUMMINS INTO THE FUTURE

Cummins’ Board of Directors oversees the Company’s affairs, while representing and protecting the interests of its shareholders. It is responsible for exercising sound and independent judgment regarding significant strategic and operational issues.

The Board also advises senior management and adopts governance principles consistent with Cummins’ Vision, Mission and Values.

Chairman and CEO Tom Linebarger is the only Cummins employee on the Board. All Cummins directors are elected annually.

The board consists of 10 members, nine from outside the Company. In 2015, shareholders elected two new independent directors to the Company’s Board – Thomas J. Lynch, Chairman and Chief Executive Officer, TE Connectivity, and Bruno Di Leo, Senior Vice President, Sales & Distribution, IBM Corporation.

As Chairman and CEO of TE Connectivity, Lynch is credited with transforming the company as it transitioned from the former electronics segment of Tyco International to a separate and independent public company. TE Connectivity (NYSE:TEL) is a $14 billion technology company and a world leader in connectivity and sensor solutions.

Di Leo is a native of Peru who has more than 35 years of business leadership experience in multinational environments. During his 40-year career at IBM, Di Leo has worked in a number of executive positions with a focus on growing business in emerging markets. In his current role, he is accountable for revenue, profit and client satisfaction in Japan, Asia Pacific, Latin America, Greater China Group, and the Middle East and Africa.

The Board reflects the Company’s commitment to diversity including two women, an African American and two Latino men within its ranks.

Additionally, the Board takes an active role in fulfilling its responsibilities. In February 2015, Board members along with the Cummins Leadership Team, visited several Cummins sites in India, stopping in Pune, Phaltan and Delhi to see progress, meet with employees and visit Cummins facilities.

The Board monitors a number of issues including:
» Performance of the Company
» Performance of senior management
» Compliance with all applicable laws and regulations
» Communications and relationships with stakeholders
» Effectiveness of internal controls and risk management practices

COMMITTEES

Cummins’ Board of Directors has six standing committees:
» Audit Committee
» Compensation Committee
» Executive Committee
» Finance Committee
» Governance and Nominating Committee

» Safety, Environment and Technology Committee

Cummins complies with all New York Stock Exchange and regulatory requirements concerning the membership of certain committees.

INTERNAL AUDIT

Cummins Internal Audit function provides board members and senior leaders independent and objective information on the performance of the Company.

The Vice President – Internal Audit reports to the Audit Committee of the Board of Directors. In 2014, the Internal Audit group published 85 audit reports and memos.

To ensure management has addressed and identified risks and implemented corrective action, Internal Audit has a formal follow-up process. The responsible business or function leader must present a corrective action plan to the Audit Committee of the Board of Directors when a function or business receives an “unacceptable” audit grade.

CUMMINS BOARD OF DIRECTORS

ROBERT J. BERNHARD
Vice President for Research and a Professor of Engineering at the University of Notre Dame. He joined the Board in 2008.

DR. FRANKLIN R. CHANG DIAZ
Chairman and CEO of Ad Astra Rocket Company, a U.S. spaceflight engineering company based in Houston, Texas. He joined the Board in 2009.

BRUNO DI LEO
Senior Vice President, Sales & Distribution for the IBM Corporation. He joined the Board in 2015.

STEPHEN B. DOBBS
Retired Senior Group President at Fluor Corporation, a Fortune 500 company that offers engineering, procurement, construction, maintenance, and project management services. He joined the Board in 2010.

ROBERT K. HERDMAN
Managing Director of Kalorama Partners, LLC, a Washington, D.C.-based consulting firm. He joined the Board in 2008.

ALEXIS HERMAN
Chairman and CEO of New Ventures, LLC, a corporate consulting company. She joined the Board in 2001 and currently serves as Lead Director.

N. THOMAS LINEBARGER
Chairman and Chief Executive Officer, Cummins Inc. He joined the Board in 2009.

THOMAS J. LYNCH
Chairman and Chief Executive Officer, TE Connectivity, a world leader in connectivity and sensor solutions. He joined the Board in 2015.

WILLIAM I. MILLER
President of the New York-based Wallace Foundation focused on K-12 education and the arts. He joined the Board in 1989.

GEORGIA R. NELSON
President and CEO of PTI Resources, LLC, an independent consulting firm. She joined the Board in 2004.
STRESS TESTS PUT CUMMINS PLANTS IN THE MIDDLE OF SIMULATED DISASTERS

The best way to mitigate risk is to understand it, and Cummins Enterprise Risk Management is working hard with leaders throughout the Company to identify, assess, prioritize and mitigate risks that could harm Cummins.

In 2014, Enterprise Risk Management refreshed its enterprise risk assessment process; updated the risk management vision and mission; identified collaboration opportunities across multiple risk and assurance groups and continued developing and rolling out business continuity plans around the world.

With hundreds of locations globally, Cummins wants each of its sites to have a business continuity plan in place to speed resumption of normal operations in case the site is impacted by a critical event such as an information technology or power outage, labor strike, natural disaster or other significant event.

Last year, as part of Cummins’ efforts to assess the effectiveness of business continuity plans in a real-world test, the Cummins Risk Insurance group identified business continuity consultants who partnered with the Company to do just that. Leadership at two manufacturing plants in the United Kingdom were put through a stress test simulating a critical event at those sites.

Five experts from areas including business continuity, command and control, communications, information technology and emergency response simulated a significant event impacting each site, putting the sites through a realistic, high-impact, high-stress situation. Various risk-related corporate groups from within Cummins also participated in and observed the stress tests.

The consultants played important roles throughout the exercise, both role-playing the situations and also coaching the site leadership teams throughout the exercise to strengthen their ability to respond to these events.

During the exercise, the consultants had the leadership group split into two teams. One team was responsible for immediate responses such as accounting for employees and working with outside emergency responders, while the other team focused immediately on longer-term goals such as business continuity, rerouting incoming shipments and rebuilding infrastructure.

“The stress test is an excellent simulation that puts you in the middle of a real life scenario in a safe environment. The lessons you learn are extremely valuable as we all look to build our business resilience.”

GARETH HOPKINSON
CUMMINS PLANT MANAGER – GENERATOR TECHNOLOGY PLANT, STAMFORD, U.K.

“...an excellent simulation that puts you in the middle of a real life scenario in a safe environment. The lessons you learn are extremely valuable as we all look to build our business resilience.”

GARETH HOPKINSON
CUMMINS PLANT MANAGER – GENERATOR TECHNOLOGY PLANT, STAMFORD, U.K.
CUMMINS FOCUSING ON EMPOWERING EMPLOYEES TO REDUCE CYBER SECURITY THREATS

Data breaches have become major corporate headaches and headlines over the past year.

In response to these high-profile breaches, Cummins Global Security, working together with Corporate Information Technology (IT), is proactively engaging employees to be on the lookout for potential attacks.

Whether it’s the disclosure of internal communications, personal identifying information or customer email addresses, Cummins IT Security group and Global Security are incorporating cyber security threats into a broader corporate security strategy.

Cummins IT Security group ensures that Cummins’ information is protected by a strong network and properly hosted applications while Cummins Global Security team focuses on establishing the right behaviors and tools for employees to properly handle and store Company information.

“In the past, protecting our data fell mostly to those with cyber security in their job descriptions,” said Shelley Stewart, Executive Director of Security and Facilities at Cummins. “We now realize that we need to support our IT Security team by empowering employees to identify and report security threats.”

Over the past year, Cummins has launched a two-pronged internal plan to help employees prevent security breaches and ensure a quick response in the event of an attack.

Prevention efforts include additional training on data classification and handling, ongoing security updates and refresher courses, moving away from the use of USB drives and CD-ROMs and monitoring the use of sensitive databases. All of this work coincides with a strong partnership with the IT Security team.

Employees who believe fraud or theft has occurred are urged to quickly report their concerns to the Cummins Response Center, a 24/7 virtual operations center, which also investigates high-risk fraud attempts and unusual activity.

“We are focusing on building a security culture so that employees feel empowered to properly handle information and report concerns,” said Andrew Lamm, Corporate Security’s Information Asset Protection Program Director.

Looking ahead to 2015 and beyond, the Global Security team will continue focusing on educating employees on key security behaviors that best protect the needs of Cummins customers and shareholders.

The team will also continue working to ensure Company employees and information assets are part of an environment consistent with its motto, "Safe. Sure. Secure."

“In the past, protecting our data fell mostly to those with cyber security in their job descriptions. We now realize that we need to support our IT Security team by empowering employees to identify and report security threats.”

SHELLEY STEWART
CUMMINS EXECUTIVE DIRECTOR – SECURITY AND FACILITIES
GOVERNMENT RELATIONS AND POLITICAL ACTIVITY

Cummins’ government relations employees are working around the world on issues that have a significant impact on the Company, such as energy policy, environmental standards and enforcement, taxes, trade, transportation, education and more.

The Company maintains an office in Washington, D.C., but with half of Cummins’ sales coming from outside the United States, the Company also has government relations employees in China, India, Russia and South America.

The Cummins government relations team works to ensure that Cummins’ voice is heard by government policymakers across the globe. For example, the Company works extensively in multiple countries and regions to promote and protect global emissions standards from delay or modification and supports government efforts to establish greenhouse gas and fuel consumption standards for commercial vehicles.

The Cummins government relations staff also works to foster greater international cooperation and understanding between the various countries in which the Company operates. Cummins has hosted international visitors at the Company’s headquarters in Columbus, Indiana (U.S.A.), and other sites. The Company also hosted U.S. and other government visits at its international sites to encourage best practice sharing on issues like emissions enforcement, development of fuel-economy standards and combined heat and power projects.

The Company is also working to improve communities in the U.S. and globally by supporting efforts to expand access to quality education and training as well as opposing legislation that threatens Cummins’ commitment to diversity and fair treatment for all employees.

Cummins belongs to a number of trade organizations to further its business interests. These organizations help the Company by leveraging Cummins’ resources with other companies on issues where they share similar positions.

While Cummins might not agree with the positions these associations take on every issue, the Company believes participating in these groups helps ensure government officials know where Cummins stands on matters critical to the Company.

CORPORATE CONTRIBUTIONS

Cummins bans contributions using corporate funds to candidates, political parties and independent political expenditures, including advertisements that support or oppose individual candidates.

The Company also will not use corporate funds to contribute to 501 (c) (4) and 527 tax-exempt groups in the United States that are engaged in political activity or make payments to influence ballot issues unless the contribution or payment advances an issue directly tied to the Company’s core values and business interests.

In those cases, Cummins is committed to publicly disclosing any payments including recipient names and amounts.

In June 2014, the Company contributed an additional $22,000 to Freedom Indiana, the principal
opposition group to Indiana House Joint Resolution 3, a proposed amendment to the Indiana constitution banning gay marriage. In 2013, Cummins contributed $100,000 to the group, which was disclosed in the 2013-2014 report.

CIPAC
In the United States, political contributions are made by the Cummins Inc. Political Action Committee (CIPAC), and the committee is funded solely by voluntary employee contributions.

CIPAC makes contributions to federal and state candidates on a bipartisan basis after review and approval by CIPAC’s Executive Committee and according to federal and state election law.

For a complete list of the political action committee’s contributions to candidates, go to www.fec.gov.

CIPAC is governed by corporate policies and bylaws that state:

- All CIPAC contributions are strictly voluntary.
- The Company will not reimburse employees directly or indirectly for political contributions.
- Employees will not be pressured to contribute to CIPAC or make any other personal political contribution.
- A decision not to contribute to CIPAC shall not disadvantage an employee’s career in any way.

Contributions to political candidates and political organizations are based on the following criteria:

- Public integrity of the candidate
- Representation of a Cummins facility or employees
- Support for issues of importance to Cummins
- Timely and effective constituent service
- Political leadership or organization
- Support for the Company’s values

All of CIPAC’s political activities are disclosed to the Cummins Board of Directors in an annual political contribution report.

LOBBYING
The following is a list of U.S. trade organizations to which Cummins paid dues in excess of $50,000 during calendar year 2014 and the U.S. Chamber of Commerce, which fell below the $50,000 threshold.

Listed with each entity is Cummins’ estimation of the portion of these dues used by each organization for lobbying or other political expenditures.

The American Trucking Association
$13,100.64

The Business Roundtable
$26,282.88

The Diesel Technology Forum
$127.00

The Engine Manufacturers Association
$9,592.00

The National Association of Manufacturers
$14,445.42

U.S. Chamber of Commerce
$10,000.00
Cummins reported record financial results in 2014 driven by higher revenues in North America, which more than offset lower demand in Brazil and Europe.

Revenues over the year increased 11 percent to $19.2 billion. Meanwhile, revenues in North America increased 20 percent over the same time period while international sales went up 2 percent as growth in China offset weaker demand in Brazil and India.

Net income attributable to Cummins for the full year was $1.65 billion ($9.02 per diluted share), or $1.67 billion ($9.13 per diluted share) excluding one-time items, up from $1.48 billion ($7.91 per diluted share) in 2013.

EBIT (Earnings Before Interest and Taxes) was $2.5 billion or 13 percent of sales for 2014. Excluding one-time items, EBIT was $2.53 billion or 13.2 percent compared to $2.16 billion or 12.5 percent of sales in 2013.

Production started in 2014 on the G Series platform in China, a new global heavy-duty engine designed to meet a broad variety of on-highway and off-highway uses in the region.
“We reported record revenues in 2014 despite weak economic conditions in several of our most important international markets,” said Cummins Chairman and CEO Tom Linebarger. “Revenues grew 11 percent as demand in on-highway markets in North America improved, we continued executing our distributor acquisition strategy and we delivered strong growth in China driven by new products.”

The 2014 numbers returned the Company to its previous growth history after sales were flat between 2012 and 2013. Since 2010, external sales have grown about 45 percent.

Cummins improvement in profitability was driven in 2014 by record performance in the Components and Distribution businesses and higher earnings in the Engine Business.

Full-year sales in Components were up 18 percent compared to the year before while overall sales in Distribution were up about 38 percent compared to 2013. The Engine Business Unit, meanwhile, was up about 9 percent for overall sales compared to the year before.

The Company also benefited from its decision to acquire the remaining equity in its North American distributors to leverage their expertise and provide the best support to customers. Acquisitions contributed about 3 percent to revenue growth in 2014.

Cummins also invested a record $754 million back into the Company, primarily into research and development (page 63).

“We continued to invest in future growth, reflecting our commitment to technology and product leadership, while growing EBIT faster than sales,” Linebarger said.

The Company also increased its dividend by 25 percent and repurchased 4.8 million shares of stock. In addition, Cummins received credit ratings upgrades from Standard & Poor’s and Moody’s.

The Company’s financial performance in 2014 also included some challenges. Cummins Power Generation fell short of expectations, with external revenues down about $300 million. The Company is making cost reductions it expects will improve earnings going forward.

“We are committed to improving the quality and service for our customers, closely managing costs and further improving financial performance in 2015,” Linebarger said. “The Company delivered on its commitment to return 50 percent of cash from operations to shareholders in 2014.”

Chairman and CEO Tom Linebarger is working with other business leaders through the U.S.-based Business Roundtable to push for Trade Promotion Authority for the president of the United States.

The legislation would allow President Obama to pursue trade agreements that open more markets for American goods and services.

For the better part of 75 years until 2007, Congress authorized every president to pursue trade agreements that open markets for U.S. goods and services. The Obama Administration has not had this authority.

“International trade has been the most important driver of growth and hiring at Cummins for more than a decade,” said Linebarger, who is Chairman of International Engagement for the Roundtable. “Cummins exported approximately $3 billion in U.S.-made engines, generators and related products in 2014, and nearly half of our sales were to customers outside the U.S. …And, like most other companies with international business, as we grow globally, we add more high-quality jobs at home.”
Chairman and CEO Tom Linebarger and President and Chief Operating Officer Rich Freeland took to their bikes in the summer of 2014 to promote a healthy, low-carbon lifestyle, leading about 80 employees on a morning ride into work.

The four-mile bike ride started at a shopping center in Columbus, Indiana (U.S.A.), and concluded at Cummins’ Corporate Office Building (COB) in downtown Columbus. Nine other members of the Company’s leadership team joined Linebarger and Freeland on the ride.

“We have a great opportunity together – not only to get some exercise in – but to do our part to reduce emissions in getting to work,” Linebarger, an avid rider, told employees before the event. “At Cummins, we promote the health and well-being of all our employees because we care about our employees. We want our employees to reach their full potential in every way, including feeling healthy.”

The ride was hosted by the Cummins Emission Solutions (CES) Bicycle Advocacy committee and GOAL, the Latino employee affinity group based in Southern Indiana.
CENTER’S GOAL IS A HEALTHIER EMPLOYEE

Cummins is committed to helping its employees live fuller, healthier lives both at home and at work. That’s why the Company is exploring a different way to deliver health care to its employees and their families.

The Cummins LiveWell Center under construction just north of Cummins’ Corporate Office Building in downtown Columbus, Indiana (U.S.A.), is the Company’s first health and well-being facility. When it opens in 2016, the center will be home to a number of health-related services, ranging from routine health and optometry exams to acupuncture, chiropractic, and physical therapy services.

“The center will be an entirely new way to experience healthcare, with everything focused on the patient,” said Dr. Dexter Shurney, Cummins Chief Medical Director and Executive Director of Global Health and Wellness. “That includes everything from wait times, to the design of the center, to how patients communicate with their healthcare team.”

While employees and their families will not be required to utilize the center, Shurney believes they will want to come to improve their health and wellbeing. The Company’s goal is to give employees and their families the tools they need to achieve optimal health on their own terms.

The center is designed to take a team approach to a person’s health. Exam rooms at the center, for example, are designed to encourage a dialogue between physicians and their patients about healthy lifestyle choices. Employees and their families then have access to the services that can help them maintain that lifestyle including health and wellness coaching, educational seminars and live cooking demonstrations.

Other features and services at the center include:
- A pediatric care suite with exam rooms specially designed for children
- Physical therapy
- Radiology/Lab services
- On-staff pharmacist for medication consultations and limited dispensing
- Visiting specialists in a variety of disciplines
- A multi-purpose space for health seminars and other events
- Nutritional and exercise advice
- A teaching kitchen for cooking demonstrations

The LiveWell initiative is starting in Columbus. If successful, the intent is to expand the concept nationally and potentially globally over time.
CUMMINS’ SOUTHERN INDIANA LOGISTICS CENTER SETS NEW STANDARD FOR CUMMINS’ SUPPLY CHAIN

In years past, it was a logistical reality that Cummins products in North America could head north out of Indiana for customer pickup in Wisconsin, only to be loaded up and transported back south through Indiana to Kentucky for final delivery.

The duplication cost both the customer and the Company extra time and money, and required using additional fuel, as well.

Enter the Southern Indiana Logistics Center (SILC), a new 428,000 square foot regional warehouse located next to the Cummins MidRange Engine Plant in Walesboro, Indiana (U.S.A.).

The facility, which came online in January 2015, is the first of its kind for Cummins and represents the latest step in the Company’s long-range supply chain transformation strategy.

“The Southern Indiana Logistics Center is a game changer for Cummins and our supply chain,” said Lisa Yoder, Vice President – Global Supply Chain and Manufacturing. “It’s a big, tangible step toward transforming our supply chain so we can continue to improve how we meet our customers’ needs through reduced lead times and lower costs.”

Cummins began to transform its supply chain in 2010, focusing on ways to increase efficiency, lower costs, and reduce its environmental footprint. Developing supply chain excellence is one of the Company’s Five Growth Accelerators.

By working to coordinate the production, shipment, and delivery of its goods, Cummins better serves its customers. Effective supply chain management can solve many of the problems encountered by businesses today.

A more efficient supply chain is also better for the environment. Cummins has established four Green Supply Chain Principles for suppliers as part of its transformation:

» Collaborate with Cummins to create environmental improvements.
» Reduce the environmental impact of all products, processes and materials.
» Minimize adverse environmental impacts on air, land and water.
» Minimize the consumption of natural resources, raw materials and fossil fuel input.

Consider the example of transporting goods from Indiana to Wisconsin to Kentucky.
SILC, which is owned but not operated by Cummins, eliminates the need to use several Southern Indiana warehouses and consolidates materials under one roof, making it easier to manage and track inventory. It also helps improve freight routes and delivery schedules.

Inserting SILC into the equation will mean Cummins has the capability to store an order until the customer can get to Columbus to pick it up rather than ship it to Wisconsin to make room in those smaller Indiana facilities for additional products.

Eliminating that extra leg of transportation will mean more than $500,000 in annual savings for Cummins and more than $425,000 in savings for the customer, not to mention a reduction in time required to transport the materials.

The new warehouse also puts a premium on ensuring a safe and secure work environment. For example, forklift operators must swipe their security badges before starting equipment. If they aren’t properly trained to use it, the equipment won’t start.

SILC operates almost like an airport. Upon arrival, delivery drivers are directed to a specific dock where warehouse staff are ready to meet them. Efficiency is a top priority.

The facility also has state-of-the-art lighting designed to improve safety and reduce energy consumption. Overall, the new facility is expected to reduce carbon dioxide (CO₂) emissions by 25 percent over previous operations.

The Southern Indiana facility is just the beginning of a global supply chain evolution that puts a focus on the synchronized warehousing of raw materials to provide scale and improve efficiency. A second regional warehouse is planned for San Luis Potosí, Mexico, in 2015.

“Our efforts in supply chain continue to focus on bringing value to our customers and shareholders, and I am very pleased with our progress,” said Lisa Yoder, Vice President of Global Supply Chain. “There is outstanding supply chain work being done at all levels of our company.”

Gartner has been researching and writing about demand-driven practices since 2003. Cummins ranked 23rd on the list. It was the fourth consecutive year the Company was on the list.
CUMMINS TEAMS UP TO DELIVER FOR CUSTOMERS IN MADAGASCAR

Many residents of Toamasina, one of the most densely populated areas of Madagascar, were facing a gloomy holiday, literally, in December of 2014.

The country’s limited power grid couldn’t adequately support the city of 200,000 on the east coast of the island nation and fearing a possible blackout, the government was looking for an answer, fast.

Not only was Christmas just weeks away, but so was the harvest for litchi (also frequently spelled lychee), the strawberry-red fruit that provides a lot of jobs for the residents of Toamasina.

The country’s power utility, JIRAMA, contacted Cummins’ regional dealer in the country, Madagascar Automobile (Madauto), in November of 2014 asking for 6 megawatts of power by mid-December. Madauto, in turn, reached out to Cummins Power Generation in Johannesburg, South Africa.

“We were all very excited about trying to do something so quickly,” said Darryn Scheepers, Cummins General Manager for Dealer Development in Southern Africa. “Turning around a request like this would normally take 14 or 15 weeks. We were being asked to do it in less than half that time.”

Following in-depth talks on how best to meet Toamasina’s needs, an order was placed on Nov. 25, 2014, for a fully-integrated solution consisting of six individual generator sets with a target delivery date of mid-December 2014.

Scheepers said the Cummins team was fortunate that one unit was already in Madagascar that was not being used. So now it was merely a matter of getting five units into the country and then to Toamasina.
The five units were immediately available from the Cummins Dubai Distribution facility. But the equipment needed to be modified so the generators could withstand the high humidity of Madagascar’s east.

The major modifications were available from Cummins Power Generation in Kent in the United Kingdom. The plant met its deadline and the material was soon on its way to Dubai. After the proper alterations were made, the generators were ready for shipment.

Air travel was the only viable way to get the generators to Madagascar on time, but each of the generators had a dry weight of over 16 tons each. All fluids had to be drained and batteries disconnected to reduce any hazardous risks related to leakages and sparks.

The generators were eventually packed in special containers that were transported from Dubai to Antananarivo, the capital and largest city in Madagascar, by a specialist French aviation charter company, Air Partner.

Once again, the team cleared the hurdle and the project remained on schedule.

After landing in Antananarivo, the cargo was directly loaded onto flatbed trucks for the final 500 kilometer leg of the journey. Each of the five generator sets was transported on its own truck. It took about eight hours to reach Toamasina.

A competitor had also been invited to bid on the project, but was unable meet the strict deadlines. The Cummins team successfully met all the urgent deadlines and product specifications without compromising on quality or integrity.

“This project was immensely challenging,” Scheepers said. “Conference calls were held daily between Cummins South Africa, Cummins United Kingdom and Cummins Dubai in order to ensure that nothing was lost in translation and that everything ran according to plan. We couldn’t have done it without a tremendous amount of cooperation and collaboration among all of the parties involved.”

The generators, by the way, started producing power on Dec. 24 – Christmas Eve.

CUSTOMER SUPPORT EXCELLENCE AT CUMMINS

Customer Support Excellence (CSE) at Cummins means our customers’ success is the Company’s number one priority. Every facet of the business forms a chain to the customer and one broken link can be the difference between a great customer experience and a terrible one.

CSE asks that every employee demonstrate the four CSE behaviors of Safe, Caring, Dependable and Responsive to ensure they’re properly supporting the next link:

SAFE
We value the safety of our customers, employees and their families above all else.

CARING
Everything we do demonstrates to our customers and co-workers that we are committed to their success.

DEPENDABLE
We do what we say we will do, right the first time, on time, in everything we do.

RESPONSIVE
We are easily accessible to our customers and co-workers and act with the sense of urgency they expect.
CUMMINS HELPS PATIENTS TAKE FLIGHT IN FIGHT AGAINST CANCER

Cummins Director of Corporate Aviation Chris Raskob says helping cancer patients and their families access the care they need can be an emotional experience for his team.

“Sometimes we fly the same person to and from multiple treatments so you get to know what they are going through,” Raskob said. “Helping someone in a difficult situation like that can be tremendously rewarding, but you feel for the patients and their families, too.”

CAN – the Corporate Angel Network – reduces the emotional stress and the physical and financial burden on families with a loved one fighting cancer by arranging for free travel to health care using empty seats on corporate aircraft.

By working with 560 of America’s top corporations including Cummins, the White Plains, New York (U.S.A.) group has coordinated more than 46,000 flights since CAN was founded in 1981.

CAN awarded Cummins its Corporate Angel Network Award for Excellence in 2014, citing the Company’s work ferrying cancer patients and their families. Cummins conducted more than 30 patient flights in the past five years, ranking it among the top 5 percent of CAN flight providers.

“Corporate flight departments like Cummins are the life blood of CAN’s world,” said Dick Koenig, Executive Director of the network.

Raskob said Cummins has been using its aircraft to make humanitarian flights dating back to the 1950s and 1960s when the Company was led by visionary Chairman and CEO, the late J. Irwin Miller.

The Corporate Angel award was merely one highlight in 2014 for Cummins’ Corporate Aviation team. It was also honored for 50 years of safe flying, having completed 88,651 hours without an accident on Dec. 31, 2013.

The aviation department will celebrate its 60th anniversary in 2015. The Company didn’t receive its safe flying award earlier because of a record-keeping gap.

Today, Cummins has four aircraft, a team of five individuals maintaining those aircraft, two schedulers and 15 pilots. The team, which is based in Columbus, Indiana (U.S.A.), averages 2,000 to 2,500 hours per year in the air flying Company employees to Cummins’ plants and facilities in North America.

In addition to getting Cummins employees to Company facilities in North America, the Corporate Aviation team helps patients fighting cancer.
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