

# Innovative. Engaged. Sustainable.



#### **ABOUT THIS REPORT**

Cummins' 2012-2013 Sustainability Report is presented in the spirit of the Global Reporting Initiative (GRI). The goal of the GRI is to develop a consistent way for companies around the world to voluntarily report on the environmental, social and economic components of their business.

The Coalition for Environmentally
Responsible Economies created the GRI
in 1997 and works today in collaboration
with the United Nations Environment
Program and the U.N. Secretary
General's Global Compact to promote
the importance of sustainability reporting.

Cummins takes a broad view of sustainability, including such things as safety, diversity, leadership and governance along with environmental practices, community involvement and financial performance. The Company believes that it can't be sustainable without a firm financial foundation that enables investment in everything from product development to building stronger communities.

As a global company, Cummins wants to make a difference for all of its stakeholders, today and in the future.

This report was published in May 2013 and is the Company's 10th annual edition.

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#### **ABOUT THE COVER**

Cummins Fuel Systems' plant in Juarez, Mexico, restores nearly a million injectors, pumps and Electronic Control Modules each year, using innovative technology to return them to useful life. Cummins' Karina Meza Sosa holds a fuel injector that the plant is remanufacturing. Read more about the innovative things happening all across Cummins on page 14.

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### Letter from the chairman

"Innovative. Engaged. Sustainable." The title of this year's 2012-2013 Sustainability Report describes our Company well. In fact, Cummins was founded on innovation 94 years ago when Clessie Cummins first obtained a license to use Rudolf Diesel's technology and then had the ingenuity and vision to build on Diesel's work over time.

Today, our Company is the only independent diesel engine maker that remains from the more than 100 other original Diesel licensees. And the continued innovation driven by the engagement of our more than 46,000 employees across the globe will secure the long term sustainability of our Company into the future.

This year's Sustainability Report starts out by appropriately celebrating Cummins' innovative giants over time – such as Clessie, Dr. Julius Perr and Dr. Alyn Lyn – who collectively laid the foundation for a lot of our success today. Their stories are inspiring and remind us of the tremendous contributions they made, embedding innovation in everything they did to meet existing customer needs and earn new customers by helping ensure their success.

I'm pleased to report that their legacy lives on. You'll see in this year's report that our heroes of innovation can be found all across Cummins every day and everywhere, from the engineers designing our products, to the shop floor employees making it happen in our facilities across the world, to office employees serving every business unit

and function, and everywhere in between.
They are producing the best products,
delivering outstanding customer service,
shrinking the Company's environmental
footprint and building stronger communities
around the world.

We define innovation, one of Cummins' six core values, as using the "creative ingenuity necessary to make us better, faster, first." Here are just a few examples of the kinds of innovation stories that you'll find in this year's report:

- » Our Corporate Responsibility Environmental Challenge initiative where teams of Cummins employees join together using their creativity, skills and talents to carry out community involvement projects to improve the environment.
- » Our Health, Safety and Environment employees' leadership in finding ways to reduce the amount of solid waste created at our facilities around the world, which has resulted in recycling almost 90 percent of the waste that the Company creates.



"Our ongoing commitment to innovate and engage in everything we do will ensure our customers' long term success and ultimately the sustainability of our Company for all of our stakeholders now and into the future."

TOM LINEBARGER CHAIRMAN AND CEO

- » The superior customer service that our employees along the East Coast of the United States delivered during Super Storm Sandy in the fall of 2012. In many cases, they put their customers' needs first at a time when many of their own homes were cold, dark and wet.
- » Our Safety and IT staffs' joint work to create a new web tool that enables employees to easily record the safety problems they discover and resolve. Not only does the tool encourage employees to make a personal commitment to safety, it increases best practice sharing to avoid unsafe situations.
- » Our India employees' efforts to create innovative ways to open up additional economic opportunities within Cummins for women, promoting another Company core value, diversity.

This year's report also looks ahead to the future of technical innovation at Cummins. Over the past 20 years, much of our innovation has been tied closely to meeting increasingly stringent air emissions regulations around the world. As engine emissions approach near-zero levels in mature markets, our teams must be thinking about the next big innovation 10 or 20 years down the line.

To this end, we are launching a campaign across Cummins in 2013 to promote innovation and better engage our employees to See the Future First and Beat the Competition to It!™

Looking forward, our customers will continue to depend on Cummins to lead in innovation and deliver the best products and services to meet both their spoken and unspoken needs. Our ongoing commitment to innovate and engage in everything we do will ensure our customers' long term success and ultimately the sustainability of our Company for all of our stakeholders now and into the future.

As Chairman and Chief Executive Officer, it is an honor and privilege to lead a Company with a rich legacy of innovation and a bright future ahead, thanks to the commitment and dedication of the best employees in the world. I hope you enjoy our 2012-2013 Sustainability Report.



Tom Linebarger

Chairman and Chief Executive Officer Cummins Inc.

# **Cummins** around the world

It was a busy 2012-2013 for Cummins. Here's a look at just some of the developments across the globe over the past year.

#### **UNITED STATES**

Seymour – Members of the crew from the boat the Time Bandit on the reality television show "The Deadliest Catch" toured several Cummins facilities in Southern Indiana including the Seymour Engine Plant in June 2012. The Hillstrand family was replacing the old engines on their crab fishing boat with two new QSK19 engines.

#### **UNITED KINGDOM**

Huddersfield – Deputy Prime Minister Nick Clegg visited Cummins Turbo Technologies on Jan. 17, 2013, to tour the Engine Waste Heat Recovery Research Programme. The British government awarded the initiative a  $\Sigma$ 1.478 million grant to push the technical boundaries of what's already been achieved in the field.

#### BRAZIL

Itatiba – Site preparation continued on a new Cummins campus in Brazil in 2012.

A water pipeline has been extended to the site that will be home to Cummins Power Generation and a Cummins Global Logistics Distribution Center. A formal groundbreaking is planned for July 2013.

 This map includes Cummins plants, offices and distributors.







#### **UNITED KINGDOM**

London - Cummins played a significant role in the Summer Olympics in 2012. The International Media Center in the heart of London was equipped with a Cummins natural gas generator for backup power and a significant number of the 30,000 Cumminspowered buses in the country ferried fans to and from the games.

#### QATAR

Doha – Less than a year after it started business in January 2012, Cummins Qatar LLC held its first Community Involvement Team activity. Thirty-four of Cummins Qatar's 37 employees helped clean up one of the most visited seashores in Qatar on Nov. 23, 2012.

#### **CHINA**

Wuxi - Wuxi Cummins Turbo Technologies Co. Ltd. (Wuxi CTT) produced its 7-millionth turbocharger in December of 2012. Plant leaders held a small ceremony to celebrate the achievement.

#### ANGOLA

Luanda - Cummins Angola Lda officially opened its doors for business on Nov. 15, 2012. The joint venture partnership is ideally situated to develop significant power generation, mining, marine and filtration opportunities in Angola.

#### INDIA

Phaltan - The fifth facility at the Cummins Megasite, the Phaltan MidRange Upfit Center, was inaugurated on March 26, 2013, by Chairman and CEO Tom Linebarger and Anant Talaulicar, Managing Director, Cummins India. The state-of-the-art facility is designed to manufacture 80 engines per day in two shifts.

#### AUSTRALIA

Cummins announced in January 2013, that Australia would be the first market in the world to offer the ISXe5 heavy-duty truck engine. The engine meets Euro 5 emissions regulations through Cummins' proven SCR technology.







### 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, Ind., 47201 STOCK SYMBOL (traded on NYSE)

CMI

**FOUNDED IN 1919** 

**WEB SITE** www.cummins.com

#### **SALES / EARNINGS**

In 2012, Cummins earned \$1.65 billion on revenues of

\$17.3 billion.

**FORTUNE 500 RANKING (2013)** 

160

#### **EMPLOYEES**

Worldwide, approximately

46,000 people.

More than 60 percent of the Company's employees are located outside the U.S.

#### **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 **6,500** dealer locations.

### 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-powered 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 medium- and heavy-duty, and high-horsepower engine markets.

**Cummins Filtration** designs and builds heavy-duty air, fuel, hydraulic and lube filtration, chemicals and exhaust system technology products.

**Cummins Fuel Systems** manufactures new fuel systems.

**Cummins Turbo Technologies** designs and builds turbochargers to boost engine power and related products.

**Cummins Electronics** designs and procures electronic hardware, develops base controls software and tools, and rebuilds Electronic Control Modules.







**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.



In addition to being a tireless innovator,
Clessie Cummins was a promotional
genius, making cross-country trips on cars,
buses and trucks to demonstrate the power
and durability of diesel engines. He even
sponsored race cars at the Indianapolis
Motor Speedway powered by diesel engines.

**BELOW** J. Irwin Miller was a visionary leader whose views on diversity, corporate responsibility and ethics are still part of how Cummins does business today.

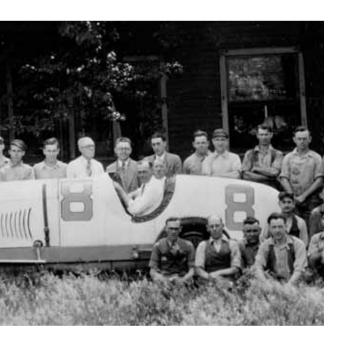






### **Our history**

Cummins is a global Fortune 500 company that operates and serves customers around the world while maintaining strong ties to its Indiana home.



The Company was founded in Columbus, Ind., in 1919 as the Cummins Engine Company, for its namesake Clessie Lyle Cummins. Cummins was among the first to see the commercial potential of an unproven engine technology invented two decades earlier by Rudolph Diesel.

After a decade of fits and starts. a stroke of marketing genius by Clessie Cummins (page 20) helped save the Company. Cummins mounted a diesel engine in a used Packard limousine and on Christmas Day in 1929 took businessman W.G. Irwin for a ride in America's first diesel-powered automobile.

Irwin's much needed infusion of cash helped fuel a number of speed and endurance records in the coming years that demonstrated the engine's power and durability.

J. Irwin Miller, great-nephew of W.G. Irwin, became general manager in 1934 and went on to lead the Company to international prominence over the next four decades. Cummins would earn its first profit in 1937 and soon developed a reputation for high quality products and a unique nationwide service organization.

As the Company continued to grow in the United States, Cummins also began looking beyond its traditional borders. Under Miller's leadership, the Company expanded into Brazil, India and China in the 1960s and 1970s, far ahead of other U.S. based companies.

The Company eventually expanded into the power generation business while growing its reputation as a technology leader, producing cleaner running engines to meet increasingly stringent emissions regulations.

Today, Cummins' customers are located in approximately 190 countries that the Company reaches through a network of more than 600 Company-owned and independent distributor locations and approximately 6,500 dealer locations.

# Vision, mission, values and principles

#### **VISION**

Making people's lives better by unleashing the Power of Cummins.

#### **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.

#### **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.

#### 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.

#### **PERSONALITY**

Decisive. Driven to win.

Agile. Passionate. Caring.

#### **SIX SIGMA AT CUMMINS**

Six Sigma has played a key role in Cummins' success since it was initiated in 2000 at a time when the Company was facing some significant financial problems.

The business-improvement tool created a common language for Cummins 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 2012, approximately 14,000 people had been trained in how to use Six Sigma tools at Cummins since the process was initiated in 2000.
- » Almost \$4.35 billion in savings have been identified at Cummins since the program was initiated.
- » An estimated \$858 million was saved by Cummins' customers since 2005.

The Company also uses Six Sigma in its community involvement work, helping its community partners improve their efficiency and address major problems. In 2012, 106 Community Impact Six Sigma Projects were completed, up from 48 in 2011 and 34 in 2010.

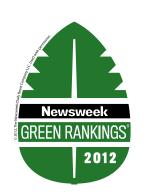
#### **CUMMINS OPERATING SYSTEM**

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

- 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.
- 7 Establish the right environment.
- Treat preferred suppliers as partners.
- Follow common problemsolving techniques.
- 10 Use Six Sigma as the primary process improvement method.

# **Our recognition**

# Cummins received recognition in several areas that touch on sustainability, including:



#### **ENVIRONMENTAL**

Cummins was again named to the Dow Jones Sustainability Index in 2012 for an eighth consecutive year. The index represents the top 10 percent of the world's most sustainable companies rated by Dow Jones over a range of economic, environmental and social responsibility factors.

The Company was named to Newsweek's Top 500 Green Rankings list announced in 2012. The Company finished 64th in the magazine's U.S. rankings and 134th in the global rankings. That was up 108 spots over the Company's ranking in 2011.

Tata Cummins Limited in India won the 13th Annual Greentech Environment Award in the silver category of the automobile sector in 2013. The award by the Greentech Foundation recognizes best practices for effective waste management and water conservation.

Cummins was named Sustainability
Supplier of the Year by Chrysler Group
LLC during its Annual Strategy Meeting
and Supplier Awards Ceremony in 2012.

The Company was honored for its all around approach to sustainability, including its extensive environmental efforts.

# CORPORATE RESPONSIBILITY AND ETHICS

Cummins was named to the Civic 50, a list of companies that "best use their time, talent and resources to improve the quality of life in their local communities and beyond" in 2012. The list is compiled by Bloomberg, the National Conference on Citizenship and the Points of Light Foundation. Cummins ranked 25th on the list.

The Company was named one of the World's Most Ethical Companies by the Ethisphere Institute in 2013. The Institute evaluates companies' commitment to ethical leadership, compliance practices and corporate responsibility. This was the sixth consecutive year Cummins was named to the list.

Corporate Responsibility magazine named Cummins to its 2012 list of the world's 100 Best Corporate Citizens. It was the 12th time in the last 13 years that the Company has been named to the list.







#### **WORKPLACE, FINANCIAL**

Cummins was named one of the Top 50 Companies for Diversity by DiversityInc magazine for a seventh consecutive year in 2013. Cummins ranked 15th on the list, up from 18th in 2012.

For the eighth consecutive year, Cummins was awarded a perfect score in the 2013 Corporate Equality Index by the Human Rights Campaign (HRC), the largest U.S. civil rights organization for lesbian, gay, bisexual and transgender (LGBT) employees. The Company was recognized for offering equivalency in spouse and partner benefits, health coverage for transgender individuals, competency training and accountability measures for new hires and supervisors, and more.

Glassdoor Inc., a website that ranks employers, named Cummins to its annual list of the "Best Places to Work" in 2013. Cummins ranked 20th on the list, which is developed from anonymous employee feedback and input from employers.

Cummins India was named Best Employer for Women in Corporate India by the WILL Forum in 2012. The Company shared the award with five other corporations, but was the only winner in the manufacturing category. WILL evaluates companies for their practices and policies for women.

Cummins was named to the 2012 InformationWeek 500, an annual listing of the nation's most innovative users of business technology. Cummins last received this honor in 2007. InformationWeek identifies and honors the nation's most innovative users of information technology.

Computerworld magazine selected Cummins Information Technology in 2012 as one of the Top 100 places to work in Information Technology. The list is compiled annually based on a comprehensive questionnaire covering things such as benefits, diversity, career development, training and retention. Cummins was ranked 28th.

Cummins was named one of 145 "Most Honored" companies by Institutional Investor magazine in 2012. The Company was rated by buy-side and sell-side analysts participating in a survey. Almost 2,000 companies received votes. Cummins was ranked top in its category.

The Motley Fool, a website for investors dedicated to building the "world's greatest investment community" online, with a special focus on individual investors, named Cummins at the top of its 2013 list of the 25 Best Companies in America. Companies were evaluated for their success in "serving investors, customers, employees and the world at large."

Cummins was included on Fortune magazine's 2013 list of the most admired companies, finishing fourth in the Industrial and Farm Equipment sector. Fortune asked business people to vote for the companies they most admired from any industry.









# Keeping the spirit of innovation alive

When a Delaware-based chemical plant was looking for innovative ways to shrink its carbon footprint, it turned to Cummins.

Construction crews lower a protective cover around a combined heat and power generating system at Croda Inc., a chemical company in Delaware. The system runs on gas from a nearby landfill.

Croda Inc.'s Atlas Point facility will get about half the power it needs in 2013 using a combined heat and power generating system from Cummins. The system runs on methane gas piped in from the nearby Cherry Island landfill and converts heat produced by the system's two generators for use in Croda's operations.

The project is expected to shrink the plant's annual greenhouse gas (GHG) emissions equivalent to removing 33,000 cars from the road.

"This project demonstrates innovation and environmental commitment by taking a readily available waste product that previously served no productive purpose – in this case landfill gas – and putting it to work," said Delaware Secretary of the Environment and Energy Collin O'Mara at a ground-breaking ceremony in 2012.

The Delaware initiative is merely one of many innovative projects Cummins is working on around the world.



The Company produces engines and power generation systems that run on alternative fuels, recover waste heat and shrink GHG emissions while providing customers with the power they need to succeed. Cummins' Variable Geometry Turbochargers and revolutionary XPI Fuel Systems (page 16) boost power and reduce emissions while optimizing fuel economy.

Cummins' commitment to innovation is reflected in the number and range of products it consistently brings to market. In the first quarter of 2013, the Company launched two new off-highway engines, the QSF3.8 and the QSM12, at a trade show in Munich, and the new marine version of the QSB6.7 during boat shows in Miami and Shanghai.

The Company also unveiled a new powertrain package developed jointly with Eaton that is expected to deliver a 3 to 6 percent fuel economy improvement during the same time period and a suite of near-market and future turbochargers capable of improving fuel efficiency by at least 6 percent. In all, Cummins has introduced more than 60 new and updated products, including engines, components and power generation systems, since January 2012.

Whether it involves the Company's products, building stronger communities through Cummins' Corporate Responsibility program, keeping employees safe or creating the right work environment for success, innovation is critical to the Company's sustainability.



Cummins has achieved many advances in Variable Geometry Turbochargers (VGTs) to improve engine performance and power, and to reduce harmful engine emissions.

Turbochargers are fan-like devices first used to force air into engine cylinders to boost power and efficiency. They have enabled engines to get smaller and lighter without sacrificing performance.

Cummins' Variable Geometry Turbochargers have the ability to control air flow independently of engine speed and power to balance exhaust pressure against intake pressure for better emissions control.

Engines with VGTs can achieve peak efficiency over a broader operating range, contributing to better fuel economy and cleaner emissions. VGTs also help produce heat for chemical reactions critical to some exhaust aftertreatment systems.

Cummins' patented VGT design is known for its simplicity. While other VGTs have many moving parts in the hot gas flow, Cummins' VGT has one moving flow control surface.

This makes the design much more durable and especially well suited for heavy-duty diesel applications. As a result, Cummins has a more than 90 percent share of the heavy-duty VGT market.

#### **INNOVATION IN ACTION**

#### **XPI FUEL SYSTEM**

Cummins' XPI Fuel System was a significant breakthrough in heavy-duty fuel systems.

Dr. Julius Perr (page 22) conceived the basic design, which he originally called the "Flexible and Efficient Fuel System."

At the time, modern heavy-duty engines were fueled by "unit injectors" similar to the designs that originated with Clessie Cummins – individual fuel injectors for each engine cylinder where combustion takes place.

Alternative "common rail" fuel systems, which were being used on some smaller, high-speed diesels, were more flexible because they were powered independently by a separate fuel pump with electronically controlled injection.

But they were inefficient for heavy-duty applications, where good fuel economy is a must, and their injection pressure capability was too low for future emission controls.

Cummins created a design that retained common rail flexibility but made it much more efficient and at the same time greatly increased the maximum injection pressure. The increase was so far above competitors' capabilities it was named XPI, short for eXtreme high Pressure Injection.

XPI allows for a small amount of fuel to be injected into the combustion chamber slightly before the main injection to reduce noise and prepare the chamber for lower emissions. A small injection after the main injection can optimize aftertreatment temperatures.

Maintaining something so important to Cummins' sustainability can't be left to chance. That's why in 2013 the Company launched a campaign across Cummins to promote innovation – one of the Company's six core values. Employees are being asked to **See the Future First and Beat the** 

# to See the Future First and Beat the Competition to It!™

"Innovation continues to be fundamental to how we grow today and how we are going to grow in the future," said Cummins Chairman and Chief Executive Officer Tom Linebarger. "I think it's really important to figure out how we are going to sustain the levels of innovation we enjoy today and find new ways to innovate in the future."

#### **BUILDING ON A RICH HISTORY**

The good news is that Cummins has a rich history of innovation to draw on and the Company has consistently invested in research and development and cutting-edge technology to keep moving forward.

Clessie Cummins was an inventor at heart when he started the Company (page 20). A self-taught mechanic who built his first car as a teenager, Cummins was awarded more than 30 patents in areas ranging from fuel systems to engine brakes.

Dr. Julius Perr, the Company's most prolific inventor, joined Cummins after fleeing Communist Hungary in 1956 (page 22).



Over his more than 40-year career, the mechanical engineer submitted more than 300 patents on engine improvements, including 80 still in use today.

Dr. Alyn Lyn joined the Company in 1968 as a senior technical advisor and would become Cummins' Vice President of Research during his more than 20 years with the Company (page 23). In addition to playing a key role in Cummins' successful entry into China, Dr. Lyn was a pioneer in detailed combustion modeling of the diesel engine.

That modeling would become the foundation for Analysis Led Design, which Cummins uses today in almost all of its technical research and development. By employing sophisticated computer models to first analyze all aspects of an engineering challenge and then designing solutions accordingly, Cummins engineers can study an almost limitless variety of approaches.

Analysis Led Design has increased the depth and breadth of research at the Company. It has been good for the environment, too, by limiting the amount of testing that takes place with an actual engine in a test cell.

Cummins today has technical centers in Brazil, China, India, the United Kingdom and the United States and a number of highly specialized tools at its disposal.

The Company's Cyber Applications Lab, for example, is able to virtually replicate a truck trip from, say, Denver, Colo., to Columbus, Ind., including traffic and weather, to test the performance of a turbocharger or other components. The Department of Metrology's laser tracker can take a three-dimensional picture of an engine component so engineers can check a part against the original design specifications to detect even tiny variations.

Cummins' Randy Franklin in the Company's Department of Metrology uses a laser tracker to take a threedimensional picture of a turbocharger. It's one of the tools Cummins has to make extremely precise measurements.

# SEVEN ENABLERS OF INNOVATION AT CUMMINS

# EXTERNAL AND INTERNAL SENSING NETWORKS

Sensing new technology ideas and market opportunities.

# LINK MARKET OPPORTUNITY TO TECHNOLOGY NEED

See product value: Value to customer and profitability for Cummins.

#### RECEPTIVE TO NEW TECHNOLOGY

Mindset and capacity to accept and develop new technologies.

### DEEP TECHNICAL EXPERTISE

Visible career paths that develop and sustain deep technical expertise in key areas.

# RAPID PROTOTYPING AND CONCEPT EVOLUTION

Test design concepts and test understanding of market and customer opportunities.

# RAPID AND CAPABLE SORTING

Focus resources on most promising concepts as the concepts evolve.

### CROSS-FUNCTIONAL DIVERSE TEAM

Act without boundaries in drawing expertise from across the organization in assembling work teams.

With engines and components being asked to do more than ever before, even the slightest variation can be critical.

The Company's commitment to research and development is unwavering. In 2012, despite a drop in sales from \$18 billion to \$17.3 billion in the midst of a global economic slowdown, the Company invested a record \$728 million in research and development, up 16 percent from 2011.

In addition, Cummins and its joint ventures invested over \$1 billion in capital expenditures, much of it related to the development of new products.

"We can't stop investing in technology and expect to be in the market in two or three years," said Pat Ward, Cummins' Vice President – Finance and the Company's Chief Financial Officer.

#### **CAMPAIGNING FOR INNOVATION**

Cummins' campaign for innovation comes at an especially critical time for the Company's technical function.

For most of the past two decades, the biggest driver of technical innovation at the Company has been increasingly stringent emissions regulations in nearly every platform, from pickup truck engines to power generation systems. With emissions levels approaching near-zero levels in most mature markets, Cummins technical leaders are thinking a lot about what will drive innovation over the next 20 or 30 years.

"We have had a very strict schedule of emissions technology requirements over time," said Cummins Vice President and Chief Technical Officer Dr. John Wall. "We've been paced by the leading markets and integrated that into developing markets, which gives us a pace and schedule to product delivery.

"Without that strong driver, we now have to create our own pace for innovation. How do we interact with our customers and manage our business to deliver innovative products when we don't have that clock ticking on the next emissions regulations?"

Wall believes it will be more critical than ever before for Cummins to stay connected to its customers so the Company's engineers can anticipate their needs and desires even when they may not be able to put them into words.

"We need to know our markets and individual customers better than anyone else," he said. "We need to know our technologies better than anyone else and we need to be able to combine those so we can continue to differentiate our products in the eyes of our customers."

Wall has asked Joan Wills, Director – Technology Planning, to work with business units and their leaders within Cummins to create the processes, capability and culture necessary to drive innovation in the future. She is stressing the importance of listening to customers, devoting personnel and resources to research and development, and investing in new technology.

Wills and her staff have developed a list of "Cummins Innovation Enablers" (page 18) to help guide Company leaders and employees as they think about what's ahead.

"Cummins has a rich history of product innovation, so these enablers will seem familiar to many," Wills said. "But in the crush of meeting day-to-day deadlines, they can get pushed to the back burner and we just can't afford to let that happen."

Wills said there is no question in her mind that the spirit of innovation is alive and well at Cummins and the future is extremely bright.

The Delaware landfill gas project is a good example. Work is already underway on an even bigger, more complex project to install a combined heat and power system at the City of Wilmington's waste water treatment plant.

That system, to be completed in 2014, will be fueled by a blend of gas from the Cherry Island landfill and digester gas from the treatment plant. The new project will produce nearly twice as much energy as the system at the chemical plant.

"We have some incredible work happening all over the Company," Wills said. "As we transition from an emission- to a more customer-focused approach, we have to adapt our product innovation expertise to our global markets. I'm confident we can and that Cummins' legacy of innovation will continue for years to come."



#### **SYSTEMS INTEGRATION**

Cummins is the only company that produces all of the critical subsystems required to build an engine or genset in-house. The Company's experience with making components work together has established Cummins as the industry leader in systems integration.

Unlike its competitors, Cummins can design its components with no proprietary boundaries. Subsystem designers work hand-in-hand with system integrators to ensure customer needs are met.

Electronic Control Modules coordinate engine accessories, ABS brakes, the transmission and more to deliver top performance. The Interact System on most Cummins engines includes advanced prognostics and diagnostics.

Cummins Power Generation develops and manufactures all of the key components for gensets, from the alternator and transfer switches to the controls, turbochargers and paralleling systems. They all communicate via Cummins' PowerCommand digital controls.

Controls are critical to operate subsystem functions efficiently and to integrate Cummins' engines and gensets into vehicles, equipment, buildings and power systems. They deliver information and take input from operators, service systems and equipment manufacturers.

The Company's comprehensive approach enables

Cummins to deliver better designs to component
customers, too. The Company's market-leading Variable
Geometry Turbochargers, for example, were designed
differently from others because the Company understood
heavy-duty diesel engines better than anyone else.

# **Problem solving through innovation**

Clessie Cummins never stopped thinking about how he could make things work better. From the moment he built his first car as a teenager to working on a concept engine in the workshop at his California home in his 70s, Cummins (1888-1968) pursued innovation with a passion few could match.

"Almost all of Dad's unique and creative ideas were to solve problems that continually arose," said Lyle Cummins, Clessie's son. "Thus, his life was one of innovating through adversity."

Lyle grew up watching his father at the height of his career, in what some describe as the golden age of American inventors. Clessie Cummins would sometimes swap stories with Henry Ford, who liked to keep tabs on what his younger colleague was doing. Today, Lyle Cummins is working with the Company that bears his father's name to preserve Cummins' history. The Company has established an archive in the vault of a former bank building it recently acquired in Columbus, Ind.

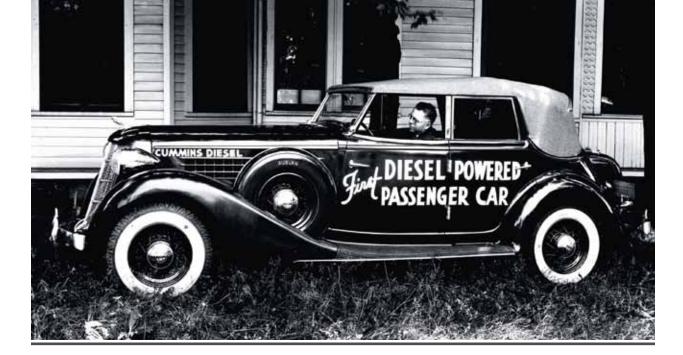
The archive will hold pictures, documents and other artifacts, much of it involving the founding of the Company in 1919 and the partnership between Columbus businessman W.G. Irwin and Clessie Cummins, the driver Irwin hired in 1908.

Lyle Cummins said his father's formal education ended in the 8th grade after his family moved to Columbus. Clessie told family members he left school because he was tired of knowing more than his teachers.

Clessie's father was in the barrel-making business and the family moved around a lot. One of the constants in Clessie's life, however, was his fascination with all things mechanical. He loved finding ways to make rural life easier.

Lyle Cummins and Cummins
Chairman and CEO Tom
Linebarger cut the ribbon on
new space in a former bank
building for the Company's
new archive of historical
pictures and documents.





With Irwin's financial backing, Clessie continued innovating, holding many patents himself. But Clessie Cummins was also a promotional genius, demonstrating the power and reliability of his diesel engines by barnstorming around the country in diesel-powered trucks and buses.

Lyle Cummins and his father were particularly close because they worked together. Clessie Cummins moved to California in 1945 after leaving the Company. At the same time, an influx of military veterans led to a shortage of housing at Stanford University in nearby Palo Alto so Lyle decided to live at home while he pursued an engineering degree.

As a result, father and son worked together on cars and other projects while Lyle was in school and joined forces professionally after Lyle returned several years later for a graduate mechanical engineering degree.

They developed the "Jake Brake," which preserves traditional brakes by converting an engine into a power absorbing air compressor to slow trucks down during long descents. Lyle Cummins would go on to become an outstanding engineer and an accomplished author and historian.

Dr. John Wall, Cummins' Vice President and Chief Technical Officer, said he's delighted the Company is working with Lyle Cummins to preserve Company history. He said generations of Cummins engineers will be inspired by Clessie's story.

"When we talk about 'Innovation You Can Depend On,' that's what Clessie was doing," Wall said, referring to Cummins' motto. "And that's what we need to be doing moving forward, to keep a dynamic innovation and development process alive inside the Company and to deliver real value to our customers."

Lyle Cummins, Clessie Cummins' son, looks at a restored Cummins diesel engine from the early days of the Company during an October 2012 visit to Columbus, Ind.



# **Cummins' innovative giants**

Clessie Cummins got it all started but he was far from the only remarkable innovator at Cummins. Dr. Julius Perr and Dr. Alyn Lyn each played key roles in helping Cummins become the technology leader it is today. In many ways, their impact on the Company can still be felt today, not only in their inventions but in the doors they opened for those behind them.

# A MOST PROLIFIC INVENTOR



Dr. Julius Perr (1931-2005)
submitted more than
300 patents on engine
and engine application
improvements over
his more than 40-year
career at Cummins,
including 80 patents that
are still in use today.

But the story of how he got to the Company almost overshadows his illustrious career at Cummins.

Perr was born in Hungary, grew up during World War II and was only a teenager when his homeland was taken over by the Soviet Union in 1945. He was 25 when he joined the Hungarian Revolution and in the fall of 1956, he and his countrymen briefly enjoyed freedom from Soviet rule.

The Soviets quickly crushed the rebellion, however, and Perr became a wanted man.

He escaped through Austria, dodging fire from Soviet patrol and border guards. He eventually made it to a refugee camp in Austria.

He became part of a U.S.-Hungarian refugee program, which brought him to New Jersey. With a master's degree in engineering, Perr was recruited by a number of automotive companies and eventually chose to join Cummins.

Dr. Perr settled in Columbus, Ind., where he was joined by his wife Elizabeth, who escaped Hungary in 1958. He then went to work on a host of engine improvements, most involving fuel systems. His patents dealt with fuel injectors, pumps, valves, nozzles and more.

In 1969, he was granted amnesty and allowed to return to Hungary. That enabled Dr. Perr to complete his doctorate in mechanical engineering from the University of Technology in Budapest in 1972.

Dr. Perr was commended by the U.S. Patent Office for the example he set for young inventors. Today, the annual Dr. Julius Perr Awards are Cummins' highest honor for technical innovation.

"Julius had a very active mind - and he was always inventing and teaching," recalls Dr. John Wall, Cummins' Vice President and Chief Technical Officer. "It was not unusual to see him in the cafeteria at lunchtime, in his rumpled blue suit, surrounded by young engineers and drawing injector designs on napkins.

"He is the most stimulating engineering boss I ever had," Wall added. "That's part of the spirit we need to keep alive in Cummins, and that's why we honor our best inventors each year with the Dr. Julius Perr Award."

#### A LION IN THE INDUSTRY

Dr. Alyn Lyn (1917-2010) played a critical role in Cummins history in many ways. He was one of the world's foremost authorities on engine combustion, bringing his expertise to the Company in 1968. He eventually became Cummins' Vice President of Research.

Dr. Lyn also played a key role in Cummins' successful entry into China in the mid-1970s. He was able to help the Company navigate the Chinese system to establish operations in the country.

"Dr. Lyn was an absolute lion in the industry," said Cummins' Vice President and Chief Technical Officer Dr. John Wall.

"He was a mentor to many young engineers working in the field of engine combustion, including me."

After graduating

from Tsinghua University in Beijing, China, with a degree in mechanical engineering, Lyn completed his master's degree and his doctorate in mechanical engineering at the University of London in the United Kingdom.

He worked at Rolls Royce and then obtained a doctorate of science from King's College in London, becoming the first Chinese university professor in the United Kingdom. He later joined Cummins and moved to the United States.

Lyn retired in 1982 although he continued with the Company as a part-time consultant until 1990. His legacy lives on in the Dr. Lyn Scholarship, sponsored by Cummins at Tsinghua University in Beijing. The scholarship helps academically outstanding but financially challenged female students study engineering at China's foremost technical university.

The Dr. Lyn Scholarship, the first scholarship for women in engineering at Tsinghua University, builds on two of Cummins' core values: innovation and diversity.



### The future of innovation at Cummins

We asked some of the Company's technical leaders to look at innovation at Cummins five, 10 and 15 years into the future. Here's a quick look at what they said:

**5 YEARS OUT** 

# REDUCING CO<sub>2</sub> EMISSIONS AND FUEL CONSUMPTION

The near future will continue revolving around reducing CO<sub>2</sub> emissions and fuel consumption.

In late 2012, Cummins announced its ISX15 engine had received the first certification from the U.S. Environmental Protection Agency (EPA) for new greenhouse gas (GHG) and fuel-efficiency rules, a full year before those regulations take effect in 2014. The ISX15, the top-selling engine in the heavy-duty truck market, will achieve up to a 2 percent fuel economy improvement over its predecessor.

The approach to meeting regulations in 2016 and 2017 will be largely the same as in 2014. There will be new requirements for on-board diagnostics and further improvements required in  ${\rm CO_2}$  emissions and fuel efficiency.  ${\rm CO_2}$  is a key contributor to global warming.

Possible technology improvements to reduce  $\mathrm{CO}_2$  emissions beyond 2017 could include converting waste heat from the engine into useful energy, hybrid powertrains to capture energy lost in braking and deceleration, advanced combustion, and improvements to the aftertreatment and fuel systems.

**10 YEARS OUT** 

# ALTERNATIVE FUELS

Vehicle fleets and equipment operators are already exploring alternative fuels to reduce emissions, improve operating costs, or adapt to locally available fuel sources. This trend is expected to continue over the next decade.

Natural gas has emerged as the most promising alternative fuel for many market segments.

New drilling techniques have greatly expanded natural gas production and have significantly reduced fuel costs.

For example, in the United States, about 15 percent of new transit buses and 50 percent of new refuse trucks currently operate on natural gas. Meanwhile, industry assessments predict that natural gas adoption rates in the United States for the on-highway truck market may be between 10 and 20 percent by 2018 with further upside beyond that.

Cummins is a leading producer of natural gas engines and components for a wide variety of markets, including trucks and buses, oil and gas production and electric power generation.



**15 YEARS OUT** 

Cummins' current natural gas engine product line ranges from 50 to 2,700 horsepower, and the Company recently announced plans to develop several new engines.

A new engine requires an investment of \$10 million to \$50 million over the program life, so these new products represent a significant commitment to alternative fuels. Cummins is also working on technology to improve the efficiency of natural gas powered generation systems by 20 percent by 2018. These engines will also be capable of running on renewable fuels.

Also in the development pipeline:

- » Technology to reduce long haul truck fuel consumption by 10 to 15 percent from the fuel consumption of the 2017 product.
- » Engines fueled by gas that uses sewage and municipal waste as feedstock and gas derived from agricultural waste.

# INTEGRATING POWER SOURCES

Harnessing power generated from renewable energy sources like wind and solar is gaining interest today and will likely be a key issue in 15 years. Cummins is preparing now to meet that need.

Cummins Energy Solutions Business, part of its Power Generation business, has been installing combined heat and power (CHP) systems for some time. CHP, or cogeneration, is the production of two kinds of energy – usually electricity and heat – from a single source of fuel.

Small power systems that draw from multiple energy sources including renewable forms of energy are on the horizon, operating either as autonomous "microgrids" capable of storing and distributing power or connected to established grids.

Distributed generation technology that allows energy production at the point of consumption opens up the possibility of integrating traditional generators with renewable forms of energy.

Wind and solar, for example, cannot provide a continuous output of power by themselves. But using wind or solar with a diesel or natural gas engine to create a standalone energy system could offer many benefits.

Such a system would lower operating costs. And Cummins' generator sets could be used to "firm" or support grids with a high penetration of renewable energy much faster and in a more efficient manner than conventional peaking power plants.

#### **UPDATE:**

# 'SuperTruck' off to impressive start

The concept truck featuring a higher efficiency engine and an aerodynamic tractor-trailer developed by Cummins and Peterbilt Motors Company turned some heads during testing in the fall of 2012 on a U.S. highway in Texas.

The concept "SuperTruck" outside Peterbilt Motors
Company's headquarters
in Denton, Texas. The truck
recorded impressive results
in fuel economy and
freight efficiency.



The "SuperTruck" achieved a 54 percent increase in fuel economy, averaging nearly 10 miles per gallon during testing along U.S. Route 287 between Fort Worth and Vernon. The truck also demonstrated a 61 percent improvement in freight efficiency compared to a baseline truck driving the same route.

The freight efficiency result significantly exceeded the 50 percent SuperTruck program goal set by the Department of Energy (DOE). Freight efficiency is an important metric in the transportation industry that is based on payload weight and fuel efficiency.

The truck also includes a system that converts exhaust heat into power delivered to the crankshaft, electronic controls that use route information to optimize fuel use, tires with lower rolling resistance and lighterweight material throughout.

"Many of the technologies we are testing on the concept engine and truck will be integral parts of the trucks of tomorrow," said David Koeberlein, Principal Investigator for the SuperTruck program at Cummins.

The Class 8 Peterbilt 587 powered by a Cummins ISX15 engine averaged 9.9 mpg over 11 runs meeting SAE International test



Cummins SuperTruck team members Jon Dickson. Vehicle Applications Leader -Advanced Engineering; David Koeberlein, SuperTruck Principal Investigator and Wayne Eckerle, Vice President -Research & Technology, during a SuperTruck visit to Columbus in 2012.

standards along a 312-mile route. The tractor-trailer had a combined gross weight of 65,000 pounds.

Today's long-haul trucks typically achieve between 5.5 and 6.5 mpg. The 54 percent increase in fuel economy would save about \$25,000 annually based on today's diesel fuel prices for a long-haul truck traveling 120,000 miles per year. It would also translate into a 35 percent reduction in annual greenhouse gas emissions per truck.

The potential savings in fuel and greenhouse gases are enormous, given American Trucking Association estimates that there are about 2 million registered tractor-trailers on U.S. roads today.

Cummins is a prime contractor leading one of four teams participating in the DOE's SuperTruck project. SuperTruck is one of several initiatives under the 21st Century Truck Partnership, which is a public-private effort to further stimulate innovation in the trucking industry.

Cummins, Peterbilt and their program partners will have invested \$38.8 million in private funds over the four-year life of their SuperTruck program, with critical support coming through awarded

matching grants from the Department of Energy's Vehicle Technologies Program.

Cummins personnel have been focused on the engine and its integration with the powertrain. They have been working with several other companies and research institutions to also develop numerous changes in the combustion system.

Peterbilt, a division of Paccar, has been working with its partners on improvements in the drivetrain, the idle management system and weight reduction in addition to the truck's aerodynamics. Meanwhile, Eaton's advanced transmission facilitates further engine downspeeding for additional fuel economy benefits.

"Aerodynamics has been a significant contributor to the efficiency gains," said Scott Newhouse, Senior Assistant Chief Engineer of Product Development at Peterbilt. "We've been very pleased with what our team has been able to accomplish."

Testing will continue in 2013 on a new Peterbilt 579 that will address use of the tractor-trailer over a 24-hour period; including times when drivers are at rest but still need power for such things as air conditioning and small appliances.

#### **Environment POINTS OF** INNOVATION

- » SuperTruck nears 10 miles-per-gallon mark (page 26).
- » Cummins is recycling nearly 90 percent of its waste (page 42).
- » Mexico plants slash water use (page 53).

#### **ENVIRONMENTAL SUSTAINABILITY // PRODUCTS**

Cummins pursues environmental sustainability through its products, practices and partnerships. This report now takes an in-depth look at Cummins products and their impact on the environment.

### **Products**

Cummins is able to provide the most appropriate emissions control for each market it serves because of the Company's leadership in combustion research, fuel systems, airhandling systems, electronics, filtration and aftertreatment.

As the only independent engine manufacturer with the in-house capability to produce all major engine systems, Cummins can provide the best solution to customers across all applications.

The Company's diverse product portfolio meets or exceeds all emissions requirements while delivering superior fuel economy. At the same time, it delivers the performance, reliability and durability that customers demand.

There is a push for stronger environmental regulations by governments in almost every country around the world. Meeting emissions regulations is a critical element of Cummins' global success. The Company believes its technical expertise gives Cummins a competitive advantage in this business environment.

The Company's goal is to develop the best technical solutions and business processes to meet customers' needs in each individual market. This approach builds on the emissions compliance work Cummins has historically done, but adds a very important, all-encompassing regional element to ensure customers have the right technology, at the right time and in the right places.

#### **ENGINES**

Cummins on-highway engines have been regulated by the U.S. Environmental Protection Agency (EPA) and similar regulatory agencies around the world for combustion emissions since the 1970s. Regulated emissions include nitrogen oxide (NOx), carbon monoxide (CO), hydrocarbons (HC) and particulate matter (PM), also known as soot.

Engines have come a long way in a relatively short time period. Today's onhighway diesel engines emit 90 percent less PM and NOx compared to emissions from just a little more than a decade ago.



Cummins has been a leader in clean diesel technology, pioneering the design and use of integrated subsystem technology such as combustion, controls, fuel systems, filtration, air handling, and aftertreatment.

The Company's commitment to innovation has enabled it to deliver exceptional fuel economy for the Company's on- and offhighway customers, ultimately reducing their output of carbon dioxide (CO<sub>a</sub>), a key contributor to global warming.

The Company has also supported the development of biodiesel. All of Cummins' engines produced today are equipped to run on a 20 percent blend of biodiesel.

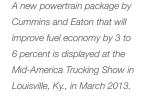
Doing both the right thing for customers and the right thing for the environment is Cummins' highest priority.

#### **ON-HIGHWAY ENGINES**

The U.S. Environmental Protection Agency has established the most stringent emissions regulations in the world, reducing both allowable NOx and PM levels by 90 percent compared to 2004. In 2010, all heavy-duty on-highway engines sold in the United States had to meet the EPA's NOx standard (0.20 grams per brake-horsepower hour (g/bhp-hr)) and the PM standard (0.01g/bhp-hr).

Cummins was among the first companies to meet these new standards. In 2010, the Company successfully introduced the ISX15 engine for use in 18-wheel heavy-duty commercial tractor-trailers. The engine provides up to 6 percent greater fuel economy, stronger performance, faster throttle response and best-in-class drivability and reliability compared to Cummins' previous industry leading ISX engine.

The 2010 regulations not only required near-zero NOx and PM emissions, but also the phase-in of advanced onboard diagnostic controls with additional







# CUMMINS' FIT FOR MARKET STRATEGY

Fit for Market is a Cummins strategy to meet customer requirements by using the Company's knowledge, tools and technologies to deliver cost-effective products with the right capability for each market in every global region.

This is not a one-size-fits-all approach, but a strategy to listen to customers and understand their needs.

Cummins has a portfolio of technologies that can be adapted to meet the power needs of specific markets, taking into account local product and application requirements, the local service environment and local manufacturing capability.

sensors to monitor the effectiveness of emission-control systems on the engine. The on-board diagnostics alert drivers if emission-reduction devices fail and need to be repaired. In 2013, on-board diagnostics have been implemented across Cummins' entire line of on-highway products for the United States.

Beginning in 2014, new greenhouse gas and fuel-efficiency rules will take effect for all on-highway engines in the United States. Cummins ISX15 was the first engine to achieve EPA certification (page 40) for the new standards – a full year ahead of schedule.

The engine provides up to 2 percent greater fuel economy than the 2012 model year engine, and maintains its best-in-class drivability and reliability.

The ISX15 features the Cummins XPI fuel system, the next generation of Exhaust Gas Recirculation (EGR), a Variable Geometry Turbocharger and Cummins Aftertreatment System that incorporates a Diesel Particulate Filter and Selective Catalytic Reduction (SCR) technology to reduce emissions. Each ISX15 can reduce CO<sub>2</sub> emissions by up to 12 metric tons per year compared to a 2007 ISX engine.

In 2012, Cummins introduced the new ISX12 engine for the vocational and work-truck market, emergency vehicles and motor coach applications. The engine is designed to deliver better fuel economy, performance, reliability and durability in a compact design.

For the heavy-duty pickup truck market, the 2013 Ram heavy-duty trucks using a 6.7-liter Cummins turbo diesel and SCR aftertreatment will get at least 10 percent better fuel economy (depending on duty cycle) than a model year 2012 truck.

The Company also announced a new powertrain package for the North American heavy-duty truck market in 2013 that is expected to deliver a 3 to 6 percent fuel economy improvement, lower preventive maintenance costs, and reduce total lifecycle cost.

The new product combines an Eaton® Fuller Advantage™ Series automated transmission with new Cummins ISX15 SmartTorque2 ratings. The product will be available in the fall of 2013 for linehaul, regional haul and less-thantruckload (LTL) applications.

#### **OFF-HIGHWAY ENGINES**

In only three years, the North American and European industrial markets have been faced with the challenge of transitioning to near-zero emissions by 2014. This challenged Cummins to look beyond basic engine technologies to areas such as high pressure fuel systems, advanced turbocharging, electronics and aftertreatment systems to further reduce off-highway engine emissions.

The resulting innovations not only helped to meet the latest regulations, but also led to more fuel efficient products that produce less CO<sub>2</sub>. The off-highway business has

gone beyond simply reducing engine emissions and improving fuel economy by launching multiple "clean-sheet" engines, designed from the beginning without any constraints.

Since 2011, Cummins extended its off-highway power offering at each end of the horsepower spectrum, down to 49 hp with the QSF2.8 and up to 4,200 hp with the QSK95. Both of these engines were designed with advanced emissions control in mind and as minimal an impact to the customer as possible. They are equipped with aftertreatment systems that require no active regeneration to meet applicable regulations.

In April of 2013, Cummins introduced two additional engines at a major trade show in Munich, Germany, completing the Company's full product lineup for Tier 4 Final from 49 to 675 hp. The new QSF3.8 and the QSM12 were developed from a clean-sheet design and fill very

specific power densities to meet customer demands.

#### **NATURAL GAS ENGINES**

As natural gas has become increasingly available, 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, 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 partnership as the leading North American provider of natural gas engines for onhighway commercial vehicles.

The joint venture announced in early 2013 that it had received certification for its ISX12 G engine from the EPA, meeting both the agency's 2013 regulations and new greenhouse gas and fuel efficiency rules

Chairman and CEO Tom
Linebarger and the Executive
Director of the Heavy-Duty
Growth Program, Jerl Purcell,
stand between the new
QSF3.8 and QSM12 engines
at the Bauma 2013 trade
show in Munich, Germany.



taking effect in 2014. Limited production of the natural gas engine began in April, with full production to start in August 2013.

About five months earlier, Cummins
Westport announced it had started
development on another engine,
the ISB6.7 G. The 6.7-liter natural gas
engine is based on Cummins ISB6.7
diesel engine. The natural gas version
is expected to be in production by 2015.

The engines offered by Cummins Westport range in size from 5.9-liters to the 12-liter ISX12 G now entering production.

Independent of the joint venture,
the Cummins Engine Business Unit
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.

Last year, Cummins announced plans to produce dual fuel engines from

800 hp to 3500 hp (597-2610 kW) for high-horsepower markets. The first in the product portfolio, QSK50 Tier 2 for oil and gas well servicing applications, will begin production in mid-2013, with other QSK Series engines to follow, including engines capable of meeting upcoming EPA Tier 4 Final emissions regulations.

Cummins projects that by 2020, nearly 30 percent of its high horsepower engine production will be natural gas due to the increasing abundance of the fuel and its relatively low cost.

Cummins is currently working on a natural gas version of the QSK95, a 95-liter engine unveiled in 2011 that will be the largest high-speed diesel engine the Company has ever built.

The Company is also developing a 15-liter heavy-duty natural gas engine for onhighway applications. That engine is expected to be in production by 2016.



These employees are part of the high tech processes Cummins uses to reclaim 50 million pounds of product annually through its remanufacturing initiatives. Remanufacturing requires less energy than producing new parts and keeps Cummins' product out of landfills.

#### **REMANUFACTURING**

Through remanufacturing, Cummins takes engines and parts at the end of their useful life and returns them to productive use, significantly reducing the amount of Company product that ends up in landfills and saving energy that would otherwise be used to manufacture new products.

Cummins is an industry leader in remanufacturing, with sales of approximately \$1 billion in 2012. Cummins remanufacturing reclaimed 50 million pounds of product in 2012 and avoided 200 million pounds of GHG emissions. The business offers 1,000 components and 2,000 engine part numbers.

The Company remanufactures engines and parts through the common application of salvage technology, component reuse guidelines and remanufacturing-specific policies and procedures. Cummins' remanufactured products are often "up-cycled" to include design and quality upgrades.

Remanufacturing requires about 85 percent less energy than manufacturing a brand new product. If an engine block, for example, can be reused, the energy consumed in the ore mining, processing, transportation, casting, and machining to make a new block is eliminated.

Since most of the energy used at Cummins and in the Company's supply chain is fossil-fuel based, the energy savings equate to greenhouse gas reductions. In addition to the energy

and GHG savings, remanufacturing reduces landfill waste and further supports Cummins water reclamation initiatives.

Remanufactured parts can improve power and durability because often product improvements have occurred since the component was initially produced and these upgrades are often included in the remanufacturing process. Remanufactured parts and engines come backed by warranties, parts availability and service.

Finally, the use of remanufactured components can also cost-effectively extend the life of an entire piece of equipment. The vehicle and chassis, for example, can be updated to match the extended life of a remanufactured engine.

#### **CUMMINS EMISSION SOLUTIONS**

Cummins Emission Solutions (CES) is no stranger to global emissions challenges. A subsidiary of Cummins since 2002, CES has quickly built a reputation for developing emissions-related solutions to its customers' distinctive needs around the world.

The business develops aftertreatment products for on-highway

and off-highway applications based on years of dedication to understanding engine exhaust and how effective and innovative technology can convert exhaust components into harmless elements.



This urea supply unit (left) and dosing unit (above) are part of Cummins Emission Solutions' industry-leading aftertreatment systems. The systems help reduce harmful engine emissions to near-zero levels.

In 2012, the Brazilian market saw its first emissions regulations come into play. Equivalent to Euro V regulations, the Proconve P-7 regulations required Selective Catalytic Reduction (SCR) technology to meet emissions limits. With over 40 billion miles of SCR system experience, Cummins Emission Solutions was well positioned to support its customers during this launch.

SCR systems, coupled with urea (diesel exhaust fluid) dosing technologies, convert oxides of nitrogen (NOx), which can cause smog and acid rain, into harmless nitrogen gas and water. In many mature emissions markets such as North America and Europe, SCR systems are combined with a diesel particulate filter and an oxidation catalyst which aid in the regulation of particulate matter (PM), or soot.

In the latter half of 2012, CES focused on integrating a new product in its portfolio. The acquisition of Hilite International's SCR division in July introduced a liquid-only urea dosing system into Cummins Emission Solutions' product line.

This EcoFit UL2 Liquid-Only Urea Dosing System offers additional flexibility and ease of integration to customers.

Cummins Filtration's User Friendly Filter is one of the Company's first products to be developed using full life-cycle analysis, assessing its environmental impact at all stages of the product's life.

#### **CUMMINS FILTRATION**

Cummins Filtration provides high quality, high performance integrated filtration system solutions to protect equipment, offering customers the best possible solutions while remaining mindful of its responsibilities to the environment.

The business recently introduced its advanced nanotechnology based media, NanoNet™, designed for engines operating under the stringent requirements of the very latest EPA and European emissions standards.

A first for fuel filtration, NanoNet traps 98.7 percent of all hard particles at 4 microns – 12 times smaller than the smallest particle visible to the human eye. This proprietary media provides unmatched protection for today's high pressure common rail fuel systems essential to clean emissions.



As the only filter manufacturer that is part of an engine company, Cummins Filtration has a key technology advantage that has resulted in a number of other innovations including:

- » **PG Platinum**<sup>™</sup> A NAPS free propylene glycol coolant, it contains no nitrites, amines, phosphates or silicates. Propylene glycol is recognized as nonhazardous and non-poisonous by the U.S. Food and Drug Administration.
- » Crankcase Ventilation These systems filter up to 100 percent of oil drip, up to 95 percent of aerosol vapors and 100 percent of engine compartment fumes. Since crankcase hydrocarbon emissions can contribute up to 25 percent of total emissions, control of this air pollution source is critical.
- » Filter-in-Filter This product combines two filters in a single cartridge, which is then contained within a reusable housing. This provides maximum protection for the engine and reduces the amount of waste material during regular fuel system maintenance. The design also reduces volatile organic compounds because the filters no longer require painting.

Cummins Filtration also strives to be environmentally sensitive in the way it does business.

Entering its second year, the Fleetguard® Filter Recycling Management Program, Filtering Change<sup>™</sup>, continues to enable customers to be environmentally responsible. In 2012, over 670 tons

of filters, including 546 tons of steel, were recycled through the program, more than four times the year-end goal set by Cummins Filtration. This equates to about 745 avoided metric tons of greenhouse gas emissions.

Cummins Filtration remains the only filter manufacturer to initiate an internal recycling management program aimed at partnering with service centers and fleet locations throughout the United States and globally.

Recycling content is important to Cummins Filtration's sourcing decisions. Currently, 20 percent of Cummins Filtration's 75,000 tons of integrated steel used to produce filter shells comes from recycled metal along with 80 percent of the 25,000 tons of mini-mill steel used to produce other filter components.

### **POWER GENERATION**

Cummins Power Generation is committed to solving customers' power needs in ways that benefit communities and contribute to comprehensive environmental solutions.

#### Waste to energy

In the drive to meet emissions standards and maximize cost-efficiency, more and more businesses are producing profitable and environmentally responsible energy from waste.

Gaseous fuels that would otherwise be wasted are becoming the alternatives of choice. Landfill, wastewater treatment and other waste fuel source owners are discovering they can convert these

### **CUMMINS AIDS IN BIODIESEL TESTING**

Field testing started in 2013 as the U.S. Coast Guard Research and Development Center explored using 100 percent biodiesel in some of its vessels to reduce greenhouse gas emissions.

Biodiesel is a renewable fuel made from a broad variety of sources such as vegetable oils, animal fat and recycled cooking oil. Cummins is helping the Coast Guard understand what changes would be needed to use 100 percent biodiesel in its boats.

A Cooperative Research and Development Agreement has been put in place for the field testing on a 49-foot boat. It is set to continue for a year after which a final report will be published.



Visiting Cummins employees learn about a high-efficiency Cummins generator that runs on biogas produced from variable biomass feedstock at the Nocton Fen Farm in the United Kingdom.

alternative gaseous fuels into sustainable and economical electricity – reducing their costs and environmental footprint and selling the power generated to create new revenue.

Driving the change are low-BTU gas generator sets, which use proven technology to convert these "free" energy sources into clean and economical electricity.

A recent example involves an anaerobic digestion plant on a 3,500-acre farm on the east coast of the United Kingdom. Power Generation's Energy Solutions team created a system that converts mixed biowaste into green, renewable power and heat at Nocton Fen Farm. The high-efficiency generator produces

very low emissions and the system has a heat recovery system that includes exhaust gas heat exchangers.

The system reuses biowaste that otherwise would have been disposed in a landfill.

The total energy efficiency of the project is expected to exceed 90 percent when fully operational, with some of the renewable electricity sold to the grid.

The project also reduces the CO<sub>2</sub> admitted into the atmosphere by an estimated 7,200 tons per year. And local farms use the plant's output as a natural fertilizer.

### Cogeneration

Cummins' combined heat and power (CHP) systems are providing power to hospitals, schools, sports complexes and commercial facilities around the world.

Cogeneration is the production of two kinds of energy – usually electricity and heat – from a single source of fuel. Cogeneration can replace traditional methods of supplying energy from multiple sources such as

An anaerobic digestion plant on the farm produces the biogas that is then used to power the generator.

purchasing electricity from a power grid while also burning natural gas or oil separately in a furnace to produce heat or steam.

These more traditional methods waste up to two-thirds of the energy in the original fuel. With cogeneration, 70 to 90 percent of the energy in the original fuel is put to productive use and total energy savings can be 30 percent or more.

A cogeneration system normally consists of some kind of machine turning an alternator to produce electricity, and a waste heat recovery system capturing the heat from the exhaust and cooling water jacket.

Cummins also provides trigeneration, or CCHP (combined cooling, heat and power), power systems, with recent installations at the new Centre for AgriBioscience and Royal Children's Hospital, both in Australia, and The Museum of Human Evolution in Burgos, Spain. The hospital was honored by Building Products News magazine for

having achieved unprecedented levels of sustainability in an Australian healthcare project.

### **Cummins Generator Technologies**

Cummins Generator Technologies (CGT) offers premium quality AC generators in the range of 0.6 to 20,000 kilovolt amperes (kVA). CGT's family of brands – MARKON, STAMFORD and AvK – is known for its robust build, reliable performance and versatile configurations.

CGT announced in 2012 the development of its first Motor Generator with CorePlus™ technology, designed to be used in a range of commercial vehicle applications. Cummins believes there is a strong market for engine electrification in medium- and heavy-duty commercial vehicles.

Cummins Generator Technologies expects
Cummins CorePlus™ Motor Generator
will accelerate the evolution of engine
electrification and drive even greater

Two Cummins natural gas powered generators provide heating, cooling and power for The Museum of Human Evolution complex in Burgos, Spain.



improvements in vehicle fuel efficiency and emissions reduction.

It is available with power, torque and performance characteristics suitable for hybrid systems, electric vehicle designs, range extender solutions and electrical power generation in vehicles. These can be applied across a range of commercial vehicle applications such as buses, trucks and off-highway vehicles.

## Advanced Medium Mobile Power Sources

Cummins' Advanced Medium Mobile Power Sources (AMMPS) is a new line of mobile power generators for military use whose environmental and logistical benefits include greater fuel efficiency, lighter weight, quieter operations and increased reliability with a lower total lifecycle cost.

AMMPS generators are 21 percent more fuel efficient than their predecessors, which saves fuel in both the use of the generators and the transport of fuel to the generators.

#### **DC Generators**

DC generators offer a cost-effective and environmentally-friendly alternative to conventional large battery reserve systems and traditional AC generators used to power remote community access TV, telecom and wireless tower sites.

They continuously monitor the battery system and seamlessly restore power should battery backup fail or a prolonged power outage occur. Not only are generators generally more fuel efficient, DC generators reduce the number of onsite batteries needed; fewer batteries result in fewer environmental issues related to battery disposal.

### Hybrid generators for RVs

A hybrid generator set is a great example of how Cummins is using technology to reduce fuel consumption by recreational vehicle (RV) owners as well as noise pollution.

By using a combination of inverters, a power unit and coach battery, Cummins Power Generation has been able to reduce generator fuel consumption by up to 20 percent. Power Generation has also been able to cut noise pollution by 5 decibels.

While this number might not seem very big, it represents about a 40 percent reduction in audible sound levels. In addition, the hybrid generator weighs up to 374 pounds less than the Company's large diesel generators. This translates directly into better fuel economy for RVs, which in turn means a reduction in their carbon footprint.

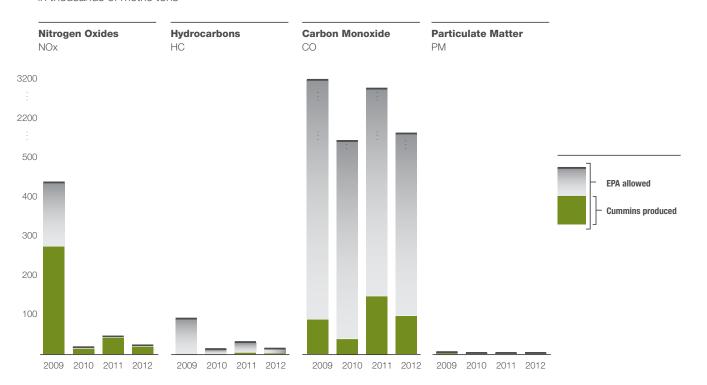
### **PRODUCT EMISSIONS**

The on-highway charts for North America compare the estimated maximum allowable emissions by U.S. EPA standards and Cummins' estimate of engine emissions for the past three years. Estimates are based on the number of engines, both heavy-duty and midrange, manufactured in the United States for on-highway use per year.

The figures in the off-highway charts are based on the number of midrange, heavy-duty and high-horsepower engines produced to EPA standards for non-road uses.

### **AUTOMOTIVE (ON-HIGHWAY) USEFUL LIFE EMISSIONS TOTAL**

in thousands of metric tons



**Particulate Matter** 

PM

### **NON-ROAD USEFUL LIFE EMISSIONS TOTAL**

**Carbon Monoxide** 

in thousands of metric tons

**Nitrogen Oxides** 

+ Hydrocarbons

### NOx + HC 500 200 400 62 150 300 100 200 50 100 2009 2010 2011 2012 2009 2010 2011 2012 2010 2011 2012 2009

### **DIESEL ENGINE VOLUMES**

in thousands

**Automotive** Non-road (On-highway)

High Horsepower

Heavy-Duty

MidRange

2009

2010

2012

2009

2010

2011

# **Early to market for ISX15 and stationary diesel generators**

Cummins' technical leadership was clearly on display in 2012 when the Company's ISX15 engine and the entire range of Cummins Power Generation's stationary high horsepower diesel generators met U.S. EPA regulations a year or more early.

The ISX15 was the first engine to receive U.S. Environmental Protection Agency (EPA) certification for new greenhouse gas and fuel efficiency rules for on-highway engines that take effect in 2014.

The stationary diesel generators, meanwhile, received the EPA's certification for the current 4i emission standards and qualify under the stricter Tier 4 Final requirements for off-highway engines that don't go into effect until 2015.

"I am delighted to announce that our Tier 4 interim certified generator sets are Tier 4 Final ready and fully capable of meeting the most exacting EPA requirements three years ahead of schedule," said Tony Satterthwaite, President of the Power Generation Business and a Cummins Vice President.

The generator sets range from 680 to 2,750 kilowatts (kW), and include the industry-leading Mission Critical 2500 kW diesel generator set.

The ISX15 is the top-selling engine in the North American heavy-duty truck market. It will deliver higher levels of fuel efficiency and reliability in 2013. Efficiency improvements to the base engine include optimized combustion and high-efficiency water, fuel and lube pump systems.

Cummins' products were early to market outside the United States, too.

In September 2012, Cummins unveiled the Company's next generation of diesel and natural gas engines meeting Euro 6 emissions standards. Euro 6 is Europe's most stringent emissions standard to date, applying to all new vehicles starting in January 2014. The Euro 6 regulation is closely aligned with the U.S. EPA's 2013 standards.

"The Euro 6 engines build on the technology and experience from EPA 2010, enabling us to develop near-zero emission products with the best possible fuel efficiency, running costs and durability," said Neil Pattison, Director – Automotive Engine Business for Europe, the Middle East and Africa.

Cummins' stationary generators met federal emissions regulations three years early.



## **New London buses celebrate** the past, look to the future

Passengers travelling between the borough of Hackney and historic Victoria Station over the past year have gotten a glimpse of the greener future of London's iconic bus system.

A new bus inspired by the original doubledecker Routemasters and powered by a Cummins ISBe 4.5-litre engine, has carried locals and visitors using state-of-the-art hybrid technology.

Cummins engineers worked closely with Wrightbus in Northern Ireland, which won a contract in 2009 to build prototypes in keeping with London Mayor Boris Johnson's vision of a city bus inspired by the Routemasters but with features befitting the 21st Century.

Wrightbus is expected to build 600 of the new buses over the next four years, representing the largest order of hybrid buses ever placed in Europe.

The Cummins engine is connected to a Siemens hybrid transmission. The engine drives a generator which supplies energy to a lithium-phosphate battery pack, which in turn provides electrical current for new electric drive motors.

Regenerative braking feeds otherwise wasted kinetic energy back into the battery pack from the electric motors. The end result is the most environmentally friendly bus of its kind, improving air quality and reducing carbon emissions.

"Cummins is pleased to work with Wrightbus and Transport for London on this exciting project," said Neil Pattison, Director -Automotive Engine Business for Europe, the Middle East and Africa. "We are able to provide a solution which delivers benefits for vehicle operations and the environment."

Cummins' ISBe 4.5-litre engine also powers Alexander Dennis' Enviro 400 double-deck hybrid buses. Supported by the UK Green Bus Fund promoting low carbon buses, there are over 400 units in service in London and other major U.K. cities.

This new prototype bus celebrates the iconic Routemaster buses in London but includes many green features including Cummins engines.



# **Cummins innovates to reduce global waste footprint**

In Fridley, Minn., Cummins is making significant strides to reduce production waste thanks in part to a partnership with Rise, Inc. The local not-for-profit helps create job opportunities for people who have employment barriers.

The Rise employees work on a variety of tasks including the plant's recycling efforts, which have increased significantly in recent years. Along with other steps, Cummins Power Generation in 2012 eliminated 34 percent of the solid waste that had been going to landfills – an annual cost savings of \$28,000.

The initiative is just one of many innovative ways Cummins facilities around the world are reducing, reusing and recycling the solid waste the Company produces.

The most comprehensive study to date of waste handling at Cummins showed that nearly 90 percent of the waste the

Company generated, or just over 155,000 metric tons, was recycled in 2011. Cummins continued at that rate in 2012.

"Partners such as Rise along with the dedication and expertise of Cummins employees are the reason we've made significant improvements in our global waste footprint in a relatively short period of time," said Ernie Smith, Corporate Environmental Manager for Cummins.

"However, there is still much to be done and it will require innovation, creative partnerships and most importantly, a widespread commitment to avoid waste in all aspects of our operations," he said.

The 2011 analysis showed that about 60 percent of the Company's waste profile was iron and steel. Wood, used primarily in crates and pallets, accounted for about 14 percent and general refuse and cardboard each made up about 9 percent.

Reducing Cummins' global waste footprint requires a focused effort from many functions within the business. Engineering teams, for example, are working on design improvements to reduce the amount of scrap metal produced through machining and stamping operations.

Joshua Williams (left) and Matthew Kopacek (right) are two of the workers from Rise, Inc. helping Cummins Power Generation significantly reduce the amount of waste it sends to landfills in the Minneapolis area.



Cummins' purchasing staff is developing sustainable packaging guidelines that are intended to encourage suppliers to minimize the amount of packaging materials used for incoming products.

And office employees for several years have been working to reduce the amount of paper they use, while increasing recycling.

"Our focus on waste reduction is driven by our Environmental Management System (page 51) and has been embraced by our suppliers, customers and communities around the world," Smith said. "As a result, we have collaborated to achieve considerable benefits by way of cost savings, increased productivity and reduced environmental impacts."

Three Cummins plants have achieved "zero-disposal" status while others are nearing that accomplishment. Cummins defines a zero-disposal site as a facility

that reuses or recycles all byproducts in a useful manner, leaving nothing to be disposed of by landfill or incineration.

The three zero-disposal sites are:

- » The Jamestown (N.Y.) Engine Plant
- » The Darlington (U.K.) Engine Plant
- » The Cummins Filtration Plant in Quimper, France.

The Company considers technologies that burn waste to create energy as a viable disposal option only after reuse and management opportunities have been explored and the waste material contains an appropriate energy value.

Ultimately, Cummins' goal is to reduce the environmental impacts associated with waste generation, so the management method used for a given waste stream is intended to minimize those impacts. Employees at the Columbus Engine Plant are known for their efforts to reduce waste sent to landfills. In 2012, they extended that effort by sponsoring a day when they asked Columbus, Ind. residents to drop off in the plant parking lot items like refrigerators, televisions and other items that individuals can find hard to recycle.



### **ENVIRONMENTAL SUSTAINABILITY // PRACTICES**

Cummins pursues environmental sustainability through its products, practices and partnerships. This report now takes an in-depth look at the Company's practices to promote good environmental stewardship.

### **Practices**

Cummins is committed to practicing good environmental stewardship in keeping with the Company's mission that "everything we do leads to a cleaner, healthier, safer environment."

Cummins is constantly looking for ways to shrink the Company's environmental footprint and has established a new committee to develop a comprehensive plan with specific goals (page 65).

In Company facilities, environmental management efforts are focused on the three main areas articulated in Cummins' Corporate Environmental Policy:

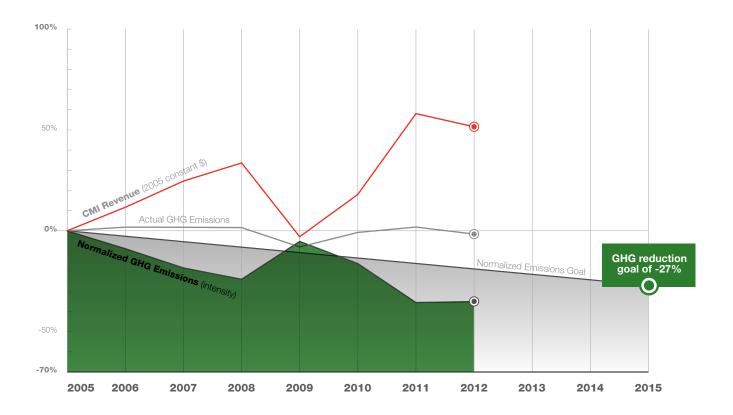
- » Compliance
- » Pollution prevention
- » Resource conservation

Cummins Enterprise Environmental Management System (EMS) has been the primary driver for environmental footprint reductions and other improvements in Cummins facilities since its inception in 2003 and the global deployment that followed.

The Company adopted an innovative model, deploying 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.

One way Cummins' energy leaders save energy is by eliminating inappropriate uses of expensive compressed air and optimizing the efficiency of compressed air systems.





Cummins' EMS conforms to and goes beyond the ISO 14001 international environmental standards.

In 2006, the Company set its first formal greenhouse gas (GHG) reduction goal: a 25 percent GHG intensity reduction between 2005 and 2010 based on Cummins' comprehensive GHG emissions footprint. The focus on energy and greenhouse gas represented the first Company-wide initiative of its kind targeting a specific set of environmental impacts around the globe.

Cummins' emerging eco-efficiency strategy involves improved target-setting in key focus areas, the development of tools to support site-level efforts and scorecards to track progress against objectives.

Here's a look at what Cummins did in 2012 to reduce energy use and its impact on the air, land and water:

### AIR, ENERGY AND CLIMATE CHANGE

Cummins is a partner in the U.S. Department of Energy's (DOE) Better Buildings, Better Plants Challenge, which is the industrial component of the Better Buildings Challenge. The challenge is a national leadership initiative that calls on chief executive officers, university presidents, and state and local leaders to significantly reduce energy use and share the results of their energy reduction strategies.

The goal of the Better Buildings Challenge is to make American commercial and industrial buildings at least 20 percent more energy efficient by 2020. As a partner, Cummins has committed to a 25 percent energy efficiency intensity reduction from 2005 to 2015, which equates to a 27 percent greenhouse gas (GHG) reduction.

This GHG figure differs from the Company's previously announced goal of 40 percent

Cummins is committed to reducing greenhouse gas emissions by 27 percent (adjusted for revenue) between 2005 and 2015. Cummins sold an Ohio light-duty filtration facility where the Company had eliminated a potent GHG in 2008 so the 2015 goal has been adjusted.



due to the sale of a business in which the Company had significantly eliminated GHG. The business, and its associated GHG reduction, was removed from Cummins' 2005 baseline inventory, consistent with accepted GHG inventory accounting, and therefore from the Company's 2015 goal accounting.

In 2012, global absolute energy consumption at Cummins dropped by 2 percent compared to 2011, and greenhouse gas emissions fell by just over 3 percent. During the same time period, the Company's global energy intensity (total energy/total revenue) increased by almost 2 percent and GHG emissions intensity (total GHG/total revenue) increased by about 1 percent.

Cummins has a comprehensive investment plan designed to achieve the Company's 2015 energy and GHG intensity goals.

Cummins is focusing its efforts in four areas:

### » Improve existing facilities:

Cummins has reduced the energy intensity of the Company's facilities by almost 34 percent from 2005 to 2012 by targeting high-return opportunities. Additional improvements will be more difficult and expensive to implement. Cummins has allocated \$20.7 million in capital over 2013-2015 to install sub meters, expand control systems, and upgrade or replace inefficient equipment.

» Recover test energy: In 2012, the Company's energy use and GHG footprint improvements were offset somewhat by increased product development testing. This trend will accelerate as Cummins launches high horsepower development programs. To mitigate this impact, the Company has allocated \$19.3 million from 2013 to 2015 to install test cell energy recovery systems at tech centers and manufacturing plants.

- » New construction: Cummins uses the most stringent locally applicable codes, green building certifications, and ASHRAE 189.1 as the design basis for its new construction. By using this approach with Cummins' Global Building Standards, the Company expects to improve its new construction energy impact through 2015 by 21 percent over what Cummins would have built just meeting local building codes.
- » **Energy management:** Cummins continues to drive site-level energy efficiency through the Company's Energy Champions program. Energy Champions and Energy Leaders are trained to find low and no cost energy improvements at their sites. Cummins has launched pilot projects to meet ISO 50001 international energy standards at three sites globally (a fourth is planned in 2014), with a North Carolina plant piloting the U.S. Department of Energy's Superior Energy Performance program.

Together, these efforts are projected to reduce GHG emissions by 187,000 metric tons of CO<sub>2</sub>e (carbon dioxide equivalent) per year and reduce energy costs by nearly \$16 million per year.

Outstanding energy efficiency performance is recognized through the Cummins energy awards program. Twenty-eight projects entered the 2012 program from nine countries. Eight additional projects were recognized as best practices, ranging from improvements in handling compressed air to implementing geothermal energy systems.

### **LAND**

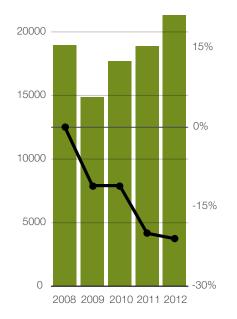
In 2011, Cummins comprehensively characterized and evaluated its global waste footprint. The Company's waste management strategy focuses on reducing waste, increasing recycling rates and aggressively avoiding disposal as a management method.

Cummins is looking for continued improvements in waste management through its supply chain. Packaging waste is a key target because it represents approximately 25 percent of the Company's overall waste footprint. Cummins is establishing formal packaging guidelines

### **Total disposed waste**

in metric tons





2008 2009 2010 2011 2012	18,964 MT 14,892 MT 17,708 MT 18,879 MT 21,325 MT	_	Total disposed waste Disposed waste normalized to labor hours
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<sup>\*</sup> Distribution Business Unit waste included only in 2012 totals.

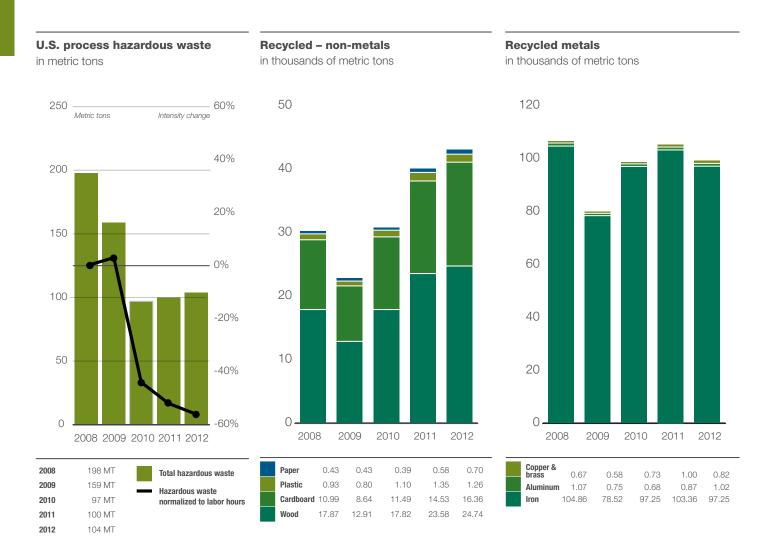
and working with internal and external suppliers to both "right size" packaging and promote reusable and recyclable materials.

Scrap metal is another area of focus, encompassing 55 percent of the waste Cummins generated in 2012. The Company's manufacturing and engineering groups are exploring opportunities to improve the efficiency of Cummins' machining and stamping operations.

Using 2008 as a base year, Cummins disposal increased by about 12 percent in absolute terms, while experiencing a 21 percent reduction in disposal intensity, normalized to labor hours over the same reporting period. Cummins continued an almost 90 percent recycling rate.

The Distribution Business Unit waste numbers are included in 2012, but not prior years.

Cummins has reduced process hazardous waste generation in the United States by about 48 percent, on an absolute basis, since 2008. In 2012, Cummins reduced labor-normalized process derived hazardous waste by 56 percent from 2008 levels.



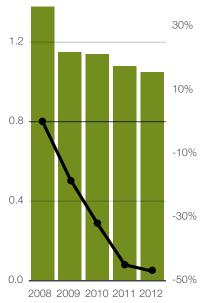
This substantial reduction was achieved through a multi-faceted effort that included product substitutions, improved waste segregation, improved inventory management and increased efficiency in painting operations. Several facilities, for example, have successfully replaced solvent-based paints with waterbased paints.

Cummins has completed multiple projects to redesign manufacturing processes, improve waste segregation and increase employee engagement and supplier partnerships to reduce waste.

### **Total water withdrawn**

in billion gallons





2008	1.38 B	Total water use
2009	1.15 B	Water withdrawn
2010	1.14 B	normalized
2011	1.08 B	to labor hours
2012	1.05 B	

### **WATER**

Water continues to be a global priority for both environmental and social sustainability. The world is recognizing that water is vital to food production, sanitation, power generation, raw materials processing, manufacturing, transportation systems, and more. Cummins continues to develop programs that navigate the complexities and challenges unique to water management.

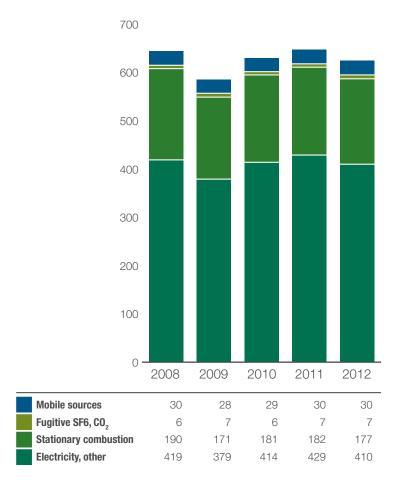
Cummins puts a priority on analyzing metrics that help the Company make data-based decisions. Cummins uses a 2008 baseline for manufacturing sites and was expanded to use Distribution Business Unit (DBU) water use metrics in 2009.

In 2012, the Company once again reduced both total water use and water use normalized to labor hours, by approximately 3.5 percent and 2 percent, respectively. Over the past five years, Cummins' total water use reduction is approximately 24 percent on an absolute basis or 47 percent normalized to labor hours over that period.

To sustain this success, Cummins facilities continue to use tools that include conducting facility water balances (a formal exercise that defines water intakes, uses, and discharges) and water scorecards combining both leading and lagging metrics. During the past year, the Company also developed a method to help sites evaluate their water efficiency compared to their peers.

#### **Total GHG emissions**

in thousands of metric tons CO<sub>2</sub>e



### U.S. and Non-U.S. GHG emissions

in thousands of metric tons CO,e

		2008	2009	2010	2011	2012
DIRECT	U.S.	115	114	112	115	111
	Non-U.S.	81	63	75	74	73
INDIRECT	U.S.	312	278	293	300	279
	Non-U.S.	107	101	121	129	131

Using key operating metrics such as plant population, square footage, and type of operations (such as office, heavy manufacturing, light manufacturing, or testing), Cummins is better able to understand its greatest internal opportunities for both improvement and benchmarking.

The Company has developed a water strategy consisting of four key components: conservation, business risk, community engagement and supply chain.

Cummins' water efforts go well beyond a conservation focus. In 2011, the Company conducted a global risk screen, leading to water source assessments at Cummins' highest priority sites located in both India and Mexico, two regions that face water scarcity challenges. Community efforts have promoted water efficiency in Wuxi, China, and water supply development in Manjarsumbha Village, India.

Cummins is engaged in several key projects that will further develop the Company's water management efforts by:

- » Performing water assessments at 31 select facilities to better define specific water conservation and water risk mitigation opportunities.
- » Embedding water risk management considerations throughout business processes including site selection, building construction, manufacturing process selection and supplier management.
- » Developing processes for aligning the Company's water management programs with specific community needs, focused on water scarce areas.

### **HEALTH, SAFETY** AND ENVIRONMENTAL **MANAGEMENT SYSTEM**

Cummins has integrated health and safety processes and procedures with the environment in accordance with OHSAS Safety Management Standard Integration to create the Enterprise Health, Safety and Environmental Management System (HSEMS).

By the end of 2012, the Company's independent auditor certified 82 entities, representing 131 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.

Beginning in 2013, by incorporating practices and procedures into the HSEMS to meet the new ISO 50001 Energy Management Standard, Cummins will deliver a common global approach and make energy efficiency standard practice across the Company.

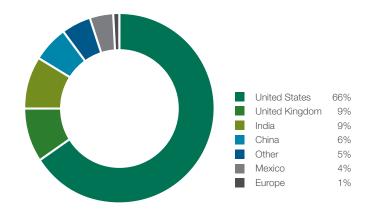
Broad objectives and targets are set at the corporate level to establish direction for critical corporate initiatives. Cummins' business units and sites then build upon them to establish site-specific objectives that align with Company priorities but address site-specific needs and challenges.

In 2011, environmental improvements as a result of specifically-set objectives and targets completed totaled \$14.5 million.

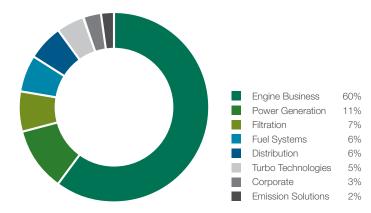
As the Company's HSEMS continues to mature, Cummins has aligned its efforts along key resource areas including greenhouse gases, water and waste. These focus areas drive specific activities such as:

- » Water balances: Sites developed a water balance to identify key uses and discharges of water.
- » Waste inventories: Sites developed comprehensive waste inventories to help minimize waste disposal by reducing, reusing and recycling.
- » Energy: Cummins leveraged the HSEMS to ensure sites make energy and GHG reduction a priority.





### **Cummins GHG emissions by business**



### FOR THE RECORD

Cummins tries to be as transparent as possible about its environmental record. Over the past year, the Company had a significant spill in China and inadvertently installed some air handling equipment at its plant in Seymour, Ind., that did not conform precisely to the permit then in effect. Here is more on both cases:

### **Chongqing spill**

The Chongqing Cummins Engine Co. Ltd. (CCEC) in Chongqing, China, released an estimated 3,000 to 3,500 gallons of untreated wastewater into the Fenghuang Xi stream in March 2012. Upon discovering the release from a wastewater treatment tank, plant officials immediately closed a valve that was identified as the source, plugged rainwater outfalls at each transfer station on the site with cement and cleaned up the spill.

The Company will pay about a \$30,000 fine in addition to cleanup and restoration costs. While the pathway associated with the wastewater treatment system has been effectively eliminated, Cummins has increased training at the site to ensure personnel in key roles understand the plant's potential environmental impact and how to avoid problems.

### Seymour permit

Cummins announced in October 2012 that it paid an \$11,250 fine to the state of Indiana because of the technical non-conformance of a new air-handling unit and other equipment at the Company's Seymour (Ind.) Engine Plant. The equipment installed at the plant as part of a \$219 million expansion did not precisely conform to what was described in the Company's air permit request.

Upon discovery of the discrepancy, Cummins notified the Indiana Department of Environmental Management to inform the agency of the issue as well as the measures taken to avoid reoccurrence of the problem. Those measures included broadening the site's environmental leadership team. Cummins has also obtained the proper permits for the equipment.

### **AUDITOR CERTIFICATION PROGRAM**

Environmental goals are measured through a structured audit process. A third party auditor, Bureau Veritas Certification (BVC), certifies the Company's enterprise system and the data Cummins collects.

Cummins supplements the audit sampling conducted by BVC by conducting annual audits using internally trained auditors.

Every site is audited on an annual basis.

Since the launch of the Company's internal auditor certification program in 2006, more than 140 HSE and other leaders have been trained. Of those, 69 have been certified as Lead Auditors after successfully completing a series of audits as a team member and as an audit leader. This structured audit program validates performance and provides a mechanism for HSE auditors to share best practices.

## HEALTH, SAFETY AND ENVIRONMENT AWARDS

In 2005, Cummins created the Health, Safety and Environment Awards to recognize employees and sites that excel in the commitment to world class performance and environmental stewardship.

Winners of the 2012 awards presented their projects to the Cummins Board of Directors and participated in an exhibition that provided an opportunity for others in the Company to duplicate these best practices.

The growing number and quality of the projects demonstrates that Cummins employees embrace and celebrate environmental stewardship.

## Mexico plants making wise use of water

Water can be scarce in certain regions of Mexico, but Cummins plants in the country have implemented a variety of initiatives to use the resource wisely.

At Cummins New and ReCon Parts in San Luis Potosí, plant officials are monitoring soil moisture in green areas to create efficient irrigation methods.

They harvest rainwater from a cistern with a capacity of 3,612 cubic meters. Meanwhile, 17,000 square meters of grass were replaced with native vegetation that consumes less water.

The plant has also been experimenting with a gel that looks like grains of sugar that can absorb and retain water, reducing the need for irrigation in green areas by as much as 50 percent.

These steps and others are making a difference in the plant's water consumption.

"In 2009, water used for irrigation was 47 percent of our total consumption," said Edna Espinoza, Environmental Engineer at the facility. "In 2012, irrigation was only 25 percent."

She said since July 2012, the plant has been able to limit the water it uses for irrigation to what it collects from the cistern and the plant's waste water treatment plant, saving the equivalent of 10 Olympic-sized swimming pools per year.

Meanwhile, the Fuel Systems plant at Juárez has established a greenhouse that is irrigated with recycled water from the production line after it passes through a treatment plant.

"The trees at the greenhouse are eventually donated to parks, schools and other local institutions," said Ariana Silva, an employee at the plant.

About 20 employees created the greenhouse, which was inaugurated in 2012 by Ray Amlung, Vice President and General Manager of Fuel Systems, and his leadership team.

Cummins' Fuel Systems plant at Juárez, Mexico has established a greenhouse that is irrigated with recycled water from the production line after it passes through a treatment plant.



# Practicing environmental stewardship around the world

Rebuilding high horsepower engines is an inherently "green" activity, potentially tripling the life of an engine.
The Distribution Business Unit's High Horsepower Master Rebuild Center in Dubai, however, doesn't stop there in practicing good environmental stewardship.

Cummins built its Middle East headquarters in Dubai in 2010 and achieved LEED gold certification in 2012 when it finished the Rebuild Center next door – the two are connected by a bridge. Among its many environmentally sensitive features, the complex has its own wastewater treatment plant where oil, fuel and water are separated and water is re-circulated for engine washing.

"We knew green buildings were important to Cummins and to the environmental challenges of Dubai, and we wanted to make our new rebuild center a model of resource conservation in the free zone," said Rachid Ouenniche, Managing Director

of Cummins Distribution Business in the Middle Fast.

The new complex is just one example of how Cummins Distribution Business, which sells and distributes Cummins-branded products and services all over the world, is working to shrink its environmental footprint.

In Sydney, Australia, for example, the Wetherill Park distributor won the best energy efficiency project in Cummins' annual environmental awards competition in 2012. The distributor reduced its electricity use by 44 percent and greenhouse gas (GHG) emissions by 47 percent. The distributor implemented facility-wide improvements

An engine rebuild is a manufacturing process that includes the complete disassembly, cleaning, inspection and replacing of major components of an engine. Cummins does high horsepower engine rebuilds at its Middle East center.





including a solar array with LCD displays to keep employees informed of the electricity generated each day as well as cumulative totals.

New lighting not only saved the site money, it also increased employee satisfaction as the lighting levels increased 70 percent with less reliance on portable lighting.

In Mt. Gambier, Australia, Distribution employees used the opportunity to replace a nearly 30-year old facility to develop a new branch that would reduce energy and water consumption, prevent pollution and enhance safety.

The new facility features a solar-powered hot water heater, rainwater harvesting, an environmentally friendly septic system, a system to capture any spills that might occur on the site and safer storage of shop oils and coolants. It also has improved lighting and a better waste separation and handling facility. Electricity use and CO<sub>2</sub> emissions have been reduced by 83 percent and total water use has dropped 52 percent.

After Cummins increased its ownership in Cummins Central Power in the United States, which covers Nebraska, Iowa, South Dakota, Kansas, Missouri, and Illinois, the distributor wasted no time in joining the Company's energy efficiency

efforts. It has implemented lighting upgrades in five branches using Cummins Central Energy Efficiency Fund, increasing employee engagement and satisfaction significantly.

Cummins environmental leaders are encouraged by what's happening because they believe it demonstrates that the Company's mission "that everything we do leads to a cleaner, healthier, safer environment" is being embraced by Cummins employees around the world.

That's certainly true at the complex in Dubai. It is one of the few sites in the sprawling Jebel Ali free trade zone that has received gold certification from LEED (Leadership in Energy and Environmental Design), one of the most recognized seals of approval for energy efficient buildings in the world.

The Cummins complex includes such things as a delivery door that quickly opens and closes to keep cooler air from escaping, reducing energy consumption, and an automated parts and component cleaning tank with a reservoir that enables the cleaning chemical and rinse water to be used over and over. Water conservation is a key issue, according to Ouenniche.

"Dubai is a very water stressed area," he said, "and we often say that water here is even more precious than oil." The Cummins Middle East headquarters complex is one of the few sites in the Jebel Ali free trade zone in Dubai that has received gold certification from LEED (Leadership in Energy and Environmental Design).

# Strategic approach to energy saves millions for Jamestown, N.Y., plant

Major infrastructure upgrades can be very capital intensive, and the Jamestown Engine Plant (JEP) in Western New York hadn't seen many over the last 40 years. All that changed in 2012, however, including the plant's approach to energy use.

The Jamestown Engine
Plant has taken a strategic
approach to energy efficiency
that combines infrastructure
upgrades like a new roof
with specific energy
efficiency improvements.

A "deep energy retrofit" project is underway at the nearly one million square foot facility as part of a corporate-wide commitment to improving energy efficiency. The project combines a suite of energy conservation measures and necessary infrastructure upgrades to achieve significant energy savings and optimal systems performance for the entire facility.

Cummins is showcasing the four-year, \$23.8 million project as part of the

Company's participation in the Department of Energy's Better Buildings, Better Plants Challenge. The Challenge provides technical assistance to commercial and industrial building owners.

The Company anticipates the energy savings from just the energy efficiency-measures in the project will be more than 61 billion BTUs, which translates into about \$604,000 in annual savings.



When all factors are taken into account, the \$3.3 million of the project specifically for energy efficiency is expected to pay for itself in about four years. Nearly half of the project's overall cost went towards a new roof with improved thermal insulation.

Cummins acquired the Jamestown Engine Plant in 1974, though the facility dates back to 1968. Much of the original base infrastructure within the plant remains. This includes three large gas-fired steam boilers, related distribution piping, 26 large heating and ventilating units, 29 dock heaters and five snow melt systems.

"This equipment has become unreliable, incurring significant repair costs and operational interruptions," said Randy Myers, facilities manager for JEP. "Putting energy efficiency upgrades on older equipment would not have given us the best results. We believe implementing a phased, whole building energy and infrastructure improvement project is our best investment."

Prior to the project, the plant partnered with Duke Energy One and Mazza Energy Conservation Services to complete a thorough site assessment. The most significant uses of energy were primarily facility based and included air handlers, air conditioning systems, ventilation systems, exhaust fans, dock heaters, and steam users. Other pieces of equipment were also evaluated.

The energy efficiency components of the project include heating and cooling upgrades, compressed air optimization and controls upgrades. Steam is being almost



entirely eliminated, replaced by direct fired gas units. A few localized manufacturing processes, however, will require three small steam generators to meet limited local variable demand.

The Jamestown plant is very actively engaged in other projects in keeping with Cummins' environmental mission. The plant was the first Cummins site to achieve zero disposal status (no waste disposed in a landfill), a significant accomplishment. JEP's water projects include controlling water run-off, eliminating all ground contamination and enhancing wastewater treatment effectiveness before the water goes to the sewer district.

New cooling equipment will be installed, saving about 4 million gallons of water annually. The plant has moved to use more environmentally friendly chemicals and a tree planting initiative is achieving both site beautification and carbon capture. Officials did a site assessment to determine the plant's most significant uses of energy. Air handlers was one big user, so the plant installed four new, more efficient air handlers in 2012.

### ENVIRONMENTAL SUSTAINABILITY // PARTNERSHIPS

Cummins pursues environmental sustainability through its products, practices and partnerships. Now this report takes an in-depth look at how the Company partners with other groups to protect the environment.

## **Partnerships and policy**

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. Here's a look at just a few examples:

### **GLOBAL ENERGY POLICY**

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.

These principles were put into action during the development of the first-ever greenhouse gas (GHG) and fuel efficiency standards for heavy-duty and medium-duty vehicles in the United States. Cummins was very active in the development of the rule for more than four years. The Company formed a stakeholder group with other companies in the industry, wrote a regulatory framework white paper, supported the rule

publicly when it was proposed and provided extensive feedback during the comment period.

The rule was finalized in August 2011, with new standards that take effect for engines and vehicles starting in 2014. In October 2012, Cummins announced it was the first manufacturer to receive U.S. EPA certification for the new GHG engine standards, one year earlier than required.

Even as regulators and industry are in the early stages of implementing the new standards, known as Phase 1, work has already begun on the Phase 2 rule. Cummins is once again taking an active role in helping to develop the regulation.

The Company is collaborating with a variety of stakeholders to develop a comprehensive framework of complementary engine and vehicle regulations building upon the solid foundation of the Phase 1 rule while recognizing GHG and fuel efficiency benefits from technologies not considered by the first rule.



Cummins' environmental sustainability principles shape the Company's actions not only in the United States, but around the world. Cummins participates in the Global Commercial Vehicle Industry Forum, a group of European, North American and Japanese manufacturers of heavy-duty vehicles and engines. At the group's 10th meeting in Tokyo in late 2012, key topics included regulatory harmonization, GHG reductions and fuel efficiency improvements.

Cummins is also becoming more involved in GHG and fuel efficiency regulatory development in Europe, China and other regions of the world. The Company has dedicated resources to focus specifically on the policies involving GHG and fuel efficiency regulations for the Company's products around the world.

This will help better coordinate the Company's global activities in developing responsible regulations that promote technologies for more efficient products with lower GHG emissions.

### RESEARCH AND DEVELOPMENT **COLLABORATION**

Cummins continues to build upon its longstanding partnerships with the U.S. Department of Energy (DOE) and other federal and state agencies to develop advances in product energy efficiency.

Previous Cummins programs with the DOE and others have led to both evolutionary and breakthrough technologies and analytical approaches, speeding up the time for commercialization of vehicles and power systems based on advanced combustion engines and emission control technologies.

The Company's current public-private projects involving DOE, except where noted, include:

- » The SuperTruck initiative (page 26), which demonstrates the power in integrating breakthrough engine efficiency improvements with Class 8 truck design improvements, including advanced aerodynamics. During testing in 2012, the concept truck recorded a more than 60 percent gain in freight efficiency, an important metric in the transportation industry.
- » The ATLAS (Advanced Technology Light Automotive Systems) project, whose goal is to develop a new light-duty diesel that achieves at least a 40 percent fuel economy improvement over a gasoline V8 engine that the diesel engine could possibly replace.
- » CHP, a joint Cummins Power Generation/ Engine Business program, is delivering a packaged natural gas based Combined Heat and Power system for commercial and light industrial applications, achieving more than 80 percent combined efficiency.
- » ARES (Advanced Reciprocating Engine Systems) is a multifaceted research program Cummins is part of that involves engine manufacturers, research laboratories, universities and the government. The program is closing in on its final phase of maximum engine efficiency and low emissions from natural gas reciprocating engines for power generation.

» The Ultra-Low Carbon Powertrain program, a partnership with the California Energy Commission, supports Cummins development of a downsized mediumduty engine/powertrain optimized for E85 ethanol. The project target is a 50 percent GHG emissions reduction compared to a diesel-powered baseline vehicle.

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 and exhaust catalysis fundamentals, biofuels and more.

#### **GOVERNMENT RELATIONS**

The Company's Government Relations staff continues to advocate globally for products and technologies that benefit the environment. These include fuel efficient generators, combined heat and power systems and natural gas engines.

Cummins is also active in efforts to remove barriers to remanufacturing and remanufactured goods globally.

In the United States, the Company is leading a coalition whose aim is to secure continued funding for the Diesel Emissions Reduction Act (DERA), which provides grants or loans to assist local governments and others in purchasing diesel-powered engines to meet more stringent emission standards or install emission reduction systems.

# Collaborating with customers for better performance

Since 2004, Cummins has collaborated with its end user truck fleet customers on 94 customer-focused Six Sigma projects, which saved 88 million gallons of fuel and avoided 888,336 tons of CO<sub>2</sub> emissions. That's equivalent to taking 185,000 cars off the road. Here are a few other ways the Company engages our customers to improve performance.

### FUEL ECONOMY REFERENCE LIBRARY TOOLS

Customers can access information describing the best fuel economy configuration for electronic parameters, transmission, tires and other factors.

### **FLEET MANAGEMENT**

Fleet managers can analyze engine data for variations between drivers or trucks, looking for trends that can aid driver coaching.

# GREATER FUEL ECONOMY: DRIVER ASSISTANCE

Cummins' electronic features encourage drivers to maintain fuel efficient habits.

Smart Torque minimizes the down shifts required to maintain speed.

## GREATER FUEL ECONOMY: ENGINE FINE-TUNING

Greater fuel economy
through advanced integration
with the vehicle, with increased
communication between
systems for maximum
fuel economy.

### POWERSPEC

Helps customers specify the correct vehicle and electronic parameters using inputs such as vehicle weight and engine type to determine proper axle and transmission configuration.

## SCIENCE AND TECHNOLOGY ADVISORY COUNCIL

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 the Company 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 the specific topics being addressed by the Council 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 of 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 with respect to safety, as well as environmental and technological matters that significantly impact the Company or its products.
- » Progress of strategic environmental programs and policies.

### **ACADEMIC PARTNERSHIPS**

Cummins partners with hundreds of universities around the world to assist the Company with research and development.

For example, the Massachusetts Institute of Technology's Environmentally Benign Manufacturing Group is investigating how Cummins uses energy to make and manufacture engine components.

Specifically, the university is looking at the energy used to manufacture different camshaft designs to understand just how much design decisions can affect energy use. The steps taken in this process will be used to create a design-for-low-energy methodology, complete with Life Cycle Assessment tools for designers to use to make energy-conscious decisions during the first stages of engine design.

### **AMERICAN ENERGY INNOVATION COUNCIL**

In 2010, then Cummins Chairman and CEO Tim Solso joined several key U.S. business leaders serving as founding members on the American Energy Innovation Council, a group advocating for development of clean energy to boost the nation's economic competitiveness. Other members included Microsoft founder Bill Gates and Jeff Immelt. Chairman and CEO of General Electric.

Current Chairman and CEO Tom Linebarger has continued Cummins' leadership role in this group. Cummins, like AEIC, believes that government and business working together to address technological leadership, energy security, economic prosperity and environmental protection is the most effective way to ensure mutual success.

Recent staff case studies involved topics such as unconventional gas production and advanced diesel engines. Another case study interviewed Cummins' Dr. John Wall, Vice President and Chief Technical Officer, among more than a dozen research and development leaders at innovative companies. The goal of the study was to learn how innovationdriven businesses structure their research and development operations and what government can do to make a public policy environment that is favorable to long-term investments in research and development by private firms. The URL is http://www. americanenergyinnovation.org.

Cummins also sits on the President's Council of Resources for the Future, the Clean Air Act Advisory Council, and the North American Council for Freight Efficiency.

#### 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 eight years, the Company has participated in the Carbon Disclosure Project (CDP), 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.

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.

Cummins has been a regular contributor to the Roundtable's annual sustainability report, including the 2013 report "Doing Well by Doing Good."

# Fleet reduces global warming with natural gas engines

Indiana's largest beer and wine distributor announced in 2012 it will convert 85 percent of its heavy-duty truck fleet to Cummins Westport engines fueled by compressed natural gas.



Monarch Beverage CEO Phil Terry announces his company will convert most of its fleet of trucks to compressed natural gas engines from Cummins Westport. The large inflatable globe in the background represents one ton of carbon dioxide (CO<sub>2</sub>). The move will save 1,500 tons per year.

The Monarch Beverage Company is partnering with Cummins and several other companies on the project, which will include an on-site compressed natural gas fueling station.

"As a family-owned Hoosier company, we are excited to partner with such innovative companies to strengthen the presence of compressed natural gas powered vehicles in Indiana," said Phil Terry, CEO at Monarch Beverage.

The decision puts Monarch on the leading edge of the movement in the United States toward truck fleets fueled by compressed

natural gas. The natural gas option is especially attractive to local and regional companies whose trucks return home at the end of the work day where they can be refueled.

Monarch, which serves parts of Indiana, Ohio, Illinois and Kentucky, expects to have 100 trucks fueled by natural gas, reducing its consumption of diesel fuel by 800,000 gallons annually and its fuel expense by more than 60 percent.

"This partnership demonstrates our commitment to the communities we serve and our commitment to creating a cleaner, healthier and safer environment," said Jim Arthurs, President, Cummins Westport Inc.

The December, 2012 announcement was made at Monarch's gleaming distribution center on the eastside of Indianapolis. A two-story inflatable globe stood to the side of the stage representing one ton of carbon dioxide (CO<sub>2</sub>), a key contributor to global warming.

Monarch estimates the transition to natural gas engines will reduce the CO<sub>2</sub> emitted into the atmosphere by 1,500 tons per year.

# Charting a plan for environmental sustainability

Work is underway to integrate the Company's many independent environmental initiatives into a coherent global plan for environmental sustainability.

The Action Committee for Environmental (ACES) Sustainability involves all businesses, all functions and all locations at Cummins. The committee evaluated the Company's impact on the environment and is defining a global strategy to reduce Cummins' environmental footprint.

"Environmental work is embraced by many functions at Cummins, but there is much more that can and should be done," said Brian C. Mormino, Executive Director -Environmental Strategy and Compliance.

Cummins has the ability and global reach to make a significant impact on improving the environment. The Company sells more than 1 million engines a year around the world and has almost 6 million in operation today.

Cummins' employees, meanwhile, have a passion for the environment and want to make a difference at work, at home and in their communities.

Beyond the societal benefits, there is a clear business case for environmental sustainability at Cummins. By helping customers save on fuel, for example, the Company helps customers save money. By reducing Cummins' own use of energy and its production of waste, the Company reduces its expenses.

"Our sustainability as a business is tied to environmental sustainability," Mormino said. "In a very real sense, our business is the environment."

The ACES team is divided into six Environmental Stakeholder Areas to ensure that all aspects of the environment and relevant areas of the business are included and coordinated. The first three areas address the Company's greatest opportunities across product lifecycle, while the others play a key role in establishing an environmental stewardship mindset.

The environmental stakeholder areas are:

- » Supply Chain
- » Customers / In-Use Products
- » Design for Environment
- » Business and Technology Strategy
- » Employee and Community Engagement
- » External Communications and Marketing

Each area will establish its own goals and a high-level roadmap that will collectively be Cummins' Global Environmental Sustainability Plan. Cummins will publish those goals in next year's Sustainability Report.



Foundational to the Action Committee for Environmental Sustainability's work is Cummins' 10 Environmental Sustainability Principles. The principles cover everything from advocacy to community engagement and technology. To see all the principles, go to page 59.

# **Building stronger communities** in record numbers

Cummins employees invested a record number of hours in building stronger communities around the world in 2012, living the Company's Corporate Responsibility Value to "serve and improve the communities in which we live."

More than 27,000 Cummins employees worked on community service projects in 2012, a 68 percent increase over the 16,472 employees who participated in 2011.

Employees worked more than 221,000 hours on community involvement activities in 2012, an increase of about 90,000 hours over the 130,000 hours logged building stronger communities in 2011. That's about a 70 percent increase over the year before.

"Cummins has long been committed to strengthening our communities," said Gwen Langley, Director – Global Community Engagement. "It's extremely gratifying to see our employees living this core value in such a meaningful way around the world."

For more than 50 years, Cummins has believed building stronger communities helps build stronger markets for the Company's products, dating back to Cummins' visionary CEO J. Irwin Miller, who helped Dr. Martin Luther King, Jr., organize the 1963 March on Washington.

But seldom has there been a year like 2012, not just in terms of the hours invested by Cummins employees, but also in the breadth and depth of the community projects they worked on. Here are just a few:

» In India, employees celebrated Cummins' 50th anniversary in the country by launching an environmental education campaign designed to reach 75,000 school children.

To celebrate the Company's 50th anniversary in India, Cummins India employees launched an environmental education effort to reach 75.000 children.





- » Employees in China achieved a major milestone with their multi-year campaign to donate books to rural Chinese libraries, reaching 80,000 books distributed to more than 90 libraries around the country.
- » In Southern Indiana, around 600 employees participated in a week-long Habitat for Humanity "building blitz" to build 10 homes for families displaced by massive tornadoes earlier in the year.

"I've been a Cummins employee for over 30 years; I've always been proud of that fact, but never more than I am standing here today," said Jeff Caldwell, the Company's General Manager – Global Pickup / Van Business, speaking at a ceremony marking the end of the Habitat build in Henryville, Ind.

### **EMPLOYEE ENGAGEMENT**

The Company carries out most of its community involvement work through a global network of more than 200 employeeled Community Involvement Teams (CITs). Under Cummins' Every Employee Every Community (EEEC) program, the Company pays for employees to work on community

projects for at least four hours per year. Employees can work more on Company time with the permission of their supervisor.

Cummins strongly believes that a vigorous employee engagement program in addition to building stronger business markets, also helps attract and retain the kind of workers Cummins needs to be successful.

The Company encourages employees to focus their efforts on three global priority areas where Cummins believes they can especially add knowledge, skills and passion:

- » Education
- » Environment
- » Social justice / equality of opportunity

For each of the past four years, the Company has sponsored Cummins' Environmental Challenge where CITs compete as they address environmental concerns in their communities. They submit projects for formal judging to be recognized as one of the Company's 15 best of the year.

More than 600 Cummins employees participated in a Habitat for Humanity "building blitz" in Henryville, Ind., in 2012 to build 10 homes in a week for families displaced by tornadoes earlier in the year.

### **Corporate Responsibility POINTS OF INNOVATION**

- » Employees set EEEC participation record (page 66).
- » New global vocational education initiative begins (page 70).
- » Challenge tops GHG record (page 71).

### **TRANSITIONS**

Jean Blackwell, who started at Cummins in 1997 and served in several roles including Chief Financial Officer, announced her retirement in 2013 as the Company's Executive Vice President of Corporate Responsibility and Chief Executive Officer of The Cummins Foundation.

Blackwell led Cummins' Corporate Responsibility efforts since 2008 and the size and scope of the program grew significantly during those years, especially globally. The Company's community involvement efforts also became more closely aligned to the business under Blackwell's leadership, and she strengthened the department's ties with all of Cummins' business units.

She was replaced by Mark Levett, who since 1999 served as Cummins' General Manager and Vice President – High Horsepower. Levett's new title is Vice President – Corporate Responsibility and Community Relations and CEO of The Cummins Foundation. He joined the Company in 1973.

Jean Blackwell, then Cummins' Executive Vice President of Corporate Responsibility and Chief Executive Officer of The Cummins Foundation, talks to Principal Zheng Hong at the Dandelion School outside Beijing, China. The school focuses on migrant children. During a 2010 visit, Blackwell toured the former factory that is the school's home. Blackwell retired from Cummins in 2013.



The Challenge was once again a huge success in 2012, drawing more than 100 entries from Cummins employees in 19 countries (page 71). The 15 winners each received a \$10,000 grant from The Cummins Foundation for the charitable community partner of their choice.

### **UNITED WAY**

Despite the sluggish economy, 2012 was also a record year for Cummins' participation in the United Way.

Cummins employees pledged a record \$2.66 million in 2012, a 6 percent increase over 2011 when the previous record was set with employees giving \$2.51 million.

The Cummins Foundation matches pledges dollar for dollar, so social service organizations in the communities where Cummins employees live and work received a total of \$5.32 million in 2012. More than 9,000 employees participated.

The United Way allows contributors to designate their funds to specific qualifying programs, so in many cases employees were able to direct their donations to activities they worked on through the Company's EEEC program.

While the United Way program mostly involves the United States, Cummins has started matching gift programs outside the country.

In 2011 and 2012, Cummins launched matching gift programs in India, China and parts of the Asia Pacific region and plans are in place to add others in the next 12 to 18 months.

Through voluntary payroll deductions, Cummins employees in these regions are able to support local non-profits whose causes are meaningful to them.

## SIGNIFICANT PARTNERSHIPS / PHILANTHROPY

Cummins continued to financially support several significant partnerships in 2012-2013, addressing a range of concerns.

The Minneapolis-based Courage Center, for example, helps those with brain and spinal cord injuries and developmental disabilities. Cummins Power Generation employees in Fridley, Minn., have long volunteered their time to adapt toys and household devices for the center's clients.

Cummins Power Generation is working to expand the assistive technology program globally, establishing partnerships with agencies like the Courage Center in the United Kingdom and China.

The Company also continues financial support for the Cummins College of Engineering for Women in Pune and Nagpur, India (page 80). As its name would imply, the college serves women who have long been under-represented in the field of engineering.

Cummins supports these initiatives and others through its businesses as well as The Cummins Foundation and related foundations such as the Cummins India Foundation (page 88).

In 2012, Cummins invested more than \$30.7 million in its corporate responsibility efforts, including \$14.1 million to The Cummins Foundation, one of the oldest corporate foundations in the United States.

Dollars, however, have never been a central part of Cummins' corporate responsibility focus. Financial donations are used to support initiatives where Cummins' employees are already actively involved.

Cummins employees in South Africa conduct a cleanup project.



### **UPDATE:**

# TEC program addresses skills deficit around the world

People have traveled to the Moroccan city of Casablanca for centuries looking to make a new start. For 112 students, that journey could begin in September 2013 at a vocational education program sponsored in part by Cummins.

Cummins is partnering with the OFPPT (Office de la Formation Professionnelle et de la Promotion du Travail) to open a vocational education program in Casablanca, Morocco, in 2013. The organization sponsors vocational education in the country.

The OFPPT's (Office de la Formation Professionnelle et de la Promotion du Travail) Center for Transport is one of the first school partners in TEC: Technical Education for Communities.

TEC is a Cummins initiative to increase access to good jobs through vocational education, teaching industry-relevant skills such as bus and truck maintenance, which are in high demand in North Africa.

"One of the goals of TEC is to test different approaches to technical education so we can share what we learn," said Mary Chandler, Cummins' Director of Global Strategic Programs.

The TEC program started in 2012 when Cummins recognized that a lack of employable skills is a key barrier to success for many people and the communities in which they live. In addition to the Center for Transport in Morocco, there are now TEC programs operating in China and India.

All TEC programs include effective teachers and trainers, career guidance and a curriculum that meets labor market needs, combining workplace learning with classroom learning. Forging partnerships with business, government and community organizations is also critical to TEC's success.

In 2013, TEC will continue in Morocco, China and India as well as other new global locations, testing a variety of approaches and identifying best practices prior to recommending a global approach to community technical education.



# **Environmental Challenge** is a global success

Cummins' 4th Environmental Challenge produced another year of impressive results in 2012, as employees put their skills to work reducing traffic, planting trees, increasing recycling and much more.

Under the Challenge, the Company's more than 200 Community Involvement Teams (CITs) compete to develop one of the 15 best environmental projects of the year. More than 100 entries were submitted from 19 countries in the 2012 competition. Participation increased 20 percent over 2011 to 12,000 employees. The 2012 Challenge reduced greenhouse gas (GHG) emissions by an estimated 4,300 tons a new record.

Each of the 15 winning CITs received a \$10,000 grant from The Cummins Foundation to be awarded to the charitable partner of their choice. Three projects received special recognition in the 2012 Challenge. Here are their stories:



#### **TAMING PUNE'S TRAFFIC**

Pune. India

Cummins India employees in Pune are well aware of the congestion along Karve Road. The road is one of the main approaches to the Company's facilities in the city and

can be jammed with cars, buses, trucks, motorcycles, motorized rickshaws and bicycles, too.

Employees, however, didn't just complain about the 148,000 vehicles that pass along the road each day. They put their data analysis and problem-solving skills to work to make the situation better.

"Traffic congestion is a huge problem in Pune," said Navdeep Singh, who led a team of more than 200 employees working to improve the flow of traffic. "Apart from the mental stress, traffic congestion creates a lot of air pollution. And this stretch of Karve Road was also recommended by Pune Traffic Police because of its heavy volume of traffic."

The project focused on five traffic signals along a 1.3 kilometer stretch of Karve Road. Employees from six Cummins entities participated in the initiative: The Automotive Business Unit, the Cummins Research and Technology Institute, Cummins Turbo Technologies, Cummins Industrial Engine Business Unit, Cummins Emission Solutions and the Distribution Business Unit.

Employees worked in partnership with Janwani, a non-governmental organization



Cummins India's Navdeep Singh, center, captures video of traffic on Karve Road. He led a team of more than 200 Cummins employees working to improve the flow of traffic.

devoted to community improvement and sustainable growth in Pune, as well as the Pune Traffic Police and the Pune Municipal Corporation.

Pune is one of the fastest growing cities in India with a population of about 5 million in the metropolitan area. Many multi-national corporations have established operations in the area to tap into Pune's highly educated workforce. However, some key thoroughfares are centuries old and were never designed for the volume of traffic that exists today.

The team concluded that there are four main causes to traffic congestion along Karve Road:

- » Bunching of vehicles traveling at different speeds
- » A lack of driver discipline
- » Too many vehicles
- » The lack of coordinated traffic signals

The team determined that in the short term, the only area it could affect was traffic signal management. Team members believed if the signals were coordinated, there was an opportunity to reduce congestion, GHG emissions and fuel could be saved, too.

They designed a methodology to evaluate the stretch of Karve Road and began

collecting data via videos taken in the morning, mid-day and during the evening on selected days of the week. One hundred and forty employees took 68 videos in three weeks, investing more than 600 Every Employee Every Community (EEEC) hours on the initiative.

Seventy engineers then analyzed the videos and derived more than 3,000 timing readings that were evaluated to determine the best settings for the traffic signals. The signals were adjusted according to the analysis for conditions in the morning, evening and weekends.

Traffic now flows more smoothly through the targeted stretch of Karve Road. The team estimates more than 200,000 kilograms of GHG emissions will be avoided annually and nearly \$150,000 in fuel will be saved each year based on today's fuel prices.

The team also believes there will be fewer accidents and less stress among those who travel Karve Road. Pune Traffic Police agree and are now in the process of using the same tool to address traffic congestion in other parts of the city.

That's a pretty good return on the team's capital investment of around \$300. Leaders of the project believe the work they did can be easily replicated not just in Pune but around India.

"The techniques we developed require very little capital," said Singh, who works in Cummins' Automotive Business Unit, "and the technique can be replicated in any part of the country."



#### **RATS, OWLS AND RECYCLING**

Johannesburg, South Africa

Cummins South Africa employees decided it was not enough merely to increase recycling in Alexandra Township, an informal settlement near Johannesburg, South Africa, not far from the Company's offices in Kelvin.

To really address Alexandra's problems, they had to look for ways to reduce the area's population of rats – some the size of small cats.

And the best way to control the rat population, they concluded, was to encourage the growth of the owl population, a natural predator but long considered a symbol of bad luck in South Africa.

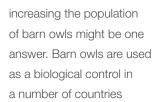
That's how what started as a fairly straightforward Environmental Challenge project to promote recycling became an effort to change people's beliefs and behaviors, not just about trash, but about owls, too.

"Now the owl has come to the rescue of Alexandra residents, surpassing traditional methods of solving the rat infestation," said Kholofelo Nthane, Project Co-Leader and Environmental Community Involvement Team (CIT) Leader for Cummins South Africa.

Alexandra's rat problem has been attributed to the illegal dumping of solid waste in the community. Alexandra is home to approximately 500,000 people, but its infrastructure was never designed for a population of that size. The rat population exploded, presenting both a physical threat to residents and spreading disease.

Believing that education is the key to change, employees decided to partner with the Ithute Primary School in Alexandra. From the outset, they wanted to address the community's trash and rodent problems in a sustainable way, without putting students or teachers at risk.

Their research led them to look at whether



Cummins South Africa employees helped start eco kids clubs to help raise awareness about environmental issues and installed a nesting house for owls on a school.



# ENVIRONMENTAL CHALLENGE BY THE NUMBERS

Cummins' Environmental
Challenge was first held
in 2009 to celebrate the
Company's 90th anniversary.
Here's a look at a few key
numbers from the competition.

30,000

Employee hours in the 2012 Environmental Challenge

200,000

Total employee hours since the first Environmental Challenge was held in 2009

4,300

Estimated tons of greenhouse gas emissions reduced in the 2012 Environmental Challenge

9,147

Estimated tons of greenhouse gas emissions reduced since the Environmental Challenge was first held in 2009

19

Participating countries in 2012

including Malaysia, Israel, the United States and other parts of South Africa.

Adult owls can eat four to six rats per day. Eight adults in one family can consume just over 1,000 rats per month. And they can reduce that population without using poisons that might harm people.

Cummins partnered with the Owl Foundation to build a nesting box for owls on top of the school. Then, they set about addressing the cultural issues involved in the program.

"Many regard owls as evil, so we had to introduce the children to the harmless nature of owls and their purpose to reduce rodents," said Ally Dhlamini, Project Co-Leader.

The Owl Foundation and Cummins South Africa employees gave Ithute students an eco-centric view of owls and their niche in the food chain while being careful not to dismiss anyone's cultural beliefs.

As part of this education effort, an art competition was held where students drew or painted pictures of owls. Members of the Kelvin CIT were assigned to different classes to help, and the winning class was recognized with a trophy.

To improve waste management, employees implemented a recycling program at Ithute. Cummins employees assisted with the delivery and set up of recycling bins in various colors to separate glass and tin, plastic, paper and cardboard and organic material.

Employees also worked with the school's environmental teachers and the Abilities

Projects Management Corporation, a professional environmental management company that the CIT had worked with before, to establish eco kids clubs at the school.

The clubs are intended to create, educate and support green initiatives in the community. Eco clubs run by students were established for every grade. They will put together an environmental plan for the community that will be submitted to the CIT for possible collaborations.

Though there is much work ahead to eradicate the trash and rat problems, both employees and Alexandra residents say after years of struggle, there's finally cause for optimism.



#### **CREATING AN URBAN OASIS**

Guarulhos, Brazil

The Cummins campus in Guarulhos, Brazil, is near several major highways and São Paulo's international airport. Traffic in the area is frequently bumper-to-bumper.

Green space is limited.

But over the past three years, nearly 800 Cummins employees have planted some 5,000 trees in the area. Not only has their work helped beautify the city, the air is cleaner, dust has been reduced and temperatures are down in some areas.

"When we communicated that we were planning an activity to plant trees, the engagement of our employees was just amazing because we understand that this



generates not just environmental and social benefits, but contributes to improving the quality of life for our community," said Ligia Almeida, Community Involvement Team Leader for the Guarulhos campus and a project team member.

The tree-planting effort started in 2010 when employees at the Cummins campus formed a partnership with local municipal officials and the Environmental Department of Guarulhos. Through this partnership, employees planted 2,100 trees near the Cummins campus.

The following year, the partnership grew when an environmental education component was added, reaching more than 400 local school children. Some 400 employees also planted 2,000 more trees throughout the city.

Then, in 2012, the project, led by Cummins employees Alexandre Balista and Priscila Papazissis, added yet another dimension. Nine hundred and fifty more trees were planted, and the employees, together with the Environmental Department of Guarulhos, determined key areas of the city in which to plant in order to produce the greatest environmental impact.

"Planting trees provides other benefits, such as air purification, noise reduction,

softening the force of winds that provide habitats for birds, protecting groundwater, increasing air humidity, providing shade and serving as a dust barrier," Almeida said.

Guarulhos has two major parks, Parque Estadual da Cantareira and the Parque Ecológico Tietê, located on opposite edges of the city. As the areas around the parks became more urbanized, the park ecosystems became isolated and vulnerable.

The Cummins project sought to ease the migration of wildlife and rejoin the flora by creating an ecological corridor, or "eco-aisle," between the two parks. More than 300 employees helped form this eco-aisle, which officials believe is already starting to have a positive impact.

Temperatures were taken in the areas with new trees and compared with historical data on those sites. The research showed, on average, temperatures were about 8 degrees cooler in the shaded areas.

Employees say they feel like they are making a difference.

"We feel proud about the transformation that we, as Cummins employees, are making in our community," Almeida said.

Cummins employees in Brazil have planted 5,000 trees to help improve the environment in Guarulhos, Brazil.





Cummins employees
remove underbrush and
create gardens to make a
safer environment for students
at The Poona School and
Home for Blind Girls (left,
center). The project also
included improvements in
energy and water conservation.

## 2012 Environmental Challenge winning projects

#### "CATCH THEM YOUNG" ENVIRONMENTAL EDUCATION CAMPAIGN Pune, India

To commemorate Cummins' 50 years in India, this environmental education campaign raised awareness among 75,000 students on the importance of preserving the environment.

#### EMISSIONS REDUCTION THROUGH TRAFFIC SIGNAL MANAGEMENT Pune, India

Cummins employees designed and implemented a traffic signal management system to reduce vehicular emissions and traffic congestion.

#### BALANCED ECOSYSTEM AT THE POONA SCHOOL AND HOME FOR BLIND GIRLS Pune, India

Cummins employees created a safer environment for students at The Poona School and Home for Blind Girls through improvements in energy and water conservation.

### ECOSYSTEM AT BARREN HILLS Pune, India

Cummins employees offset carbon by developing and sustaining an ecosystem to promote biodiversity, water and soil conservation and forest fire prevention.

#### INNOVATIVE APPROACH FOR POPULAR AGRICULTURAL SEGMENT Phaltan, India

Employees reduced the adverse environmental impact of sugar cane cultivation by educating farmers on sustainable practices.

#### MANJARSUMBHA VILLAGE WATER MANAGEMENT PROJECT Ahmednagar, India

Cummins employees established a permanent solution to ensure the sustained availability of water for drinking and irrigation in an Indian village.

#### DANDELION ECO SCHOOL Beijing, China

Employees reduced Dandelion School's energy consumption to reduce operational expenses and improve student living conditions.





#### ORGANIC CULTURE, SERVING COMMUNITY Chengdu, China

Cummins employees taught village residents organic agriculture, established a garbage sorting system and developed environmental education activities for village children.

#### **ENVIRONMENTAL STORY BOOKS AND LITERACY PROGRAM** Johannesburg, South Africa

Employees developed books in English and Zulu to educate students on water conservation, air pollution and environmental protection.

#### ITHUTE RECYCLING PROJECT AND OWL BOXES Johannesburg, South Africa

Employees established student eco clubs, implemented a recycling program and erected an owl box to combat a rat infestation.

#### SAMBURU WATER PAN PROJECT Nairobi, Kenya

This project harvested rainwater through water pans in the arid Samburu area, benefiting 12,000 people.

### WATERWAY RESTORATION PROJECT Nashville, Tenn.

This project restored a local waterway after flooding caused several hundred choke points in the river.

#### ECO CLUBS San Luis Potosí, Mexico

Employees created eco clubs in the area and introduced sustainable activities to raise awareness about the importance of environmental stewardship.

#### REFORESTATION AT CERRO SAN JUAN DE GUADALUPE San Luis Potosí, Mexico

After wildfires in 2011, employees planted trees to restore the ecosystem and promote water conservation and CO<sub>2</sub> absorption.

#### GREEN ISLAND AND ECO-AISLE PROJECT Guarulhos, Brazil

Employees created an "ecological aisle" to connect two major urban parks.

Employees at Cummins Filtration (above) in San Luis Potosí, Mexico, worked to strengthen and develop eco clubs to sponsor environmental activities in the area. The effort started with a goal of establishing five school-based clubs, but the idea was so popular that 14 were created and another was started at the University de San Pablo.

# Hope blossoms at the Dandelion School

Housed in an abandoned factory in the suburbs of Beijing, the Dandelion School is the only middle school in the city created specifically for children from low-income migrant families moving to Beijing to find work.

> But with crumbling plumbing and heating systems, and outdated electrical wiring, this beacon of hope has been a real challenge to keep going.

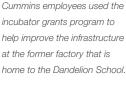
Then, employees at Cummins Emission Solutions (CES) in Beijing became involved. Using a new Corporate Responsibility incubator grants program, they tackled some of the school's structural problems and today the future is much brighter.

"Dandelion is helping needy children change their lives, but they face so many challenges," said CES project leader Hans Han. "Cummins has a responsibility to help, in whatever way we can."

Families from impoverished regions in rural China are often forced to leave all that is familiar in search of work in the nearest city. In many cases, they are small farmers made obsolete by modern farming practices.

Often, their children's schooling suffers because of higher education costs in the city.

The Dandelion School was established in 2005, charging only a nominal fee for tuition and boarding to help as many families as possible. Its operating budget has barely covered yearly expenses.







The CES Community Involvement Team (CIT) partnered with the school to apply for a grant from The Cummins Foundation's newly created Incubator Grants Program. Launched in 2012, the program supports employee-led community environmental projects in two categories: energy efficiency and water conservation, protection and access.

Incubator grants provide start-up funds to help nurture innovative and high-potential Corporate Responsibility projects. Emphasis is placed on projects that can be scaled or replicated and that apply technology to solve environmental problems. The CES project with Dandelion was the first recipient of an incubator grant.

Members of Cummins' Health, Safety and Environment team visited the school and put together a water and energy report. Together with the CIT, they studied water and electricity use to find areas for improvement and created a plan to reduce waste.

One hundred and eighty employees spent a total of 720 hours working to improve conditions. With the grant support, the team developed a system, installed underneath downspouts at the school, to collect, filter and re-use rainwater. Waste water can also be collected and treated by the equipment, with the purified water being used on gardens at the school.

The team also improved the insulation and lighting at the school, resulting in a 20 percent decline in energy consumption in addition to 20 percent more efficient use of water. The project's success led to it being named one of 15 winners in Cummins' 2012 Environmental Challenge.

"At Dandelion, we believe that education nurtures a child's character, which ultimately makes the world a better place," said school Principal Zheng Hong. "Thanks to the improvements in our school's energy consumption and educational training for our students, Cummins will help us see benefits for years to come."

Students line up at the Dandelion School, the only middle school in Beijing, China, created specifically for children from low-income migrant families.

# **Coalition for progress**

Cummins strongly believes that leadership engagement is a crucial factor in the success of community improvement projects, particularly those that aim to have a high impact with sustainable goals.

One success story in the Company's headquarters community has become a model for three other Cummins cities across the country.

The Community Education Coalition (CEC) in Columbus, Ind., is a nationally recognized partnership of education, business and community leaders focused on aligning and integrating the region's community learning systems with economic growth and a high quality of life. The CEC is a nonprofit organization founded in 1997, in part with Cummins' help.

The Company and its leaders have a long history of collaborating with the CEC, both

from a funding and an advisory capacity. Vice President Pamela Carter, President of the Distribution Business Unit, currently serves on the coalition's Board of Directors. Mark Gerstle, the recently retired Vice President of Community Relations, also serves on the board and played an integral role in furthering the goals of the CEC during his 25-year career at Cummins.

"Cummins is pleased to be a partner in this important work as we strive to bolster our educational systems in the region," said Mark Levett, Vice President of Corporate Responsibility and Community Relations and current Board member of the CEC. "I'm particularly proud of the active roles Cummins leaders are taking in this initiative, since their engagement is critical to our corporate responsibility efforts."

The coalition has tackled a wide variety of education initiatives, from improving pre-school education to upgrading higher education opportunities in the Columbus area in Southern Indiana.

One such undertaking is the iGrad program, a collaborative approach in the community to improving high school graduation rates in Bartholomew County. The program pairs students at risk of dropping out with

Cummins employee Jim Burke tutors a student at East High School in Columbus, Ind. as part of the iGrad program sponsored by the Community Education Coalition to improve high school graduation rates.





Karen Pence, the wife of Indiana Gov. Mike Pence, tours the Busy Bees Academy in April 2013, another project supported by the Community Education Coalition in Columbus, Ind.

concerned adults. iGrad's goal is reaching a 100 percent graduation rate by 2017.

Many Cummins employees are participating in the program including Jim Burke, Power Cylinder Team Leader at the Company. He has served as a mentor and tutor in the program since the beginning of 2013.

"I did a lot of coaching and school activities as my four children were growing up," Burke said. "I enjoyed that interaction, so this program struck a chord with me."

Once a week, he meets with his student at East High School and together they review her homework problems and quizzes and discuss any questions she has. "I'm happy that Cummins has given me the opportunity to do something I like that also helps the community," he said.

Initially, the CEC focused on the development of two-year, four-year and master's degree programs that better aligned with the needs of the business community in fields such as business, nursing, computer technology, mechanical engineering and education. Over time, the coalition has focused on bringing together educators and industry leaders

to develop a shared vision and define community and regional needs.

The CEC also worked to build the Advanced Manufacturing Center of Excellence (AMCE) in Columbus. It is part of a network of integrated technology labs and associated programs to update and improve manufacturing education. Cummins helped fund the construction of the building and has also worked to support the establishment of a bachelor's degree in mechanical engineering that is offered at the AMCE through Indiana University Purdue University Columbus.

"Our community and region is very fortunate to have Cummins as a partner working to develop a regional system of learning," said John Burnett, Chief Executive Officer of the Community Education Coalition. "Members of the Cummins leadership team have been actively engaged and worked tirelessly to develop the Community Education Coalition in partnership with other key businesses, educators and community leaders."

The CEC's success has led to the start of similar programs in Rocky Mount, N.C., Jamestown, N.Y., and Seymour, Ind. Cummins' involvement in these efforts is spearheaded by local leaders committed to making a difference in the communities where they live and work.

#### **CEC AT A GLANCE**

The Community Education Coalition supports a number of pre-K through 12th grade initiatives, as well as several post-secondary programs. Here are just a few:

## **PRE-K THROUGH** 12TH GRADE:

- » Busy Bees Academy Takes a unique approach to education by preparing children of all backgrounds who are socially, emotionally and cognitively ready for kindergarten.
- » Dream It. Do It. Advanced manufacturing, science and technology career outreach.

#### **POST-SECONDARY:**

- » Columbus Learning Center -130,000 square foot facility shared by Indiana University-Purdue University Columbus and three other educational institutions. The center serves more than 7,000 students.
- » Health Education Network -Partnership of two career technical education centers. seven hospitals and five post-secondary institutions to expand degree programs to address a shortage of certified nurses.

## **UPDATE:**

# Students take a path less traveled

Some students at the Cummins College of Engineering for Women (CCEW) in India have found a new way to test their skills: off-road endurance racing.

Team Blitz is made up of students at the college in Pune that has long been supported by Cummins to help increase the number of women in engineering. The team designed and built an off-road vehicle and in 2013 became the first CCEW team to compete in the Baja Society of Automotive Engineers (SAE) India competition.

"During my first year at CCEW, I came across an episode of the television program 'Overdrive' about the Baja event held in Pithampur," said Team Captain Mrunal Sawant. "I had no prior knowledge about it, so I began researching and learned that the

first requirement to participate was to create an SAE chapter at the college."

Sawant worked with a classmate to create the SAE chapter and the off-road team soon followed. Team Blitz, which now consists of 25 women, spent a year studying and preparing for the event and then entered the 2013 competition.

Over about three months, they painstakingly built a car to withstand harsh conditions and meet the contest requirements that vehicles be safe, easily transported, easily maintained and have a speed limit of 60 kilometers per hour.

Team Blitz finishes an impressive 13th in the Baja Society of Automotive Engineers India competition.





The CCEW team celebrates its strong showing.

The Baja competition provides budding mechanical engineers the opportunity to showcase their potential as automobile designers. Just getting to the starting line is a major accomplishment. Of the 260 teams that applied to join the event, only 91 survived rigorous inspections and tests that lasted three days.

The vehicles that actually start the race are evaluated for acceleration, speed, climbing inclined roads and maneuverability in addition to endurance over rough terrain.

Forty of those 91 teams ran for the entire three-hour duration of the Baja's Endurance Test. Team Blitz finished an impressive 13th and took second place in the Best Quality competition.

Cummins has been a co-sponsor of the Baja competition for the past five years and Company officials say Team Blitz's

performance was truly impressive. The Baja competition has been getting stronger every year.

"It is remarkable to see the participating teams improve over the years and we are excited to take this event to an international level soon," said Lalitkumar Suryavanshi, of Cummins Turbo Technologies and Joint Convener for SAE Baja 2013.

Paul Sowerby, Chief Technical Officer for the Cummins Area Business Organization in India, was one of the Guests of Honor at the competition. He applauded all the participating teams.

"This is the perfect platform for students to apply the knowledge they have gained through academics in real practical use," he said. "I am pleased to see their performance."

#### **CCEW AT A GLANCE**

Here's a quick look at the Cummins College of Engineering for Women:

#### **HISTORY**

Maharshi Karve Stree Shikshan Samstha (MKSSS) has been a renowned educational institution in India for more than 100 years, dedicated to the "empowerment of women through education." It started an engineering college exclusively for women in 1991. The Cummins India Foundation gave a donation to help start the college, hence the name Cummins College of Engineering for Women.

#### **LOCATION**

CCEW has campuses in Pune and Nagpur, India.

#### **ACADEMICS**

The college offers five undergraduate degree level programs and two post graduate programs in engineering. The CCEW also partners with Purdue University on a fellowship in advanced engineering studies.

#### **MISSION**

"To develop women professionals who are academically and technically sound with strong work ethics and above all good human beings."

# CES puts skills to work designing a better cook stove

Cassie Marion, a Customer Support Excellence Coordinator for Cummins Emission Solutions (CES), had always thought cook stoves that burn wood or other fuels were only used in daily food preparation in extremely remote locations around the world. Then, she became part of a CES competition to build a cleaner stove.

"In reality they are used in towns and cities throughout the world," said Marion, who is based in Columbus, Ind., and is a member of team Nuv Vida Four, one of 27 employee teams that submitted designs in the competition. "So the idea of being part of a project that can improve the lives of millions of people was very enticing."

Marion and the rest of Nuv Vida Four will get to see their stove design built and tested after their team was named one of five competition finalists in April 2013 by CES Vice President and General Manager Srikanth Padmanabhan.

Prototypes will be built using each of the finalists' designs and then tested by the Beijing (China) University of Chemical Technology stove testing center.

One design will be selected to go into production, in partnership with Indiabased Prakti Design, one of the leading stove makers in the world.

Indoor air pollution generated mostly by inefficient and poorly ventilated cook stoves is responsible for the deaths of about 1.6 million people around the globe annually, according to the World Health Organization (WHO).

More than half of these deaths occur among children five or younger, the health organization says. In developing countries with high mortality rates, indoor air pollution ranks fourth among the risk factors that contribute to death and disease.

Cummins Emission Solutions
Cost Analyst David Emmons,
a member of team Boiling
Point, studies one of
Prakti's stoves.





About 170 employees from around the world participated in the Cummins Emission Solutions competition. A team of judges from the Company and Prakti first whittled the 27 designs down to 10, choosing proposals from Cummins teams in Brazil, China, Germany, India, the Netherlands, the United Kingdom and the United States.

Three of the five final teams are from India. The other two come from CES in Marktheidenfeld, Germany, and team Nuv Vida Four from Columbus. The competition is expected to wrap up in mid to late 2013.

Bringing together employees with different backgrounds from across the globe in a business-wide corporate responsibility project was precisely what CES leaders intended when they launched the cook stove design competition in the summer of 2012.

The cook stove issue resonated with CES' 1,400 employees who were surveyed on what would interest them. Project S.T.E.A.M. - Standards, Testing (and design), Education, Application and Monitoring – was soon off and running.

"All of us are aware of the serious health hazards caused by the traditional cook

stoves," said Engineer Isha Vyawahare, a member of team Ignite, another finalist in the competition. Vyawahare works in High Horsepower Engineering at Cummins Research and Technology India in Pune. "We entered this competition as it had a very noble cause, to make this world a better place to live in."

CES leaders believe designing cleaner burning cook stoves closely aligns with the skills of their employees.

"Being a division that produces products that reduce harmful engine emissions around the globe, we felt that it was appropriate that we should focus on the environment," Padmanabhan said in launching the competition.

Prakti CEO Mouhsine Serrar says he hopes Cummins' research and development support will help his company develop the next generation of cook stoves - cleaner, more efficient and durable while still affordable.

"We look forward to working with someone who has some expertise, who can take a fresh view ... of the problem and maybe point to a different approach to achieving our goal," Serrar said.

Prakti Design CEO Mouhsine Serrar talks about his cook stoves at a meeting kicking off the competition that was webcast to Cummins Emission Solutions employees around the world.

## **Born to serve**

Rick Stoner says his work at the international charitable group Save the Children wasn't as different as you might think from his time as a Cummins executive.



In both places, he worked on improving systems, strategic and succession planning and strengthening global collaboration.

"In some ways Cummins' business units are like the different divisions at Save the Children," said Stoner, who retired in October 2012 after 13 years with the child welfare group, most recently as the organization's Senior Vice President – International Programs and Chief Operating Officer. "It's all about working effectively toward a common goal."

Stoner says he frequently drew on what he learned during his more than 20 years at Cummins where he worked in a variety of

positions including as Vice President of Cummins Power Generation Group and Managing Director of Holset Engineering, which later became Cummins Turbo Technologies.

But in many ways, Stoner had been preparing his whole life for his work with Save the Children, where he continues to serve on a volunteer basis.

Stoner is the son of Richard B. Stoner, who was Vice Chairman of the Cummins Board of Directors for 20 years and a close associate of visionary Cummins CEO J. Irwin Miller.

Rick's father and Miller shared a belief in the life-changing power of education and a world view that extended far beyond Indiana's borders. They handed down those beliefs to their own children.

"My dad had a tremendous influence on me," said Stoner, whose father died in 2008. "His values, his sense of fairness and his drive to improve all aspects of community life inspired me."

After graduating from Yale, Stoner joined the Peace Corps, working in Africa. It was an eventful experience for many reasons, among them: he met his wife Elizabeth



Rick Stoner stands outside George's School in Ethiopia, dedicated in 2005 to the memory of longtime Cummins executive George Fauerbach. The school was built with donations from Cummins' executives in honor of their colleague who died in 2002 at age 55.

there. Upon returning home, Stoner went to law school at Harvard and later became an aide to then-U.S. Rep. Lee Hamilton, D-Ind.

Joining Cummins was just about the furthest thing from his mind then. But he was approached about becoming General Manager of the Company's Africa operations based in London. That just happened to be where his wife's family was living after fleeing unrest in Ethiopia in the 1970s.

For the better part of 15 years, Stoner lived in England, serving in a variety of roles including plant manager at the Daventry Engine Plant before becoming Managing Director of Holset.

Eventually, he returned to Columbus, taking on a number of other executive assignments including consolidating Cummins' generator business.

But Stoner never lost his passion for development work or Africa. He became a Cummins executive on loan to Save the Children in 1999. Then in 2001, he officially left the Company and became a full-time employee of the charitable organization.

While Stoner is proud of what he accomplished organizationally at Save the Children, he also takes great pleasure in the schools he helped to start in Africa some replacing mud huts that were serving as many as 120 students in a classroom.

"The children are so motivated to learn," Stoner said.

Stoner made a huge difference during his time at Save the Children, according to Glyn Price, who himself is a former Cummins executive. Stoner was one of Price's supervisors at Cummins and his example inspired Price to join Save the Children, too.

Price was an executive on loan for 18 months until March of 2013 when he retired from Cummins, but stayed on as a volunteer with Save the Children.

"Rick brought an awful lot of business thinking and strategy to the not-for-profit business," said Price. "That's definitely his legacy here."

# **Supporting employee passions and skills through philanthropy**

The Cummins Foundation is one of the oldest corporate foundations in the United States. It has played a critical role in hundreds of initiatives since its inception in 1954.

But giving dollars is not a central component of the Company's Corporate Responsibility program. Cummins wants to use its philanthropy to support employee efforts to use their skills and passions to build stronger communities.

Cummins invested more than \$30.7 million in its corporate responsibility efforts in 2012, including \$14.1 million to The Cummins Foundation. The Foundation, in turn, gave out nearly \$8 million in grants in 2012.

Those grants covered a wide range of activities, from lab equipment for science, technology, engineering and math education in Cookeville, Tenn.; to restoration of the Stamford Mill Stream in Stamford, U.K., to a program that establishes businesses and empowers women in Kenya.

The Foundation focuses primarily on communities where Cummins facilities are located and in support of the Company's

three global priorities: education, the environment and social justice / equality of opportunity.

In 2012, about 65 percent of the Foundation's spending went toward educational initiatives. Social justice and environmental spending accounted for the remaining 35 percent.

In addition, there were grants totaling \$637,990 from a Cummins-supported foundation in India. The Cummins India Foundation, established in 1990, supports higher education, energy, the environment and local infrastructure projects.

Finally, some philanthropic spending is made by individual business units within Cummins – just over \$1.39 million in 2012.

A list of Cummins' larger philanthropic contributions and projects during 2012 is included on the following pages.

Cummins employees in Indianapolis used a grant to improve a playground for one of its community partners – the Concord Neighborhood Center. The improvements included a safer rubberized surface that is now home to a play truck employees built as part of a fundraiser for Habitat for Humanity.



GRANTEE ORGANIZATION	COMMUNITY	GRANT OR DONATION	CUMMINS FOUNDATIONS	CUMMINS INC.
Education				
Jackson County Education Coalition Advanced Manufacturing Lab and planning grant	Seymour, Ind.	\$950,000		
Save the Children Disaster Relief Program Supporting Education in Emergencies	Various	\$250,000		
Phaltan Engineering College Technical Education for Communities (TEC)	Phaltan, India	\$249,744		
Chautauqua County Education Coalition Planning grant	Jamestown, N.Y.	\$235,000		
Community Center J. Irwin Miller Technical Education for Communities (TEC)	São Paulo, Brazil	\$212,000		
Komatsu Cummins Chile Training and operational costs for ReinventaRSE	Quilicura, Chile	\$197,000		
Falconer's Hill Infant School  Design, development and construction of a resource center	Northamptonshire, U.K.	\$187,000		
Maharshi Karve Stree Shikshan Samstha Educational funding for Cummins College of Engineering for Women	Nagpur, India	\$181,818		
Ivy Tech Foundation Graduation Coaches Program	Columbus, Ind.	\$175,000		
Community Education Coalition Early Childhood Education Initiative	Columbus, Ind.	\$125,000		
Ithemba Institute of Technology Implementation of a sustainability plan by supporting operational expenses and safety upgrades	Johannesburg, South Africa	\$125,000		
<b>Education Business Partnership</b> <i>Employability school for young people</i>	Kent, U.K.	\$106,112		
Amherst H. Wilder Foundation Child Development Center and Incredible Years Program	St. Paul, Minn.	\$100,500		
Stoughton High School "Fab Lab" for technical education	Stoughton, Wis.	\$100,000		
The Mind Trust Summer Advantage Program	Seymour, Ind.	\$100,000		
International Youth Foundation TEC Program – Soft skills teacher training at Morocco site	Casablanca, Morocco	\$90,000		
Charleston County School District 4th grade science and environmental education	Charleston, S.C.	\$79,989		
The Library Project, Inc. China Education Initiative	Throughout China	\$79,233		
Strategic Twin-Counties Education Partnership Root cause identification and strategic plan for improving student achievement	Whitakers, N.C.	\$75,000		
Chhindwara Project Sponsorship for Center of Excellence	Chhindwara, India	\$75,264		
ITI Phaltan Technical Education for Communities (TEC)	Phaltan, India	\$61,630		
Kwa-Bhekilange Secondary School Improve mathematics pass rate in grades 8-10	Sandton, South Africa	\$46,500		
SIFE China Provide safety, health and nutritional training to 15 migrant worker schools	Shanghai, China	\$40,635		
Mineral Point Elementary School Safe, eco-friendly and ADA accessible playground	Mineral Point, Wis.	\$37,075		
Putnam County Schools Lab equipment for the STEM Program	Cookeville, Tenn.	\$29,500		

GRANTEE ORGANIZATION	COMMUNITY	GRANT OR DONATION	CUMMINS FOUNDATIONS	CUMMINS INC.
Education – continued				
Rowan Gate Primary School Energy efficiency lighting project	Northamptonshire, U.K.	\$27,000		
Family Nurturing Center Child abuse education and prevention in Northern Kentucky	Florence, Ky.	\$25,000		
Amigos of Costa Rica / Estrategia Siglo XXI Advance science and technology in Costa Rica	Costa Rica	\$25,000		
<b>Ladson Elementary School</b> Greenhouse and outdoor classroom	Ladson, S.C.	\$23,868		
Bartholomew Consolidated School Foundation  Minds on Math	Columbus, Ind.	\$20,000		
<b>Dandelion Middle School</b> Extracurricular programs for students with physical and psychological needs	Beijing, China	\$18,885		
<b>Tennessee Tech University</b> Purchase of generator for mobile learning lab	Cookeville, Tenn.	\$17,000		
<b>Bartholomew Consolidated School Foundation</b> <i>Diversity Awards</i>	Columbus, Ind.	\$15,000		
<b>Bartholomew Consolidated School Foundation</b> Book Buddies Program	Columbus, Ind.	\$15,000		
Bartholomew Consolidated School Corporation Columbus Area Career Connection - Part-time instructor for Engineering Drawing Department	Columbus, Ind.	\$13,000		
Young Enterprise Helping children succeed through entrepreneurship	Sunderland, U.K.	\$10,200		
Bartholomew Consolidated School Corporation Environmental Challenge grant recipient	Columbus, Ind.	\$10,000		
Heritage Fund of Bartholomew County Dave Galle Scholarship Fund	Columbus, Ind.	\$10,000		
Indiana University Lee Hamilton Fellowship Award	Bloomington, Ind.	\$10,000		
Environment				
Columbus Park Foundation Expansion of the People Trails	Columbus, Ind.	\$250,000		
Patronato Pro Regeneración del Parque Juan H. Sanchez A.C. Improve water quality of Parque Morales Boating Lake	San Luis Potosí, Mexico	\$88,000		
Yorkshire Wildlife Trust Renovation of community farm buildings	York, U.K.	\$55,000		
MCCIA Zero Garbage Project	Pune, India	\$40,079		
<b>Dandelion School</b> Eco-School energy and water efficiency improvement projects	Beijing, China	\$38,500		
Friends of Nature Public education and recycling campaign	Beijing, China	\$37,309		
International Association of the Lions Club - Kenya Installation of two water pans in arid Samburu region	Kenya & South Africa	\$35,300		
The Welland Rivers Trust Restoration of Stamford Mill Stream	Stamford, U.K.	\$32,000		
Hands on Nashville Repair flood damaged waterways	Nashville, Tenn.	\$32,000		

GRANTEE ORGANIZATION	COMMUNITY	GRANT OR DONATION	CUMMINS FOUNDATIONS	CUMMINS INC.
Environment – continued				
Global Village of Beijing Solution for household waste and agriculture pollution	Beijing, China	\$24,737		
Global Village of Beijing Environmental Challenge grant recipient	Beijing, China	\$20,000		
Food Bank of Eastern New Mexico Energy efficiency project	Clovis, N.M.	\$17,000		
Housing Partnerships, Inc. Energy efficiency project	Elizabethtown, Ind.	\$12,950		
<b>Durham Wildlife Trust</b> On-site viewing platform and screen made from recycled plastic	Tyne & Wear, U.K.	\$12,250		
City of Elkhart Environmental Challenge grant recipient	Elkhart, Ind.	\$10,000		
Janwani Environmental Challenge grant recipient	Pune, India	\$10,000		
Housing Partnerships, Inc. Environmental Challenge grant recipient	Columbus, Ind.	\$10,000		
Kandu Industries, Inc. Environmental Challenge grant recipient	Janesville, Wis.	\$10,000		
Social Justice United Way Agencies U.S. matching program	United States	\$2,663,692		
Courage Center Elevate Assistive Technology Program	United States  Minneapolis, Minn.	\$2,663,692 \$222,270		
to a national level of prominence  Wuxi Social Welfare Center				
Build seven specialized rooms for children with cerebral palsy	Wuxi, China	\$203,520		
Food Bank of Eastern New Mexico Co-fund purchase of a new refrigerated truck	Clovis, N.M.	\$123,055		
Second Harvest Foodbank of Southern Wisconsin Warehouse efficiency project	Madison, Wis.	\$103,552		
Institución Potosina Pro-Educación Especializada A.C. Vocational training space for people with intellectual disabilities	San Luis Potosí, Mexico	\$75,000		
Harewood Hill Lodge Caregiver short break and day care services for disabled youth	Darlington, U.K.	\$72,050		
CommonBond Communities Electronic document management system	St. Paul, Minn.	\$67,120		
Eastside Community Center Materials to help define and remodel space	Columbus, Ind.	\$50,000		
Habitat for Humanity of Indiana Sponsorship for tornado relief rebuild project	Henryville, Ind.	\$50,000		
CommonBond Communities  Advantage Services - Facilitate additional programs and services to the residents at Norwood Square and Brandes Place	St. Paul, Minn.	\$42,600		
Maharashtra Arogya Mandal-Muktangan Girls Hostel Support vocational training and higher education	Pune, India	\$29,455		
Community Emergency Assistance Program Software licensing, backup and firewall solutions for new computer system	Brooklyn Park, Minn.	\$29,000		

GRANTEE ORGANIZATION	COMMUNITY	GRANT OR DONATION	CUMMINS FOUNDATIONS	CUMMINS INC.
Social Justice – continued				
Asociación Mexicana de Ayuda a Niños AFIC Philanthropic Awards	San Luis Potosí, Mexico	\$26,316		
Gleaners Food Bank of Indiana, Inc. Backsack Program	Walesboro, Ind.	\$25,000		
Backfield in Motion, Inc. Purchase of 15-passenger van	Nashville, Tenn.	\$25,000		
Autism Speaks 2012 Lead Off For A Cure	New York, N.Y.	\$25,000		
The BOMA Fund Establish businesses and empower women in Northern Kenya	Kenya	\$25,000		
<b>Crisis Ministries</b> Funding to support 6 Sigma project and purchase a deep freezer	Charleston, S.C.	\$20,222		
Concord Community Center Increase awareness and visibility of Concord to potential clients and funders	Indianapolis, Ind.	\$20,000		
Gleaners Food Bank of Indiana, Inc. Backsack Program	Seymour, Ind.	\$20,000		
Upper Cumberland Long Term Recovery Committee, Inc. Tornado Relief	Carthage, Tenn.	\$20,000		
Wisconsin Vietnam Veterans Memorial Project Complete a DVD project, roof and building replacement	Neillsville, Wis.	\$20,000		
Ecoficina - Youth at Risk Promote training course using recycled material	São Paulo, Brazil	\$19,400		
<b>Promoción Social Integral, A.C.</b> AFIC Philanthropy Award	San Luis Potosí, Mexico	\$17,409		
<b>Developmental Services, Inc.</b> Purchase and assemble five greenhouses	Columbus, Ind.	\$15,065		
<b>Connected Community Partnership</b> Website services to non-profits in Columbus and Seymour	Columbus, Ind.	\$13,500		
Gleaners Food Bank of Indiana Improve client tracking and reporting of data for Gleaners and nine food pantries	Indianapolis, Ind.	\$13,100		
Secours Populaire Français - Comité de Quimper Improve safety and storage	Quimper, France	\$11,700		
Columbus Area Chamber of Commerce Foundation Support funding for Executive Administrator for CAMEO, CYP and LBC Partnership	Columbus, Ind.	\$10,000		
<b>Columbus Regional Hospital Foundation</b> 17th Annual Reverse Raffle for Volunteers in Medicine	Columbus, Ind.	\$10,000		
CommonBond Communities Environmental Challenge grant recipient	St. Paul, Minn.	\$10,000		
The Poona School and Home for Blind Girls Environmental Challenge grant recipient	Pune, India	\$10,000		
Love Chapel Environmental Challenge grant recipient	Columbus, Ind.	\$10,000		
Sans Souci, Inc. Environmental Challenge grant recipient	Columbus, Ind.	\$10,000		
The Putnam/Overton County Long Term Recovery Committee, Inc. Disaster Relief	Cookeville, Tenn.	\$10,000		

## **Foundation leadership**

## The Cummins Foundation is governed by these officials and committees:

#### **BOARD OF DIRECTORS**

#### **Chairman Tom Linebarger**

Chairman and CEO. Cummins

#### **Director Mark Levett**

Vice President - Corporate Responsibility and Community Relations, Cummins

#### **Director Will Miller**

President - Wallace Foundation Member of Cummins Board of Directors

### **Director Marya Rose**

Vice President and Chief Administrative Officer, Cummins

#### **Director Pat Ward**

Vice President - Chief Financial Officer, Cummins

#### **Director Tony Satterthwaite**

Vice President

President – Power Generation

Business, Cummins

#### **Director Anant Talaulicar**

Vice President

President - Components Group

Chairman - Cummins India

### **Director Rich Freeland**

Vice President

President - Engine Business, Cummins

#### **Director Lisa Yoder**

Vice President - Global Supply Chain and Manufacturing, Cummins

#### **FOUNDATION OFFICERS**

### **Chief Executive Officer Mark Levett**

Vice President - Corporate Responsibility and Community Relations, Cummins

#### Treasurer Marsha Allamanno

Corporate Responsibility Finance Director, Cummins

#### **Secretary Mary Chandler**

Corporate Responsibility Director of Global Strategic Programs, Cummins

#### **AUDIT COMMITTEE**

### **Chair Marsha Hunt**

Vice President – Controller, Cummins

#### **Luther Peters**

Vice President - Internal Audit, Cummins

#### **Karen Battin**

Vice President - Controller, Engine Business, Cummins

### **INVESTMENT COMMITTEE**

#### **Chair Gloria Griesinger**

Executive Director - Global Treasury and Pensions, Cummins

#### **Greg Ehlinger**

Executive Director -

Corporate Development, Cummins

### Rakesh Gangwani

Director - EMEA Corporate Development, Cummins

# Health and safety key to Cummins' sustainability

Building on its record-setting performance in 2011, Cummins improved on several key safety metrics in 2012 while rolling out new initiatives that should enhance safety at the Company in the future.

"I'm very proud of the way so many of our employees made a personal commitment to safety in 2012," said Michelle Garner-Janna, Director – Corporate Health and Safety. "Our long term goal is to achieve world class performance in health and safety. To get to that level, we need to build an interdependent spirit in our organizations where we care about each other's safety as much as we care about our own."

Cummins health and safety leaders went into 2012 knowing it would be hard to top 2011. The Company enjoyed a record year

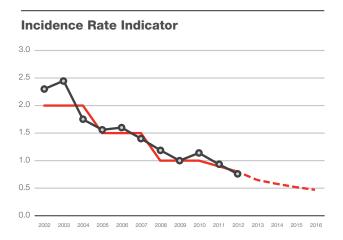
for safety in 2011, meeting all of its targets for key safety metrics for the first time ever.

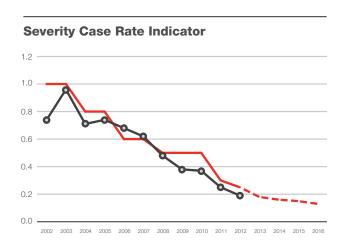
In response, Cummins raised its goals in 2012, but nevertheless managed to meet most of them and record improvements in several key areas, including:

- » A 24 percent reduction in the Severity Case Rate in 2012.
- » A 12 percent drop in the Incidence Rate compared to 2011.
- » A 6 percent improvement in 2012 in the Severity Lost Work Day Rate.

Two key safety metrics, the Incidence Rate Indicator and the Severity Case Rate Indicator, have been falling over the past decade, a sign of the Company's commitment to safety.









"This is reflective of the hard work, commitment and diligence by our health and safety teams and active participation and support of all our employees," said Pramod Palat, Cummins Occupational Safety Director.

Cummins believes strongly that its employees are the Company's most valuable resource and keeping them safe impacts everything from productivity to treatment costs for work related injuries.

The Company's commitment to keeping employees healthy and safe can be seen in the steady reduction in the Incidence Rate and Severity Case Rate at Cummins over the past 10 years. The Incidence Rate, based on recordable injuries and illnesses, dropped 72 percent over that time period while the Severity Case Rate, based on lost-time cases, decreased more than 80 percent since 2003.

"Those numbers reflect both a commitment to safety and to continuous improvement in our safety programs," said Guillermo Castillo, Cummins Corporate Safety Manager.

Cummins initiated several programs during 2012-2013 to improve health and safety. Some are designed to raise awareness about specific safety concerns like the first-ever, Company-wide ergonomics competition (page 98). The competition drew more than 70 entries that collectively saved an estimated \$1.7 million.

Other initiatives were developed by individual business units to make it easier for employees to make health and safety a personal priority such as a web-based reporting tool that employees can use to report safety problems they have identified and fixed (page 100).

Cummins employee Kim Miller safely operates a hoist at the Columbus Engine Plant in Columbus, Ind. The Company's health and safety team in 2012 rolled out a new hoist and crane safety policy and tool kit to guard against accidents.

## Safetv **POINTS OF INNOVATION**

- » Key safety metrics continue falling (page 94).
- » Ergo Challenge saves \$1.7 million (page 98).
- » Team's new web tool makes safety personal (page 100).

The Company also rolled out a new Crane Safety Toolkit and partnered with groups outside Cummins to identify best practices the Company should adopt in the future.

#### **CRANE SAFETY**

At Cummins, hoists and cranes are frequently used to lift heavy objects weighing from a few hundred pounds to several tons.

Sometimes familiarity can breed complacency. Employees may forget that all hoists and cranes should be operated with caution simply because of the potential damage that can result if a load falls.

Crane-related injuries are often severe and pose an important hazard for employees and operators alike. In 2012, Cummins consolidated the implementation of a re-designed crane safety policy and a toolkit aimed at preventing these types of accidents.

The cross-functional effort has reduced crane-related incidents by more than 60 percent since its implementation.

#### **CAMPBELL INSTITUTE**

In October 2012, Cummins was invited to become a member of the Campbell Institute (www.thecampbellinstitute.org), which is the Center of Excellence for Environmental, Health and Safety (EHS) at the National Safety Council.

The Institute fosters healthy and highperforming workplaces through the identification and sharing of best practices. Impact-driven, rigorous and cutting-edge, the Institute believes EHS is at the core of business vitality and sustainability, and intrinsic to operational excellence and financial performance.

Some of the Institute's charter members include: Dow Chemical Company, Exxon Mobil Corporation, General Motors, Gulf Petrochemical Industries Company, United States Steel Corporation, United Technologies and the Whirlpool Corporation.

"We believe participating in the Campbell Institute is both a tremendous honor and a wonderful opportunity to learn from other leaders in health and safety," said Kelli Smith, Cummins' Occupational Health Director.

#### **AUBURN UNIVERSITY**

Cummins partnered with Auburn University in Auburn, Ala., in 2012 to look at how the Company approaches certain assembly tasks from an ergonomic perspective.

"Both the university and the Corporate Health and Safety Group saw this as a great opportunity because it provided students a hands-on, 'live' opportunity to assess assembly tasks and it gave Cummins ergonomic support from an external point of view," said Chris Shieldsmith, Corporate Ergonomist at Cummins.

The partnership resulted in a thoughtful solution that Shieldsmith says should help improve the way Cummins approaches certain assembly tasks.

# **Engine business tackles distracted driving among teens**

Cummins Heavy-Duty Engine Business took aim at the safety problem of distracted driving among new drivers.

The business unit sponsored the Start Smart 2012 Teen Driver Safety Rally in August 2012 in Columbus, Ind.

Cummins partnered with the American Trucking Association and local sponsors to host the training-and-educational fair to give students driving tips to keep roads safe.

The rally took over the Central Avenue parking lot at the Columbus Engine Plant and featured a number of attractions to help teens learn good driving habits. The day included a distracted driving course where teen drivers had the opportunity to drive a new Mini Cooper with a professional racecar driver on a specially prepared course.

Cummins has taken a leading role in driver safety. For example, the Company has

prohibited employees from using their cell phones while driving on Cummins business for the past two years.

Car crashes are a leading cause of onthe-job injuries across all industries both inside and outside the United States.

In addition to the rally, Cummins teamed up with Sara Bean, a Columbus East High School student, who for her senior year project worked with the Company's video staff to produce a video warning of the potential consequences of distracted driving.

"Teens everywhere are not driving safely – even in the school parking lot," Bean said. "Many are driving too fast and are often distracted by phones or loud music. It's putting themselves and other drivers around them at risk."

Cummins Heavy-Duty Engine
Business sponsored the
inaugural Start Smart 2012
Teen Driver Safety Rally in
August 2012 in Columbus,
Ind. Teen drivers had the
opportunity to drive a new Mini
Cooper with a professional
racecar driver on a specially
prepared course.



# **Cummins holds first Company-wide Ergo Cup competition**

The Corporate Health and Safety team launched Cummins' first Ergo Cup competition in the fall of 2012 to promote ergonomics across the Company.

The three-month competition resulted in more than 70 entries from Cummins locations around the world. Employees suggested ways to adjust work tasks to more safely align with the natural movement of the human body. The 70 projects saved the Company an estimated \$1.7 million in costs avoided and lost productivity.

Safety officials said the contest inspired Cummins employees to think about ergonomics in new and creative ways and greatly encouraged an ergonomics culture throughout the Company.

these projects," said Chris Shieldsmith, Cummins' Corporate Ergonomist. "I hope this competition will grow next year so we will be able to share even more outstanding ergonomic best practices and solutions with Cummins employees."

"I am really pleased by the quality of

Ergonomics is the study of efficiency in work environments. Bending, reaching and lifting in awkward ways is not only inefficient, it's a leading source of injuries at the Company.

Contest entries were judged on innovation, simplicity, cost savings, ergonomic risk and presentation. The winning team, Cummins Power Generation China, developed an innovative hoist fixture to significantly reduce the level of risk for multiple people while enhancing efficiency.

That project and a project at the Jamestown (N.Y.) Engine Plant were accepted into an international ergonomics competition. The Jamestown project redesigned the way engines are secured to carts to avoid the old process of pulling on straps with tremendous force.

While neither project won, just being part of the international competition raised awareness about the importance of ergonomics.

Cummins Power Generation
China won the Company's
first Ergo Cup competition,
developing an innovative hoist
fixture to significantly reduce
risk for multiple people while
enhancing efficiency.

# **Ergonomics in action**

As part of the Company's first Ergo Cup competition, the Jamestown Engine Plant's application included some excellent photos that illustrate why ergonomics is so important to employee safety.

The Jamestown team redesigned the way it secures engines to building carts to take second place in the competition. We asked Chris Shieldsmith, Corporate Ergonomist at Cummins, to tell us what he sees in the team's pictures:

## **BEFORE**

"The task of strapping the engine to the engine build cart requires the operator to bend in compromising postures while exerting up to 70 pounds of force to activate the buckle on the strap twice," Shieldsmith said. "The combination of force and poor posture could lead to multiple types of musculoskeletal injuries including, but not limited to, a wrist or back strain."

## **AFTER**

"The solution eliminated the straps that were used to hold the engine to the build cart and replaced them with a mechanism that is bolted to the engine and hooks the engine to the cart," Shieldsmith said. "The new process completely eliminated the forceful exertion that was required to lock the straps and also kept the operator standing upright with minimal bending, effectively eliminating any postural risks that were associated with the job as well."





# Web tool helps put safety first

Safety month each April was already a big hit within the Engine Business Unit (EBU) at Cummins, resulting in the identification and repair of literally thousands of unsafe acts or conditions worldwide since it was initiated in 2010.

Observance of the EBU's April Awareness Event in 2013, however, took safety to a new level thanks to safety leaders, the Information Technology staff at the Columbus Engine Plant and the EBU's Corporate IT staff.

Working together, they created an easy-touse, web-based tool as part of the EBU's "Find It, Fix It" campaign. The tool enables employees, whether at home or at work, to report with a few strokes of a computer keyboard any health or safety concern that they identified and fixed.

With the new tool in place and rolled out to EBU employees around the world, reports more than doubled in April 2013, from 13,386 the previous year to 28,449.

"The main purpose of this initiative is to change people's behavior to get them to decide 'I will get this fixed and I will get it fixed now,'" said Bertrand Piredda, Health, Safety and Environment Director of EBU Global Operations.

The Find It, Fix It campaign adds a little friendly competition to the EBU's safety efforts as employees strive to report the most health and safety problems identified

and corrected. Some locations award gift cards and other prizes to the employees or teams of employees that resolve the most problems.

Safety leaders say the program encourages Cummins workers to take a personal interest not only in their own safety but in the safety of their co-workers. And it establishes a framework so employees can talk about safety problems with their co-workers without appearing critical or confrontational.

The safety problems identified during safety month in 2013 included such things as improper storage of hand tools and engine carts, the absence of protective guards around rotating pieces of equipment, equipment with sharp metal edges and potential obstacles in the way of workers walking the plant floor. One employee even identified and fixed an unsafe traffic condition in the parking lot at his workplace.

Safety leaders like seeing employees extend their concern for safety beyond plant walls because it's an indication that they are incorporating safety into their daily lives.

Stacy Wyatt, Health and Safety Engineer at the Columbus Engine Plant, said the tool

also reduced administrative tasks typically associated with safety auditing programs.

"This computer program makes it so much easier to report, collect and analyze data," she said. "I think it will really help us embed safety into the lives of our employees."

Cummins believes strongly that employees must take personal responsibility for safety to establish a world-class safety environment. Getting employees to make a personal commitment to safety through tools like Find It, Fix It is a key component of the Company's "Safety Begins with Me" campaign.

The April safety month also includes video messages from senior leaders, recognition of significant employee contributions to safety, employee meetings on safety,

and a celebration of World Day for Safety and Health at Work.

Wyatt says the April Awareness Event and other steps have helped to change the plant floor culture within the Engine Business Unit. Employees were initially reluctant to confront someone engaged in an unsafe practice. Now, she says, employees across the business unit recognize that safety is everyone's responsibility.

Corporate safety officials say EBU's version of the safety month and the new computer tool are being made available to Cummins business units across the Company.

"World-class HSE (Health Safety and the Environment) is not a status we achieve only for one month, but our April initiative is one more step in the right direction," Piredda said. Columbus Engine Plant employees Danny Leckron and Ray Batemen hang a safety banner for the Engine Business Unit's safety month in April 2013.



## The power of diversity and inclusion

Cummins has long believed in the power generated by bringing together people with diverse backgrounds to solve a problem or meet a challenge.

But leveraging the full benefit of a diverse workforce doesn't end with representation. Cummins believes inclusion, the creation of an atmosphere where employees feel safe to share their full opinions and even disagree on occasion, is key to tapping into the power of diversity.

"We don't ask employees to always agree with each other," said Andre Goodlett, Cummins Diversity Relations Director. "Embracing diversity in the workplace means treating each other with dignity and respect when expressing or receiving different perspectives. It's in competing ideas that we truly see the power of diversity."

Cummins' Global Diversity Department will be focusing on inclusion over the next year, working with various departments and business units to embed diversity into their business strategies. The department wants to be a resource where business leaders can go to learn how to develop a workplace where ideas flourish.

Fortunately, the department has more than 50 years of history to build upon, dating back to legendary CEO J. Irwin Miller,

who helped Dr. Martin Luther King with his 1963 March on Washington when Miller was president of the National Council of Churches. Miller, who led Cummins for some 40 years before retiring in 1977 and served on the Board of Directors until his death in 2004, was practicing diversity before the term had even been coined.

"Character, ability and intelligence are not concentrated in one sex over the other, nor in persons with certain accents, or in certain races, or in persons holding degrees from some universities over others," Miller said in a quotation still prominently used across the Company. "When we indulge ourselves in such irrational prejudices, we damage ourselves most of all and ultimately assure ourselves of failure in competition with those more open and less biased."

It's a philosophy shared by current Chairman and CEO Tom Linebarger who took over as leader of Cummins in January 2012.

"Cummins' success today would not be possible without our deep commitment to diversity," said Linebarger, who joined the Company in 1994.



"At Cummins, we want to create an inclusive work environment where the diverse ideas and perspectives of our employees drive innovation for solving tomorrow's business challenges," he said. "Diversity will help us better serve our customers around the world and deliver results that will sustain our future growth and success."

The Global Diversity staff helps to create the right environment for leveraging the full benefit of diversity in several ways.

The staff supports more than 100 employee resource groups charged with helping to uphold and enhance the Company's diversity-related initiatives.

Affinity Groups are organized around specific demographic traits under-represented at the Company such as women, African-Americans and lesbian, gay, bisexual and transgender (LGBT) employees. These groups typically focus on recruiting, retention and career development while also representing the concerns of their particular demographic group to senior leaders.

Local Diversity Councils, meanwhile, are site-based groups designed to promote diversity in general and to identify any diversity-related issues or challenges to site leadership.

The Global Diversity Department also works on special projects, policies and procedures related to diversity. For example, in 2012 the Company released a policy statement clarifying the expression and exercise of religion in the workplace. The statement supports appropriate expressions of individual beliefs but does not permit attempting to change another's point of view.

Finally, the department provides oversight, infrastructure, and compliance expertise to Cummins' U.S. Affirmative Action programs.

Goodlett believes the Company is poised to take its diversity initiatives to the next level.

"At Cummins, the conversation is now about how we get the maximum competitive advantage from our diverse workforce," he said. "That's a very exciting conversation to be having." Chairman and CEO Tom
Linebarger addresses a town
hall meeting in 2013 sponsored
by the Corporate and CBS
Local Diversity Council.
Cummins leaders have used
this forum to discuss the state
of diversity at the Company.

# Employee Relations POINTS OF INNOVATION

- » Cummins India creates opportunities for women (page 104).
- » Employee groups set the right environment for success (page 106).
- Company prepares next generation of leaders (page 110).

# **Pursuing diversity in India**

For much of the past year, workers on the second shift at Tata Cummins Limited Plant 2 in Phaltan have witnessed something rarely seen on a shop floor in India after 7 p.m. Women.

Women are now working from 2 to 10 p.m. in the plant at Cummins' Megasite, about two hours southeast of Pune. They normally are not allowed to work past 7 p.m. but Tata Cummins is one of a select number of manufacturers given permission by the government to allow women to work the second shift.

The plant has taken a number of steps to help women who want to work that shift, appointing female security guards at the facility, ensuring safety while traveling to and from the plant, providing self-defense training and more. In some cases, Company officials even met with the

parents of job candidates to dispel their fears about working at the plant.

"Getting permission from the government to have women work in the second shift was a major breakthrough," said Ashwath Ram, Tata Cummins JV Leader. "This is the next step in our continued pursuit to have more women representation in the workplace."

Cummins leaders have been working hard to increase diversity from the shop floor through the professional ranks, and then to leverage the power of diversity to improve Company performance. Their efforts have been noticed by the news media in India.

Women can now be seen working on the shop floor at Cummins' Megasite in Phaltan, India after 7 p.m. Cummins India is working hard to increase opportunities for women.





To aid women who want to work, Cummins facilities in India have taken steps like appointing female security guards, providing safe escorts to and from plants and providing self-defense training.

"It's good to have diverse people sitting around the table and thinking – people who are differently wired, (and) think differently," Nagarajan Balanaga, Cummins India's Human Resources Leader, told The Times of India in 2012.

That particular story focused on the recruiting of people from different regions of the country to work at Cummins facilities. The Times, however, has also noted Cummins' efforts to bring more women into the workforce in a separate piece.

The WILL Forum India, a forum for women in leadership, noticed, too. It named Cummins one of five winners of its Best Employer for Women in Corporate India award at the fifth Women in Leadership Conference in Mumbai in October 2012.

The number of women in professional jobs at Cummins facilities in India has been increasing dramatically, from 4 percent in 2004 to 27.5 percent in 2011. Cummins India re-launched the Women's Affinity Group and named Priyadarshini Gupta the business organization's Diversity Leader.

"Being a woman, I feel deeply passionate about growing representation as well as growing women leaders at Cummins," Gupta said. "I believe having a good mix of men and women both in the workplace and in leadership will benefit the Company."

The Women's Affinity Group has been working on a number of issues ranging from child care solutions to mentoring and coaching women with the potential to be leaders to helping women integrate their work life with their home life.

The Affinity Group has also set up meetings with the women on the second shift at Tata Cummins.

"Cummins in India believes in the value that diversity in thought brings to business. We recognize this is an important value at Cummins and see a clear business case in having better representation of diverse groups."

#### **PRIYADARSHINI GUPTA**

DIVERSITY LEADER – CUMMINS INDIA AREA BUSINESS ORGANIZATION

# **Employee groups create** inclusive work environment

Chang Su had already put together a successful singles networking group. So when he saw a need for younger Cummins employees in Southern Indiana to meet and share common interests, he didn't hesitate to organize a new Affinity Group.

"In Southern Indiana, there are about 1,500 Cummins employees under 30," said Su, an Account Specialist at Cummins Emission Solutions in Columbus, Ind. "But they are in different business units and different departments and they need a way to meet."

Su and others created Mandala, which loosely translated from the Indian language of Sanskrit means circle. The group focuses on completing the circle for employees under 30 in Southern Indiana. It's one of a growing number of resource groups created by employees over the last three years to address recruiting, retention and career development of under-represented demographic groups at Cummins.

"The chartering of employee resource groups has been growing by almost 10 percent per year since 2010," said Andre Goodlett, who oversees the groups as the Diversity Relations Director. "We're especially seeing growth outside the United States as our business units really embrace Cummins' diversity value."

Cummins has two different kinds of employee resource groups. In addition to Affinity Groups, the Company has Local Diversity Councils, which are site-based groups charged with creating an inclusive work environment at a particular location. There are 51 Local Diversity Councils and 50 Affinity Groups across the Company representing African-Americans, employees with disabilities, Latinos, lesbian, gay, bisexual and transgender employees; veterans, women and more.

Most of the growth has come from Affinity Groups and much of it has followed Company efforts in 2010 and 2011 to embed diversity in Cummins operations outside the United States. New groups have been established in Africa, Australia, Brazil, China, India and the United Kingdom in recent years.

Sarah Wyllie, an HR Generalist at Cummins Power Generation in Kent, U.K., joined the Company in the May of 2012. A few months later, she helped start ROAR – Recruiting, Onboarding, Advancing and Retaining. The group is focused on helping employees who have been with the Company for less than two years navigate Cummins and aims to provide a support network which will allow them to develop their careers at the Company.

"I'm lucky, I'm in a position where I get to meet a wide range of people," she said of the operations at Kent which employ about 550 people. "But there are others who work in very small departments who might not get that opportunity."

ROAR has sponsored various networking opportunities including one where

participants flew paper airplanes with their employee ID numbers. Participants had to pick up an airplane that wasn't their own and pledge to have coffee with the person whose number was on it.

The group is also organizing events to meet the leadership team at the site and learn about other departments.

"These groups play a very important role at Cummins," Goodlett said. "They help us create the kind of inclusive work environment we need to be successful."

Affinity Groups often sponsor speeches and presentations at the Company. In February 2013, the Southern Indiana Special Needs and Abilities Affinity Group and the Worldwide Veterans and Supporters Affinity Group jointly sponsored a speech by Josh Bleill, who lost his legs when an improvised explosive device detonated during a patrol in Iraq. He was serving with the U.S. Marines in 2006. Now, Bleill delivers inspirational speeches on overcoming challenges. Here, he shakes hands with Chairman and CEO Tom Linebarger.



# CUMMINS OPPOSES MARRIAGE AMENDMENTS

Cummins took stands over the past year against state proposals in Indiana and Minnesota to prohibit same-sex couples from marrying.

Cummins Power Generation
President Tony Satterthwaite
released a letter in October 2012
stating that a proposed state
amendment defining marriage as
only between a man and a woman
in Minnesota would create a "less
welcoming environment" for all
prospective employees and make
it more difficult to recruit the best
and brightest job candidates.

In Indiana, Cummins
Executive Director of Corporate
Communications Carole Casto
shared the same message
in a televised discussion
surrounding a similar amendment.

And Cummins in March 2013 joined more than 250 other companies as a signatory to an amicus curiae brief filed with the U.S. Supreme Court opposing Proposition 8 in California, which prohibits same-sex couples from marrying.

Minnesota voters turned down the amendment while Indiana lawmakers postponed action pending the Supreme Court's decision on the constitutionality of California's law.

# **Diversity Procurement goes global**

Cummins' efforts to take diversity procurement outside the United States are off to a good start, but leaders caution there is much work ahead.

> Cummins was named 2012 Corporation of the Year by Minority Supplier Development China, which links large corporations and ethnic minority-owned businesses. The Company was also runner up for the 2012 Corporation of the Year award presented by Minority Supplier Development U.K.

"We can truly say that diversity procurement is a concept that applies globally," said Michelle Taylor, Cummins Diversity Procurement Leader. "But we must be careful to develop initiatives that fit our international regions. The last thing we want is to use our North American model as a one-size fits all approach."

Cummins believes diversity procurement is a key business strategy with bottom-line benefits. Developing diverse suppliers gives the Company a competitive advantage by increasing competition for its business needs. It also aligns with customer expectations and creates economic opportunities within all communities where Cummins employees live and work.

Diversity procurement started as an initiative primarily pursued by U.S.based companies. But in recent years, it has started to take root outside the United States.

Expanding the scope of diversity procurement internationally is just one goal of Cummins' Diversity Procurement team. The Company also wants to increase both the amount and the percentage of its spending with diverse suppliers.

The Company made progress in both of these areas in 2012.



The Cummins team at a diversity procurement tradeshow in Indianapolis in 2012.

## **2012 PERFORMANCE**

Despite the global economic downturn in the second half of 2012, Cummins diverse spend increased from just over \$810 million in 2011 to \$890 million in 2012 – an increase of almost 10 percent. Diverse spending at Cummins increased 91 percent between 2007 and 2012.

The Company also increased the percentage of its spending with diverse suppliers, from 12.2 percent in 2011 to 13.1 percent in 2013.

"The economic climate doesn't matter in my mind," said Taylor who replaced longtime leader Gordon Fykes who retired in 2013. "If it's the right thing to do in a good economy, it's the right thing to do in a challenging economy, as well."

Taylor would like to see the Diversity
Procurement staff challenge its largest
suppliers to use more diverse suppliers
as sub contractors. She also wants
to engage purchasing leaders about
the Company's future technology
and advanced manufacturing needs
so diverse suppliers can be ready.

#### **REACHING OUT**

Cummins is involved in several initiatives designed to help develop more diverse suppliers in the future, including:

» The Company sponsors an annual student competition at LeMoyne-Owen College in Memphis, Tenn. The competition at the historically black college asks students to identify solutions to various business challenges. This year's challenge: "How does a company with headquarters in

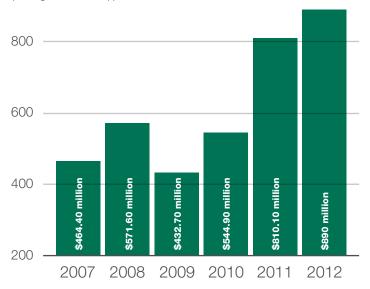
the United States such as Cummins maintain its platform of ethics in different countries with different values and continue to be profitable?"

- » The Company is a member of the Great Lakes certifying committee of WBENC (Women Business Enterprise National Council). Cummins is also a member of WEConnect International, which helps empower women business owners to succeed.
- » Cummins will leverage its membership with the National Minority Supplier Development Council by co-sponsoring "Conversations with Cummins" in an effort to engage and prepare successful diverse suppliers on future enterprise-wide growth opportunities that will require capacity planning over the next three to five years.

# Spending on diverse suppliers

in millions of dollars

The total amount of money Cummins has been spending with diverse suppliers since 2007.



# **Developing new leaders key to sustainability**

Cummins never stops working to develop a sustainable workforce.

The effort starts when employees begin onboarding sessions on their first day on the job. It continues with a robust performance management system to help them succeed. And the Company believes great leadership is especially important, so it offers a number of initiatives to train and develop Cummins' next generation of leaders.

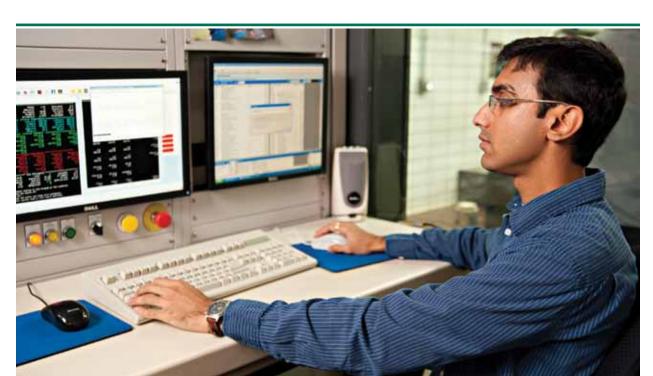
Chairman and CEO Tom Linebarger has identified leadership as one of the Company's five key growth accelerators, critical to creating the right work environment for success.

"Leadership development is critical for growing leaders who can motivate and support our employees, who are the reason for our success," Linebarger said in his year-end message to employees in 2012. "It is also important for ensuring our Company's long-term success by developing new leaders for the next generation now."

Leaders and managers learn early on that to succeed they must have a development mindset, built on five key skill areas Cummins believes are essential to great leadership:

- » Coach and develop
- » Foster open communications
- » Manage diversity
- » Talent management
- » Think strategically / Set the aim

Harsh Khandelwal is an engineer at Cummins Technical Center in Columbus, Ind.



By developing leaders in these areas through structured programs as well as ensuring employees work with their managers on these skills every day, Cummins believes its workforce development efforts are both effective and sustainable.

# STARTING OFF

Weeklong onboarding workshops provide new employees with the background they need to be successful, including information on the Company's history and culture, as well as Cummins Code of Business Conduct.

Employees are also introduced to the Company's Performance Management System, a web-based program designed to ensure employees know their managers' expectations, what they need to accomplish and how to improve.

The system is built around providing employees with the consistent feedback they need to develop and succeed. That feedback comes from a wide range of stakeholders including peers and direct reports - not just their managers.

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, for example, is available in 12 different languages. Approximately 16,000 professionals are now in system.

The Company is also continuing work to achieve consistent functional development within various disciplines so someone in finance in India, for example, is acquiring the same skills and is evaluated in the same way as a finance employee in Brazil.

## LEADERSHIP DEVELOPMENT

Cummins recognizes that nothing is as career-limiting as a bad boss who doesn't help his or her employees reach their full potential. That's why the Company's development efforts target leaders at various stages in their careers.

Cummins conducted numerous modules of the Company's "Building Success in Others" program in 2012. The effort is primarily focused on helping leaders of professionals better understand the expectations the Company has for them as well as to develop the skills to fulfill those expectations.

Launched in 2011, Building Success in Others will eventually be rolled out to about 4,000 leaders globally. An intensive 3½ day classroom session on coaching direct reports is the centerpiece of the overall program. Participants say they appreciate the opportunity to practice their skills and obtain meaningful feedback from their peers.

Meanwhile, Cummins completed its Global Leadership Development program in 2012 in China and India. The 18-month program prepares approximately 15 high potential employees from one of the Company's Area Business Organizations for future global leadership roles. The initiative will be rolled out in South America and Africa in 2013.

The Leadership Culture Series, an initiative targeting the Company's top 250 leaders created in 2009, moved into a new phase in 2012 as participants cascaded what they learned about the five key skills to leaders within their own organizations.

# **OUR WORKFORCE** AT A GLANCE

Cummins employs a global, high-tech workforce. Here's a quick look at the Company's 46,000 employees as of April 2013:

#### WHO

- » Information Technology 962 (2 percent)
- » Engineering or science degree but not in engineering 3,764 (8 percent)
- » Engineers 7,206 (16 percent)

# **WHAT**

- » Union 34 percent
- » Non-union 66 percent

## WHERE

- » Inside the U.S. 38 percent
- » Outside the U.S. 62 percent

# New code guides ethical behavior

Cummins renewed its commitment to good governance and ethical behavior in January 2013 by releasing an updated Cummins Code of Business Conduct.

"The updated Code addresses issues ranging from our commitment to diversity and how we treat each other to how we compete fairly for business around the world," Cummins Chairman and CEO Tom Linebarger said in a note to all employees announcing the update.

"It also reminds us of our key and unchanging responsibility as Cummins employees to behave ethically at all times and to report behavior that doesn't live up to our standards," he added.

The updated Code includes new guidance on everything from using social media responsibly to protecting intellectual property at a global company.

The update includes new guidance on everything from using social media responsibly to protecting intellectual property at a global company.

The update also includes numerous reminders that there are multiple ways to report a potential problem or get advice to avoid problems.

Cummins periodically updates its Code to reflect societal and business changes. The Code was last updated in 2009. The update was one of the first tasks completed by the Company's new Ethics and Compliance staff in 2012. The document was reviewed by Company leaders and Cummins Board of Directors, as well as employees around the world to ensure it was relevant across borders and cultures.

The updated Code was translated and posted on the Company's Intranet site in 16 languages. It continues to be built around Cummins' 10 Ethical Principles:

- **1** We will follow the law everywhere.
- **2** We will embrace diverse perspectives and backgrounds and treat all people with dignity and respect.
- **3** We will compete fairly and honestly.
- 4 We will avoid conflicts of interest.





- **5** We will demand that everything we do leads to a cleaner, healthier and safer environment.
- 6 We will protect our technology, our information and our intellectual property.
- 7 We will demand that our financial records and processes are clear and understandable.
- 8 We will strive to improve our communities.
- 9 We will communicate with honesty and integrity.
- **10** We will create a culture where all employees take responsibility for ethical behavior.

# **ETHICS SURVEY**

In addition to updating the Code, the Company also surveyed office and professional employees in 2012 to assess where Cummins stands globally on ethics and compliance issues.

The first-ever Compliance and Ethics survey was completed by a third party in June and July of 2012. Individual employee responses were anonymous and were not shared with anyone at Cummins. About 14,000 employees participated.

The survey found that the vast majority of employees are both aware of the Cummins Code of Business Conduct and the importance of ethical behavior to the sustainability of the Company.

However, the survey revealed pockets within the Company where awareness could improve. In addition, the survey suggested awareness could be raised about the help available to Cummins employees on ethical issues.

Help can be obtained through a number of sources including the Company's Law Department and Ethics and Compliance staff. Employees around the world can also report problems and concerns to Cummins Ethics Help Line (page 114). They can report those concerns anonymously where allowed by law.

Cummins Chairman and CEO Tom Linebarger talks to students at Indiana University's Kelley School of Business where he spoke on the topics of Corporate Responsibility and Ethics at Cummins. The speech was hosted by the Delta Sigma Pi Business Fraternity at the school.

# Governance **POINTS OF INNOVATION**

» Updated Code guides employees (page 112).

## **2012 COMPLIANCE TRAINING**

Thousands of employees receive compliance training every year at Cummins. These figures are accumulated enrollments going back to when the training courses were first implemented:

TRAINING	ENROLLED	PERCENT
Anti-bribery	18,103	98
Antitrust and Fair Competition	18,364	99
Careful Communication	23,477	98
Code of Business Conduct	14,454	100
Conflicts of Interest	22,967	97
Export Compliance	18,031	98
Global Competition Principles and Practices	11,689	96
Information Protection	23,365	97
Intellectual Property	5,807	99
Lobbying and Political Activity	572	98
Records / Information Management	23,209	97
Treatment of Each Other At Work	13,625	100
Fair Labor Standards Act	515	98
Managing Within the Law	528	99
Payment Card Industry Data Security Standards Compliance	322	98
Grand Total	183,663	98

## **TRAINING**

Cummins puts its ethical principles into practice through a comprehensive compliance training program targeting appropriate employee groups to promote ethical behavior.

The Company has required courses on topics ranging from Anti-Bribery and Information Protection to Lobbying and Political Action. Most of the training is delivered through on-line courses available in multiple languages.

The Company's policies and procedures in these areas are periodically updated and new training initiatives are established to help employees stay aligned with Cummins Code of Business Conduct.

# ETHICS VIOLATIONS, REPORTING AND INVESTIGATIONS

Any code of conduct must be enforced to be effective. Cummins employees are frequently reminded that they have an obligation to report suspected Code of Business Conduct violations to protect and preserve what makes Cummins a great place to work.

They can do that in a number of ways, including through senior leaders, their Human Resources representative, their supervisor, the Law Department, the Ethics and Compliance staff and they can report it on-line at ethics.cummins.com.

They can also call the Cummins Ethics Help Line. Violations at any level of the Company are acted on swiftly and appropriately and all reports are investigated. Cummins' team of Master Investigators responds to reports of Code violations. They make sure appropriate action is taken in a timely manner. The Company has Master Investigators in most regions of the world.

No one's career at Cummins can be negatively affected by reporting suspected Code violations made in good faith. Where permitted by local law, employees can report potential violations anonymously.

In 2012, Cummins investigated 1,196 Code of Business Conduct-related complaints compared to 1,076 in 2011. Forty-six percent of those complaints came from outside the United States, and 26 percent of all complaints were reported anonymously.

Of the cases investigated in 2012, 54 percent were substantiated and 40 percent of those substantiated cases resulted in employee terminations. Reports of unprofessional behavior and those grouped into the category of Human Relations accounted for most of the cases. The Company averaged 13 days to close cases in 2012, the same as in 2011.

Reported violations are closely monitored by Cummins' senior leaders. Each quarter, business unit leaders receive an update on reports in their business or region. Chairman and CEO Tom Linebarger also receives updates and the Audit Committee of the Cummins Board of Directors reviews an annual report.

## **ETHICS CERTIFICATION PROCESS**

Employees certify their compliance with the Company's Code of Business Conduct and underlying policies every year and report any exceptions to Cummins policy.

In 2012, 17,666 employees and officers completed their annual Ethics Certification including all members of the Board of Directors. Internal Audit and Cummins Law Department reviewed any exceptions to ensure they were documented and investigated, according to Company policy.

## SUPPLIER CODE OF CONDUCT

Cummins' suppliers are held to a higher standard than just compliance with local laws. The Company's Supplier Code of Conduct has been translated into multiple languages to ensure suppliers around the world know the standards they are expected to meet.

The Code includes provisions banning child or forced labor, respecting employee rights and providing a safe workplace for employees. The Company wants to do business with suppliers that share its passion for sustainable practices and policies.

In 2013, Cummins sent its code to the Company's top suppliers who collectively receive about 80 percent of Cummins' total spending. All reported they were in compliance. The Company's Supplier Code of Conduct is scheduled to be updated in 2013.

**GOVERNANCE BY THE NUMBERS** 

1,196

Number of Code of Conduct cases around the world investigated by Cummins

Percentage of those cases substantiated

Average number of days to close Code of Conduct cases in 2012, the same number of days as 2011

14,000

Cummins employees participating in the firstever Compliance and Ethics survey completed in June and July of 2012

17/0000

Employees and officers who completed their Ethics Certification at Cummins in 2012

# **Board exercises independent judgment**

The Board of Directors oversees the affairs of the Company, representing and protecting the interests of Cummins' stakeholders. It exercises sound and independent business judgment regarding significant, strategic and operational issues.

The Board also advises senior management and adopts governance principles consistent with Cummins' Vision, Mission and Values.

Cummins Chairman and CEO Tom Linebarger is the only Cummins employee on the Board of Directors. The other eight directors are independent of the Company. Each Director must stand for election annually.

The Board takes an active role in fulfilling its responsibilities. For example, it traveled to Nashville, Tenn., in 2012 to see Cummins' new Customer Care facility, meeting with key Company personnel to review strategy.

The Board monitors a number of issues, including:

- » The performance of the Company.
- » The performance of senior management.
- » Compliance with all applicable laws and regulations.
- » Communications and relationships with stakeholders.
- » The 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**

The Company complies with all New York Stock Exchange and regulatory requirements concerning the membership of certain committees.

### **INTERNAL AUDIT**

Cummins Internal Audit department provides to Board members and senior leaders independent and objective information on the performance of the Company's control environment. The Vice President - Internal Audit reports to the Audit Committee of the Board of Directors. In 2012, the Internal Audit Group published 134 audit reports and memos.

To ensure management has addressed identified risks and implemented corrective action, Internal Audit has a formal followup process. The responsible business or functional 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.



**ROBERT J. BERNHARD** 

Vice President for Research and a Professor of Engineering at the University of Notre Dame. He joined the Board in 2008.



FRANKLIN 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.



STEPHEN B. DOBBS

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 M. HERMAN** 

Chairman and CEO of New Ventures, LLC, a corporate consulting company. She joined the Board in 2001 and currently serves as Lead Director.



**GEORGIA R. NELSON** 

President and CEO of PTI Resources, LLC, an independent consulting firm. She joined the Board in 2004.



**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.



**CARL WARE** 

Retired Coca-Cola executive and President and COO, Ware Investment Properties LLC. He joined the Board in 2004.



**N. THOMAS LINEBARGER** 

Chairman and Chief Executive Officer, Cummins Inc. He joined the Board in 2009.

# Managing risks, keeping employees secure

Cummins strongly believes that a robust Risk Management program is critical to the sustainability of any company.

> Super Storm Sandy, which devastated much of the East Coast of the United States in the fall of 2012, was merely the latest reminder of what can happen to businesses that fail to manage risk effectively (see Cummins' response to Sandy on page 126).

Cummins has broadened its risk management efforts in recent years, focusing not just on how to keep particular locations operating in the midst of a crisis, but how to keep global processes functioning that are critical to meeting customer needs in particular regions of the world.

The Risk Management team continues to prepare a dashboard for the Cummins Board of Directors and senior leaders outlining the biggest risks facing the Company. The dashboard is constantly updated to reflect changes in and outside Cummins, and the Company frequently assigns teams of employees to develop steps to mitigate specific risks using Six Sigma research and evaluation tools.

Underscoring its strategic significance to the Company, the Risk Management function was shifted in 2012 to Corporate Strategy. The function also underwent an audit in late 2012 and early 2013, to identify both strengths and weaknesses.

The development of Business Continuity Plans remains an important responsibility of the Risk Management team.

## **BUSINESS CONTINUITY PLANS**

Business Continuity Plans at Cummins detail step-by-step what has to be done to keep a location operating. The Risk Management team has overseen the completion of more than 160 plans over the past few years and has set a goal of completing a plan for every Cummins location, including all wholly owned and joint-venture Distribution Business Unit sites, by the end of 2014.

To accomplish this goal, plans for more than 400 locations will be necessary. The team is working to train a person at each site to complete a plan, significantly reducing the amount of travel necessary.

Risk Management leaders believe this new approach is both more sustainable and more effective, embedding business continuity planning into the culture of every site by involving local employees earlier in the process.

To help bring additional attention to the plans, employees from Cummins Power Generation's headquarters in Fridley, Minn. made a presentation before the Board of Directors in 2013 on how sites can use business continuity planning to improve their operations.

# **GLOBAL SECURITY TAKES ON BIGGER ROLE**

The Global Security function is playing an increasingly important role in Cummins' overall sustainability, striving to embed the concept of "security first" throughout the Company.

Focusing on the protection of the Cummins' employees as well as its physical and information assets, the Global Security team has established a number of initiatives to carry out its mission.

The Travel Smart Travel Safe program is designed to support employees and partners during business travel and at the workplace. The program works through vendors and advisors to assess regional risk in all locations where Cummins does business.

Employees who travel can subscribe to daily emails with the latest security information, travel tips, and can also access an internal website with pertinent information.

The program also provides employees with an emergency hotline should they encounter issues while travelling.

Ensuring sustainable growth requires Cummins to protect sensitive Company information. The Information Asset Protection Program develops, implements, and manages Cummins information security across the enterprise. Although risk can never be fully eliminated, the program ensures employees follow the right processes for the right level of security.

Implemented in 2012, the Crisis Action Management Program (CAMP) leverages local, regional and corporate response teams to quickly assess incidents that affect the Company, employees and the communities in which Cummins operates.

CAMP relies on persistent intelligence monitoring and rapid communication in order to achieve an immediate and measured response. CAMP enables Cummins to move quickly and efficiently when an emergency affecting the Company, or the public, cannot be managed through normal channels.

Through this work, Cummins Global Security is focused on the Company's long-term success by implementing programs that promote a secure environment and a sustainable future.

# **Ensuring Cummins' voice is heard**

Cummins has government relations employees around the world working on issues that might have a significant impact on the Company, such as energy policy, environmental legislation, taxes, trade and transportation to name just a few.

The Company maintains an office in Washington, D.C., but with half or more of Cummins' sales in recent years coming from outside the United States, the Company also has government relations employees in China and India.

These employees work to ensure that Cummins' voice is heard. For example, Cummins works extensively to promote and protect emissions standards globally from delay or modification and supports government efforts to establish greenhouse gas and fuel consumptions standards for commercial vehicles.

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 we 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.

### **POLITICAL CONTRIBUTIONS**

Cummins bans contributions using corporate funds to candidates, political parties and independent expenditure campaigns. This ban includes contributions to 501 (c) (4) and 527 tax-exempt groups in the United States engaged in political activity.

On ballot measures deemed important to the Company's interests, Cummins is committed to publicly disclosing any payments made directly to influence the outcome, including recipient names and amounts.

In the United States, political contributions are made by the Cummins Inc. Political Action Committee (CIPAC), but the committee is funded solely by voluntary employee contributions. CIPAC makes contributions to state and federal candidates on a bipartisan basis after review and approval by CIPAC's Executive Committee and according to state and federal 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 2012 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

\$12,528

The Business Roundtable

\$24,261

The Diesel Technology Forum

\$127

**The Engine Manufacturers Association** 

\$8,682

The National Association of Manufacturers

\$15,759

**U.S. Chamber of Commerce** 

\$13,750

Cummins Power Generation Plant in Fridley, Minn., in May 2013. He is joined by Assistant Secretary of Defense Sharon Burke, right, and Cummins Power Generation President Tony Satterthwaite, left. Franken, who represents Minnesota in the U.S. Senate, and Burke, the Defense Department's top energy official, were at the plant to learn how power generators produced by Cummins have slashed the military's

power usage.

U.S. Sen. Al Franken tours the

# Global economic slowdown slows Cummins

After a record start, revenues slowed considerably for Cummins in the second half of 2012 amid a global economic slowdown.

Revenues were \$17.3 billion compared to \$18 billion in 2011. Despite the drop, it was the second best revenue year in Company history. Revenue for 2012 represented a 31 percent increase over 2010 and a 61 percent increase over 2009.

The Company increased its dividend by 25 percent in the third quarter of 2012 and Fitch Rating Services raised its Long-term Issuer Default Rating and long-term debt ratings for Cummins from A- to A despite the challenging economy.

"After a strong start to the year, demand declined across most geographies and end markets in the second half of 2012 as the global economy slowed," said Tom Linebarger, Cummins Chairman and CEO.

"I am pleased that we were able to deliver improved gross margins in the fourth quarter and record gross margins for the full year despite the weakness in demand," Linebarger said. "The work we have undertaken to reduce costs and lower inventory should benefit the Company when the global economy improves, however, there is uncertainty surrounding the timing and pace of improvement in end markets in 2013."

Fourth quarter revenue of \$4.3 billion in 2012 was a 13 percent decrease from the same quarter in 2011, reflecting weakness in most major markets and geographies. The decrease year-over-year was driven by weaker demand in truck, construction, and oil and gas markets in North America. The Company also experienced lower demand in international markets for power generation equipment and construction, truck and mining engines.

# FINANCIAL PERFORMANCE AT A GLANCE

Here's a summary of Cummins' performance since 2008.

Year	Sales	Net income attributable to Cummins
2008	\$14.3 billion	\$755 million
2009	\$10.8 billion	\$428 million
2010	\$13.2 billion	\$1.04 billion
2011	\$18 billion	\$1.85 billion
2012	\$17.3 billion	\$1.65 billion



For the entire year, revenues in North America were up 9 percent but were offset by international sales which dropped by about 15 percent, with the most significant declines in Brazil, China and Europe.

EBIT (Earnings Before Interest and Taxes) for the year, excluding special items, was \$2.35 billion or 13.6 percent of sales, compared to \$2.6 billion or 14.2 percent of sales in 2011.

Net income attributable to Cummins for the full year was \$1.65 billion (\$8.67 per diluted share), down from \$1.85 billion (\$9.55 per diluted share) in 2011. Excluding the costs of restructuring actions (\$0.18 per diluted share), one-time tax benefits (\$0.29 per diluted share) and the gain on the sale of the Company's exhaust business (\$0.02 per diluted share), the Company reported full year net income of \$1.62 billion (\$8.54 per diluted share).

Cummins sold its exhaust operations in Stoughton, Arcadia, Black River Falls and

Viroqua in Wisconsin and Scoresby in Australia in 2011 to a private equity firm.

The Company took a number of actions during 2012 to lower expenses in response to the difficult economic conditions, including reducing the size of its workforce by about 1,300 people – about equally split between exempt and non-exempt employees.

The Company, however, invested a record \$728 million in research and development, up 16 percent from 2011. In addition, Cummins and its joint ventures invested over \$1 billion in capital expenditure projects, much of it related to the development of new products.

Cummins announced in May 2012 it had signed an agreement to acquire the assets associated with the emissions control products of Hilite International. Hilite's selective catalytic reduction doser technology will become part of Cummins Emission Solutions.

Chairman and CEO Tom
Linebarger and Managing
Director for Cummins
India Anant Talaulicar
inaugurate the fifth facility
at the Megasite in India –
the Phaltan MidRange Upfit
Center – in March 2013.

# POINTS OF INNOVATION

- » Cummins builds 2-millionth engine for Ram pickup trucks (page 124).
- » Team puts customers first in responding to Super Storm Sandy (page 126).

# Ram-Cummins partnership celebrates major milestones

Enduring relationships pass the test of time whether it's a marriage, a friendship or a business relationship. That's certainly true of the Ram Truck-Cummins diesel partnership.

Cummins has been building diesel engines for Ram Trucks since the first engine for Ram rolled off the line at the Rocky Mount Engine Plant in Rocky Mount, N.C., in 1988. Over the past 25 years, the Company has produced more than 2 million engines for Chrysler Group LLC.

"This milestone build is a significant achievement for Cummins and our employees, and is an accomplishment of which we are immensely proud," said Wayne Ripberger, General Manager – Pickup and Light Commercial Vehicle Operations. He was speaking after the 2-millionth engine was built for Ram pickups in December 2012 at the Columbus (Ind.) MidRange Engine Plant.

"At Cummins, we take great pride in each and every engine we build – whether it's the first or the 2-millionth." he said.

In its own news release marking the engine milestone, Chrysler noted the partnership has benefited both companies.

"The Ram Truck-Cummins diesel partnership is one of the industry's most enduring and certainly fitting of such a tribute," said Fred Diaz, President and CEO – Ram Truck Brand and Chrysler de Mexico. "Both companies have benefited greatly, but Ram diesel customers are the real beneficiaries. Every day they experience the toughness and capability a Cummins-powered Ram can deliver."

What's so special about Cumminspowered Ram Trucks? It's the combination of power, durability and innovation that has led to an extremely loyal following of pickup truck owners.

Cummins employees say they are frequently stopped by strangers who upon learning where they work tell them: "I just love the Cummins engine in my Ram Truck."

The Cummins 6.7L Turbo Diesel powers the Ram 2500 and 3500 heavy-duty pickup trucks and is also available in the Ram 3500, 4500 and 5500 chassis cabs.

To commemorate the occasion, the 2-millionth engine sported a special edition red breather cover and valve cover.





The 2013 Cummins-powered Ram HD trucks feature the same kind of innovation that customers have come to expect, including:

- » A 10 percent fuel economy improvement.
- » Best-in-class 850 lb-ft of torque.
- » Best-in-class 15,000 mile oil change interval.
- » Improved towing thanks to a "Smart" exhaust break.
- » B20 biofuel capability.

The 25th anniversary officially comes later in 2013 when Cummins begins building engines for the model year 2014 Ram Trucks.

"We've come a long way since 1988," said Ram HD Brand Manager Mike Cockell, who attended the 2-millionth engine celebration. "We've made great improvements to the entire package, but there is one thing that has remained constant: proven Cummins power.

"We're proud of our heritage with Cummins, and we're also excited about the 2013 Cummins Turbo Diesel-powered Ram trucks," he added. "We hope to be back here in a couple years celebrating the 2.5-millionth engine."

"This milestone build is a significant achievement for Cummins and our employees, and is an accomplishment of which we are immensely proud. At Cummins, we take great pride in each and every engine we build – whether it's the first or the 2-millionth."

#### **WAYNE RIPBERGER**

GENERAL MANAGER –
PICKUP AND LIGHT COMMERCIAL
VEHICLE OPERATIONS

To honor the Company's partnership with Chrysler, Cummins employees (left to right) Clint Garrett, Justin Streeval, David Crawhorn and Thomas Sallee were part of the team that restored the first Cummins powered Ram development truck. The truck is a 1985 Dodge Ram D350 and was the first truck built to test the viability of a Cummins Turbo Diesel in a Ram chassis. Prior to the restoration, the truck was used to move parts around Cummins facilities in Columbus, Ind.

# Putting customers first in wake of Sandy

At the height of Super Storm Sandy, Cummins Power Systems' Steve Philips went 21 hours without sleep, his phone ringing 40 or 50 times per hour until he finally nodded off at his New Jersey home, his computer and cell phone in his lap.

Three hours later, he was back working the phone again, trying to find generators for desperate customers in New York and New Jersey left powerless by the mammoth storm.

"You just gotta try to help everyone you can," said Philips, General Manager – Rental Power for the New York district. He knew first-hand how his customers felt. The power was out at his home and his office was underwater at Cummins Power Systems in Newark, N.J.

Philips wasn't the only Cummins employee who lost sleep after Sandy hit in October 2012, packing 80 mph winds and pushing a 13-foot surge of sea water toward New York City that flooded subway tunnels and the underground electrical systems that power Wall Street. An estimated 6 million people in the region lost power.

Steve Philips spent long hours helping Cummins customers from his New Jersey home after Super Storm Sandy flooded his office.



Scott Patrohay, President – Cummins Power Systems, LLC, points to the water line on a Cummins truck caught in the flood waters left by Super Storm Sandy at the company's facilities in Newark, N.J.



Cummins Power Systems technician Joe Magnone works on one of the three New York City Transit Authority Pump Trains that played a critical role in reopening flooded subway tunnels during Super Storm Sandy.

Cummins technicians slept on cots at customer locations next to the generators they were monitoring on a 24-hour basis. Warehouse and service personnel worked long hours to clear debris to get their operations up and running as quickly as possible after the storm.

Before the worst was over, nearly 400 pieces of Cummins Power Generation equipment were operating in the region, collectively deploying nearly 30 miles of cable and generating more than 200 megawatts of power.

"So many of our employees were thinking of our customers first at a time when many of them had significant concerns in their own lives," said Scott Patrohay, President - Cummins Power Systems, LLC, based in Bristol, Penn. "I couldn't be prouder of them or more grateful for their tremendous effort."

Cummins distributors quickly mobilized their fleets of rental generators from across North America to help out, joining hundreds of other Cummins powered generators owned and operated by many of the country's largest rental companies.

While the rental power played a vital role in the storm response, Cummins employees contributed in a variety of other ways.

For example, technicians worked on the engines that powered the three New York City Transit Authority Pump Trains, each capable of pumping out thousands of gallons of water per minute from flooded subway tunnels.

One of the trains was out of service the Friday before the storm. Realizing every pump train would be needed as the storm approached, the transit authority called Cummins Power Systems' Bronx Engine Service Support Team for help.

The team was able to get the engine back in service and for the next 10 days the pump trains would play a key role in getting the subway system up and running.

"It was much, much needed," Vince Carderi, superintendent of the transit authority's rail yard, said of the repair to the broken pump train. "I'm very grateful they responded so quickly to our lastminute request for help."

# Committed to a global supply chain

# Cummins' commitment to sustainable growth relies on a fully integrated global supply chain.

Cummins wants to develop a highly integrated network of lean, green and flexible plants in the Company's supply chain. This employee at Cummins Emission Solutions in Mineral Point, Wis., is working on an aftertreatment system.

The Company uses a broad definition of supply chain to include everything from the moment a customer orders a product through production, delivery and beyond. Today, the supply chain is one of Cummins' five key growth accelerators, built around the Company's commitment to customer service while also driving efficiency and cost reduction to improve profitability.

Cummins' five-year supply chain transformation started in late 2010 and significant progress was achieved in 2012. As part of the journey, the Company's supply chain organization committed to reducing costs by 1 percent of sales. The organization identified \$85 million in project cost savings in 2012 and \$64 million was realized as a direct bottom-line value to Cummins.

The majority of the projects focused on transportation and logistics, where the Company was able to better leverage its spending on freight and drive improved efficiency and utilization.

"Our vision for supply chain transformation encompasses our Company-wide commitment to reduce our environmental impact, leverage a diverse supply base, and develop our talent globally," said Lisa Yoder, Vice President – Global Supply Chain and Manufacturing.

"Integrated, yet focused, strategies have been developed across purchasing, manufacturing, warehousing, planning, and transportation," she added.

One example of a cost savings was the parcel provider project, implemented in January 2012. With a focus on Cummins' express transportation costs, the Company was able to reduce its current expenses by \$2.9 million. Improved rates were



"Our vision for supply chain transformation encompasses our Company-wide commitment to reduce our environmental impact, leverage a diverse supply base, and develop our talent globally."

#### **LISA YODER**

VICE PRESIDENT –
GLOBAL SUPPLY CHAIN
AND MANUFACTURING

realized by aggregating and consolidating combined volumes. Further savings were achieved as Cummins reviewed the types of services provided and reduced its residential surcharges.

The Company also worked with a customer to reclaim \$1.1 million in import duties.

The product was imported by Cummins and subsequently exported by the customer. By working with the customer,

Cummins was able to provide the necessary documentation to fulfill the requirements that enabled the duty to be reclaimed.

As Cummins continues to execute its supply chain transformation, the Company will expand its focus from manufacturing sites to include all elements of sustainability – suppliers, customers and the communities where Cummins does business and its employees live and work.

Cummins is working hard to ensure its supply chains not only provide the Company with the supplies needed to meet the demands of its growing customer base, but also ways to shrink its environmental footprint. Part of Cummins' long-term vision is to move from an inflexible and disconnected global network to a highly integrated network array of lean, green and flexible plants.

The future of Cummins' supply chain includes a focus on carbon-neutral plants with industry-leading environmental best practices.

"Building sustainable supply chains means identifying ways to reduce the amount of packaging on products to minimize waste, combining shipments so that delivery trucks don't travel half empty and using shipping materials that can be reused or recycled rather than discarded." Yoder said.

The Company envisions market-driven supply chains to establish profitable growth. Executing on this vision will strengthen the Company's commitment to not only exceeding customer expectations but also fulfilling Cummins' mission that "everything we do leads to a cleaner, healthier, safer environment."

## **CUMMINS GROWTH ACCELERATORS**

Cummins has established five growth accelerators for sustained, profitable growth. They are:

- 1 Adopting a growth mindset.
- **2** Advancing from a multi-national to a global company.
- **3** Achieving supply chain excellence.
- 4 Delivering customer support excellence.
- **5** Investing in leadership development and high performing teams.



## CUMMINS' SUSTAINABILITY REPORTING DOESN'T END WITH THIS DOCUMENT.

Go to our website – www.cummins.com/sustainability – for regular updates on how we're meeting the needs of all of our stakeholders and practicing good corporate citizenship.

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