



**SUSTAINABILITY  
PROGRESS REPORT  
2015-2016**

# **POWERING WHAT'S *NEXT***

# ABOUT THIS REPORT

*Cummins' 2015-2016 Sustainability Progress Report is presented in the spirit of the Global Reporting Initiative (GRI). The GRI's goal is to develop a consistent way for companies across the globe to voluntarily report on their environmental, social and economic performance.*

*This report reflects Cummins' broad view of sustainability, including safety, diversity and governance in addition to the company's environmental initiatives, efforts to promote innovation, its community programs and Cummins' financial performance.*

*The theme of this year's report is **"POWERING WHAT'S NEXT."** A good part of 2015 and early 2016 at Cummins has been devoted to looking ahead, positioning the company so it's ready when better markets return. Guided by our Vision, Mission and Values, this approach applies not just to Cummins' product portfolio, but in the way the company engages in communities and creates the right work environment for success. As it has since the company's founding in 1919, sustainability will continue to play a critical role in Cummins' future.*

*Cummins is a global company that wants to make a difference for all of its stakeholders, today and in the future. This report was posted in May 2016 and is Cummins' 13th annual edition.*

## CUMMINS DATA BOOK

Cummins will again produce a 2015-2016 Sustainability Data Book in June 2016. This report will include all of the data in our Sustainability Progress Report plus additional disclosures, especially as it pertains to Cummins' environmental performance. It is designed for those who want a deeper statistical look at the company. The Data Book will be posted at [www.cummins.com/sustainability](http://www.cummins.com/sustainability).

Where appropriate, we will post the corresponding GRI number for each disclosure.

We will also post Cummins' submission to the Carbon Disclosure Project at [www.cummins.com/sustainability](http://www.cummins.com/sustainability). You can find more financial data about the company's performance in Cummins' annual 10-K report. It is available in the Investor Relations section at [cummins.com](http://cummins.com).

## EXECUTIVE SUMMARY

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

You can get the Executive Summary by going to [www.cummins.com/sustainability](http://www.cummins.com/sustainability). Look on the left-hand menu for a link to "Past Reports."

## OUR REPORT ONLINE

The contents of the full progress report are also available at [www.cummins.com/sustainability](http://www.cummins.com/sustainability). If you have suggestions for the site, please contact Blair Claflin, Director – Sustainability Communications, at [blair.claflin@cummins.com](mailto:blair.claflin@cummins.com).

# ABOUT THE COVER

*Cummins spent much of 2015-2016 focused on the future, looking for new ways it can power advances both in its industry and the world at large, hence the Sustainability Progress Report's title “**POWERING WHAT’S NEXT.**”*

The three pictures on the cover reflect the company's focus on innovation to solve problems:

### ADDRESSING AIR POLLUTION

Chairman and CEO Tom Linebarger spoke at the 2015 BSR Conference in San Francisco where he told attendees that Cummins can play an important role in helping address the high levels of air pollution plaguing cities in developing countries.

### DRIVEN TO REDUCE CO<sub>2</sub>

The company in 2015 used a barnstorming tour of North America to talk about its 2017 products, putting a special focus on the ways they can help customers improve fuel efficiency, which translates into a corresponding reduction in greenhouse gases. It's just one of many ways Cummins is driven to reduce carbon dioxide (CO<sub>2</sub>) while powering our increasingly interconnected world.

### IN PURSUIT OF IMPACT

Cummins piloted a new approach to its community service efforts in 2015 in San Luis Potosí, Mexico, focusing on a relatively small geographic area in need of help to maximize the impact of the company's efforts.

# THE POWER OF CUMMINS

*In our newest video, we think you'll see that Cummins uses its power in many ways – ranging from its push for environmental sustainability, to its efforts to build stronger communities, to its ability to serve customers in remote locations. In the end, all of this – and more – defines The Power of Cummins.*

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# KEY PERFORMANCE INDICATORS

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



Cummins believes in transparency. This icon identifies multi-year data that allows for comparisons.

<sup>1</sup> Primary energy excludes sold electricity and associated fuel usage

<sup>2</sup> Intensity defined as adjusted for sales (energy / GHG) or hours worked (water)

<sup>3</sup> Reduction includes consolidated entities only

## ECONOMIC

|            | 2013           | 2014           | 2015           |
|------------|----------------|----------------|----------------|
| Revenue    | \$17.3 billion | \$19.2 billion | \$19.1 billion |
| Net Income | \$1.48 billion | \$1.65 billion | \$1.40 billion |

## ENVIRONMENTAL

|  | 2013   | 2014   | 2015   |
|--|--------|--------|--------|
| GHG emissions (thousands of metric tons CO <sub>2</sub> e) | 750    | 788    | 774    |
| Energy consumption <sup>1</sup> (thousands of MMBtu)       | 12,079 | 12,739 | 12,903 |
| Water use (millions of gallons)                            | 958    | 972    | 953    |
| Water intensity reduction <sup>2</sup> (since 2010)        | 30%    | 36%    | 41%    |
| Energy intensity reduction <sup>2,3</sup> (since 2005)     | 30%    | 34%    | 33%    |
| GHG intensity reduction <sup>2,3</sup> (since 2005)        | 33%    | 35%    | 36%    |
| Recycling rate   | 89%    | 90%    | 90%    |

## SOCIAL

|  | 2013   | 2014   | 2015   |
|--|--------|--------|--------|
| Major injury rate  | 0.04   | 0.043  | 0.039  |
| Incidence rate   | 0.65   | 0.61   | 0.57   |
| Women leaders in the workforce   | 20%    | 20%    | 21%    |
| Every Employee Every Community (EEEC) participation rate                                   | 68%    | 73%    | 80%    |
| Number of Environmental Challenge participants   | 11,500 | 13,600 | 21,600 |
| Greenhouse gas reduction as part of the Environmental Challenge (thousands of metric tons) | 19     | 22.4   | 36.8   |

# A NOTE FROM THE CHAIRMAN

*At Cummins, sustainability, particularly environmental sustainability, is critical to the company's long-term growth and profitability.*

*Our economic success is driven by our ability to produce the cleanest, most fuel efficient engines in the world. We want to help our customers meet the most stringent environmental regulations while providing them with the dependable and affordable power they need to reach their business goals.*



If you are unfamiliar with Cummins, we power trucks, trains, ships, excavators and more, helping to deliver people and products faster, cleaner and more efficiently than ever before. Our engines work thousands of feet below the earth's surface and high in the mountains in some of the most demanding environments in the world. We also make generators, providing reliable backup power to schools, hospitals and some of the largest, most technically advanced data centers on the planet.

In short, we help power the interconnected world that so many of us have come to depend on, and we do it consistent with our mission demanding "everything we do leads to a cleaner, healthier, safer environment."

Success at Cummins is measured by more than the bottom line. If we do our job right, our company can help build stronger communities, extend economic opportunity to more people and help address the environmental challenges facing the world today.

We take a holistic approach to sustainability, focusing on growth, innovation, corporate responsibility, health and safety, diversity and governance, in addition to environmental protection. While all of these areas contribute to Cummins' long-term success, they also depend, at least to some extent, on the company's profitability.

While 2015 was a profitable year for Cummins, it was a difficult one in many ways. International sales declined in the face of market challenges in much of the world. Revenues in North America grew for much of 2015, but were unable to offset weakness in many of our end markets elsewhere.

In response, we made the difficult decision to reduce our workforce by approximately 2,000 people in the fourth quarter of 2015 and restructure several of the company's operations to reduce costs, streamline operations and match capacity with market demand. We continued investing in new products, technology and strategic partnerships despite weak economic conditions.

*Linebarger has been working at Cummins for more than 20 years. Here's a quick look at his career at the Company.*

**CHAIRMAN AND CHIEF EXECUTIVE OFFICER**  
Jan. 1, 2012, to present

**PRESIDENT AND CHIEF OPERATING OFFICER**  
2008-2011

**EXECUTIVE VICE PRESIDENT, PRESIDENT –  
POWER GENERATION BUSINESS**  
2005-2008

**VICE PRESIDENT – POWER GENERATION**  
2003-2005

**VICE PRESIDENT AND CHIEF FINANCIAL OFFICER**  
2000-2003

**VICE PRESIDENT – SUPPLY CHAIN MANAGEMENT**  
1998-2000

**MANAGING DIRECTOR – HOLSET ENGINEERING COMPANY  
(A DIVISION OF CUMMINS)**  
1997-1998

**SENIOR MANAGER – ENGINEERING OPERATIONS  
AND TECHNICAL CENTER LEADER, HOLSET**  
1996-1997

**ENGINE COMPANY ASSISTANT TO GROUP VICE PRESIDENT  
FOR WORLDWIDE OPERATIONS, PROGRAM MANAGER –  
ADVANCED FUEL SYSTEMS**  
1994-1996

**INTERNSHIP – ASSISTANT TO PLANT MANAGER  
COLUMBUS MIDRANGE ENGINE PLANT**  
1992

With a leaner cost structure and strengthened product and market positions, I'm confident Cummins will emerge as a stronger company when our markets return to more normal levels. Cummins has emerged stronger from the last two downturns, with stronger profitability levels and higher growth, and we intend to do that again this time.

Cummins is especially well positioned in markets with tougher emissions standards. Unfortunately, some countries still believe they must choose between industrial development and clean air. This view has contributed to the unacceptable levels of air pollution we see in many parts of the world.

We are now working with regulatory agencies around the world to help them develop, adopt and enforce tough but achievable emission standards. Cummins can offer proven technology at affordable prices, allowing for cleaner air and successful economic growth.

Enforcement, however, is critical. As I told the 2015 **BSR** (formerly Business for Social Responsibility) Conference in San Francisco, if enforcement is inconsistent, those who comply with the rules are the ones that lose out.

I suppose some of you might still be skeptical about how a company building engines and generators can help improve the environment in polluted cities, let alone build a better world. I encourage you to read this report and learn more about the progress Cummins is making toward improving the fuel efficiency of our **products in use** and reducing the **environmental impact** of our own operations.

I also hope you will read about the remarkable things our employees are doing, working with their communities to preserve water resources, **improve air quality**, and promote educational opportunities.

***Finally, I hope you will read about our efforts to help build model villages in India. Seeing the incredible improvements in economic achievement, education and health and sanitation in Nandal village during our Board of Directors' visit in 2014 was one of the best moments of my career.***

One of the reasons I joined Cummins out of business school was I thought it offered me the best opportunity to make a positive difference in the world. Twenty-two years later, I still feel that same way.



**Tom Linebarger**  
Chairman and CEO  
Cummins

# 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 St.  
Columbus, IN 47201

EST. 1919



[www.cummins.com](http://www.cummins.com)

**CMI**

**STOCK SYMBOL**  
(New York Stock Exchange)

**55,200** EMPLOYEES  
WORLDWIDE

More than 50 percent of the company's employees are located outside the United States.

(approximate employee total, as of Dec. 31, 2015)

## CUSTOMERS

Cummins' customers are located in approximately **190 countries and territories** that the company reaches through a network of more than **600 company-owned and independent distributor locations** and approximately **7,200 dealer locations**.

## FORTUNE 500 RANKING (2016)

**148**

## SALES / EARNINGS

In 2015, Cummins earned \$1.4 billion on revenues of

**\$19.1 billion**

# HOW WE DO IT

*The company is organized into four business units. In 2015 and early 2016, Cummins went through some restructuring designed to help the company innovate faster and bring more value to customers.*



## CUMMINS ENGINE BUSINESS

The **Engine Business** manufactures and markets diesel and natural gas engines for on- and off-highway use around the world. Markets include heavy- and medium-duty trucks, buses, light-duty trucks and industrial uses in segments such as agriculture, construction and military equipment.

## CUMMINS POWER SYSTEMS

Cummins **Power Systems** is a global provider of power generation systems, components and services in standby power and distributed power generation. It provides a full range of services including turnkey and temporary power solutions. Cummins continues to produce high horsepower engines for ships, trains, generators and more, but that function moved from the Engine Business to the new Power Systems business.

## COMPONENTS BUSINESS

**Cummins Emission Solutions** designs and builds exhaust aftertreatment solutions to reduce emissions for light-, medium-, heavy-duty and high horsepower engines.

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

**Cummins Fuel Systems** designs and manufactures fuel systems that maximize power and fuel economy while helping to reduce emissions.

**Cummins Turbo Technologies** designs and builds turbochargers to maximize performance and reduce emissions and fuel consumption.

## CUMMINS DISTRIBUTION BUSINESS

**Cummins Distribution Business** sells and services the full range of Cummins products for over 20 application segments in more than 190 countries and territories around the world.

# CUMMINS GLOBAL NEWS ROUNDUP

A look at some of the news the company made around the world.

- |   |                         |   |                |    |                         |    |                               |
|---|-------------------------|---|----------------|----|-------------------------|----|-------------------------------|
| 1 | BUENOS AIRES, ARGENTINA | 5 | DORMAA, GHANA  | 9  | SULAYMANIYAH, IRAQ      | 13 | DAKAR, SENEGAL                |
| 2 | SCORESBY, AUSTRALIA     | 6 | PHALTAN, INDIA | 10 | SAN LUIS POTOSÍ, MEXICO | 14 | DARLINGTON, UNITED KINGDOM    |
| 3 | PALMAS, BRAZIL          | 7 | PHALTAN, INDIA | 11 | DOHA, QATAR             | 15 | COLUMBUS, INDIANA (U.S.A.)    |
| 4 | BEIJING, CHINA          | 8 | PUNE, INDIA    | 12 | SINGAPORE               | 16 | STOUGHTON, WISCONSIN (U.S.A.) |



# VISION, MISSION, VALUES & PRINCIPLES

## OUR VISION

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

## OUR MISSION

*We unleash the  
Power of Cummins by:*

- » **MOTIVATING** people to act like owners, working together.
- » **EXCEEDING** customer expectations by always being the first to market with the best products.
- » **PARTNERING** with our customers to make sure they succeed.
- » **DEMANDING** that everything we do leads to a cleaner, healthier, safer environment.
- » **CREATING** wealth for all stakeholders.

## OUR VALUES

### INTEGRITY

Strive to do what is right and what we say we will do.

### INNOVATION

Apply the creative ingenuity necessary to make us better, faster, first.

### DELIVER SUPERIOR RESULTS

Exceed expectations consistently.

### CORPORATE RESPONSIBILITY

Serve and improve the communities in which we live.

### DIVERSITY

Embrace the diverse perspectives of all people and honor both with dignity and respect.

### GLOBAL INVOLVEMENT

Seek a world view and act without boundaries.

## OUR STRATEGIC PRINCIPLES

### Leverage Complementary Businesses

Cummins is a family of complementary businesses that create value for our customers by leveraging relationships and applying innovative technology across business boundaries.

### Increase Shareholder Value

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

### Seek Profitable Growth

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

### Relentlessly Pursue Cost Leadership

Cummins will pursue an operational strategy of cost leadership.

### Lead in Critical Technologies

Cummins will be the market leader in technologies most critical to our customers' success and our Company's performance.

### Create the Right Work Environment

Cummins will assure that the physical and cultural work environment is conducive to excellent performance and continuous improvement.

# OUR KEY TOOLS

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

## SIX SIGMA

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

Six Sigma uses data-based analysis to identify defects and variation in a wide range of manufacturing and business situations. Since it was introduced at Cummins in 2000:

- » Approximately **23,000 people** at Cummins have been trained on Six Sigma tools over **3 million hours**.
- » Six Sigma projects have identified an estimated **\$6.3 billion in savings** over the tool's 15-year history at Cummins.
- » Customers have saved an estimated **\$1.37 billion** through Six Sigma initiatives with the company since the tool was first offered to them in 2005.

Cummins also uses Six Sigma in its community work, helping its community partners address problems. Employees completed 110 Community Impact Six Sigma projects on behalf of their community partners in 2015.

The impact of Six Sigma on the company, however, goes beyond cost savings and community engagement. It has provided Cummins with a common language and collective mindset that can be used to address a problem or challenge almost anywhere in the world.

In 2016, the company announced some changes to its Six Sigma program designed to keep projects targeted at Cummins' most important business needs. The company's top leaders will play a key role in determining Six Sigma priorities with a special focus on product quality, working capital, distributor synergies, direct material cost reductions and telematics.

After 15 years and so many people trained on the tool, however, it seems likely a Six Sigma mindset will continue to be behind almost everything the company does.

## CUMMINS OPERATING SYSTEM

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

- » Put the customer first and provide real value.
- » Synchronize flows (material, physical and information).
- » Design quality in every step of the process.
- » Involve people and promote team work.
- » Ensure equipment and tools are available and capable.
- » Create functional excellence.
- » Establish the right environment.
- » Treat preferred suppliers as partners.
- » Follow common problem-solving techniques.
- » Use Six Sigma as the primary process improvement method.

## CUMMINS BUSINESS MODEL

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

The business model was updated in 2013 to more accurately reflect how Cummins delivers products and services to our customers around the world through an integrated supply chain. The new model more clearly represents how we work together to meet or exceed customer expectations.

# OUR RECOGNITION

Cummins received a number of awards in 2015-2016 that involved the sustainability of the company.

## CORPORATE RESPONSIBILITY / ETHICS

### WORLD'S MOST ETHICAL COMPANIES

Cummins was named to Ethisphere's 2016 list of **World's Most Ethical Companies** for a ninth consecutive year.



Cummins was one of 10 global companies awarded the **Golden Peacock for Excellence In Governance** in 2015.



Cummins in 2015 was named to the **FTSE4GOOD Index** for demonstrating strong social, governance and environmental practices.

### TOP COMPANIES FOR CORPORATE RESPONSIBILITY

Cummins India was named one of India's **Top Companies for Corporate Responsibility** in 2015 by The Economic Times, a leading Indian financial newspaper.

## ENVIRONMENT

### MEMBER OF Dow Jones Sustainability Indices In Collaboration with RobecoSAM

Cummins was named to the 2015 **Dow Jones Sustainability Index for North America**. It has been on the index since 2006.



Cummins was named to CDP's **Climate Disclosure Leadership Index** in 2015.



Cummins in 2016 received the Clean Energy Ministerial's **Award of Excellence in Energy Management**, one of only three ISO 50001-certified organizations to be honored.

## DIVERSITY / WORKPLACE



Cummins received a perfect score for an 11th consecutive year in the 2016 **Corporate Equality Index** from HRC, the largest U.S. civil rights organization for LGBT employees.

### TOP 25 EMPLOYERS IN AMERICA

Forbes named Cummins one of its **Top 25 Employers in America** in 2016.



Cummins was named one of the **Top 50 Companies for Diversity** by DiversityInc for a 10th consecutive year in 2016.

### MILITARY FRIENDLY EMPLOYER

Cummins was named a 2016 **Military Friendly Employer** by the publisher of G.I. Jobs and Military Spouse.

## BUSINESS / PRODUCT

### BEST PICKUP FOR 2016

The Cummins-powered 2016 Nissan TITAN XD was named **Best Pickup for 2016** by Cars.com, PickupTrucks.com and AutoGuide.com.

### 2015 PRODUCT OF THE YEAR

Consulting-Specifying Engineer named the QSK95 Series generator its **2015 Product of the Year**.

### TOP 25 SUPPLY CHAIN COMPANY

For a fourth consecutive year, Cummins was named a **Top 25 Supply Chain Company** by Gartner, an IT, research and advisory company.

# OUR HISTORY

*Cummins has a rich history, replete with examples of innovation, entrepreneurship and vision. Here's a look at some highlights over the last 96 years:*



# DRIVEN TO REDUCE CO<sub>2</sub>

## CUMMINS WORKING IN MANY WAYS TO REDUCE CARBON DIOXIDE

*At first glance, Dave O'Brien might not seem like a man on a mission. But get him talking about Cummins' latest fuel economy triumph, and the corresponding decrease in carbon dioxide (CO<sub>2</sub>) emissions, and it's easy to see why he describes himself as a "catalyst for fuel economy."*



"This isn't about me," Cummins Fuel Economy Leader explains, his eyes growing just a little bit bigger. "We've got incredibly talented people helping our customers all around the world to improve the fuel efficiency of our products in use. I'm just the guy who brings them together to share ideas that are good for our customers, good for the environment and good for the company, too."

O'Brien, who records, tracks and celebrates fuel efficiency projects for the company's products in-use team, is just one of many people at Cummins focused on improving fuel efficiency, and by extension, reducing CO<sub>2</sub> emissions. Boosting fuel economy results in an almost equal reduction in CO<sub>2</sub>, a key contributor to global warming and the primary greenhouse gas (GHG) emitted through human activities.

Cummins is working across almost every function to reduce CO<sub>2</sub>, capitalizing on the opportunity to do something that's good for the environment while saving money for customers.

This effort is clearly reflected in the company's products. Cummins, for example, received certification from the EPA for its complete lineup of on-highway diesel and natural gas engines more than a year ahead of the second step in GHG and fuel-efficiency standards, which take effect in January 2017.

When the company went on a 36-city North American barnstorming tour in 2015 to meet with customers, Cummins' fuel efficiency technology was prominently on display.

The Redefining Tour highlighted the work of several products designed to improve fuel economy, including the SmartAdvantage Powertrain, which uses a combination of down-speeding and optimized communication between the engine and transmission to boost fuel efficiency.

But the effort to reduce carbon dioxide goes well beyond the company's products to the way Cummins works with customers, pursues innovation and streamlines its own operations.

**"Going forward, Cummins will continue to be a catalyst for environmental action," says Cummins Chairman and CEO Tom Linebarger. "Our vision and mission demand it, our business success depends on it, and the ingenuity and energy of our employees can make it happen."**



## ADDRESSING OUR PRODUCTS IN USE

*The overwhelming majority of the CO<sub>2</sub> Cummins produces stems from its products in use by customers.*

In 2015, the company for the first time calculated the collective lifetime CO<sub>2</sub> emissions of its 2014 engines as part of its submission to the CDP, formerly known as the Carbon Disclosure Project.

Cummins estimated the collective emissions of the 1.1 million engines the company and its joint venture partners

sold in 2014 would be 914 million metric tons of CO<sub>2</sub> over their useful lives of 10, 20, or even 40 years.

"Our stakeholders understand we make a lot of engines, and they last a long time," said Brian Mormino, Executive Director of Environmental Compliance. "But we have a responsibility to focus on reducing their lifetime emissions."

Even before the CO<sub>2</sub> estimate was calculated, Cummins set a goal of partnering with customers to reach an annual reduction of 3.5 million metric tons of CO<sub>2</sub> or 350 million gallons of fuel annually by 2020.

The company estimates it has saved its customers 232 million gallons of fuel and 2.32 million metric tons of CO<sub>2</sub> since the products in-use initiative started in 2014.

One of the most active fuel economy teams at the company is based in Pune, India, where Arnol Wairagade and his colleagues are working from a list of 24 projects they hope to accomplish over the next few years such as developing stop-start technology for their bus customers.

“We want our customers to be the market leaders on fuel economy,” Wairagade said. “We know how important fuel costs can be to their profitability.”

O’Brien said Cummins has already worked with customers to recalibrate engines for optimal efficiency on a wide range of projects, from fleets of forklifts to snow-making machines at ski resorts.

**“If we can help customers reduce one of their major cost centers and help the environment at the same time, to me that’s huge,” O’Brien said.**



**Cummins’ Kevin Brittain uses Numerical Optimization to help engineers arrive at better designs faster.**

## DESIGNING FOR THE ENVIRONMENT

*The effort to reduce CO<sub>2</sub> starts long before a Cummins product ever reaches a customer, however.*

Cummins engineers use powerful computer models capable of simulating the harsh environment inside an engine to design products that are fuel efficient and use a minimum amount of natural resources while still delivering the power and durability customers need to succeed.

The models give product designers an almost limitless number of options before ever using a drop of fuel in a test cell.

Cummins’ Kevin Brittain uses something called Numerical Optimization to help make these models even more effective for high horsepower engines. Numerical Optimization is based on mathematical calculations that help designers narrow the range of possibilities to those that have the best chance for success.

Final designs still must be tested before they are ready for a customer. But computer models and tools like Numerical Optimization make it much more likely that testing will be successful.

“The focus of Design for Environment is to reduce our product’s environmental impact by making informed decisions in the design phase,” said Madeleine Fogler, who led Cummins’ Design for the Environment effort until changing positions in 2016. “Reducing material without compromising durability and reliability is one way to do that.”



## NEW WAYS OF DOING BUSINESS

*Cummins has also changed the way it does business to drive down CO<sub>2</sub>.*

For example, three years ago each of Cummins' four business units in North America were running their own transportation systems, with different service providers.

Now, thanks in large part to a new computer logistics service, three of the four systems are part of a coordinated initiative with the fourth coming on line soon. The business units share trucks where it makes sense to ensure tractor-trailers are full when making runs.

Supply Chain leaders can track with a laptop computer the nearly 500 trucks delivering material to company facilities in North America on a typical day.

So far, Cummins has saved more than \$2 million and 2,400 metric tons of CO<sub>2</sub> thanks to the new system.

Cummins has set a goal for reducing the CO<sub>2</sub> per kilogram of goods moved by 10 percent by 2020. The company has seen about a 2.3 percent reduction so far.

While it makes up a relatively small part of the company's overall CO<sub>2</sub> emissions, Cummins believes good environmental stewardship begins with its own operations.

In addition to establishing goals, the company has initiated a number of efforts in 2015 to reduce its carbon footprint, including:

- » Installing equipment to capture the power generated within the test cells of its high horsepower plant in Seymour, Indiana (U.S.A.) to help power the facility. The plant has significantly reduced the power it gets from its local utility and for five hours during one stretch was completely self-powered.
- » Expanding the use of alternate fuels to help power Cummins' facilities such as the 3.6 megawatt roof-top solar array installed at the Beijing Foton Cummins Engine Company Ltd. It is the largest of 11 solar arrays at Cummins locations around the world.

- » Certifying three plants in the United Kingdom, one in France and one in Belgium as the first Cummins sites achieving "Zero Disposal" status, where 100 percent of waste is handled in a truly useful manner. The company wants to have 30 "Zero Disposal" sites by 2020.

In all these ways and more, Cummins is driven to reduce CO<sub>2</sub>, consistent with the company's mission demanding that "everything we do leads to a cleaner, healthier, safer environment."

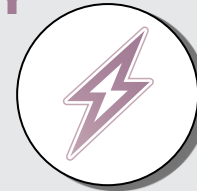
# CUMMINS ACHIEVES KEY ENVIRONMENTAL GOALS

*Cummins achieved two major environmental milestones in 2015, exceeding its 2015 energy / greenhouse gas reduction goals and reaching its 2020 water goal five years early.*

"The environmental teams around the globe truly had an outstanding year," said Mark Dhennin, Cummins' Director of Energy Efficiency and Environment. "There was a lot of effort that went into delivering on our commitments, which our environmental professionals met with great skill and enthusiasm."

Here's a 12-month progress report on each of the environmental goals Cummins has established.

## ENERGY AND GHGS



### Goal:

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

**Baseline year: 2005**

Cummins exceeded its energy and greenhouse gas reduction goals in 2015. The company achieved a 36 percent reduction in GHG intensity and a 33 percent reduction in energy intensity (both adjusted for sales) from the 2005 baseline year.

In 2015, the company's GHG emissions decreased by 14,000 tons on an absolute basis and 1 percent adjusted for sales from the prior year.

Cummins had a number of challenges in maintaining progress on the goal, including several new buildings that used energy but did not produce revenue. The company also acquired all but one of the North American joint venture distributors,



## NEW ENERGY GOAL

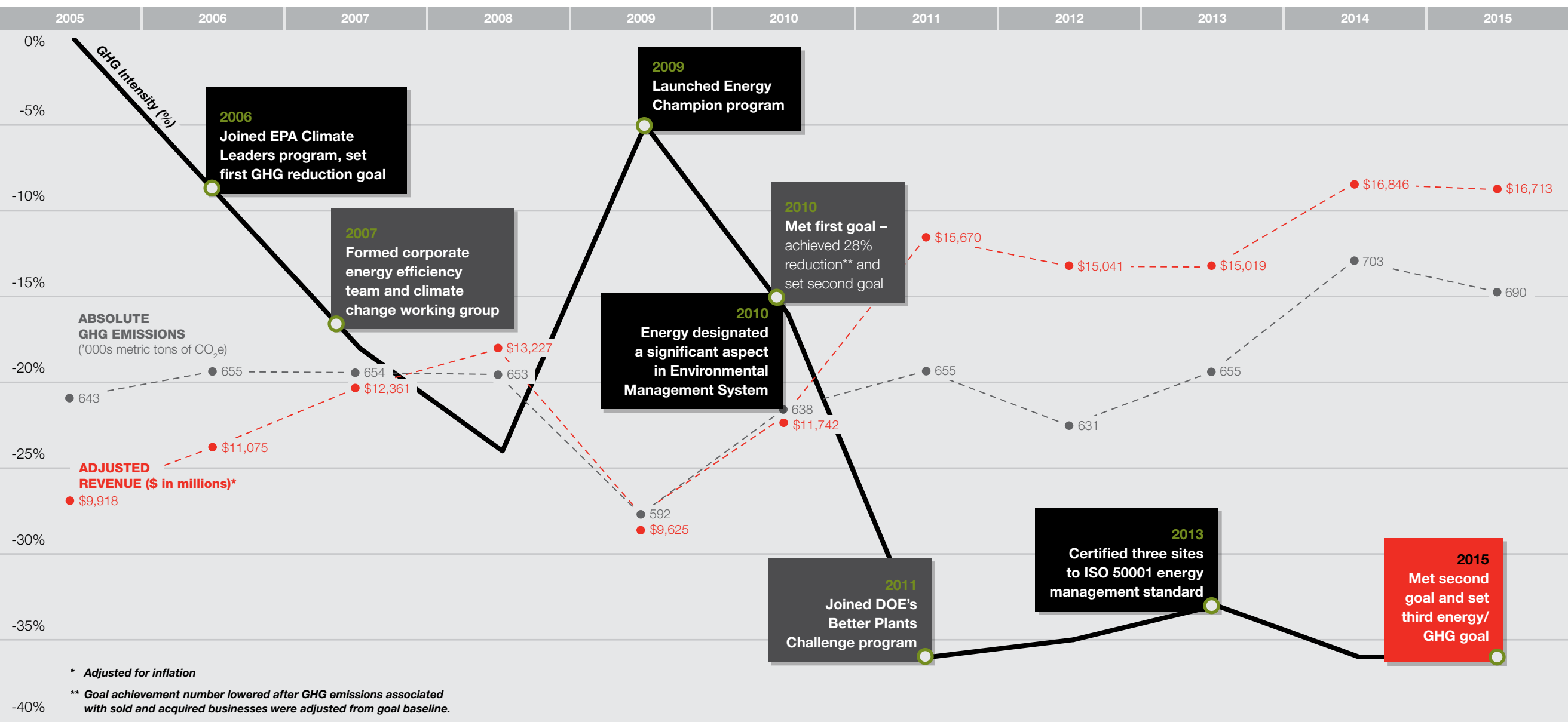
Cummins in 2016 approved its third energy goal in 10 years. It pledges to **achieve a 32 percent energy intensity reduction from company facilities by 2020** (using a baseline year of 2010) **and increase the portion of electricity it uses derived from renewable sources.**

This goal's intensity factor is based on hours worked, not revenue as previously used.

All consolidated operations and joint ventures subscribing to Cummins' Enterprise Environmental Management System are included.

2015 GREENHOUSE GAS GOAL MILESTONES

Cummins has been actively managing energy efficiency at its facilities for a decade. Here is a look at some key milestones toward its achievement of a second GHG goal.



increasing Cummins' facility footprint. Finally, the company invested more in research and development and the production of high horsepower engines, which substantially increased fuel usage in test cells.

The company used tools and resources available from programs such as the ISO 50001 (international) energy management system and the Department of Energy's Superior Energy Performance (SEP) program to achieve the goal.

## WATER



### Goals:

- » *Reduce direct water use across Cummins by 33 percent by 2020, adjusted for hours worked.*
- » *Achieve water neutrality at 15 Cummins manufacturing, technical, and other larger sites located in regions where water is in short supply.*

**Baseline year: 2010**

In 2015, Cummins used 953 million gallons of water, a 19.6 million gallon decrease from 2014. Since the goal's baseline year of 2010, direct water use is down by 16 percent, while water use adjusted for hours worked is down by 41 percent despite an increase in the number of in-scope facilities during the period.

Since 2010, Cummins in-scope facilities increased by 200 sites to about 440 sites by the end of 2015. The increase in the footprint was due to the addition of new office buildings, regional distribution centers and acquisition of North American distributors.

Cummins plans on setting a new water goal by the end of 2016. For the global water goals, Cummins considers all the managed, consolidated and 50:50 joint ventures that are part of its Environmental Management System.

In 2015, Distribution Business entities reduced about 43 million gallons of water by performing water balances, or evaluations, to identify and fix problems at little or no-cost. With several new facilities open that are continuing to increase

production, Cummins must ensure it continues producing results through the next phase of growth and production demands.

Cummins' water neutrality work is progressing as expected. The company continues to promote awareness about the connection between water use in its plants and community needs. Over the past year, Cummins' efforts have been focused on validating calculation methodologies using sites implementing projects and defining project roadmaps leading to goal achievement.

The company has three sites in India and one in China pending validation, and it expects three will be designated as water neutral during 2016.

One notable water project won a Chairman's Environmental Award in 2016. The Chongqing Cummins Engine Company used its water balance to identify leaks and implemented a program to reduce water use by 24 percent, a savings of 42 million liters (11 million gallons) per year.

## WASTE



### Goals:

- » *Increase recycling rate from 89 percent in 2014 to 95 percent by 2020.*
- » *Reach "Zero Disposal" status at 30 sites with 100 or more people by 2020 where 100 percent of waste is reused, recycled or recovered in a useful manner.*

**Baseline year: 2010**

Cummins continues to make progress on its waste goals. The company in total recycled 90.4 percent of its total waste generated in 2015, equivalent to approximately 172,000 tons of waste. Cummins' European sites have already achieved a collective 98 percent recycling rate.

Since the baseline year of 2010, Cummins' total waste disposed decreased by about 18 percent in absolute terms, while experiencing a 43 percent reduction in disposal adjusted for hours worked. Compared with 2014, Cummins' total waste disposed in 2015 increased slightly by 858 tons on an absolute basis but decreased 3 percent, adjusted for hours worked.

The four sites that achieved Zero Disposal in 2014 were confirmed again in 2015, and one new site was validated in 2015, bringing the total validated to five. Two new sites are currently pending validation.

Under Cummins' definition of Zero Disposal, waste can only be burned as a last resort to create energy and then only if there is a net energy gain, creating more energy than is needed merely to sustain combustion.

## PRODUCTS IN USE

### Goal:

» Partner with customers to improve the efficiency of our products in use, reaching by 2020 an annual reduction of 3.5 million metric tons (MMT) of carbon dioxide (CO<sub>2</sub>), saving 350 million gallons of fuel.

**Baseline year: 2014**



1.6 MMT reduction toward its goal of a 3.5 MMT annual reduction.

On a cumulative basis, counting work done in both 2014 and 2015, Cummins has saved customers \$927 million and 232 million gallons of diesel fuel.

There are a number of factors contributing to the success of the company's fuel economy improvement efforts. The fuel savings for some large initiatives delivered results greater than originally estimated. In addition, Cummins exceeded its initial estimate of achieving between 2 and 5 percent improvement per project for its customers, averaging instead 6.7 percent.

Collaboration among fuel economy team members, from customer engineering to account management, has contributed greatly to new project ideas and implementation. A global fuel economy forum meets monthly to share projects and best practices to fuel ideas for additional work.

Cummins fuel economy teams throughout the world implemented more than 100 fuel economy projects in 2015 for on- and off-road customers. The company is already nearly half way toward its 2020 goal, with particular success in the off-highway market where Cummins has more than doubled its original projections. As of the end of 2015, the company had achieved an annual

Some of the successes include a partnership between engineers at Cummins' Darlington Engine Plant in the U.K. and their counterparts at the Hyster-Yale Group, a leading manufacturer of materials handling equipment. Working together on nearly 20 projects since 2010, the partnership has delivered annual fuel savings in excess of 2 million gallons.

In another example, Cummins U.K. on-highway customer engineering worked with U.K. bus OEMs (original equipment manufacturers) to improve the fuel efficiency of Euro VI certified Cummins ISB engines in transit buses. Fuel economy improvements ranged from 2 to 5 percent, which was in addition to the nearly 20 percent improvement of the Euro VI engine compared to the Euro V engine.

In 2015, the partnership was able to avoid 2,800 metric tons of CO<sub>2</sub>, saving customers 280,000 gallons of diesel fuel or \$1.3 million. Consequently, Cummins-powered buses can now qualify for the London Low Carbon Certification tax incentive program.

## LOGISTICS

### Goal:

» Use the most efficient method and mode to move goods across the Cummins network to reduce CO<sub>2</sub> per kilogram of goods moved by 10 percent by 2020.

**Baseline year: 2014**



Cummins has achieved a 2.8 percent reduction through 2015 on CO<sub>2</sub> per kilogram of goods moved against its goal of a 10 percent reduction.

Logistics teams worked on several initiatives that helped Cummins' transportation network become more efficient in 2015. The company has created strategic transportation partnerships, moving from more than 40 carriers to a core group of five that now moves 85 percent of Cummins' freight. These carriers are encouraged to use natural gas, a low emission fuel.

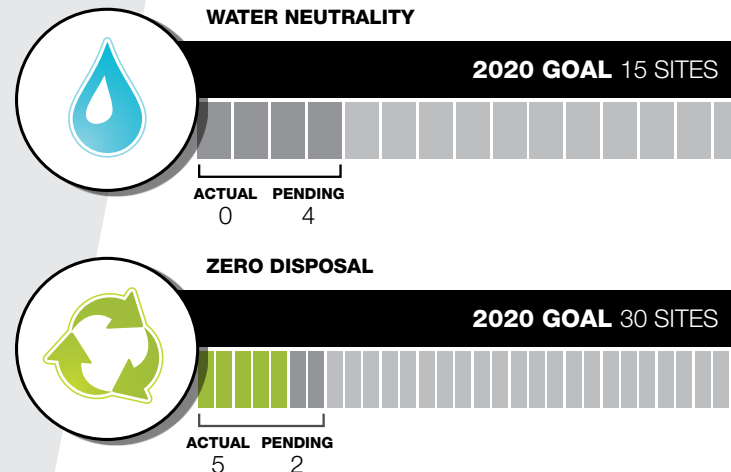
The company has moved to multiple consolidation centers across the globe to more effectively handle international shipments. Routing changes are also allowing Cummins to move goods more efficiently.

The company has increased the amount of goods moved in its trucks, resulting in a greater weight per truck than ever before. More intermodal freight options are considered and the company is moving to rail from truck transportation where feasible.

## KEY INDICATORS

Here's a look at Cummins' progress toward its environmental goals.

**Environmental performance** includes all consolidated operations and joint ventures subscribing to Cummins' Enterprise Environmental Management System.

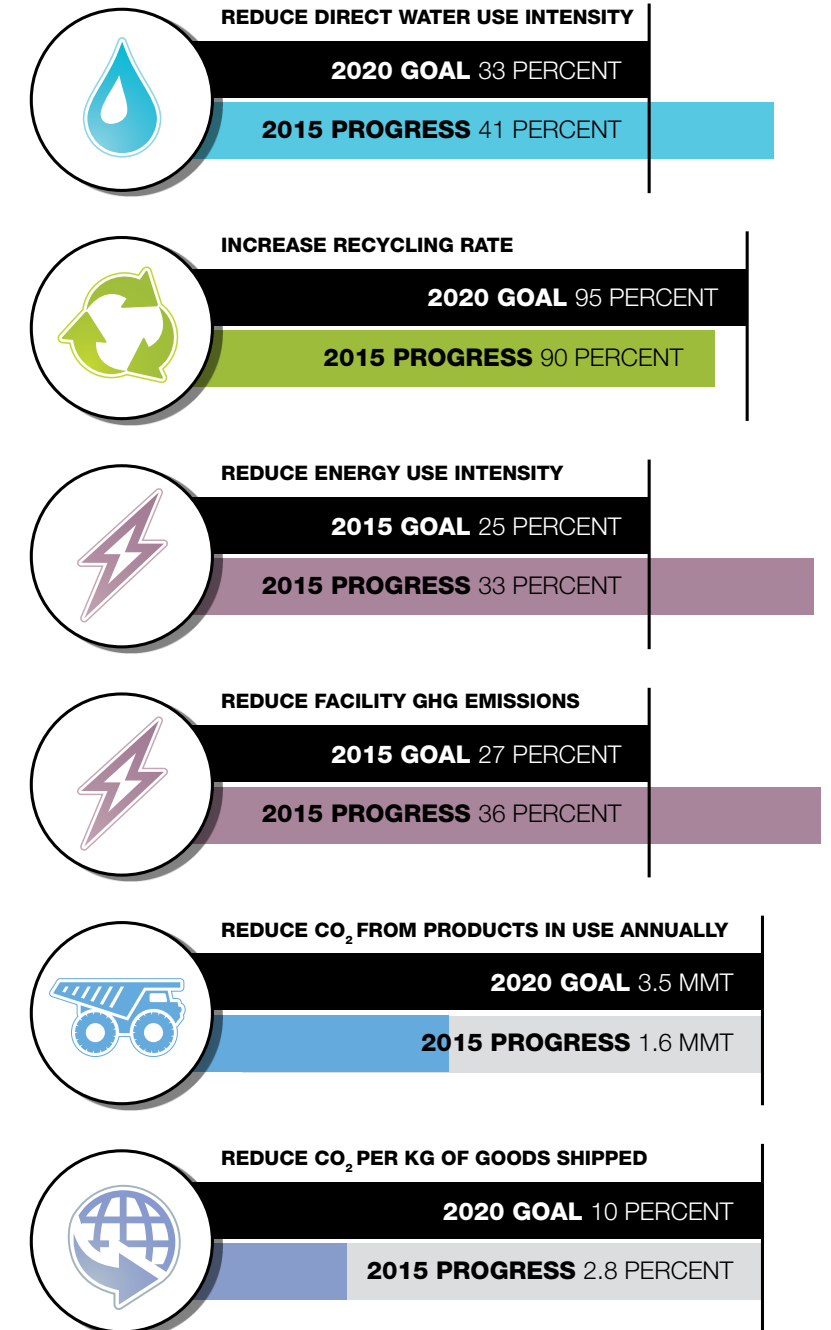


| ENVIRONMENTAL PERFORMANCE                                    | 2011   | 2012   | 2013   | 2014   | 2015   |
|--|--------|--------|--------|--------|--------|
| Energy consumption (thousands of MMBtu) <sup>1</sup>         | 12,135 | 11,690 | 12,079 | 12,739 | 12,903 |
| GHG emissions (thousands of metric tons CO <sub>2</sub> e)   | 775    | 727    | 750    | 788    | 774    |
| Generated waste (thousands of metric tons)                   | 188    | 179    | 177    | 183    | 191    |
| Disposed waste (thousands of metric tons)                    | 25     | 21     | 20     | 18     | 18     |
| Recycled waste (thousands of metric tons)                    | 164    | 158    | 157    | 165    | 172    |
| Recycling rate (%)   | 87     | 88     | 89     | 90     | 90     |
| U.S. hazardous waste (metric tons)                           | 101    | 104    | 85     | 92     | 78     |
| Water use (millions of gallons)                              | 1,082  | 1,069  | 958    | 972    | 953    |
| Number of Enterprise ISO 14001 certified entities            | 76     | 81     | 86     | 102    | 112    |
| Number of Enterprise ISO 14001 certified manufacturing sites | 55     | 63     | 67     | 71     | 71     |
| Net sales (millions U.S. dollars)                            | 18,048 | 17,334 | 17,301 | 19,221 | 19,110 |
| Energy intensity reduction since 2005 (%) <sup>2,3</sup>     | 35     | 33     | 30     | 34     | 33     |
| GHG intensity reduction since 2005 (%) <sup>2,3</sup>        | 36     | 35     | 33     | 35     | 36     |
| Water intensity reduction since 2010 (%) <sup>2</sup>        | 21     | 22     | 30     | 36     | 41     |

<sup>1</sup> Primary energy excludes sold electricity and associated fuel usage

<sup>2</sup> Intensity defined as adjusted for sales (energy / GHG) or hours worked (water)

<sup>3</sup> Energy and GHG intensity reduction includes consolidated entities only



## **A CLOSER LOOK: THE IMPACT OF OUR GOAL**

**Partner with customers to improve efficiency of our products in use,** resulting in an annual reduction of 3.5 MMT of CO<sub>2</sub> by 2020, saving 350 million gallons of fuel

In 2014 & 2015, Cummins Fuel Economy Projects



**Reduced** fuel by  
232 million gallons



**Saved** customers  
\$927 million (U.S.)



**Avoided** 2.32 million  
metric tons of CO<sub>2</sub>

Carbon sequestered by  
**1.9 MILLION ACRES**  
of forests

**5.44 BILLION MILES**  
of driving eliminated

Removal of  
**481,032 CARS**  
from the road for one year

# VISION FOR NEW PRODUCT DESIGN

*As the largest independent diesel engine manufacturer in the world, Cummins has the means and the commitment to reduce both the resources it uses to build products and the fuel burned to operate them.*

For the past 20 years, the company has focused its technology development on meeting regulatory requirements for the reduction of oxides of nitrogen (NOx), particulate matter (PM) and carbon monoxide (CO). But as those regulations near zero in developed markets, Cummins' focus for the next decades will be increasingly on fuel efficiency and carbon dioxide (CO<sub>2</sub>) reduction.

"Our product vision conveys that we are committed to pushing technology boundaries to solve environmental problems for our customers and our communities," said Vice President – Chief Technical Officer Jennifer Rumsey.

Engineering teams have long included fuel efficiency targets as part of their product development process. Today, Cummins is conducting a great amount of research into what it would take to expand its approach to design efficient products that are needed far into the future – to 2030 and beyond. The company is moving beyond just meeting regulations as its main guidepost and driving force to focusing on continuing to exceed customer's expectations while reducing the environmental impact of its products.

As a result, Cummins has created a vision statement for new product design:

***Powering the future  
through product innovation  
that makes people's lives  
better and reduces our  
environmental footprint.***

***We will do this by:***

- » ***Being first to market  
with technologies that  
deliver the best fuel  
efficiency and reduced  
GHG (greenhouse gas)  
emissions***
- » ***Driving customer  
success through  
dependable, innovative  
products and services***
- » ***Going faster and  
further with sustainable  
energy solutions***

This vision statement reflects Cummins' commitment to differentiated products for the future and the necessary changes to deliver them. The company knows it will require an in-depth knowledge of product markets and applications, challenging Cummins' product planning and technical function to transform how the company thinks about future technologies and products that delight our customers and match long-term global environmental scenarios.

Cummins' vision of being first to market, driving customer success and going faster and further builds on efforts already underway. The company has certified a complete lineup of on-highway diesel and natural gas engines to U.S. Environmental Protection Agency (EPA) standards, compliant to both the current EPA regulations and the second level of Phase 1 GHG and fuel-efficiency standards, which take effect in January 2017.

Cummins certified the Dodge Ram ISB engine three years early to the 2010 stringent NOx standards and was the first to certify to the California

Air Resources Board's stringent optional NOx standard of 0.02 gm/hp-hr with the ISLG engine.

Cummins is growing its suite of data connectivity software applications to help customers increase asset operating efficiency and utilization. Connected Diagnostics gathers engine data to provide customers with immediate expert recommendations in response to engine fault information, which results in greater productivity and maximized uptime.

Later this year, Connected Calibrations and Connected Tuning will be introduced as additional tools for optimizing the operating efficiency of the company's products by enabling over-the-air calibration updates.

Looking ahead, Cummins is refining its technology roadmaps to deliver on the company's new product fuel efficiency vision. New technologies including continued innovation in traditional engines and components, new fuel and energy sources, new components, and optimization of the system through broad integration will be evaluated.

*Cummins Redefining Efficiency Tour takes off from Columbus, Indiana in 2015. The tour across North America highlighted many of the ways the company's products are improving fuel efficiency.*

# REDEFINING EFFICIENCY: ACCELERATING CO<sub>2</sub> REDUCTIONS

*Cummins expanded the disclosure of its greenhouse gas footprint in 2015 to include the lifetime carbon dioxide (CO<sub>2</sub>) emissions of the company's products sold in 2014.*

Cummins has reported its facility greenhouse gas (GHG) emissions to CDP, formerly known as the Carbon Disclosure Project, for 10 years. In 2015, for the first time, the company reported to CDP its estimate that the collective CO<sub>2</sub> emissions of the just over 1 million engines Cummins and its joint venture partners sold in 2014 would be 914 million metric tons over their useful lives of 10, 20 or even 40 years.

These engines play a critical role, powering trucks, trains, ships and more, delivering needed goods, food and medicine around the world. They power school buses, emergency vehicles like fire engines, off-highway vehicles such as tractors critical to food production and excavators essential to building roads and bridges. Finally, they power the generators essential to schools, hospitals and data centers.

The new estimate is more evidence that Cummins’ biggest opportunity to reduce its CO<sub>2</sub> footprint is with its products, both in their design and in use, through greater fuel efficiency. It gives the company a baseline to measure against as it moves forward in its CO<sub>2</sub> reduction efforts.

**Here are four things to know about Cummins’ commitment to improving fuel efficiency and reducing CO<sub>2</sub>:**

1

**Reducing CO<sub>2</sub> emissions is a win for the environment and for our customers, too.**

Redefining efficiency and accelerating CO<sub>2</sub> reductions are key parts of Cummins’ environmental sustainability strategy. One of the company’s goals is to partner with customers to improve the fuel efficiency of Cummins products in use, and by extension reduce CO<sub>2</sub>. The company wants to cut CO<sub>2</sub> emissions by nearly 16 million metric tons, saving customers up to \$6.3 billion through greater fuel efficiency, by the end of 2020.

2

**Cummins and its customers care about reducing lifetime emissions.**

Customers say fuel efficiency is one of the top attributes they look for when making a purchase. They want to deliver the goods they transport as cleanly and efficiently as possible. The same goes for schools, transit systems and fire departments.

Over the next five years, Cummins expects to work with 20 percent of its customer base, touching nearly 2 million engines as it tailors engine specifications to customer applications. The company wants to ensure customers have the latest tools to improve fuel efficiency.

3

**We will use our technical leadership to innovate.**

Cummins has the technical leadership to reduce CO<sub>2</sub> not just in its work with customers but in product design and manufacturing. Cummins introduced more electronic engine features to improve fuel economy in 2015 and wrapped up work on the SuperTruck, the super-efficient concept truck of the future.

4

**We partner with others for a cleaner environment.**

There is growing public demand for environmental regulations of all kinds by governments in almost every country. Customers increasingly want the environmental attributes Cummins products provide to meet new regulations, with the power and reliability the company is known for to help them compete and win.

By actively participating in the rule-making process, Cummins is positioned to excel in regulated environments, providing real value to its customers. The company is also engaged in many other collaborations and partnerships, working with non-governmental organizations (NGOs) such as the Environmental Defense Fund and leading universities and research labs.

# PRODUCT STEWARDSHIP

*Product stewardship at Cummins' means the company's mission demanding "everything we do leads to a cleaner, healthier, safer environment" is foremost on the minds of employees when they think about the lifecycle of the company's products.*

Cummins adopted its first-ever comprehensive environmental sustainability plan in 2014, building on the good work the company had already done to reduce its environmental impact. The plan examined Cummins' entire environmental footprint, focusing on the key areas of water, waste, energy and greenhouse gases (GHGs).

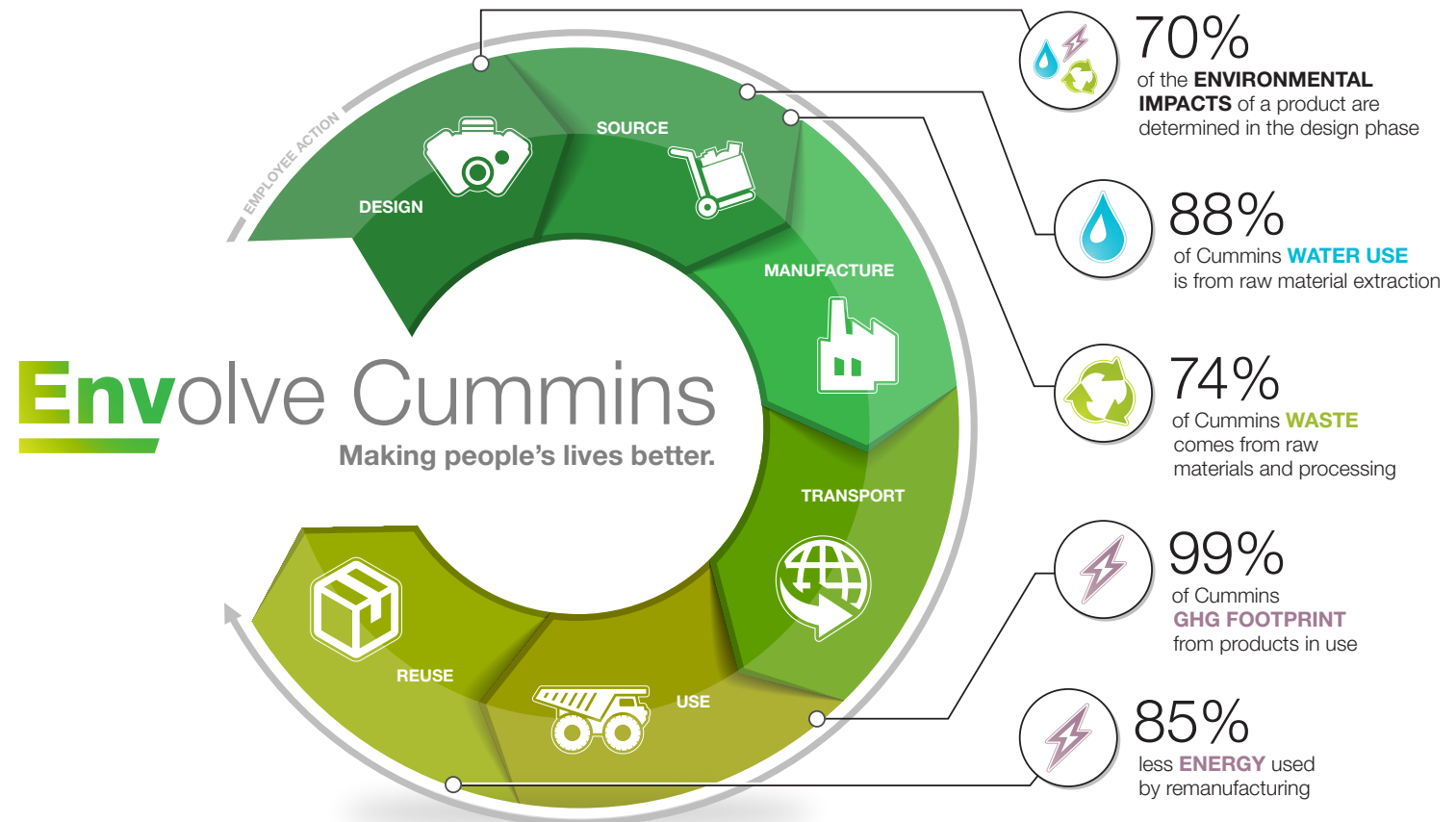
It was clear from this analysis that the company's top priority must be its products, both in design and in use. This analysis led Cummins to establish its products in-use goal in 2015 and its new product design vision statement in 2016.

As the concept of environmental sustainability matured at the company, views broadened and leaders initiated "Envolve Cummins," a comprehensive way to view and prioritize actions to address the company's biggest environmental opportunities. These actions ranged from the materials the company buys to the emissions of its products.

Envolve Cummins' priorities for sustainable consumption and production focus on four key considerations:

- 1 Reducing the company's carbon footprint.
- 2 Using fewer natural resources.
- 3 Partnering to solve complex problems.

***Envolve Cummins is the comprehensive lens through which Cummins views environmental sustainability, from design to manufacture to end of life. Our environmental sustainability plan is the way we carry out our priorities and goals and initiatives in our action areas.***



## REDUCING CUMMINS CARBON FOOTPRINT

Cummins is working in multiple ways to reduce the carbon footprint of its products and operations:

### CARBON REDUCTIONS

Cummins' operations met the company's second energy and GHG reduction goal in 2015 and is making progress on its logistics goal announced that same year.

While only 1 percent of the company's estimated GHG footprint comes from Cummins' own operations, it offers a great opportunity for employee engagement and cost savings and remains an important priority at Cummins.

### PRODUCT DESIGN AND USE

Seventy percent of a product's environmental footprint is determined during the earliest phases of the design process, according to the U.S. Environmental Protection Agency (EPA). Cummins engineers are now thinking about ways to make the company's products even more environmentally-friendly in the future, captured in the company's new product design vision statement.

Cummins is beginning to integrate tools and training programs into its new product development process to take into account the environmental impacts of all phases of product life-cycle, including raw material extraction, manufacturing, product use and end of life.

GHG emissions from Cummins products in use are the company's largest environmental impact and represent an estimated 99 percent of Cummins' greenhouse gas footprint due to fossil fuel use, which emits carbon dioxide (CO<sub>2</sub>), a key contributor to climate change. Cummins' biggest opportunity to expand its product stewardship beyond the upfront design is in working with customers to improve the efficiency of its products in use.

This is a win-win as it saves customers on fuel use and reduces GHGs. Through Cummins' products in-use goal, the company can make an immediate difference.

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

### REMANUFACTURING

Cummins' remanufacturing is the company's oldest "green business." It requires far less energy and natural resources to remanufacture products to extend life than to build new products.

Remanufacturing maximizes benefits for customers and the environment. Cummins products are designed with this in mind, enabling them to have a long, and increasingly fuel efficient, life.

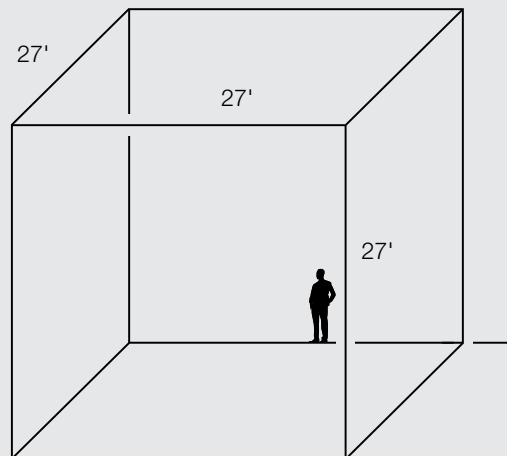
Through the common application of salvage technology, component re-use guidelines and remanufacturing-specific policies and procedures, the company has become increasingly sophisticated in what it can remanufacture and for how long it can extend a product's life.

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

Lighter, more compact, engine designs combined with new materials (compact graphite and aluminum) and special coatings are changing Cummins' approach to remanufacturing and making engines

## HOW MUCH IS A TON OF CO<sub>2</sub>?

*If you were to build a cube to represent one metric ton of CO<sub>2</sub>, it would measure 27 feet on all sides.*





## THE NUMBERS BEHIND REMANUFACTURING

**85%**  
less energy  
is required

**85%**  
of an engine  
can be **reused**

**17k**  
engines sold  
in 2015

## GOALS

more fuel efficient. Cummins is working on “design for disassembly,” to make remanufacturing easier. The company is also developing specific rebuild kits to improve fuel economy at time of rebuild.

### REMANUFACTURED ENGINES

The number of remanufactured engines 10L and above has nearly doubled since 2008.



| YEAR | NUMBER OF ENGINES |
|------|-------------------|
| 2015 | 7,222             |
| 2014 | 7,661             |
| 2013 | 5,880             |
| 2012 | 5,408             |
| 2011 | 4,770             |
| 2010 | 3,357             |
| 2009 | 2,728             |
| 2008 | 3,759             |

## USING FEWER RESOURCES

Use less, use better and use again are the strategic ideas guiding Cummins to using fewer natural resources. This goes beyond the company’s facilities, although certainly conservation is important there and Cummins has goals driving action.

This new way of thinking at Cummins encompasses the entire product lifecycle, incorporating design tools, advanced manufacturing concepts and material science for the efficient use of materials and fuels and increased opportunities for remanufacturing and reuse. The sustainability world calls it circular material flow – Cummins calls it good for business and good responsible citizenship.

Packaging leaders at Cummins continue to focus on reusable and returnable packaging to minimize natural resource use and reduce material sent to landfills.

## SOLVING COMPLEX PROBLEMS

A growing world population will bring environmental challenges that Cummins must partner with others to help solve. By 2030, the world will use 30 percent more energy and require 50 percent more food (using more natural resources to grow it). There is a projected 40 percent water gap.

The company continues to encourage suppliers to become more energy efficient and to source responsibly. Cummins is working with communities in water-stressed areas where it has operations to replenish water used at company facilities for community use.

Cummins has long worked with government and non-governmental organizations as well as technology collaborations on a host of environmental issues. It also has a demonstrated strength for effectively engaging in public policy to further environmental protection.

The company has a long history of supporting regulatory actions that are tough, clear and enforceable going back to the 1970s and the Clean Air Act.

The company supports a separate engine standard in these regulations to provide a clear direction for innovation, addressing the component that burns all the fuel and emits the CO<sub>2</sub>. It ensures enforceable requirements.

A regulatory framework that includes a combination of engine and vehicle standards is also the most cost-effective

way for customers to realize fuel savings and retain their ability to choose the right powertrain and vehicle to purchase in order to do their work.

## MATERIAL COMPLIANCE

Material compliance is key to Cummins' product stewardship. The company maintains a corporate policy regarding the use of prohibited and restricted substances in its products. Cummins' policies take into account key global environmental regulations as well as very specific ones driven by the European Union such as Registration, Evaluation, Authorization and Restriction of Chemicals (REACH); Restriction of Hazardous Substances (RoHS), and End of Life Vehicle for automotive products.

REACH addresses the production and use of chemical substances and their potential impacts on both human health and the environment, while RoHS restricts the use of certain hazardous substances in electrical and electronic products.

Compliance with the company's policies is designed into the materials Cummins uses and the company partners with its suppliers to ensure Cummins' global compliance requirements are met.

The company maintains global policies to carry out key processes such as the Reasonable Country of Origin Inquiry process, consistent with the Organization for Economic Co-operation and Development (OECD) due diligence framework.

Cummins is working with the Association of Equipment Manufacturers on a standardized approach for data collection and supplier training to ensure all products delivered in the market are compliant with global regulations. Supply chain teams have developed web-based training for suppliers to learn how to collect compliance data at upstream tiers in the supply chain. A template that meets industry standards to compliant data exchange is available at no cost to the company's supply chain.

Cummins' efforts resulted in a process both compliant to Section 1502 of the Dodd Frank Act in the United States

on conflict minerals, and one that sets the expectation of responsible sourcing practices throughout the company's supply base. Conflict minerals are mined in conditions of armed conflict and human rights abuses in the Democratic Republic of Congo and adjacent countries.

Publicly traded companies on U.S. exchanges must disclose whether they use specified materials from those countries such as tungsten, tantalum and gold in their products. The company also releases a position statement on restricted and prohibited materials and conflict minerals.

An annual assessment by Tulane University evaluates companies' compliance to the requirement of Section 1502, including transparency of disclosure and a comparison of best practices amongst industry peers. Cummins ranks in the top 11 percent of filers.

A specialized disclosure report is available at [cummins.com](http://cummins.com). Cummins strives to ensure that minerals in its products come from conflict-free sources.

## PRODUCT SAFETY

Cummins' Mission demands that everything the company does leads to a "cleaner, healthier, safer environment." That makes product safety a top priority. Cummins Product Safety Policy says:

- » Cummins will design, manufacture, sell, distribute and service all products so that they are safe to use for the described and intended purpose.
- » Cummins will provide its customers, its partners, the company's employees and society with products that are safe to operate, maintain, adjust and repair when used as intended.
- » Each Cummins employee will regard product safety as a top priority.
- » Each Cummins employee is responsible for applying the policy in his or her individual and collective work activity.
- » Each Cummins employee is expected to adhere to the spirit as well as the letter of the Product Safety Policy.

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

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

In compliance with the company's Product Safety Policy in 2015, Cummins voluntarily initiated eight product safety campaigns, impacting approximately 38,000 Cummins engines and/or Cummins components. These campaigns were reported to the relevant public agencies as required by applicable laws and improvements were made on each of the Cummins products at issue.

## PARTNERING WITH CUSTOMERS FOR BETTER FUEL EFFICIENCY

*Cummins provides a complete set of collaborative solutions to help customers maximize their fuel efficiency and reduce greenhouse gas emissions.*

*From the development of products that are optimized for specific market segments, to the use of software to assist in the truck specification process, to the ability to customize electronic engine settings and parameters, Cummins helps customers reduce their carbon footprint throughout the life of the truck.*



# LIVING CUMMINS' MISSION IN OUR PRODUCTS

*Cummins introduced more than 70 products or product updates in 2015, many addressing emissions, fuel efficiency or both as the company pursued its mission that “everything we do leads to a cleaner, healthier, safer environment.”*

While its work is often complex, Cummins' goal is simple: provide customers with the power, quality and reliability they need to succeed while meeting the regulations applicable to any particular market.

The company believes it has a distinct advantage when it comes to designing and building clean, fuel-efficient engines, generators and related components that deliver real economic value to its customers.

Cummins is the only independent engine manufacturer with the in-house capability to produce all of the critical subsystems required to build an engine or generator.

*Here's a look at some of the major sustainability developments in Cummins' products in 2015-2016, organized by business segment.*

## ENGINE BUSINESS

*Cummins Engine Business produces engines for on- and off-highway use, ranging from engines for pickup trucks, school buses and large tractor-trailers hauling freight to engines for construction, agriculture and industrial uses.*

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

Advances in fuel economy, meanwhile, have greatly reduced the output of carbon dioxide (CO<sub>2</sub>) and by extension, greenhouse gases (GHGs). CO<sub>2</sub> is a key contributor to climate change.

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

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

*Here are some of the most significant environmental sustainability developments in the Engine Business in 2015 and early 2016:*

## QSK19

*Cummins announced in November 2015 that its QSK19 engines will power two of the new models in John Deere's 8000 Series Self-Propelled Forage Harvesters lineup – the 8700 at 755 hp (563 kW) and the 8800 at 832 hp (620 kW). The machines offer forage producers more productivity, increased uptime and are designed with the latest forage-harvesting technology.*

### NOTABLE:

These models also provide forage producers with a more efficient cost of operation with improved fuel efficiency – up to 6 percent (gallons per ton) in corn and up to 15 percent (gallons per ton) in grass. When packaged alongside the stronger design and higher-horsepower performance of the QSK19, these machines will provide years of reliable service.

## SMARTADVANTAGE

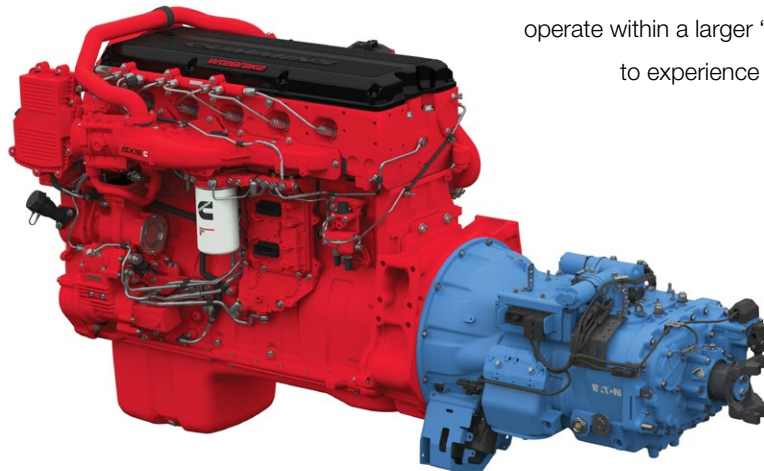
*Power management company Eaton announced with Cummins in November 2015 an expanded lineup of the integrated ISX15 SmartAdvantage powertrains to provide customers with additional choices tailored to their unique needs.*

### NOTABLE:

The new SmartAdvantage direct drive ratio is available in Cummins ISX15 400 hp and 450 hp ratings with 1550/1750 ft.-lbs. torque-rating, ensuring optimal performance at lower rpm when combined with a 2.26 or 2.28 axle ratio. This package is the ideal solution for line haul or regional haul applications that operate in flat and hilly road terrains at cruise speeds in the 50 to 62 mph range.

The new SmartAdvantage Powertrain options continue to leverage the diesel engine's torque and efficiency with technology that enables downspeeding. Downspeeding refers to engine operation at a lower rpm while cruising at a certain speed for fuel savings.

SmartAdvantage makes it easier for drivers to operate within a larger "sweet spot" to experience fuel efficiency.



## GHG CERTIFICATION

*Cummins announced in January 2016 that it received certification for its complete lineup of on-highway diesel and natural gas engines from the U.S. Environmental Protection Agency (EPA). The lineup met both the current EPA regulations and the second step in greenhouse gas and fuel-efficiency standards, which take effect in 2017.*

### NOTABLE:

Fuel efficiency is improved across the commercial vehicle lineup from 5.0 liters to 15 liters. Throughout 2014 and 2015, Cummins implemented efficiency enhancements that enable its engines to meet EPA 2016 and GHG 2017 requirements. On-board diagnostic requirements were met with enhanced monitors, ensuring that exhaust tailpipe emissions stay within EPA limits.

Efficiency improvements implemented in the 2016 ISX15 400 hp-to-475 hp ratings will provide customers with fuel economy gains over the 2013 ISX15, ranging from 2.5 percent on the base engine up to 7.5 percent for engines with the SmartAdvantage and ADEPT powertrain features.

## SMARTEFFICIENCY

*Cummins announced a product improvement plan called SmartEfficiency for global bus customers in February 2016 that focuses on improved fuel efficiency, lower total cost of ownership and improved uptime.*

### NOTABLE:

The SmartEfficiency initiative includes optimized calibrations, product tailoring with improved power and torque, mild-hybrid technologies, integrated powertrains and an expanded lineup of alternative energy products. The initiative aligns with the industry focus on reducing GHG and CO<sub>2</sub> emissions.

## CONNECTED DIAGNOSTICS MOBILE APP

*Cummins in February 2016 released its Connected Diagnostics mobile app, which provides guidance and actionable information delivered directly to a customer's mobile phone.*



### NOTABLE:

The app complements Cummins' popular fault monitoring application by providing features such as a status page listing the customer's connected equipment and is organized by the engine system's fault code status.

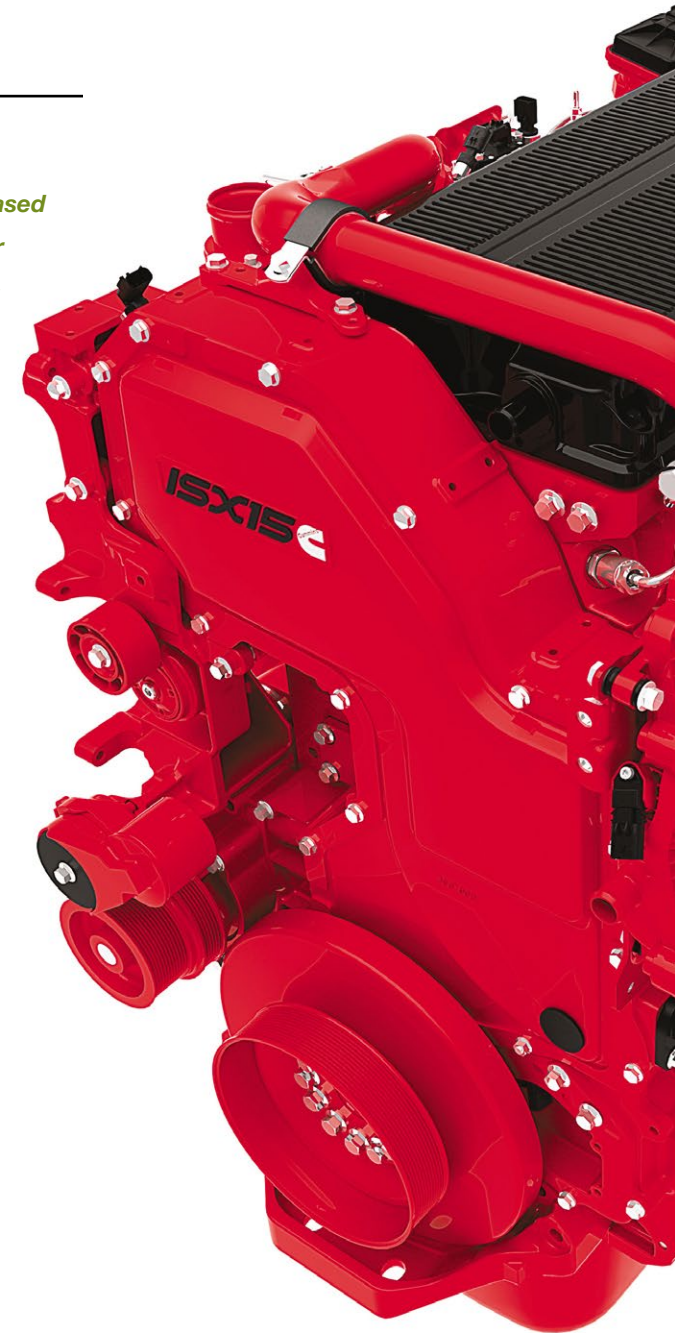
Connected Diagnostics is a customer's lifeline to Cummins. Through a telematics connection, a customer's Cummins-powered equipment wirelessly connects the engine to Cummins for immediate diagnosis of an engine system fault, providing the customer valuable information within seconds.

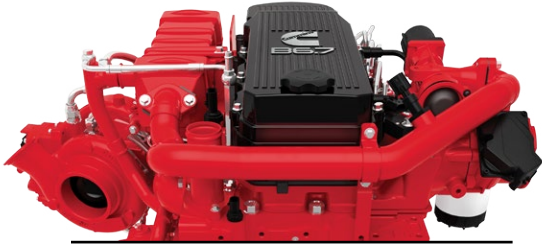
## ISX15

*Cummins in February 2016 released three new ISX15 ratings ideal for premium fleets or performance-oriented line-haul applications. The new 475-, 450- and 400-horsepower ratings with 1850 lb-ft of torque provide an optimal blend of performance and fuel efficiency for high-load applications or fleets that encounter mountainous terrain.*

### NOTABLE:

Customers who traditionally opted for a 485 hp or 500 hp rating can now benefit from the superior fuel economy of operating at a lower rpm while satisfying performance expectations.





## B6.7, L9

Cummins in March 2016 unveiled the next generation of its B6.7 and L9 midrange engines with features designed to increase efficiency and performance.

### NOTABLE:

The entire range of B6.7 ratings include an increase in fuel economy of 5 to 7 percent depending on their rating compared to their predecessors without sacrificing power. The engine, which is frequently used in emergency vehicles and school buses, is also capable of adding stop-start technology, which allows it to operate only when necessary to save fuel and create a quieter ride.

The L9, used to power vehicles such as transit buses, is designed for the most demanding work truck applications. New for 2017 is a 350 hp/1150 lb-ft rating that maintains more power and torque over a wider rpm range.



## DELIVERING ON OUR MISSION

After driving most of the approximately 76,000 miles covered during Cummins Redefining Tour, Mike Carlson said he'll never think about fuel economy in quite the same way.

Hauling just over 60,000 pounds as part of the 36-city tour across North America to demonstrate some of the company's latest technology, Carlson said he frequently got better than 9 miles per gallon in the tractor-trailer he drove for most of the tour while averaging better than 8 miles-per-gallon over the entire trip.

Trucks on the road today generally get closer to 6 or 7 miles-per-gallon depending on their age, make and model.

"If you had told me I'd be getting 8.3 or 8.4 miles per gallon when we started this trip, I'd say that's impossible," the professional driver with Mobile Events said in the parking lot of Lucas Oil Stadium in downtown Indianapolis, Indiana (U.S.A.), where the tour ended Oct. 6, 2015.

The Cummins Redefining Tour, which started in June, featured five Class-8 truck-and-trailer combinations representing major original equipment manufacturer (OEM) brands. The trucks were powered by a combination of Cummins' current ISX15 engine, the Cummins-Eaton

SmartAdvantage Powertrain and the 2017 ISX15 engine with the compact and highly efficient Single Module aftertreatment system.

Fuel economy was only part of the message delivered during the tour – efficiency, performance, reliability and customer support were other key themes. But the tour came as Cummins is exploring ways it can reduce the greenhouse gases (GHGs) produced by its products in use. Improving fuel economy translates directly into GHG reductions.

Several of the technologies featured had fuel-saving components, including ADEPT (Advanced Dynamically Efficient Powertrain Technology), which adjusts speed, power

and gear selection to take advantage of vehicle momentum and operate the engine sporadically at idle, maximizing efficiency.

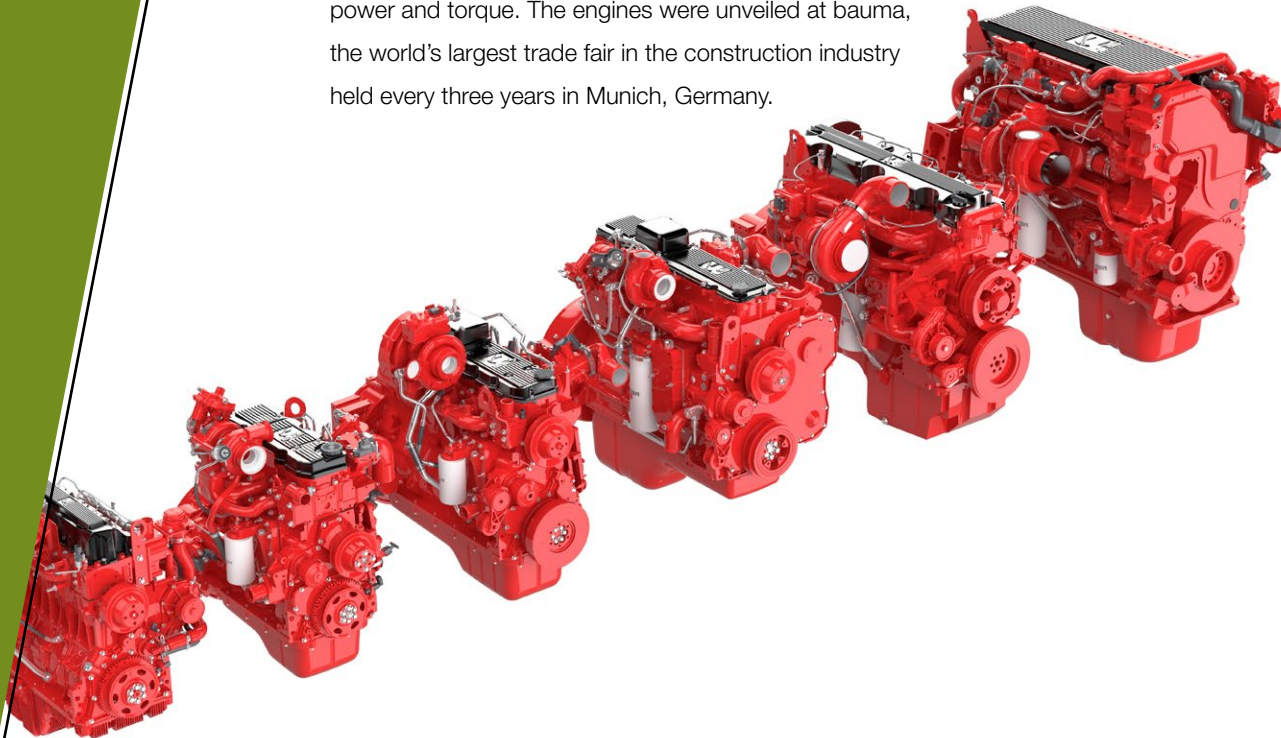
The Redefining Tour served much the same purpose as founder Clessie Cummins' cross-country forays to demonstrate the attributes of the diesel engine. While not a scientific test, the 2015 tour enabled the company to demonstrate to its customers how Cummins is meeting its mission that everything the company does "leads to a cleaner, healthier, safer environment."

## F3.8, B4.5, B6.7 AND L9

Cummins revealed in April 2016 a new generation of ultra-low emissions engines, spanning from 100 hp to 430 hp, that are designed to meet stringent 2019 European Union Stage V emissions regulations for construction, mining and material-handling equipment.

### NOTABLE:

The engines use the Single Module aftertreatment, but do not include Exhaust Gas Recirculation (EGR), allowing for a simpler architecture that results in more power and torque. The engines were unveiled at bauma, the world's largest trade fair in the construction industry held every three years in Munich, Germany.



## NATURAL GAS ENGINES

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

### ISB6.7 G

In July 2015, Cummins Westport introduced the 2016 ISB6.7 G, a 6.7-liter midrange, natural gas engine.

### NOTABLE:

The ISB6.7 G natural gas engine is based on the Cummins ISB6.7 diesel engine platform – the industry leader in the Cummins midrange engine family and the top-selling engine in the school bus market. The ISB6.7 G can be fueled by compressed natural gas (CNG), liquefied natural gas (LNG) or renewable natural gas (RNG). The engine will be certified at launch to meet EPA and California Air Resources Board (CARB) emissions standards.

**You can learn more about Cummins Engine Business by going to [cumminsengines.com](http://cumminsengines.com)**

# UPDATE: START OF SOMETHING BIG IN THE PASSENGER RAIL BUSINESS

*Siemens in 2016 celebrated installation of the first Cummins QSK95 into its new Charger locomotive, lifting the red, 42,000 pound engine with a yellow crane before gently lowering it into place.*



***Powered by Cummins' QSK95 engine, the Charger locomotive is designed to operate at speeds up to 125 miles per hour while meeting stringent emissions regulations.***

*(Photo courtesy of Siemens)*



## PRODUCTS

The production milestone occurred in February at Siemens' Sacramento, California (U.S.A.) manufacturing plant. Siemens is building 79 of the diesel-electric locomotives for passenger rail service in California, Michigan, Missouri, Washington, Wisconsin, Iowa, Oregon and Maryland. The locomotives are also being produced for a new express passenger rail service in Florida (U.S.A.).

The Charger is designed to operate at speeds of up to 125 miles per hour while meeting the Environmental Protection Agency's (EPA) stringent Tier 4 emission standards using the QSK95, the largest high-speed diesel engine Cummins has ever built.

The QSK95 was the first single prime power engine to receive Tier4 Locomotive certification from the EPA. Tier 4 requires manufacturers to reduce oxides of nitrogen (NOx) and particulate matter (PM) emissions by more than 70 percent compared with Tier 3 regulations, which took effect in 2011.

The 8-foot high, 14-foot long engine is manufactured in the United States at Cummins' engine plant in Seymour, Indiana. It features the best fuel efficiency, cleanest emissions and lowest total cost of ownership of any locomotive engine in its class.

The 4,400 hp QSK95 was featured in a story about Cummins' growing presence in the passenger rail business in the 2014-2015 Sustainability Progress Report.

"This is a very exciting and important time for passenger rail in North America," said Melina Kennedy, General Manager – Global Rail and Defense Business.

"Cummins is pleased to partner with Siemens to bring innovative and dependable new technologies to market."

## POWER SYSTEMS

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

The business has been in the forefront of the move to cleaner, quieter and more efficient diesel engine-powered generator sets, improving the fuel efficiency of all its engines because less fuel consumed means fewer emissions overall. Cummins Power Systems' lean-burn gas engine generators used in combined heat and power applications significantly reduce wasted energy and overall emissions.

***Here are some of the most significant environmental sustainability developments in the business in 2015 and early 2016:***

## 5.5 KW GENERATOR SET

*Cummins Onan introduced a compact new 5.5 kW generator set in March 2015 designed to run on compressed natural gas (CNG) and provide auxiliary electric and optional hydraulic power for the growing number of commercial truck fleets powered by CNG.*

### NOTABLE:

Compared to gasoline, CNG offers a reduced carbon footprint and lower per-gallon equivalent cost of operation. This makes CNG ideal for the small service trucks used by telecommunications companies, utilities, food trucks and other commercial operations concerned with fuel economy and sustainable business practices.

Recognized as the quietest and lowest vibration generator set in its class, the new unit has an enclosed muffler and exhaust catalysts that help it meet all applicable Environmental Protection Agency (EPA) and California Air Resources Board (CARB) air quality standards. It also features self-diagnosis capability to simplify troubleshooting, and digital voltage regulation for voltage and frequency stability.



## NATURAL GAS GENERATOR SETS

*In October 2015, Cummins Power System announced it was partnering with the U.K. Power Reserve (UKPR), the United Kingdom's largest independent developer and operator of peaking power, to bring an extra 348 MW to the U.K.'s under-pressure national grid.*

### NOTABLE:

Cummins will deploy more than 150 lean-burn natural gas generator sets in nearly 20 new medium-sized plants. Key reasons why UKPR chose to partner with Cummins included support from global resources, customer service, leading-edge technologies and a strong supply chain.

## 55-KW MARINE

*Cummins in February 2016 released a new Onan marine EPA Tier 3-certified generator, the 55-kW MDDCM. The generator provides customers a higher power option in a more environmentally-friendly product than previously available from Onan.*

### NOTABLE:

The 55-kW Onan marine generator was engineered for lower emissions and some of the best sound and vibration mitigation in the industry while still delivering the reliability and durability that marine operators have come to expect from Cummins. All Onan marine generators feature advanced sound shields for lower sound and an optimized mounting system for reduced vibration.

*You can learn more about the Cummins Power Systems by going to [power.cummins.com](http://power.cummins.com)*

## 20, 40 AND 60 KVA GENERATOR SETS

*Cummins in September of 2015 showed off its new compact, transport-optimized 20, 40 and 60 kVA generator sets as part of its European rental product range.*

### NOTABLE:

Cummins Power Systems targeted these new generator sets for the specific needs of rental fleet operators with customers in demanding sectors including construction, events, telecom and manufacturing. The new generator sets comply with the latest EU Stage IIIA emissions standards. Robust construction and heavy-duty components minimize total cost of ownership and the overall result is rental units that deliver optimum reliability in the field, with excellent uptime and service intervals of up to 500 hours.



# A WHOLE LOT OF SHAKING GOING ON

*Testing any generator to see if it will stand up to an earthquake is never easy but if that generator is 12.5 feet high, 28.5 feet long and weighs some 80,000 pounds, it's especially challenging.*



No wonder Cummins Power Systems employees were pleased to learn late in 2015 that after months of planning, logistics and testing, the QSK95 generator set had passed the “shaker table test” for seismic certification. That certification included the International Building Code and the California (U.S.A.) Office of Statewide Health Planning and Development (OSHPD).

Seismic testing and certification are required in some states in the U.S. and in some applications such as nuclear plants, but they are also becoming more popular for mission critical equipment used in data centers and hospitals.

The QSK95 generator produces 3.5 MW (megawatt) of power, enough to deliver reliable, mission critical power protection without interruption to data centers, hospitals, water treatment plants and more.

The actual shaker test took place on a specially designed, three-axis shaker table about four feet off the ground in March 2015 at the U.S. Army Corps of Engineers’ Construction Engineering Research Laboratory (CERL) in Champaign, Illinois (U.S.A.).

Cummins had personnel at the site from March 2 to March 27, 2015, with the majority of setup taking place in the first week and the actual testing in the remaining three weeks, said Charles Knealing, Product Design Engineer – Group Leader at Cummins Power Systems.

Planning the test, however, began months earlier and included a long list of activities such as designing and fabricating specially for the test an exhaust hood capable of removing 25,000 cubic feet per minute of air at 900 degrees Fahrenheit from the test cell.

Testing and teardown alone took one month and five full semi-loads of parts, test equipment and tools, not to mention a QSK95 generator trucked in from Cummins Power Systems’ headquarters in Fridley, Minnesota (U.S.A.).



***Preparing for the seismic testing of the QSK95 generator took months of planning.***

## COMPONENTS

*Four units within the company's Components Business Unit play a critical role in helping the Company's engines operate efficiently and with near zero emissions: Cummins Emission Solutions, Cummins Filtration, Cummins Turbo Technologies and Cummins Fuel Systems.*

***Here's a look at some of sustainability related Components products introduced in 2015 and early 2016:***



## CUMMINS EMISSION SOLUTIONS

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

### SINGLE MODULE AFTERTREATMENT

*Cummins Emission Solutions announced in January 2016 that its Single Module aftertreatment system is now available for midrange engine customers looking to meet European Union Stage V emissions regulations.*

#### NOTABLE:

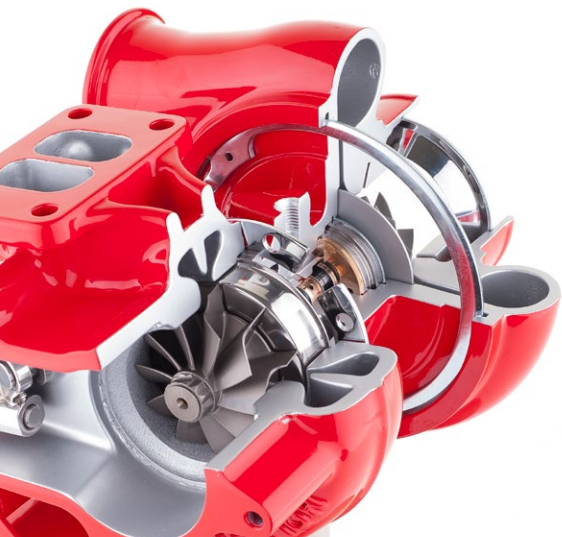
Compared to current product offerings in this market, this new innovation is delivering an aftertreatment solution that offers up to a 30 percent reduction in weight and up to a 50 percent reduction in size.

The Single Module product platform was designed to be adaptable for different customer applications. Various length options gives the customer the opportunity to select the right aftertreatment system sized appropriately for their engine output needs.

***You can learn more about Cummins Emission Solutions, go to [cumminsemissionsolutions.com](http://cumminsemissionsolutions.com)***

## CUMMINS TURBO TECHNOLOGIES

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



## ADVANCED WASTEGATE TECHNOLOGY

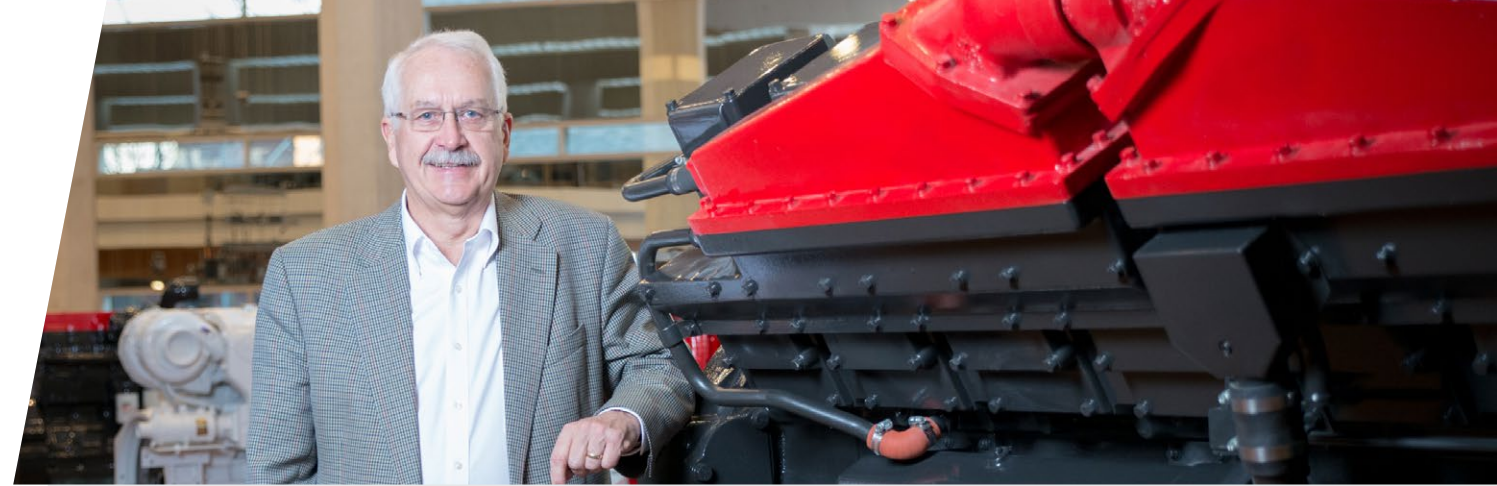
*Cummins Turbo Technologies in 2015 took the next step in the development of wastegate technology and began working with a customer to field test its new Electric Wastegate Turbocharger.*

### NOTABLE:

With its fast response and precise control at all areas of an engine's power range, the Electric Wastegate Turbocharger helps to improve performance and reduce emissions to meet the stringent targets for the light- to heavy-duty engine market.

Available with patented twin port technology, electric wastegate provides greater wastegate flow bypass to better regulate boost power. The pioneering twin port wastegate technology is exclusive to Cummins Turbo Technologies and was developed at the Company's Technical Centre and manufacturing plant in Huddersfield in the United Kingdom.

**You can learn more about Cummins Turbo Technologies at [cumminsturbotechnologies.com](http://cumminsturbotechnologies.com)**



## CUMMINS LEADER IN THE U.K. HONORED BY QUEEN

*A Cummins leader has been given one of the highest honors that can be bestowed on a British citizen by the Queen, acting on a recommendation by the Prime Minister.*

John Iain Barrowman, Vice President – High Horsepower Operations and a Senior Director of Cummins Ltd., was named a Member of the Order of the British Empire (MBE) in 2016 in recognition of his contribution to British industry.

He will be honored along with other MBEs at Buckingham Palace.

"I am extremely honored to receive the MBE, and also very proud to accept this recognition on behalf of everyone working at Cummins in the United Kingdom," Barrowman said.

The Member of the Order of the British Empire is awarded in recognition of significant achievement or outstanding service to the community. The nomination process takes 12 to 18 months and is reviewed by the government's Head of Civil Service and Main Honours Committee before it is forwarded to the Prime Minister and then to the Queen.

The award, which dates back nearly 100 years, has been presented to actors, athletes, musicians, business leaders and many others.

Barrowman has overseen the development of the company's

U.K. operations into a world-class center of manufacturing excellence. He also led initiatives to introduce a safer, more comfortable, more diverse working environment and has played a key role in driving initiatives to reduce the company's carbon footprint and increase waste recycling at Cummins facilities.

Beginning in 1987 as a plant manager with Cummins and over his nearly 30-year career with the company, Barrowman has taken on increasingly important roles, currently serving as Vice President of the company's worldwide manufacturing operations for High Horsepower Engines based at the Daventry Engine Plant in the United Kingdom.

# CUMMINS' PRACTICES DESIGNED TO REDUCE CARBON FOOTPRINT

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

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

## WATER STRATEGY



Cummins' water strategy includes four priority areas: conservation, risk management in business operations, community engagement and supply chain.

The company recognizes water as an operational risk, especially in parts of the world where water is scarce.

Cummins' strategy includes working with community leaders in water scarce locations to help them establish their own conservation initiatives.

Cummins' strategy also identifies the critical role water plays in the company's supply chain. Almost 90 percent of Cummins' water footprint exists in the supply chain, mostly associated with the extraction and production of metals. The company is beginning to work with suppliers to help them develop less water intensive techniques.

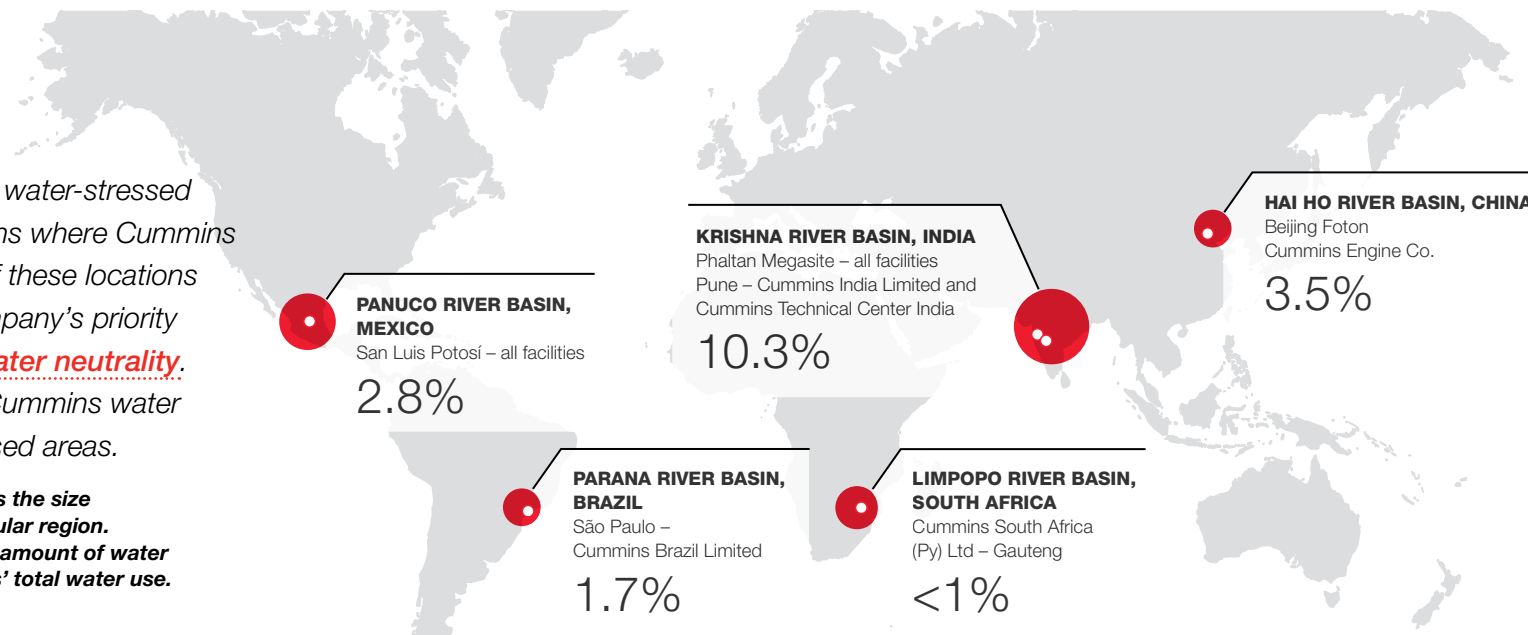
As part of its strategy, Cummins has developed tools to help the company calculate the true cost of water and target its actions to ensure the effective use of resources.

Cummins' risk mitigation tool takes into account costs such as pumping, heating and chemical usage in water, which are often not considered when evaluating a project. In addition, the company's risk assessment tool assesses water conservation and efficiency at a site as well as risk exposure and other factors.

## WATER RISKS

These are the five most water-stressed river basins in the regions where Cummins has operations. Each of these locations also falls within the company's priority regions for achieving **water neutrality**. Overall, 45 percent of Cummins water use is from water stressed areas.

The size of the dot represents the size of the water basin in a particular region. The percentages refer to the amount of water removed relative to Cummins' total water use.



WASTE STRATEGY



The company uses a waste hierarchy that is consistent with current industry standards: avoid the generation of waste, reuse, recycle, and waste to energy as a last resort.

Reducing packaging is one way Cummins tries to avoid the generation of waste. Reusing waste might involve reusing pallets or finding an alternative use without any reprocessing. Recovery and reuse of solvents is another example. The recycling of metals, paper or wood also reduce the amount of waste that has to be disposed.

The company’s ultimate goal is “Zero Disposal” at Cummins facilities. Cummins is also committed to avoiding the production of hazardous waste and properly handling hazardous materials in the workplace.

The definition for what constitutes hazardous waste varies widely by country. Cummins follows all appropriate local and regional regulations. For U.S. sites that produce hazardous waste, Cummins has a formal pre-qualification vendor process to ensure the waste is handled properly.

ENERGY STRATEGY



Saving energy has both environmental and bottom-line benefits. The company estimates savings of \$40 million per year from its energy efficiency efforts. Cummins strategy focuses on four key areas:

- » Saving and conserving energy by improving existing facilities.
- » Recovering test cell energy.
- » Building energy conservation into new construction.
- » Enhancing energy management.

High efficiency “smart” lighting and energy efficient windows, doors, walls and roofs reduce heat gain or loss. Heating, cooling and recirculation systems offer opportunities for efficiency as do boilers and burners.

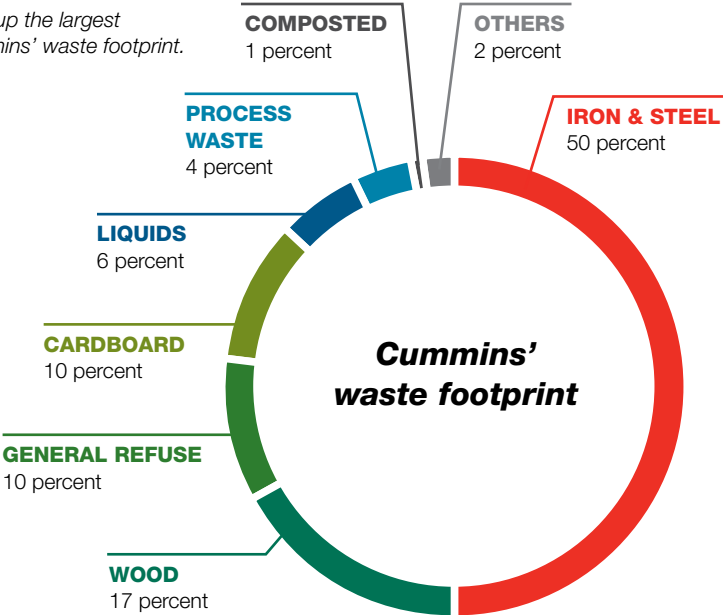
Cummins has been working to recover energy generated by engines and generators in its test cells by installing equipment that can capture that power for use by the plant or for sale to a local utility.

The company has eleven solar installations, the two most significant being the 3.6 megawatt installation at Beijing Foton Cummins Engine Company Ltd. in China and the 2 megawatt installation in Jamestown, New York. (U.S.A.).

Cummins is a partner in the U.S. Department of Energy’s Better Buildings Challenge. The company surpassed its 25 percent reduction in U.S. energy efficiency intensity commitment by the end of 2015 by achieving an 33 percent reduction.

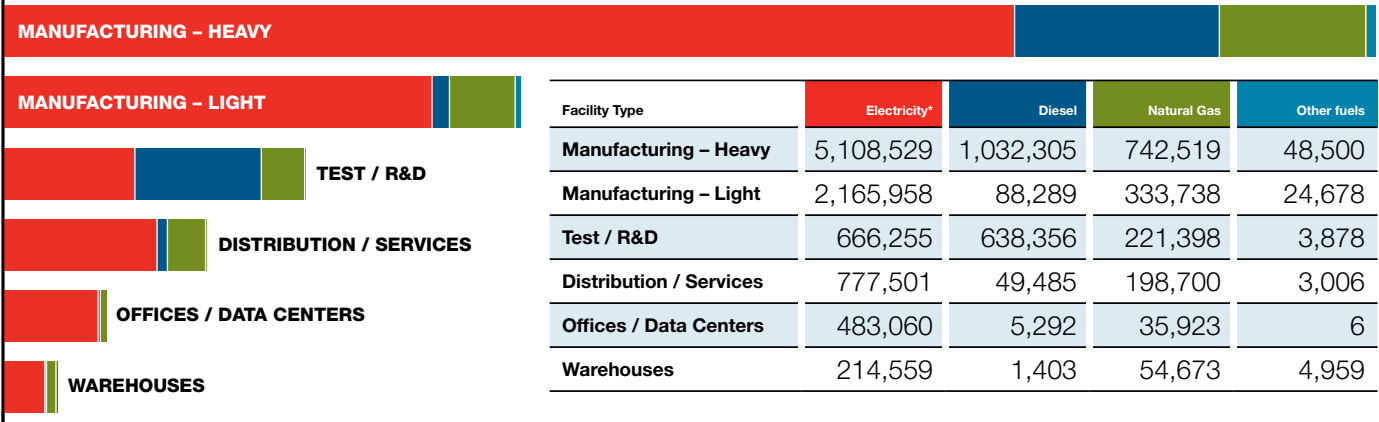
CUMMINS’ WASTE FOOTPRINT

Iron and steel make up the largest component of Cummins’ waste footprint.



ENERGY USE BY FACILITY TYPE

in millions of British thermal units



# STRATEGIC ACTIONS AT A GLANCE

Here are some actions Cummins is taking to reach its goals in energy, waste and water.

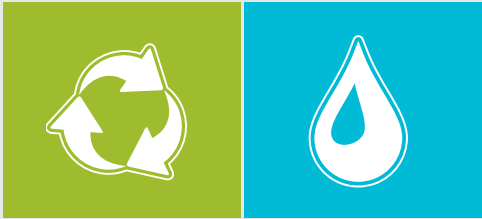
## REDUCE

Improve existing facilities • New, efficient construction • Water use analysis • Manufacturing and product testing



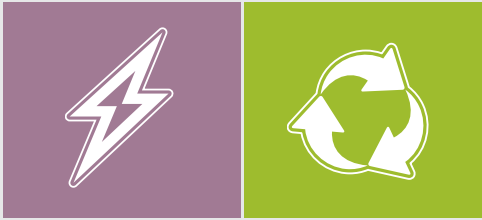
## REUSE

Waste and water hierarchies • Returnable packaging • Gray water reuse



## RECOVER

Regenerative dynamometers • Waste to energy



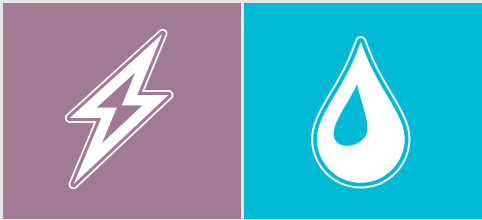
## RECYCLE

Zero disposal • Remanufacturing • Employee engagement



## REPLENISH

Community engagement • Water neutrality • Risk management



## PRACTICES

### GLOBAL BUILDING STANDARDS

Cummins has nearly 550 facilities encompassing more than 34 million square feet across the globe. During the first half of 2016, there were over 30 major renovations and new projects planned or underway at the company with a planned capital expense of \$800 million over multiple years. Having efficient buildings is not only a good return on investment, it is critical to reaching Cummins’ energy and greenhouse gas (GHG) goals.

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

While the Leadership in Energy and Environmental Design (LEED) Silver standard is an industry-respected norm, Cummins believes ASHRAE 189.1 is a better fit for the company.

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

At a minimum, all new buildings will be ASHRAE 189.1 compliant or LEED Silver equivalent unless an overwhelming argument can be made to do otherwise. In most instances, Cummins’ ASHRAE 189.1 compliant buildings would fall between the silver and gold LEED standard.

As part of Cummins’ ongoing efforts to reduce GHGs, the company will reduce its footprint in new buildings by making four considerations when choosing a building site:

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

Taking these four factors into account with the ASHRAE 189.1 standard, Cummins expects its buildings will continue to yield significant reductions in emissions and GHG's.

## HSE MANAGEMENT SYSTEM

The company's Enterprise Environmental Management System (EMS), created in 2003, plays a critical role in Cummins' global environmental footprint reductions and other improvements. The company adopted a model that includes a common framework to ensure a similar look, feel and fundamental approach throughout the organization.

The EMS has the flexibility to allow individual sites and businesses to address risks and opportunities most important to them. Cummins has integrated health and safety processes and procedures with the environment since 2007, in accordance with the international standard OHSAS 18001 Occupational Health & Safety Management System, to create the Enterprise Health, Safety and Management System (HSEMS).

The system has served as the framework for driving continual improvement and efforts beyond compliance at Cummins operations around the world. The company expects all sites to comply with its policy, procedures and initiatives.

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.

Cummins policies apply to more than just its employees, extending to contingent workers, suppliers, contractors and even customers working at company facilities. Cummins' expectations also extend beyond the company's physical boundaries, encompassing maintenance and support services that occur at off-site locations.

Cummins strategically drives certification to recognized international standards. Since 2003, the company has focused on its manufacturing locations with 92 percent of manufacturing sites certified

to ISO14001 and OHSAS 18001. By 2016, Cummins expects the HSEMS Enterprise to consist of dual-certified sites, representing 100 percent of the company's manufacturing and distribution locations.

By the end of 2014, the company's independent auditor certified 113 entities, representing 390 sites and corporate offices as part of the HSEMS. Cummins' HSEMS scope has been extended to encompass manufacturing joint ventures and distributors. They are committed to registering their sites by the end of 2015.

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

Cummins' business units and sites then build upon them to establish site-specific objectives that align with company priorities but address site specific needs and challenges. At the global level, nine sites obtained the ISO 50001 energy efficiency certification including two sites certified to the Superior Energy Performance Standard (ANSI/MSE 50021).

Eleven more sites are working on their ISO 50001 implementation, with a certification target by end of 2016.

## AUDITING AND DATA CERTIFICATION

Environmental goals are measured through a structured audit process. A third party auditor, Bureau Veritas Certification (BVC), certifies the HSEMS and the environmental metrics Cummins collects.

Two of Cummins' key sustainability stakeholders, CDP (formerly the Carbon Disclosure Project) and the Dow Jones Sustainability Indices, consider independent data verification an important factor in their evaluation of environmental performance and transparency.

Cummins believes the audit validates its efforts at data quality, placing the company among a relatively small number that pursue this level of performance and validation. Since 2011, BVC has also audited Cummins' environmental footprint and the company's data collection and verification processes.

BVC's audit included greenhouse gases (GHGs), water used, landfilled waste and recycled materials. It provided an audit report with "limited independent assurance," which the company included as part of its external reporting. Cummins supplements the audit sampling conducted by BVC by conducting its own annual audits using internally trained HSE auditors. Every site is audited on an annual basis.

The company has developed an internal environmental auditor certification process, where employees complete a training course and then a series of audit levels. In 2015, more than 62 people have been trained and there is a pool of 109 HSE leaders certified as HSE Lead Auditors.

This structured audit program validates performance and provides a mechanism for HSE auditors to share best practices. Through these practices, Cummins is not only improving sites, it is building the company's next generation of HSE leaders.

## CUMMINS IMPROVES ENERGY PERFORMANCE VIA ISO 50001 AND SEP PROGRAM

Measuring real energy performance in a complex business is a key reason Cummins is implementing the international energy management standard ISO 50001 and the U.S. Department of Energy's Superior Energy Performance (SEP) program.

The nine sites currently part of the ISO 50001 and SEP programs represent the complexity of measuring energy improvements across a broad range of site requirements and campus structures, levels of site automation, local climate, changes in market demand, new product launches and restructuring efforts.

The nine sites are:

- » The Columbus Engine Plant in Columbus, Indiana (U.S.A).
- » The Cummins Technical Center, in Columbus, Indiana (U.S.A).
- » The Jamestown Engine Plant in Jamestown, New York (U.S.A).
- » The Rocky Mount Engine Plant in Rocky Mount, North Carolina (U.S.A.)
- » The Daventry Engine Plant in Daventry, U.K.
- » The Darlington Engine Plant in Darlington, U.K.
- » Cummins Turbo Technologies in Huddersfield, U.K.
- » Cummins Generator Technologies in Stamford, U.K.
- » Tata Cummins Limited in Jamshedpur, India.

Seven sites are now certified to ISO 50001 and two (the Cummins Technical Center in Columbus and the Rocky Mount Engine Plant) are both ISO 50001 and Superior Energy Performance (SEP) certified. The company plans to achieve a total of 40 certified sites by 2020.

The Energy Management System, through the company's Corporate Enterprise approach, recorded a combined energy performance improvement of 20 percent by 2015 from a 2010 baseline for just these nine sites. Annual cost savings were \$3.5 million per year and 352,434 MMBTU, or 39,740 metric tons of CO<sub>2</sub>e (carbon dioxide equivalent) reduction.

It has been challenging to develop valid energy metrics for specific Cummins facilities, and even more difficult to consolidate site data to provide meaningful corporate performance metrics. The company's enterprise approach to ISO 50001, the SEP program, and its energy toolkits now provide the framework for this effort.

# SEYMOUR PLANT QUIETLY ACHIEVES IMPORTANT GHG REDUCTION MILESTONE

*Dec. 3, 2015 was a very good day for Matt Abdallah and his team at the Seymour Engine Plant in Seymour, Indiana (U.S.A.).*



After months of work, and more than a year of planning, the lab operations team Abdallah leads used two regenerative dynamometers, or regen dynos for short, to capture enough energy from the high horsepower engines being tested at the plant to meet all of its electrical needs.

While the dynos had been recovering enough power to reduce the plant's draw from the utility company, this was the first time the draw was zero since the dynos went into operation in the third quarter of 2015. It only happened for a short time, but it was a sign the team's hard work was paying off.

***“We didn’t have any kind of brown out and the lights didn’t flicker, which meant the power supplied by the dynos was of really good quality,” said Mike VanLiew, the leader of test technology for High Horsepower Engineering Lab Operations.***

Since then, the plant has reached “zero draw” numerous times, including on March 1, 2016, when the plant was

self-generating for more than five hours and most likely exporting electricity to its local utility over that time period.

The Seymour plant builds some of the largest engines Cummins makes – the QSK95, for example, is 8 feet tall and 14 feet long. High horsepower engines go through a lot of testing before they are released to customers, and that testing uses a lot of fuel, which can dramatically increase the plant's carbon footprint.

To a large extent, however, the power generated by the engines during testing at Seymour had been lost before the regen dynos arrived, converted into heat and dissipated completely by a cooling tower.

Capturing that power using the regen dynos means getting more out of the fuel used in testing, which is good for the environment because it ultimately reduces carbon dioxide (CO<sub>2</sub>) emissions. The U.S. Environmental Protection Agency (EPA) says CO<sub>2</sub> is a key contributor to climate change and the primary greenhouse gas (GHG) emitted through human activities.

Cummins has many regen dynos at facilities around the world, but the

two installed in test cells 16 and 17 at Seymour are the largest at any location.

They look like large black boxes, as big or bigger than the engines being tested. They take the energy generated by the engines and convert it into electricity that can be handled by what looks like a small electrical substation located on plant property just outside the test cells.

VanLiew is projecting that the regen dynos will produce about 7,000 MWh (megawatt hours) of electricity in 2016, which is about 20 percent of the site's total electric consumption in 2015. That will save the equivalent of about one month's total electric bill and result in an avoidance of about 10 percent of the plant's annual GHG emissions.

The regen dynos at Seymour represented a significant investment in the plant's test cells and more evaluation is necessary. But VanLiew and Abdallah say the early results are promising.



***The Seymour, Indiana (U.S.A.) Engine Plant is using regenerative dynamometers to capture power from high horsepower engines undergoing testing in test cells like this (left) to help power the plant.***

## LARGEST SOLAR ARRAY AT CUMMINS COMING ON LINE IN CHINA

*The largest solar array at a Cummins facility is scheduled to be completed in 2016 at the Beijing Foton Cummins Engine Company Ltd. (BFCEC) in China, eliminating an estimated 3,200 tons of carbon dioxide (CO<sub>2</sub>) per year or about 13 percent of BFCEC's overall greenhouse gas (GHG) emissions.*

The initiative will also help with China’s national drive to reduce air pollution, cutting back what electricity BFCEC consumes from the grid, which is largely fueled by coal-fired power plants.

“BFCEC leadership is fully committed to improving the environment through the business and within the community,” said Des Conlon, BFCEC Plant Manager. “Installing solar panels helps combat greenhouse gas emissions and lessens the current air pollution problem.”

Project Leader Bin Tang said the 3,600 kW (kilowatt) system installed on the roof of the plant is also expected to reduce BFCEC’s overall power costs by about 3 percent, saving about 800,000 RMB or roughly \$121,000 annually.

“This is a great example where using renewable energy really makes sense as part of our overall energy strategy,” said Mark Dhennin, Director of Energy & Environment for Cummins.

“We’re reducing CO<sub>2</sub>, we’re reducing air pollution by reducing demand for electricity from coal-fired plants and we’re lowering our operating costs,” he added. “We want to use renewable forms of energy like solar to help us achieve our overall mission that everything we do leads to a cleaner, healthier, safer environment.”

BFCEC is composed of two twin plants, the ISF and the ISG plants. ISF has been in operation for several years while the ISG opened in 2014 and has been ramping up production through 2015.

Solar panels will cover about two-thirds of the 90,000 square meter (970,000 square foot) ISF plant, which will receive about 4.2 million kWh (kilowatt hour) of power when the solar cells are fully operational. The ISF plant’s overall power consumption was around 19.5 million kWh in 2015, so about 19 percent of the plant’s power will no longer be pulled from the national grid.

The next largest solar installation at Cummins is the 2,000 kW array installed at the Jamestown Engine Plant in

Jamestown, New York (U.S.A.) in 2015. Eleven Cummins facilities now have solar arrays. The others are located in Australia, Belgium, China, the United Kingdom and the United States.

The facility in Belgium has a maximum output of 562 kW while the others are 50 kW or less. All of the solar initiatives have had some kind of government incentive. The solar array in Beijing is actually owned by an independent third party.

The panels at BFCEC are partially installed but already connected to the facility grid and will power equipment such as the boilers and water pump station for the ISF plant, said Shuquan Gao, the Facility Manager who was instrumental in the contract negotiations to get the solar array installed.

“BFCEC is going to be an important part of our renewable energy strategy,” said Dhennin. “I want to congratulate Des and his team for their great work on this initiative.”

| CUMMINS ONSITE SOLAR                               |                 |              |
|--|-----------------|--------------|
| These Cummins sites have significant solar arrays. |                 |              |
| Site   | Max Output (kW) | Installation |
| BFCEC (China)                                      | 3,600           | 2016         |
| Jamestown Engine Plant, New York (U.S.A.)          | 2,000           | 2015         |
| CGL Belgium  | 562             | NA           |
| Cummins Wetherill Park (Australia)                 | 20              | 2013         |
| Cummins Mt. Gambier (Australia)                    | 10              | 2013         |
| Fridley, Minnesota (U.S.A.) plant                  | 40              | 2011         |
| Fridley, Minn. (U.S.A.) warehouse                  | 40              | 2011         |
| Shoreview, Minn. (U.S.A.) offices                  | 40              | 2011         |
| Daventry, (U.K.) Engine Plant                      | 50              | 2011         |
| CGT Stamford (U.K.)                                | 50              | 2011         |
| CTT Huddersfield (U.K.)                            | 50              | 2011         |
| TOTAL KW   |                 | 6,462        |

# FIRST SITES CERTIFIED AS 'ZERO DISPOSAL'

*Leaders at the first Cummins sites certified by the company as “Zero Disposal” facilities say slow but steady progress that builds employee support for reuse and recycling was critical to their success.*

“Do not try to boil the ocean,” said Jennifer Hirst, a facilities engineer at one of the sites, Cummins Turbo Technologies (CTT) at Huddersfield in the United Kingdom. “Small, individual steps will slowly amalgamate into a big difference and change in culture.”

Cummins defines Zero Disposal as handling 100 percent of waste in a truly useful manner. That means waste doesn’t go to a landfill and can only be incinerated at a waste-to-energy facility after reasonable efforts to reduce, re-use and recycle. It must produce more energy than needed to merely sustain combustion.



The first four sites certified by the company in 2015 as achieving Zero Disposal include CTT in Huddersfield and two other sites in the U.K.: the Darlington Engine Plant and the Daventry Engine Plant. In addition, the company certified the Cummins Filtration Plant in Quimper, France that same year. Cummins Global Logistics (CGL) Belgium is the most recent site achieving Zero Disposal status. It was certified in April 2016.

Cummins has a robust certification process to determine if sites are managing their waste effectively and that vendors are properly handling material both at the company site and if it leaves that location.

Collectively, the first four locations certified generated almost 26 million pounds of waste in 2014 that had to be recycled or reused in some way to achieve the Zero Disposal designation.

## THIRTY BY 2020

*As part of its environmental sustainability plan, the company has set as a goal increasing its overall recycling rate from about 90 percent in 2014 to 95 percent by 2020. In addition, Cummins wants to reach Zero Disposal status at 30 sites by 2020.*

In all four cases, these plants had been moving away from landfills for some time. In both France and the U.K., there are fees and taxes in place to discourage waste disposal in landfills. That, along with the overall cost of waste handling, provided plenty of incentive for the sites to reuse and recycle to reduce costs.

But getting that last 1 or 2 percent of waste required tackling hard to recycle items such as food waste and food packaging brought into the plants.

In Darlington, for example, there are separate bins for plastic, aluminum, paper cups from vending machines, office paper, oily rags and gloves, and food and floor dust.

Environmental leaders at the Zero Disposal locations say communication is critical. Several plants maintain information boards that regularly update employees on what's happening with plant waste.

All of the certified sites also say their waste streams are constantly evolving. Just because they achieved Zero Disposal status once doesn't mean they will keep that designation in the years that follow.

"Regulations and technology are constantly changing," said Gary Botterill, Senior Plant Engineer at Daventry. "How you handle something today may not be the same tomorrow. So there's plenty of opportunity for continuous improvement."



EXPLAINING  
WATER NEUTRAL  
AND ZERO DISPOSAL

| WATER NEUTRAL   | ZERO DISPOSAL   |
|---|---|
| 01  | <i>Consistent with the waste and water management hierarchies (reduce first)</i>  |
| 02  | <i>Protects the environment and the communities where the company operates</i>  |
| 03  | <i>Completes annual validation reviews (new and renewal sites)</i>  |
| <i>Successfully offsets 100 percent of its water consumption within the community.</i>                                | <i>Successfully recycles 100 percent of its waste. Waste burned for energy recovery must produce a net energy gain to be considered in recycling.</i> |
| <i>Must be in a water scarce region (Mexico, China, India, Africa, Brazil) to be counted in the goal of 15 sites.</i> | <i>Must have a headcount of 100 or more to be counted in the goal of 30 sites.</i>  |

# FACILITIES ACHIEVE BIG ENVIRONMENTAL SAVINGS IN 2015 COMPETITION

*Cummins has recognized environmental management excellence in its facilities and operations through its awards program since 2005. In 2015, environmental teams from around the globe submitted 40 projects to be judged for the annual awards, one of the highest numbers of submissions yet.*

Site-wide energy management and compressed air optimization were common themes, as were zero disposal and hazardous waste reduction.

“I am really impressed with the quantity and quality of the work included in these projects,” said Alan Resnik, Director of Facilities and Operations Environmental Management. “For 10 years now, employees have really demonstrated great enthusiasm and hard work in making a positive impact on the environment and to Cummins’ bottom line.”

Projects are judged on their environmental benefit, level of commitment, economic efficiency, innovation and ability to be replicated at other locations.

The 40 projects submitted in the 2015 competition, combined with facility initiatives not included in the judging, accounted for significant annual savings toward Cummins’ 2020 waste, water, energy and greenhouse gas (GHG) reduction goals.

## 2015 CHAIRMAN’S AWARD WINNERS

Here are the winning projects:

### **Phaltan (India) High Horsepower:**

42 percent reduction in energy use and 33 percent reduction in energy cost; installation of two one-megawatt regenerative dynamometers plus benefits via a systematic energy management program; associated water savings of 1.2 million liters (317,000 gallons) per year.

### **Rocky Mount (North Carolina, U.S.A.)**

**Engine Plant:** LED lighting project affecting 60 percent of existing fixtures and improved lighting levels up to 30 percent, employing a photometric approach to optimize lighting levels; pioneered ISO 50001 international energy management standard adoption and Department of Energy Superior Energy Performance; \$600,000 per year savings in electricity and maintenance.

### **Tata Cummins Limited Phaltan (India) returnable packaging program:**

Reduced wood consumption and waste by 60 percent or 19.2 kg per engine, saving

\$490,000 a year; engaged key suppliers to take responsibility to implement returnable packaging for top nine priority components; optimized transport efficiency, reducing fuel consumption.

### **Chongqing (China) Cummins Engine Company water management**

**program:** This high usage water site identified leaks and process inefficiencies and implemented an approach to reduce water use by 24 percent, a savings of 42 million liters (11 million gallons) per year.

## OTHER AWARDS

### **Chairman’s Honorable Mention:**

Dongfeng Cummins Engine Company (China) Energy Management/GHG Reduction Program.

### **Best Replication Model Projects:**

- » Cummins Generator Technologies, Peterborough (U.K.) – Innovation Hub initiative.
- » Cummins Turbo Technologies, Charleston, South Carolina (U.S.A.) – Towards Zero Disposal project.
- » Cummins Generator Technologies Stamford (U.K.) – Line Relocation Integration project.

## EMPLOYEE LED SAVINGS

*Here’s a look at the annual savings that the 40 projects submitted in the 2015 Chairman’s Award completion achieved when combined with other employee led efforts that were not part of the judging:*

**22.6 million gallons of water conserved**

2.3 percent of Cummins’ total water use



**14,046 metric tons of carbon dioxide (CO<sub>2</sub>) avoided**

1.8 percent of Cummins’ total amount



**20,098 MWh (megawatt hours) of energy conserved**

2.2 percent of Cummins’ total energy use



**1,537 tons of waste diverted from landfills**

1 percent of Cummins’ total waste



# PARTNERSHIPS AND POLICY

*Cummins' partnerships and its policy advocacy efforts play key roles in the company's environmental performance. They help Cummins meet product emission goals, use energy more efficiently and bring environmental solutions to the marketplace.*

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

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

Cummins worked closely with the U.S. government and a variety of stakeholders, for example, to develop the first-ever greenhouse gas (GHG) and fuel efficiency standards in the United States in 2014 for medium- and heavy-duty commercial vehicles and engines. These standards became known as the "Phase 1 Rule."

The company is now working to help shape future Phase 2 standards. When the U.S. Environmental Protection

Agency (EPA) and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) released their joint Phase 2 proposal in June 2015, Cummins announced its support for the rulemaking, testifying at a public hearing and submitting detailed written comments.

A key aspect for Phase 2 is to maintain the same regulatory structure with separate standards for the engine and the rest of the vehicle. Separate standards are critical for the regulation to achieve environmental and user benefits while recognizing the diversity and complexity of the commercial vehicle sector.

The company's engagement on future regulations will not end with finalization of the Phase 2 Rule expected later in 2016, nor is it limited to just the U.S.

For example, the California Air Resources Board's (CARB) call for lower on-highway engine oxides of nitrogen (NOx) standards and plans by countries to adopt tougher Euro NOx standards mean Cummins will continue to share technical and policy expertise in partnership with its stakeholders around the world.

## R&D COLLABORATION

Cummins longstanding partnerships with the U.S. Department of Energy (DOE) and other federal and state agencies directly support international goals of reducing GHG emissions and national goals of reducing petroleum consumption and dependency.

These partnerships help Cummins lead the United States and other markets in energy productivity while continuing to reduce criteria emissions from global transportation and distributed power generation fleets. The company's current public-private projects involving DOE, except where noted, include:

- » The Cummins-led SLTNR (Sustained Low Temperature NOx Reduction) project, partnering with Johnson-Matthey and Pacific Northwest National Laboratory, continues to make progress on Selective Catalytic Reduction (SCR) catalyst and reductant delivery technologies capable of sustained 90 percent NOx conversion at 150 degree C. The goal is improved robustness of future high performance

NOx aftertreatment systems under challenging real world conditions.

- » The EDPCI (E85/Diesel Premixed Compression Ignition) project's goal is to demonstrate high efficiency dual-fuel engine operation in a Class 8 (long haul) truck. The project hopes to achieve a more than 50 percent reduction in petroleum consumption by making extensive use of E85 (85 percent ethanol / 15 percent gasoline) and diesel fuel. Completion of engine development, vehicle integration and demonstration testing is expected to take place in 2016.
- » The 55BTE Program goal is to demonstrate 55 percent brake thermal efficiency (BTE) in a diesel-only configuration by building on lessons from the analytically-based technology scoping phase of the [SuperTruck](#) program. The 55BTE program will also lay critical groundwork for a future SuperTruck system integration project to advance the performance, cost, and commercial viability of a suite of engine / powertrain and vehicle technologies.
- » The HHP-NG 55BTE program is developing advanced knock suppression technology for high horsepower natural

gas engines that is a key enabler for a series of other technology, defining a path to a 55 percent BTE target for large, stationary electrical power generation systems.

- » The HD Ultra-Low NOx Natural Gas program, partnering with California's South Coast Air Quality Management District (SCAQMD) and other California entities, was completed at less than 0.02 gram/bhp-hr NOx technologies, while maximizing engine efficiency. The program defined several important new technologies to narrow the efficiency gap between state-of-the-art diesel and natural gas engines.

Underlying Cummins' system-integration programs is a valuable portfolio of collaborative research and development agreements that team, and fund, world class researchers at the DOE's system of national laboratories with their counterparts at Cummins.

They jointly work on such things as combustion modeling and diagnostics, materials science, catalysis fundamentals, powertrain electrification/hybridization and more.

## ENVIRONMENTAL DEFENSE FUND

Cummins continues to collaborate with the Environmental Defense Fund (EDF) to learn more about fugitive methane emissions from natural gas vehicles and the fuel supply chain.

Through the sponsorship of a series of 16 independent studies, EDF is coordinating the work of close to 100 universities, research facilities and industry partners contributing to this research including Cummins and the joint venture [Cummins Westport](#).

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

As producers of natural gas engines, Cummins and Cummins Westport are contributing to the study of fugitive methane emissions related to evaporative losses and incomplete combustion from vehicles, and fugitive emissions associated with fueling infrastructure.

The study is led by West Virginia University. The results of the study were submitted for peer-review in 2015.

## GOVERNMENT RELATIONS

The company's [Government Relations](#) staff advocates globally for policies, legislation, government research funding and regulatory guidelines that promote products and technologies that benefit the environment.

Its efforts in the United States include working with Congress, the White House, state governments, trade associations and industry to support the EPA in developing fuel efficiency regulations for heavy-duty vehicles, and to broadly educate policy makers about how regulations, economic development and competitiveness can flourish if developed properly.

In India, Cummins pushed for the release of a formal schedule to move to Euro IV emissions regulations. The Indian government announced that India will transition to a single, nationwide Euro IV norm in a phased timeline. Cummins supports the recent announcement by the

## GRANT TO FUND HYBRID ELECTRIC VEHICLE

Cummins was awarded a \$4.5 million grant in April 2016 from the U.S. Department of Energy to develop a Class 6 commercial plug-in hybrid electric vehicle that can reduce fuel consumption by at least 50 percent over conventional Class 6 vehicles.

When fully loaded, a class 6 vehicle weighs between about 19,000 and 26,000 pounds. Typical examples include school buses or single axle work trucks.

Cummins researchers will optimize the powertrain by selecting the engine with the best architecture to use as an electric commercial vehicle range extender, using the engine to manage the charge level of the all-electric drive battery pack. The range extender will be integrated, using advanced vehicle controls, with the electrified powertrain and other applicable technologies.

Ultimately, the researchers aim to demonstrate improved fuel consumption and state of the art drivability and performance regardless of environmental conditions.

Cummins is partnering with PACCAR on the project, and the full team includes representatives from The Ohio State University, National Renewable Energy Laboratory and Argonne National Laboratory.

Indian government to transition to Euro VI norms by 2020.

In China, Cummins is advocating for an effective enforcement environment for emissions regulations and a non-discriminatory certification/testing mechanism for engines and vehicles. The company has also brought together stakeholders from the U.S. Department of Energy and China's Ministry of Science and Technology to develop a joint U.S. – China program modeled after SuperTruck with a goal to further increase engine and vehicle efficiency.

## BOARD OF DIRECTORS ENGAGEMENT

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

- » Safety policies and performance with special emphasis on employee, workplace, and product safety.
- » 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 Cummins regarding safety, environmental and technical matters.

Topics discussed in 2015 included the company's environmental footprint and a collaborative emissions study done by the [Health Effects Institute](#) as well as a variety of future product technology topics.

Cummins Science and Technology Advisory Council has paused while the company restructures its membership.

## ACADEMIC PARTNERSHIPS

Cummins has continued to partner with dozens of universities around the world to collaborate on important environmental research topics.

Cummins' collaboration with [Tsinghua University](#) in China, for example, began in 2003, and is both an academic and a research collaboration. The [Dr. Alyn Lyn Scholarship](#) is named for the late Vice President of Research at Cummins and a 1939 graduate of Tsinghua. It was established in 2004, first with

Tsinghua University before expanding to 13 universities in China, benefitting more than 400 students.

As of 2015, there were more than 20 Tsinghua graduates working at Cummins, both in United States and in China. Cummins and Tsinghua have also been collaborating on multiple projects, focusing on clean and renewable energy.

The Cummins Innovation Centre, meanwhile, opened in 2012 and is a five-year strategic alliance between Cummins and the [University of Nottingham](#) in the United Kingdom. The focus of the alliance is on the research of electrical machines and related technologies, in particular generator technologies such as gensets and synchronous generators, power electronics and electrical machines, integrated drive systems and technologies and strategies for enhanced heat transfer.

## BUSINESS COALITIONS AND COUNCILS

Cummins is a member of several key non-profit organizations that promote sustainability and responsible technology, including:

- » [The Diesel Technology Forum](#), which is dedicated to raising awareness about the importance of diesel engines, fuel and technology. Since it was founded in 2000, the forum has emerged as a leading source of information on agriculture, economics, energy, the environment, transportation and trade issues impacting diesel technology.
- » [The Health Effects Institute](#), founded by the EPA and industry leaders including Cummins, is a non-partisan organization committed to providing high-quality, impartial, and relevant science regarding the effects of air pollution on health.
- » [BSR](#) (Business for Social Responsibility), which works with member companies to develop sustainable business strategies through research and cross-sector collaboration.
- » [Rocky Mountain Institute Business Renewables Center](#), is a member-based platform that serves to streamline and accelerate corporate procurement of off-site, utility-scale wind and solar energy.

The company also sits on the U.S. EPA's Clean Air Act Advisory Council and the North American Council for Freight Efficiency.

And Cummins CEO Tom Linebarger leads the Business Roundtable's (BRT) (<http://businessroundtable.org/>) International Engagement Committee, which supports policies that promote U.S. trade and investment, and a level playing field for U.S. companies competing in global markets. Cummins has been a regular contributor to BRT's annual sustainability report.

# ENVIRONMENT MONTH SETS NEW RECORD

*What started as a grassroots effort in one Cummins business unit a few years ago has now grown to more than 30,000 employees and 67 global sites participating in the company's June Environment Month.*

While participation has tripled since 2014, the message remains the same: Even small actions taken consistently across the company can make a big difference.

Cummins employees in Qatar, for example, reduced their paper printing by 75 percent in one week. Employees in Mexico planted 300 trees while their counterparts in the U.K. upgraded to energy efficient lightbulbs. There were energy fairs, carpool arrangements and climate change quiz shows.

In 2014, Cummins adopted its first comprehensive environmental sustainability plan and introduced goals to reduce the company's energy use and greenhouse gas emissions, water use and waste production. June Environment Month is a way for all employees to deliver on Cummins' mission that "everything we do leads to a cleaner, healthier, safer environment."

The month is organized by environmental theme, with one week devoted to water, another to waste and still another to energy activities. A planning team provides structure and ideas, and employees are unleashed to tailor activities to their own site's particular expertise and interests.



## 67

Cummins site globally  
held site-wide activities  
for employees

## 30k+

employees participated  
in June Environment  
Month

## all

Business Units  
participated in creative,  
inspiring, impactful  
activities

# CATALYSTS FOR FUEL EFFICIENCY

*From his desk in Columbus, Indiana (U.S.A), Cummins Fuel Economy Engineer David Yu uses sophisticated tools to tell customers details about their operations thousands of miles away that even personnel on the ground might not know.*

He analyzes large amounts of data about the time engines are working and idling in various locations, the fuel they consume, the distances they travel and many more factors to suggest ways customers can get better fuel economy, resulting in a corresponding reduction in greenhouse gas (GHG) emissions.

“We’ve got incredibly talented people helping our customers operate Cummins products more efficiently throughout the company,” said David O’Brien, Director – Fuel Economy and Engine Business Unit Sustainability. “David (Yu) is doing some tremendous work, but most of what’s happening in this area is taking place at customer sites, where we’re working side-by-side to save fuel and at the same time reduce GHGs.”

Cummins has set a goal of partnering with its customers to reach an annual reduction of 3.5 million metric tons of carbon dioxide (CO<sub>2</sub>) by 2020, saving 350 million gallons of fuel annually.

Cummins estimates that about 99 percent of its CO<sub>2</sub> footprint is attributable to its engines when used by the company’s customers. CO<sub>2</sub> is the primary greenhouse gas emitted through human activities, according to the U.S. Environmental Protection Agency (EPA).

The perpetually energetic O’Brien is leading the company’s efforts to meet what Cummins calls its “Products In-Use Goal.” An engineer by training who worked for many years in marketing, O’Brien is part scientist and part promoter, always encouraging his fellow employees to work with customers to achieve greater and greater fuel efficiency.

Along with his team consisting of Yu and Bill Kendrick, Technical Advisor – Vehicle Performance, O’Brien is implementing a strategy to reach the company’s goal across all engine and global market segments, with a special emphasis on large on-highway fleets of trucks and off-highway operations such as mining.



## PARTNERSHIPS

The team works with personnel across the company to help improve fuel efficiency when Cummins products are in use.

O'Brien, for example, meets regularly with the fuel economy team at Cummins India led by Amol Wairagade. Wairagade's team is working from a list of some two-dozen projects it wants to complete to help customers get better fuel economy.

The ideas range from developing stop-start technology for bus customers to creating a way for heavy-duty truck drivers to easily change to a fuel efficiency setting.

"We want our customers to be the market leaders on fuel economy," Wairagade said. "We know how important fuel costs can be to their profitability."

O'Brien's experience in marketing can be seen in the internal website he's started and the newsletter he produces extolling the work of teams like Wairagade's and the virtues of fuel efficiency both for the environment and the customer's bottom line.

"I see my role as the catalyst," O'Brien said. "I'm not doing the work. My goal is to help make it go faster and further."



# PARTNERSHIP PRODUCES RESULTS FOR CUSTOMER AND THE ENVIRONMENT

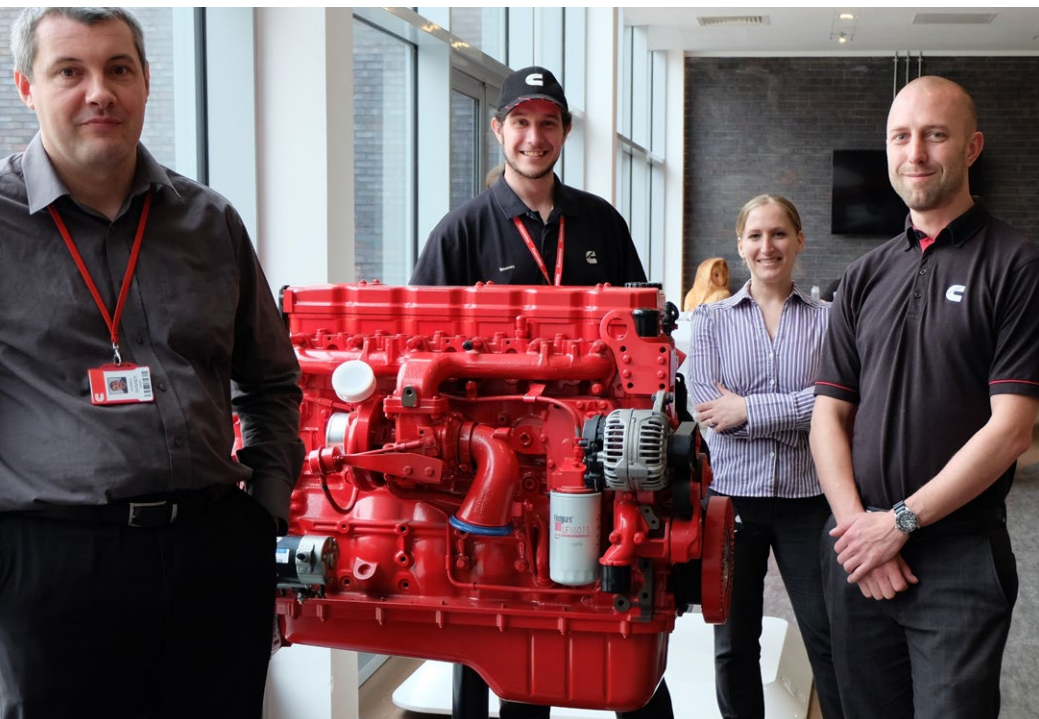
*Engineers at Cummins' Darlington Engine Plant in the U.K. and their counterparts at the Hyster-Yale Group (HYG), a leading manufacturer of materials handling equipment, have produced some pretty impressive gains in fuel efficiency over the past six years.*

Working together on nearly 20 projects, the partnership has delivered annual fuel savings in excess of 2 million gallons since the initiative started in 2010, with plans to top 4 million by the end of 2016.

"We've really moved from trying to improve fuel economy after the vehicle has been designed and validated to working together with HYG to make sure fuel economy and optimization is considered from the start of a new project," said Ben Kilpatrick, Application Engineer at Cummins for the HYG account. "It's been great to see how this partnership has grown just in the time since I joined the team in 2014, following on from Andrew Skinner, who developed this new approach with HYG in 2010."



***A piece of Hyster-Yale Group (HYG) equipment undergoes testing at an airport in Germany as part of the HYG-Cummins partnership to improve fuel efficiency. The airport is near HYG's operations in the Netherlands.***



Jan-Willem van den Brand, Big Truck Strategy & Application Center Manager at the Hyster-Yale Group, said HYG doesn't buy anything off the shelf and put it into its lift trucks and container handlers. It wants to partner with its suppliers to ensure superb integration and optimization, so customers get the reliable and durable solution they need to succeed.

***"We really wanted to achieve a significant improvement in fuel efficiency for our customers and for the environment," van den Brand said. "So we had very high expectations for this partnership. Cummins has proven to be the right partner."***

Cummins has a multi-disciplinary team of engineers at Darlington that works with HYG's team based in Nijmegen, Netherlands. The Cummins team includes engineers focused on engine system installation, machine integration, transmission integration and system optimization, including advanced system modeling and analysis to fully understand both HYG's and the end-user's needs.

The partnership has worked on a range of projects primarily involving forklifts, high capacity forklifts, reach stackers and container handlers. In one successful collaboration, the partnership determined that an HYG product could save fuel by using a smaller engine and still provide customers with the power needed to complete the desired task. Other examples have included the joint development of user selectable machine operating modes, such as "Eco" and "HiPower," to ensure customers achieve both productivity and fuel economy targets.

"Nobody knows their products and customers better than HYG," said Niki Schönauf, who has led Fuel Economy

Functional Excellence for the Cummins team since 2015. "We want to be experts on the integration and optimization of our engines in their products to help meet fuel economy targets, performance requirements and most importantly their business goals. By working cross functionally and globally across Cummins, as well as directly with HYG and its suppliers, we have been able to achieve excellent results."

HYG recently announced that it won a **2015 GOOD DESIGN™** award for its Tier 4 Final RS45-46 Reach Stacker. Presented by the Chicago Athenaeum Museum of Architecture and Design, GOOD DESIGN honors yearly achievements of extraordinary design excellence. The Tier 4 Final Reach Stacker was selected based on its efficient engine technology and productivity enhancing design.

"The engineering teams at HYG Nijmegen and Cummins Darlington have worked very closely together for many years" said Bill Pearce, Director of Customer Engineering in Europe for Cummins. "Together they

have developed and utilized new tools and processes to ensure optimization and improved fuel economy is designed into every new project from the very beginning."

HYG's van den Brand agrees that experience working together is critical. His company only brings to its customers products that have been thoroughly tested, part of its "Promise to Proof" approach. That makes it critical for HYG personnel to be at the forefront of the development cycle for innovations to reach customers as quickly as possible.

"Hyster test trucks were the first machines equipped with Tier 4i and Tier4F engines, undergoing thousands of hours of testing in the field before they were officially launched," van den Brand said. "Cummins has worked with our test engineers to combine our companies' testing programs. We will only bring reliable and durable solutions to our customers."

# HELPING EMERGING MARKETS FIND CLEAN, ECONOMICAL POWER

*Countries in emerging markets don't have to choose between clean air and building economic wealth, Cummins Chairman and CEO Tom Linebarger told a major conference on corporate social responsibility in November 2015.*

By working with joint-venture partners in emerging countries to address realistic and enforceable emissions standards, Cummins can help those countries significantly reduce air pollution using technologies the company can produce at a much lower cost today than when they were first introduced, Linebarger told the BSR (formerly Business for Social Responsibility) conference in San Francisco, California (U.S.A.).

***“One of the things that’s definitely happening is that in emerging markets, where many countries are trying to build wealth for the first time, they are seeing concentrations of air pollutants in their cities that are just staggering,” Linebarger told the conference.***

But he said those countries don’t have to choose between creating wealth and clean air.

“It’s all about trying to get them to toughen their emission standards and the way that we do that is we try to walk in and say, ‘Look, we have technology that we put in the U.S. in 1998 or 1995 and today it is reliable, it is inexpensive and we can partner with local companies in your country,’” Linebarger said.

“...We’ll partner with them. We’ll joint venture with them. They’ll learn this technology,” he added. “So it’s not just that we’re going to come in and take all the revenue as a foreign company.”

A Cummins joint venture is currently producing a truck engine in China, for example, that meets that country’s NS4 emission standards. Those standards are roughly equivalent to the 2002 U.S. Environmental Protection Agency (EPA) regulations.

Cummins has found ways to produce the engine package designed to meet China’s regulations for about 35 percent less than it cost 13 years ago to meet the EPA standards then, Linebarger said.

Linebarger’s speech came as delegates started to gather in Paris to discuss ways to address climate change across the globe. One of the key issues raised by developing countries was balancing their industrial growth with the need to reduce greenhouse gas emissions.

***“What we can do now is bring great technology to countries at a much lower cost,” Linebarger said. “Why does that matter? It encourages governments in developing countries to put in tighter emission standards with less impact to their economy.”***

But realistic, enforceable regulations are critical, he said. By its nature, clean air is a public benefit that is essentially funded privately.

“Enforceability is critical,” Linebarger said.

“If enforceability’s inconsistent, basically the only loser is the one who complies.

So it’s a really critical element to our strategy - drive the technology, drive the emissions regulations to be stringent, and enforceable.”

## ABOUT BSR

*BSR, formerly Business for Social Responsibility, is a global nonprofit organization dedicated to building a just and sustainable world through its network of more than 250 member companies.*

*With offices in Asia, Europe, and North America, BSR creates sustainable business strategies and solutions through research, consulting and collaboration. The organization was launched in 1992.*

*BSR envisions a world “in which everyone can lead a prosperous and dignified life within the boundaries of the Earth’s natural resources.”*

# CUMMINS PUTS COMMUNITY IMPACT ON THE MAP

*For many beginning a journey, “X marks the spot” to their ultimate reward. But at Cummins Turbo Technologies in Wuxi, China, Wang Jie pursued “Y,” not for her benefit but rather for others. Her story – and strategy – represents the future of Corporate Responsibility at Cummins.*



Wang, a Senior Administration Assistant, received Cummins' 2015 Community Impact Six Sigma Chairman's Award for improving workplace conditions at a center for adults with disabilities. By using her business skills to address a particular outcome – called the “Y” in Six Sigma's data-driven approach to eliminating manufacturing defects – Wang exemplified Cummins' new strategic vision for employee engagement.

***“We can utilize our talent to help people and other communities in need,” Wang said. “As the Chinese saying goes, ‘Give a man a fish and he can eat for a day; teach a man to fish, he’ll eat for a lifetime.’”***

Wang did just that by helping the center find new ways to assemble washing-machine parts to protect employees' hands. She also worked on a new layout for the center's assembly line to increase efficiency and enhance employee safety.

In 2015, to maximize all employees' opportunities to help others, Cummins' global regions developed long-term

community strategies. Wang’s project, for example, aligned with Cummins China’s regional strategy to increase independence among people with disabilities. Other regions’ goals are as diverse as the company’s global teams.

“Cummins employees have specialized skills to help people in our communities,” said Mary Titsworth Chandler, Cummins’ Executive Director of Corporate Responsibility. “When we add strategic principles to organize those unique talents, the impact is powerful.”

Like China’s strategy, the Middle East’s plan includes better integrating people with special needs into society and also educating youth on the environment. In India, Cummins leaders built their strategy around replicating the successes employees have had developing villages’ water supplies, farms, hygiene and schools. In Africa, every Cummins site is partnering with a school with a high population of students at risk of failing to raise their academic performance.

Among Cummins’ North American sites, employees are mentoring low-income students to help them pursue college or careers. European leaders will be focusing on strengthening students’ aspirations and reducing food poverty. In Mexico, teams have organized their efforts into a “neighborhood approach” in La Pila – a model South America is also pursuing because of its effectiveness.

And in the Asia-Pacific region, Cummins’ teams are expanding their TEC: Technical Education for Communities initiative to increase the availability of skilled workers and good jobs.

**“Our employees can have a profound effect on others’ lives,” said Peter Jensen-Muir, Executive Managing Director of Cummins’ Asia-Pacific Distribution Business Unit. “Cummins has a rich history serving our communities and, because of our employees and forward-looking strategies, more abundant engagement activities in the years ahead.”**

Cummins’ commitment to Corporate Responsibility has been a core value at the company since its founding in 1919. In 2015, 53,749 employees, joint venture employees and contractors honored that tradition by engaging in a community project – a record 80 percent of eligible employees.

In doing so, they assessed gaps their skills could address and strategized on where and how to create impact – just as Wang Jie did.

Although Cummins employees’ “Ys” might be varied, their “Why” is the same. And just like Wang Jie’s proverb, in 2015, their new strategies found where Cummins can help people in need net even greater opportunities.

Where X marks the spot.

MAKING A DIFFERENCE

2015 was a record year for the company’s Corporate Responsibility initiatives.

COMMUNITY ENGAGEMENT

Participation in the company’s Every Employee Every Community program.

2015:  
**53,749 EMPLOYEES**  
(80 PERCENT)

2014:  
**50,000 EMPLOYEES**  
(73 PERCENT)

ENVIRONMENTAL CHALLENGE

Cummins employees can participate in this global competition to help communities solve environmental problems.

2015:  
**88 PROJECTS**

2014:  
**62 PROJECTS**

Estimated greenhouse gas removed by teams participating in the challenge.

2015:  
**36,810 TONS**

2014:  
**22,370 TONS**

# AN IMPACTFUL LEADER RETIRES AFTER 42 YEARS WITH CUMMINS

*Mark Levett was just the leader Cummins needed to direct Corporate Responsibility's evolution toward creating greater impact in communities. He did exactly that in a variety of positions over his 42 years with the company.*

"Cummins has benefitted greatly from Mark's business expertise, his strong work ethic and his skills as a great listener and keen observer of people," said Cummins Chairman and CEO Tom Linebarger and President and Chief Operating Officer Rich Freeland in a joint statement on Levett's retirement in 2015. "Mark's modest nature masks the enormous impact he has had on our company."



*Mark Levett (center, waving) during a visit to Nigeria shortly before his retirement from Cummins after 42 years serving in a variety of positions.*

In 2013, Levett became Vice President of Corporate Responsibility after working almost exclusively on the business side of the company for most of his career. He was long known as an executive who truly lived Cummins' values in everything he did.

As the leader of Corporate Responsibility, Levett expanded Cummins' community engagement globally while tasking company leaders to create strategies aligned to the needs of their regions – a goal Levett's close colleague and successor, Mary Titsworth Chandler, will continue.

***"The community impact Mark created was a seamless continuation of his many years of impressive business results," said Chandler. "Yet what Mark will truly be remembered for is his professionalism and kindness. We miss him."***

Employees in Fridley, Minnesota (U.S.A.) developed an innovative, fuel-saving micro grid to provide clean energy to a wilderness center.

## ENVIRONMENTAL CHALLENGE PUTS EMPLOYEE INGENUITY TO WORK

*Wissam Balshe and Shalaw Mohammed knew it would be difficult to convert one sheet of paper into 33,667 kilowatts of uninterrupted clean energy for a wilderness center in Ely, Minnesota (U.S.A.). But they were up to the challenge.*



Of course, that piece of paper is just where Balshe and Mohammed started writing their plans for an innovative, fuel-saving micro grid. Without it, their community service project never would have been selected as one of the winners in Cummins' 2015 Environmental Challenge.

"It was very rewarding to lead a project all the way from an idea on paper to a full-scale example of what a robust, clean system should look like," said Mohammed, a Sales Representative for Cummins Power Systems. His team's project saved 14.3 metric tons of carbon dioxide (CO<sub>2</sub>) in 2015 by linking solar panels, batteries and a diesel generator to provide power at the Steger Wilderness Center.

Like Mohammed and Balshe, 21,600 Cummins employees from 30 countries converted similar ideas to projects as part of the company's seventh-annual employee competition to conserve water and energy, and reduce waste in communities around the world. A panel of Cummins environmental experts evaluated entries based on their levels of employee engagement, environmental impact and overall ingenuity.

The 88 projects submitted in 2015 reduced the equivalent of 36,810 metric tons of greenhouse gas (GHG), a new company record. Eighteen were named global

**Environmental Challenge winners.**

"It is our duty to preserve natural resources so that needs can be met not only in the present but also for future generations," said Moysés Silva, a Plant Engineering Supervisor who led an Environmental Challenge project in Brazil. "We had an amazing experience helping others understand the importance of good environmental practices."

## MAKING AN IMPACT

Silva and his team worked with their local water department to create quality cisterns for collecting rainwater and informational pamphlets on how to do it safely.

Since 2009, water levels in Brazil's reservoirs have dropped dramatically, causing residents to preserve rainwater for watering plants and other non-potable purposes in ways that led to an increase in dengue-fever mosquitos. To encourage proper water conservation, Cummins employees distributed 50 cisterns to families and educated 320 students at a nearby school.

“It’s being well used,” said Aparecido Saraiva, a local resident, when asked about his new cistern designed to keep insects out. “I was able to fill up four extra buckets.”

Households were similarly engaged in Pune, India, where Cummins employees continued their 2011 project to reduce the amount of waste going to local landfills. By educating residents in the Katraj and Baner wards to segregate garbage at their homes, employees helped cut waste sent to landfills by five tons and increased the quantity going to a biogas energy station by 150 percent.

***“It is a very special feeling you get when you have the chance to make a little impact on the community,” said Pranjali Kelkar, an Executive Manager at Cummins India. “This was achieved mostly through changing the mindset of the community through various awareness campaigns involving more than 15,000 citizens and 15,000 school children.”***

Kelkar’s project is now being replicated by the Pune Municipal Corporation across 32 wards, something Silva wants to do in Brazil with his team’s cisterns and Balshe wants to accomplish in Minnesota with the micro grid.

SHOWCASING NEW IDEAS

“I hope it becomes a showcase for new energy technologies,” said Balshe, a Power Systems Territory Manager, “and that the Steger Wilderness Center uses it to educate residents and high school students on different ways to reduce their carbon footprint.”



In 2016, they will have the opportunity to do exactly that through Cummins Foundation support Balshe and Mohammed directed to the center. Every Environmental Challenge winner is awarded a \$10,000 grant for a local community organization of each team’s choosing.

For Cummins employees, however, the real reward is in the air they helped clean, the water they saved, and the environment they preserved. Although they took the Environmental Challenge, it was their communities that ultimately won.

IMPACT BY THE NUMBERS

Here’s a look at the global impact of Cummins’ 2015 Environmental Challenge:

12,550  
megaliters of **water saved**

36,810  
metric tons of **GHG reduced**

77,820  
trees planted

15,354  
metric tons of **waste diverted** from landfills

350,000 **people educated**

30 countries represented

21,600  
employees participated

72,600  
hours contributed

88 **projects completed**

# ENVIRONMENTAL CHALLENGE WINNERS

*Here's a look at the 18 projects  
named by a panel of company experts  
as the global winners of Cummins' 2015  
Environmental Challenge.*



## ECO-CREEK FOR GREEN TAIHU

Components employees in Wuxi, China conserved 8,400 kiloliters of water by cleaning the country's second-largest lake.

## GREEN HAN RIVER

Employees from China's Dongfeng Cummins Engine Company reduced 38,000 tons of sewage from pig farms by expanding biogas stations.

## ORGANIC GARDEN ENVIRONMENTAL EDUCATION

Distribution employees in China expanded gardens from two to 12 schools, educating 7,000 more students.

## MODEL VILLAGE

Cummins India cross-site and business unit teams saved 15.81 million gallons of water and planted 1,600 trees.

## ZERO GARBAGE AND BEYOND

In Pune, India, Engine Business employees reduced the local community's carbon footprint by 7,575 metric tons of carbon dioxide (CO<sub>2</sub>) and educated 15,000 students.

## EMPOWERING SAFE AND HEALTHY LIVES

Phaltan, India employees from the Engine Business saved 40 metric tons of CO<sub>2</sub> by training non-governmental organizations (NGOs) on energy efficiency tools.

## SUSTAINING WATER NEUTRALITY

Employees across multiple business units helped four villages near Phaltan, India harvest 19.8 million gallons of water.

## GOLDEN STRAW

China employees from multiple business units prevented 28,000 tons of straw from being burned by local farmers.

## WATER NEUTRALITY

In Pune, India, Engine Business employees generated or saved 6,459 million gallons of water and planted 5,000 trees.

## GREEN BANK

Components employees from Cummins Fuel Systems-Wuhan taught 5,000 university students good home environmental habits and helped plant 678 plants around their schools in China.

## RIVER ECOSYSTEM RECOVERY

Engine Business employees from the China Parts Distribution Center enabled 87,600 tons of water to be cleaned per year by using a 3D printer to create floating plant beds and removing invasive species.

## ALTERNATIVE ENERGY

In Harrowdene, South Africa, a Power Systems team cut food waste by 8.79 metric tons and saved 9.91 metric tons of energy at a local school.

## URBAN FOREST

Components employees from San Luis Potosí, Mexico planted 810 trees and helped pass a law promoting urban tree planting and protection.

## RIVER TEES REDISCOVERED

Near Cummins' Darlington/Stockton site in the United Kingdom, employees from multiple business units protected species of birds, butterflies and insects.

## MICRO GRID CLEAN ENERGY

In Ely, Minnesota (U.S.A.), Power Systems employees cut fuel use at an area nature preserve by 50 percent, saving 14.3 tons of CO<sub>2</sub>.

## REDUCING EMISSIONS

Components employees from multiple sites in India retrofitted 160 KVA generators used by community partners, reducing the particulate matter they release by 85 percent.

## DROP BY DROP

Multiple business unit teams from Cummins Brazil Limited conserved 26,380 gallons of water by designing rainwater harvesting cisterns.

## TETRA PAK RECYCLE

Distribution employees from Guangzhou, China recycled 15,000 tons of Tetra Pak packaging by expanding their educational outreach to 14 more schools.



*Berfu Alev gets classroom experience at Ege University, a TEC partner in Turkey.*

# TEC OPENS MINDS ...AND DOORS

*Berfu Alev and her “family” of female students in Izmir, Turkey, are changing perceptions of what it means to work in a technical career. Like others in Cummins’ TEC: Technical Education for Communities program, family has been a motivating factor in their success.*

“I think I can help other girls in the technical field,” said Alev, a student at Ege University. “I try to remove the stigmas and stereotypes associated with the ‘dirtiness’ of a technical career and highlight the state-of-the-art equipment that today’s professionals use.”

TEC is a global initiative by Cummins to address communities’ technical skills gaps through vocational education. Alev’s school is one of 14 TEC sites that Cummins and its industry partners have opened since 2011. In 2015, sites launched in Arequipa, Peru; Kohlapur,

India; Brisbane, Australia; Perth, Australia and Beijing, China.

***“The technical skills gap has created a two-sided economic problem in many of our communities around the globe,” said Cummins Chairman and CEO Tom Linebarger, the company’s lead sponsor for TEC. “On the one hand, employers cannot find enough qualified people to fill critical technician roles. And, on the other hand, many able people cannot find good paying jobs.***

“By helping young people obtain in-demand technical skills, we can expand employment opportunities and improve the quality of life in our communities,” he said.

The students participating in TEC come from diverse backgrounds and socioeconomic levels. Many believe the program is the catalyst they need to succeed and give back to their families – often the people integral to their pursuit of a technical education.

“Both my father and older brother left school early to work and have encouraged me to get an education so I’ll have a stable future,” said Mert Nahit Karakus, a third-year TEC student studying mechatronics at Ege University. “To have a job in the technical field is an opportunity that will totally change my future.”

Karakus was a summer intern at Cummins’ Filtration facility in Izmir in 2015. Workplace learning opportunities are a core component of TEC to ensure

students engage in hands-on training before graduation. Across all TEC initiatives, 107 students participated in internships during 2015.

Come summer 2016, Karakus will be a member of TEC’s first graduating class, as will Meryem Zerouali, a 22-year-old student at the Morocco TEC site in Casablanca. Her interest in mechanics started at a very young age.

“It’s kind of funny because I didn’t have any technical experience before I enrolled in

TEC, but I’ve always been curious about fixing problems in cars,” Zerouali said. “I can thank my uncle for that.”

As Zerouali and her fellow students graduate from the program, Cummins and its industry partners will measure graduates’ job-placement rates, knowledge retention, their compensation relative to a “living wage” and employer feedback on their skills and attitudes.

Zerouali feels prepared for her future.

“I’m confident that I will be able to get a job based on my current training at the school and at my internship,” she said.

Alev, meanwhile, will likely continue opening others’ eyes to what a technical career can mean and her example may inspire more young women as TEC expands to 20 sites by 2017.

“I believe that women employed in the technical areas will increase,” Alev said, “and people’s ideas about women in the workplace will slowly change.”



# A NEW PACT TO EMPOWER COMMUNITIES

*Cummins' community engagement efforts got a new source of energy in 2015.*

*Schneider Electric joined Cummins in July 2015 to announce a global partnership for Corporate Responsibility, building upon the two companies' shared history empowering women in Turkey, training students in Nigeria and building homes for disadvantaged families in Minnesota.*

"Working together, Cummins and Schneider Electric can use our global footprint, and the strength of our employees' skills, to drive even greater change in our communities," said Mark Levett, Cummins' then-Vice President of Corporate Responsibility.

The new partnership will focus on providing more communities around the world with affordable, clean power through Schneider Electric's Access to Energy program, and skills training for quality jobs through Cummins' TEC: Technical Education for Communities initiative.

"We share a belief with Cummins that, as organizations with expertise and scale, we have a responsibility to actively support efforts to improve our communities and our world," said Francois Milioni, who leads Schneider Electric's Access to Energy initiative. "By joining forces to further animate this belief, we will be able to do more collectively than we could individually and increase the positive impacts we can make for our society."

Cummins will continue to pursue such global partnerships to increase employees' impact in their communities. In 2016, the company signed a similar agreement with Komatsu Ltd. to improve industry relevant technical skills training and access to good-paying jobs among disadvantaged populations.

# NARROWING THEIR FOCUS TO BROADEN THEIR IMPACT

*Paloma Lopez found just the spot for her school's tomato plant. The ground needs work, but with time and care it will bear fruit. Her neighborhood is not so different. With Cummins' support, the community's once rough and barren areas are now blossoming with new opportunity.*



In 2015, Cummins partnered with González Bocanegra Elementary School near the company's operations in San Luis Potosí, Mexico to develop an onsite garden for its 260 students. There, while tending the produce, company employees like Ary J. Loredó, an Accounts Payable Analyst for CBS Mexico, taught Lopez and her peers about environmental stewardship.

The activity was just one component of Cummins' "neighborhood approach" in La Pila, the community where the school is located.

"I see a great benefit from Cummins' partnership with our school," said Arturo Jaramillo, a teacher at Bocanegra Elementary. "They are teaching us to work in an organized way, consider risks when implementing ideas and helping kids think and act."

Jaramillo, however, doesn't give himself enough credit. After all, it was his own "act" that led to Cummins' partnership with Bocanegra and broader interest in La Pila.

In 2013, Cummins had around 500 community events taking place across San Luis Potosí. Although each had value, company leaders could not tell if any were creating a lasting, measurable difference. Accordingly, leaders chose to focus employees' engagement in a community that had much to gain from their skills, time and resources. They just had to find the right one.

Working with graduate students from the Universidad Autónoma de San Luis Potosí, Cummins teams analyzed neighborhoods lagging in education, environmental protection and employment. With middle school dropout rates around 50 percent, streets littered with trash and 33 percent of residents stuck in poverty, La Pila was at the top of their list. That's when Cummins employees heard about Jaramillo.

The Bocanegra Elementary teacher contacted Cummins to see if the company would consider supporting his school. Employees – already preparing to meet with La Pila stakeholders following the Universidad assessment – added Jaramillo to their list of appointments.

***"In Arturo Jaramillo and other La Pila leaders, we found a community not content with the status quo," said Andrea Villegas, a Product Engineer in Cummins' Engine Business who sponsored her team's engagement in La Pila. "Upon seeing their passion for change and interest in something greater, we knew La Pila was the place where Cummins employees could make a measurable impact."***

And so the company's neighborhood approach began, with Cummins establishing long-term goals to increase La Pila students' enrollment in higher education, encourage greater environmental care among residents and develop opportunities for employment and entrepreneurship. Those goals ultimately led to such projects as Bocanegra's organic garden and other forms of cultivation.

For example, in 2015, 48 participants from nine La Pila schools participated in



## THE NEIGHBORHOOD APPROACH

In 2016, Cummins employees are taking the company's neighborhood approach in San Luis Potosí, Mexico, to communities around the world.

Among Cummins' North America sites, teams are replicating the La Pila strategy in Indianapolis, Indiana (U.S.A.); Fridley, Minnesota (U.S.A.); Charleston, South Carolina (U.S.A.) and Memphis, Tennessee (U.S.A.).

Across the Atlantic, United Kingdom employees are exploring a neighborhood approach near their operations in Huddersfield. And in São Paulo, Brazil, Cummins leaders are engaging a neighborhood called Guarulhos, where they plan to align their adopt-a-school program and Environmental Challenge projects to create greater impact in the community.



## CORPORATE RESPONSIBILITY

the LISTO Transformational Leadership Program to improve students' academic performance levels. Cummins brought LISTO's operator, the nonprofit Worldfund, and the San Luis Potosí Ministry of Education together to implement coaching workshops across La Pila's schools.

Outside those schools, La Pila's heavily littered streets prompted Cummins employees to launch a campaign called "I am responsible for my waste," in which they worked with households, schools and government authorities on proper trash collection. In 2015, the second phase of that program resulted in 250 kilograms of plastic and 480 kilograms of paper being recycled in La Pila.

Also in 2015, to bring more greenery to the community, Cummins employees trained local residents on reforestation methods and assisted in the planting of more than 800 trees in La Pila. Cummins also worked with government authorities on a law to protect and conserve urban trees, ensuring the model's long-term sustainability. It was approved by the San Luis Potosí government in July 2015.

As the company's efforts branched out farther across La Pila, Cummins leaders

saw the need for a central structure to hold their neighborhood approach up – just like the lattice that will support Lopez's tomato plant. In 2015, Cummins, the local government and other area partners established plans to open the La Pila Community Center where residents can come for support and fellowship.

"The Community Center will help others grow in their self-confidence, respect for one another and commitment to a stronger, healthier, safer La Pila," said Juan Ulaje, a site manager for Cummins' Filtration Business.

To that end, the Community Center will host classes for adults to complete their education, workforce trainings, a library, IT room and programs for arts and crafts to beautify the neighborhood. The center won't open until late 2016, but Cummins employees already are engaged in its renovation, budget planning and program development.

Like Paloma Lopez's plant and Arturo Jaramillo's school, the Community Center is another seed in the garden that is La Pila. And by the fruits of their labor and Cummins' neighborhood approach, they are feeding their community's future.

# ‘MODEL VILLAGES’ DELIVER HOPE

*Five years ago, Banudas Sarak cultivated his barren farmland, producing a single crop just once a year. By 2015, his crops multiplied, yielding 12 months of work and an additional \$8,000 in annual income.*

Sarak is one of many near Phaltan, India whose lives have improved significantly because of Cummins India’s “Model Villages” program.

“I am thankful to Cummins for showing the way,” Sarak said. “There is no looking back.”

When the Cummins India Megasite opened in 2011, it was equipped with all the latest technology. Nearby villages, however, lacked many of life’s basic needs, including water, hygiene, agriculture and education.

To address those needs, Cummins employees partnered with area residents shortly after the Cummins campus opened and, together, built a strategy for sustainable growth.

Model Villages started in Nandal, which receives an average of just two inches of rainfall per year. Such droughts led employees and villagers to create wells and a small barrier sometimes called a “check dam” to preserve monsoon rains.





They also developed drip-irrigation systems to water crops in a way that conserves water, and education classes to improve farming techniques. Sarak was one of the farmers who attended.

Three years later, Nandal has harvested 43.6 million liters of water. Cummins India teams replicated the dams and wells in six more villages in 2015.

“Once, the villages around the Megasite were dependent on water tankers during summer, and today they are almost tanker-free,” said Sunil G. Bathe,

Cummins’ project leader for Model Villages. “Water availability has brought new meaning to farmers’ lives – a simple solution for a major crisis.”

Seven miles away in Mulikwadi, 30 percent of farmers live below the poverty line.

To aid their livelihoods, a check dam was completed in 2015, bringing higher water levels to eight wells and adding 70 more acres of cultivated farmland. And just as in Nandal, Cummins employees followed their agricultural assistance with education initiatives.

Only 77 percent of children had attended school in Mulikwadi. To encourage higher enrollment, in 2015, Cummins employees upgraded a nearby school’s roof and bathrooms and incorporated e-learning software with the government-approved curriculum.

Meanwhile, in the village of Manjarsumba, Cummins employees installed 45 biogas stations that run on cow manure, reducing deadly indoor air pollution from burning wood. In the Nimgaon Bogi village, two check dams were completed, harvesting about 3.6 million gallons of water.

Employees in Rajoda built on their 2014 water efforts by constructing a pedestrian bridge to give village students a safer pathway to school. And in Karwasa in 2015, Cummins’ village partnership de-silted two ponds, resulting in the harvesting of 1.57 million gallons of water.

In 2016, those villages will continue the model launched in Nandal: moving their efforts indoors to schools, with a focus on assisting teachers, incorporating digital curriculum and supporting multi-lingual learning software.

As for Nandal, the seed planted five years ago is bearing fruit throughout the year. The village now has 300 additional acres of cultivatable land, near self-sufficiency in potable water and surplus income to meet such basic needs as food and shelter. The village also has been crime-free for the past three years.

By seeing that impact firsthand, Nandal’s villagers are today leading their own water-management efforts and have persuaded the government to contribute. Now, they are the model, showing how villagers, including farmers like Sarak, can turn a scarce resource into a river of opportunity.

## TEACHING STUDENT SAFETY IN ABU DHABI

In Abu Dhabi, United Arab Emirates, the Zayed Higher Organization’s (ZHO) Agricultural Center for Development and Rehabilitation offers young men and women with disabilities job training and paid work through organic agriculture, aquaponics, machine maintenance and more.

In 2015, Cummins employees taught them a new skill set: how to create a safer work site. After conducting a Health, Safety and Environment assessment, employees designed a new workshop layout for the center, leveled and painted its floor and created separate areas for raw material storage.

“Historically, businesses would just provide the center with financial support,” said Salah Abousayed, Cummins Abu Dhabi Branch Manager. “But we developed a relationship with ZHO management and discovered our employees could offer knowledge and skills for something even greater.”

Cummins led ZHO instructors and students in health and safety training, developed a presentation they could use to promote the topic and designed awareness posters in Arabic.

# CUMMINS EXTENDS HELPING HAND TO STUDENTS IN AFRICA

When Abey Moleko enters the Afrika Tikkun Community Centre in South Africa, children excitedly slap hands with him, high-five style. Moleko and other Cummins employees are engaging those students now to help them realize that same joy when they enter their first jobs.

Recognizing the link between educational attainment and economic opportunity, Cummins' Africa Distribution sites "adopt" underdeveloped schools to provide student mentoring, infrastructure support and career training.

"Most students are raised in abject poverty and can't even afford to further their studies," said Moleko, the Community Involvement Team (CIT) Leader at Cummins Longmeadow South Africa. "Cummins employees saw they could close that gap by empowering students with basic skills to prepare them for the working world."

Started in 2014 with five schools, employees adopted 11 more in 2015 and plan to reach a total of 20 in the years ahead. The positioning and diverse makeup of Cummins' Distribution Business – with company-owned entities in 10 African countries – enable employees to tailor their services to the various needs of Africa's schools and students.

Last year at the Afrika Tikkun Community Centre, for example, Moleko and his colleagues mentored students who were at risk of not graduating from the Kwabhekilanga and Reiger Park secondary schools. Employees provided the 92 teens career-readiness training and skills to secure entry-level jobs.

Also in South Africa, Cummins employees managed the building and stocking of libraries at Clairwood High School and Edenridge Primary School, serving 1,255 and 1,500 students, respectively.

In Ghana's Laterbiakorshie schools, employees led a similar library project while also bringing water to the schools. The absence of hygienic resources, including separate washrooms for girls, is a major factor in females' abilities to attend school.

"Education is very important as it helps promote gender equality," said Mariam Salifu, a teacher at Laterbiakorshie.

"It is relieving to know that being educated has encouraged other girls to go against all odds and seek knowledge. In the end, education leads to growth of the family, society and country as a whole."



For both female and male students, eliminating hunger also can improve their educational opportunities. At the Manzini Primary School, the lack of food accessibility prompted employees to create a bio-gas system to fuel a school-feeding program for impoverished students – the project was a regional winner in Cummins' 2015 Environmental Challenge. The school's resulting savings from the reduced gas consumption will equal about \$1,900 a year.

And at Kathu High School, Cummins' South Africa employees developed a technical department and facilitated the incorporation of the government's 2016 curriculum. With that infrastructure in place, employees will lead a "training

technician program" to prepare students for mechanical, mining and other engineering careers in local industries.

In each of their adopted schools, Cummins employees have set a five-year goal to reach a 90 percent pass rate for students, 100 percent access to water and 100 percent retention among females.

"Cummins employees are privileged to work in needy communities to improve people's lives," Moleko said. "By changing the life of one person you have impacted positively the next generation, hence breaking the circle of poverty."

It's a high bar, but it's one Abey Moleko is encouraging students to reach with every high-five he gives.

# PARTNERING FOR POSITIVE IMPACT

*Karen Cecil is proof Cummins employees can have a “Big” impact on their communities.*

When Big Brothers Big Sisters of Central Indiana (U.S.A.) sought to improve its retention rate between mentors and mentees, Cummins’ Director of Global Environmental Sustainability wanted to help.

Starting in 2010, Cecil led two Community Impact Six Sigma projects that resulted in a significant increase in the organization’s retention rate. Her projects called for such steps as expanding mentor training to cover youth development and cultural competency.

The number of “Big-Little” relationships reaching their one-year anniversary increased from 59 percent to 78 percent after the projects’ recommendations were implemented – putting the Central Indiana organization among the top-performing Big Brothers Big Sisters agencies in the United States.

Cecil was named the Big Brothers Big Sisters of Central Indiana 2015 “Volunteer of the Year.”



“Karen’s passion and skills have brought added success to Big Brothers Big Sisters of Central Indiana,” said Chief Program Officer Amy Pomeranz Essley.

In 2014-2015, the organization facilitated 1,147 matches with “Littles,” more than 86 percent of whom qualified for free or reduced-price lunches under federal anti-poverty initiatives.

Cecil found the most valuable contribution Cummins employees can make is working hand in hand with partners to define the real problem and not just the symptoms.

***“We have the ability to bring about lasting, sustainable change in our communities,” Cecil said. “We just need to think big.”***



# CORPORATE SUPPORT

*Employee interests, community needs and Corporate Responsibility strategies guide Cummins' financial support of partner nonprofits and non-governmental organizations (NGOs).*

In 2015, Cummins joined its community partners in advancing the company's support of Cummins' key Corporate Responsibility issues: the Environment, Education and Social Justice / Equality of Opportunity. The grants further leverage the impact Cummins' employees and their partners made in communities around the world.

In all, the company invested \$15.1 million into communities in 2015, primarily in the form of grants. That compares to \$13.9 million in 2014.

Cummins' main source for grants is the Cummins Foundation, one of the oldest corporate foundations in the United States.

The foundation will only consider funding organizations that are non-discriminatory in their policies and practices with regard to physical or mental abilities, gender, race, age, sexual orientation, ethnic origin and / or creed.

Foundation spending is overseen by a nine-member board that includes Chief Executive Officer Mary Titsworth Chandler, Executive Director – Corporate Responsibility.

This report does not include grants from another Cummins-supported foundation, the Cummins India Foundation, established in 1990, or the Asociación Filantrópica Cummins created in Mexico in 1997.

# CUMMINS GRANTS

*The following pages list many of the partner organizations to which Cummins employees directed Cummins Foundation support in 2015.*

*You will also find some of our favorite pictures from 2015 Corporate Responsibility projects.*



| EDUCATION                         |  | EDUCATION                                  |  | EDUCATION                         |  |
|-----------------------------------|--|--|--|-----------------------------------|--|
| <b>SAN LUIS POTOSÍ, MEXICO</b>    | Asociación Filantrópica Cummins A.C.<br><i>Employees helped renovate an abandoned space provided by the government and engaged partners who will run the education center, labor and employment training, and environmental protection programs.</i>         | <b>MAPLEWOOD, MINNESOTA (U.S.A.)</b>       | Beaver Lake Education Center<br><i>A new playground and outdoor learning center accessible to all children, regardless of income and/or disability, was supported by Distribution employees, who also built some of the outdoor center's components.</i>                   | <b>COLUMBUS, INDIANA (U.S.A.)</b> | Clifty Creek Elementary School<br><i>Cummins Emission Solutions employees established an outdoor learning trail accessible to students with special needs, enabling them to participate in hands-on science and nature lessons.</i>                            |
| \$190,000                         |  | \$41,700                                   |  | \$69,900                          |  |
| <b>GUARULHOS, BRAZIL</b>          | Associação do Centro Comunitário Irwin Miller<br><i>Cummins employees delivered instruction in a one-year mentoring program, which developed training and skills for at-risk youth ages 16- to 18-years old.</i>   | <b>BEIJING, CHINA</b>                      | BN Vocational School<br><i>Corporate employees fulfilled their Area Business Organization (ABO) strategy to improve academics for migrant children by providing English training to vocational school students and equipping them with job skills.</i>                     | <b>ALBERTON, SOUTH AFRICA</b>     | Edenridge Primary School<br><i>Filtration employees provided resources for a local school to purchase library equipment and accompanying furniture, and managed the building of both, to aid in 1,500 students' academic development.</i>                      |
| \$75,000                          |  | \$43,100                                   |  | \$36,000                          |  |
| <b>GUARULHOS, BRAZIL</b>          | Associação do Centro Comunitário Irwin Miller<br><i>Employees provided support to underserved teens participating in a training and skills program, which helped cover the low-income participants' tuition, meals and classroom materials.</i>              | <b>JAMESTOWN, NEW YORK (U.S.A.)</b>        | Chaquatua County Education Coalition<br><i>Engine Business employees contributed to improving kindergarten readiness, developing student pathways to manufacturing careers and aligning offerings of group training for in-demand occupations.</i>                         | <b>LAGOS, NIGERIA</b>             | Eko Junior College and Orile Agege Junior College<br><i>Distribution employees contributed to improving students' grades in mathematics and English, tracking their progress after graduation and updating the infrastructure in six classrooms.</i>           |
| \$120,000                         |  | \$104,500                                  |  | \$74,100                          |  |
| <b>COLUMBUS, INDIANA (U.S.A.)</b> | Bartholomew Consolidated School Foundation<br><i>Cummins employees helped launch the Read by 3 program, with a three-year commitment giving kindergarten, first- and second-grade students access to a multi-sensory approach to improve reading levels.</i> | <b>CHARLESTON, SOUTH CAROLINA (U.S.A.)</b> | Charleston Orphan House, Inc.<br><i>Cummins Engine Business and Components teams continued their support of summer camps focused on engineering and computer technology for middle and high school students to improve their work-readiness, math and language skills.</i> | <b>GUARULHOS, BRAZIL</b>          | EPG Dorcelina de Oliveira Falador<br><i>Employees supported a partner school's electrical infrastructure and athletic facility improvements to provide students a more stable learning environment, prevent power outages and improve the school's safety.</i> |
| \$25,000                          |  | \$25,000                                   |  | \$10,000                          |  |
| <b>HUDDERSFIELD, U.K.</b>         | Batley Girls High School<br><i>Employees worked alongside teachers to help more than 300 students expand their understanding of science, their technological vocabulary and even their motivation toward learning STEM curriculum.</i>                       | <b>DURBAN, SOUTH AFRICA</b>                | Clairwood High School<br><i>With literacy being a major challenge among the school's 1,255 students, employees contributed resources to restore the library and stock the shelves with books.</i>  |                                   |  |
| \$42,600                          |  | \$40,820                                   |  |                                   |  |

| EDUCATION                         |   | EDUCATION                             |  | EDUCATION                            |   |
|-----------------------------------|---|---------------------------------------|--|--------------------------------------|---|
| <b>SAN LUIS POTOSÍ, MEXICO</b>    | Fundación Musica para la Vida A.C.<br><i>To develop personal and social skills among children and teenagers in need while encouraging group activity, Cummins employees contributed to a symphonic orchestra for kids ages seven-to 17-years old.</i> | <b>SEYMOUR, INDIANA (U.S.A.)</b>      | Jackson County United Way<br><i>Support raised by the local United Way to provide school supplies to local children in need in Bartholomew and Jackson counties was matched by Corporate employees.</i>  | <b>ACCRA, GHANA</b>                  | Laterbiokorshie Primary School<br><i>To give students a proper environment in which to learn, Distribution employees supported water access for the school while completing other needed infrastructure improvements to make the site a "model" school.</i> |
| \$150,000                         |   | \$6,500                               |  | \$57,182                             |   |
| <b>DAVENTRY, U.K.</b>             | Green Acres<br><i>Engine Business employees helped increase the number of students instructed in healthy lifestyles, expand the facility's garden area and purchased kitchen equipment and materials for vocational classes.</i>                      | <b>INDIANAPOLIS, INDIANA (U.S.A.)</b> | John H. Boner Community Center<br><i>Corporate employees supported volunteers in the Near Eastside Education AmeriCorps, who mentored preschoolers in afterschool programs and provided educational interventions for academic attainment.</i>                           | <b>FRIDLEY, MINNESOTA (U.S.A.)</b>   | Minnesota High Tech Kids<br><i>Power Generation employees contributed support to improve volunteer programming and schools in need of technology upgrades so low-income students can participate in hands-on STEM competitions.</i>                         |
| \$73,291                          |   | \$105,713                             |  | \$59,000                             |   |
| <b>MARKTHEIDENFELD, GERMANY</b>   | Hinsehen und Helfen E.V.<br><i>Emission Solutions employees supported the delivery of school supplies and food packages to children and their families in the impoverished region of southwest Romania.</i>   | <b>INDIANAPOLIS, INDIANA (U.S.A.)</b> | John H. Boner Community Center<br><i>In the Excellence – Discovery – Growth through Education (EDGE) program, Corporate employees joined students at Indianapolis Public Schools 14, 15, and 54 in developing and engaging in after-school and summer STEM programs.</i> | <b>BUCHAREST, ROMANIA</b>            | ROI Association<br><i>Cummins Power Generation employees continued their multi-year effort to improve the development of high school students so they are well prepared for the job market upon graduation.</i>   |
| \$34,374                          |   | \$20,000                              |  | \$10,000                             |   |
| <b>COLUMBUS, INDIANA (U.S.A.)</b> | iGrad<br><i>Engine Business employees started a three-year commitment to iGrad's in-school mentoring program, which provides academic support to students who have been identified as at risk for not completing high school.</i>                     | <b>KATHU, SOUTH AFRICA</b>            | Kathu High School<br><i>Employee support of the school's facility renovation, tool purchasing and additional security enabled staff to further develop their technical department, learning environments and education curriculum.</i>                                   | <b>STOUGHTON, WISCONSIN (U.S.A.)</b> | Stoughton High School<br><i>Components employees increased female participation beyond the current 18 percent in the "Fab Lab," an in-school and after-school STEM-based program for students and members of the community.</i>                             |
| \$400,000                         |   | \$5,900                               |  | \$25,000                             |   |
| <b>COLUMBUS, INDIANA (U.S.A.)</b> | Iridescent<br><i>Employees contributed to Iridescent's "Curiosity Machine" program at Schmitt Elementary School to help students solve open-ended engineering design challenges through an online STEM-based platform.</i>                            | <b>ACCRA, GHANA</b>                   | Laterbiokorshie Junior High School<br><i>To encourage better reading habits, increase literacy rates and reduce the number of dropouts, employees supported the renovation of an existing library that will accommodate the school's 650 students.</i>                   | <b>SANTIAGO, CHILE</b>               | Un Ricon de Alegria Kindergarden<br><i>Through fundraising training, marketing and communications, construction support and education programming development, Distribution employees supported a school's expansion to enroll 240 additional children.</i> |
| \$35,000                          |   | \$29,998                              |  | \$20,000                             |   |

*In Stoughton, Wisconsin (U.S.A.), Cummins employees are helping to increase female participation in STEM through “LEGO builds” and other mentoring activities.*



EDUCATION

**COOKEVILLE,  
TENNESSEE  
(U.S.A.)**

Upperman High School

*To fulfill their commitment to helping low-income students pursue STEM education and careers, Cummins Filtration employees helped two classrooms obtain mathematic graphing calculators.*

\$6,100

**LAGOS,  
NIGERIA**

Welsely Girls Secondary School

*Employees provided needed renovations and equipment, including desks, chairs and white boards, to create a healthy learning environment for improving student performance.*

\$55,006

**SAN LUIS  
POTOSÍ,  
MEXICO**

WorldFund de Mexico A.C.

*To better equip school principals, Cummins employees supported leadership transformation training in both planning and management and in-depth coaching for connecting theories to implementation.*

\$65,000

**WUXI,  
CHINA**

Wuxi Nanchang Intelligence School

*To better understand students’ special needs and measure their academic performance, Cummins Turbo Technologies employees supported the school’s development of Individualized Educational Programs for students.*

\$40,350

**NASHVILLE,  
TENNESSEE  
(U.S.A.)**

Youth Encouragement Services (Y.E.S.)

*Cummins Corporate and Filtration teams supported Y.E.S. after-school and summer reading programs to help low-income youth complete their education, obtain employment as adults and lead productive lives.*

\$15,000

| ENVIRONMENT                       |  | ENVIRONMENT             |  | ENVIRONMENT           |  |
|-----------------------------------|--|-------------------------|--|-----------------------|--|
| <b>SAN LUIS POTOSÍ, MEXICO</b>    | Asociación Filantrópica Cummins A.C.<br><i>Cummins employees who won the 2015 Environmental Challenge by completing the first phase of their zero waste management project directed their award back to their community through the Asociación Filantrópica Cummins A.C.</i>   | <b>TIMÓTEO, BRAZIL</b>  | Caminhos da Esperança Daycare<br><i>To address the region's severe water needs, employees assisted with the development and installation of a system to capture rainwater for cleaning floors, discharging toilets and irrigating gardens.</i>   | <b>SINGAPORE</b>      | Children's Aid Society Melrose Home<br><i>By cleaning a public park, Engine Business employees won the 2015 Environmental Challenge and directed their award to an organization that creates a safe environment for children whose parents are unable to provide support.</i>                            |
| \$10,000                          |  | \$6,500                 |  | \$2,000               |  |
| <b>GUARULHOS, BRAZIL</b>          | Associação do Centro Comunitário Irwin Miller<br><i>Engine Business employees supported the "De Gota em Gota Project" to develop and build 100 neighborhood cisterns for saving rainwater and educated residents on using the cisterns for water conservation.</i>   | <b>SHANGHAI, CHINA</b>  | Charyou Youth Volunteer Service Center<br><i>By restoring a river ecosystem, Cummins employees won the 2015 Environmental Challenge and supported this center, which "leads and helps foster volunteering initiatives and social innovation, and actively promotes public welfare projects."</i>     | <b>JUÁREZ, MEXICO</b> | Ciudad del Niño de Ciudad Juárez, A.C.<br><i>By recycling tires and winning the 2015 Environmental Challenge, Cummins employees directed their award to this organization that provides housing, food and education to kids and orphans in need of aid.</i>  |
| \$10,000                          |  | \$10,000                |  | \$2,000               |  |
| <b>COLUMBUS, INDIANA (U.S.A.)</b> | Bartholomew County School Corporation Foundation<br><i>Through educational activities at a local youth camp, Components and Electronics employees won the 2015 Environmental Challenge and directed their award to this foundation's promotion of "equity, innovation and opportunity" in the county's public schools.</i> | <b>SHANGHAI, CHINA</b>  | Charyou Youth Volunteer Service Center<br><i>Cummins employees replicated and combined two successful ecosystem projects into a site-based water project for educational purposes, which can be used to reach students at 12 nearby schools.</i>   | <b>INDIA</b>          | Cummins India Foundation<br><i>The seven teams in India who won the 2015 Environmental Challenge through water neutrality, waste management, educational campaigns and creative methods for solving pollution, directed their awards back to their communities through the Cummins India Foundation.</i> |
| \$2,000                           |  | \$9,304                 |  | \$54,000              |  |
| <b>STAMFORD, U.K.</b>             | Burghley House<br><i>By clearing diseased woodlands and planting new trees, Cummins employees who won the 2015 Environmental Challenge directed their support to this preservation trust that advances historic and aesthetic education.</i>   | <b>VAL-D'OR, QUÉBEC</b> | Centraide Abitibi Témiscamingue et Nord-du-Québec<br><i>Eastern Canada employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition supported this United Way chapter's work "to improve the living conditions of people in vulnerable situations."</i> | <b>BEIJING, CHINA</b> | Dandelion School<br><i>Employees from Emission Solutions introduced a new site energy management system and indoor air-quality monitoring plan to reduce energy consumption and eliminate indoor air pollution risks.</i>  |
| \$2,000                           |  | \$1,250*                |  | \$48,890              |  |

| ENVIRONMENT                               |  | ENVIRONMENT                                  |   | ENVIRONMENT                          |  |
|---|--|--|---|--------------------------------------|--|
| <b>INDIANAPOLIS,<br/>INDIANA (U.S.A.)</b> | Eagle Creek Park Foundation<br><i>Cummins employees who won the 2015 Environmental Challenge by cleaning up and improving one of the nation's 10 largest city parks directed their support to the park's foundation.</i>   | <b>XIANGYANG,<br/>CHINA</b>                  | Environmental Protection Union of Xiangyang City<br><i>To supply potable water for teachers and students, Cummins employees supported drilling a well at a local middle school while setting up a water network and installing purification equipment.</i>                          | <b>BEIJING,<br/>CHINA</b>            | Global Environmental Institute<br><i>Emission Solutions employees who won the 2015 Environmental Challenge through their clean cookstoves project directed their support to this institute's work designing and implementing "market-based models for solving environmental problems."</i>                         |
| \$10,000                                  |  | \$22,223                                     |   | \$8,000                              |  |
| <b>BEIJING,<br/>CHINA</b>                 | Enactus China<br><i>By increasing Tetra Pak recycling, Cummins employees won the Environmental Challenge and supported this community of student, academic and business leaders who encourage local entrepreneurship.</i>  | <b>SAN JUAN,<br/>PUERTO RICO</b>             | Fundación Cabecitas Rapadas<br><i>Cummins employees from the Caribbean who won the 2015 Environmental Challenge through the Green Machine waste-collection competition supported this foundation that aids individuals in need of "spiritual, emotional and financial support."</i> | <b>BEIJING,<br/>CHINA</b>            | Global Village of Beijing<br><i>Cummins employees managed the addition of a local village's waste management system to improve a nearby stream and implement earthworm compost via kitchen waste to further reduce water pollution.</i>  |
| \$16,000                                  |  | \$1,250*                                     |   | \$14,904                             |  |
| <b>BEIJING,<br/>CHINA</b>                 | Enactus China<br><i>"Turning trash into treasure," Cummins employees discouraged the burning of straw by local farmers while also bringing them added income by developing, promoting and selling mini-straw boxes for plants.</i>   | <b>HUILA,<br/>COLUMBIA</b>                   | Fundacion La Jagua<br><i>Distribution employees educated more than 600 students in five schools on waste management by constructing a collection center for plastic bottles filled with sand, which can be used safely as brick-building materials.</i>                             | <b>BEIJING,<br/>CHINA</b>            | Global Village of Beijing Environmental Education Center<br><i>Through a project that improved the Luojiagou Stream's water quality, Cummins employees won the 2015 Environmental Challenge and directed their award to this center's promotion of green lifestyles, eco-village training, and media outreach.</i> |
| \$14,496                                  |  | \$15,038                                     |   | \$10,000                             |  |
| <b>XIANGYANG,<br/>CHINA</b>               | Environmental Protection Union of Xiangyang City<br><i>Engine Business employees helped build a biogas station to dispose sewage from livestock farms and, in turn, provide families safer cooking methods (instead of burning firewood). Families were also trained to use biogas safely.</i> | <b>BEIJING,<br/>CHINA</b>                    | Future Generations<br><i>Through "Source of Life," Cummins employees began a multi-year project to create river eco-restoration, water pollution control, water conservation workshops and other environmental awareness activities.</i>  | <b>DES MOINES,<br/>IOWA (U.S.A.)</b> | Greater Des Moines Habitat for Humanity<br><i>Central Power employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition decided to support this Habitat for Humanity's efforts to give families "a decent, safe and affordable place to live."</i>                   |
| \$9,274                                   |  | \$39,614                                     |   | \$450*                               |  |
|   |  | <b>NASHVILLE,<br/>TENNESSEE<br/>(U.S.A.)</b> | Glen Cliff High School<br><i>To help disadvantaged youth participate in year-round agriculture activities, and enable the nonprofit "Hands on Nashville" to save money by selling produce, Corporate and Components employees supported the construction of a greenhouse.</i>       |                                      |  |
|   |  | \$49,800                                     |   |                                      |  |

## ENVIRONMENT

**DUBAI,  
UNITED ARAB  
EMIRATES**

**Green Hope**

*Employees participated in the sustainable development of this youth-led organization's four "eco-conferences" to spread greater environmental awareness among children, given the Middle East's high carbon footprint.*

\$26,000

**DUBAI,  
UNITED ARAB  
EMIRATES**

**Green Hope**

*Through a youth education project, Cummins employees in the Middle East won the 2015 Environmental Challenge and directed their award to this "youth organization working for sustainable development."*

\$2,000

**STOCKTON,  
U.K.**

**Groundwork North East  
and Cumbria**

*Employees updated a local park's infrastructure, accessibility and electricity while training volunteers and students to be effective environmental stewards.*

\$87,000

**INDIANAPOLIS,  
INDIANA (U.S.A.)**

**Growing Places Indy (GPI)**

*Corporate employees supported the growth of GPI's after-school programs for elementary and middle school students, nutritional education for families and students, and an internship program for low-income high schoolers.*

\$61,000

**WUHAN,  
CHINA**

**Huazhong University of  
Science and Technology**

*Employees supported "Green Bank," an open platform to arrange environmental protection activities, including in-class education and in-field lake protection, to spread greater knowledge and calls to action.*

\$8,000



**Cummins employees, such as Danielle Vetter (right), worked with Bryan Burton (left), the Department of Public Works Director for Columbus, Indiana (U.S.A.), to start the city's first-ever, free curbside recycling program.**

| ENVIRONMENT                         |  | ENVIRONMENT                            |  | ENVIRONMENT                           |  |
|-------------------------------------|--|--|--|---------------------------------------|--|
| <b>CALLAO, PERU</b>                 | Instituto para la Protección del Medio Ambiente<br><i>Cummins employees who led a beach cleanup project and won the 2015 Environmental Challenge chose to further this partner organization's support of the International Coastal Cleanup.</i>  | <b>EAST MOLINE, ILLINOIS (U.S.A.)</b>  | Living Lands & Water<br><i>Central Power employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition directed their award to "the only 'industrial strength' river cleanup organization like it in the world."</i>                 | <b>SÃO PAULO, BRAZIL</b>              | Pedro Balazs Elderly Center<br><i>A Community Impact Six Sigma project prompted employees to implement a system to capture groundwater currently discarded into the street and use it for such non-potable activities as gardening, cleaning and waste disposal.</i>   |
| \$10,000                            |  | \$400*                                 |  | \$9,525                               |  |
| <b>KEARNEY, NEBRASKA (U.S.A.)</b>   | Kearney Area Habitat for Humanity<br><i>Central Power employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition chose to support this Habitat for Humanity chapter, which "brings people together to build homes, communities and hope."</i> | <b>WUXI, CHINA</b>                     | Luo Huasheng Female Public Welfare Association<br><i>Turbo Technologies employees contributed to the effective treatment of Taihu Lake pollution and provided environmental protection training and resources to nearby communities.</i>   | <b>BEIJING, CHINA</b>                 | Plan International<br><i>Through their education project in migrant schools, Cummins employees won the 2015 Environmental Challenge and directed their support to this organization's work helping marginalized children affected by disasters.</i>  |
| \$400*                              |  | \$22,504                               |  | \$8,000                               |  |
| <b>EVANSVILLE, INDIANA (U.S.A.)</b> | Keep Evansville Beautiful!<br><i>Distribution employees engaged in the multi-year, multi-phase Evansville Gateway Project to bring about sustainable functional and aesthetic improvements to a highway corridor into the city.</i>  | <b>BEIJING, CHINA</b>                  | Minguyan School Project<br><i>Employees helped build a safer, more environmentally friendly school campus by renovating a safety ladder, putting up safety signage and upgrading the washing facilities used by 900 students and 44 staff members.</i>                           | <b>INDIANAPOLIS, INDIANA (U.S.A.)</b> | Reconnecting to Our Waterways (ROW)<br><i>Corporate employees provided multi-year support to strengthen the Pogue's Run waterway by removing invasive species, enhancing the trail connecting the neighborhood to downtown and beautifying bridges.</i>  |
| \$10,000                            |  | \$8,161                                |  | \$54,208                              |  |
| <b>DARLINGTON, U.K.</b>             | King Street Primary School<br><i>Cummins employees who won the 2015 Environmental Challenge by creating an outdoor learning area in a disadvantaged area directed their award to this school that provides "a safe, healthy, happy and secure setting" for "high-quality learning."</i>      | <b>SANTA CRUZ, CALIFORNIA (U.S.A.)</b> | Ocean Conservancy<br><i>Cummins Pacific employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition directed their award to this organization that helps formulate governments' "ocean policy based on peer-reviewed science."</i> | <b>SHANGHAI, CHINA</b>                | Shanghai Oasis Ecological Conservation and Communication Center<br><i>By building a campus garden and accompanied education classes, Cummins employees won the 2015 Environmental Challenge and directed their support to Shanghai's "first and only officially registered grassroots environment conservation NGO."</i> |
| \$2,000                             |  | \$1,250*                               |  | \$8,000                               |  |

| ENVIRONMENT                    |   |  |           | ENVIRONMENT                     |                                   |  |          | ENVIRONMENT                        |  |  |          |
|--------------------------------|---|--|-----------|---------------------------------|-----------------------------------|--|----------|------------------------------------|--|--|----------|
| SHANGHAI, CHINA                | Shanghai Oasis Ecological Conservation and Communication Center | Support for the “Nature Angel Project” was provided to build ecological boxes and deliver courses in migrant children’s schools to foster environmental awareness and action.  | \$16,957  | CHATTANOOGA, TENNESSEE (U.S.A.) | Tennessee River Gorge Trust       | Central Power employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition supported this conservation nonprofit that “protects 17,000 acres in the Tennessee River Gorge.”     | \$1,250* | SAN LUIS POTOSÍ, MEXICO            | Universidad Autónoma de San Luis Potosí                              | Through a “Living Roof” sustainability project, Business Services employees won the 2015 Environmental Challenge and directed their award to this local university partner, which educates around 25,000 students.                               | \$2,000  |
| SHANGHAI, CHINA                | Shanghai Roots and Shoots                                       | To cultivate “greener” minds in young people and build a stronger commitment to the environment, Distribution employees established organic gardens at schools and taught children about organic farming methods.  | \$29,516  | KENT, U.K.                      | Thanet Countryside Trust          | Cummins employees who won the 2015 Environmental Challenge by “upcycling” at the Monkton Nature Reserve supported the reserve’s trust, which protects the 16-acre abandoned chalk quarry, including its inhabitants.         | \$2,000  | XIANGYANG, CHINA                   | XiangYang City Association of Environment Protection Green Han River | By protecting Han River water sources, Cummins employees won the 2015 Environmental Challenge and supported this association’s advocacy for low-carbon consumption and sustainable economic development “for the benefit of future generations.” | \$18,000 |
| MELBOURNE, VICTORIA, AUSTRALIA | Taralye Oral Language School for Deaf Children                  | Distribution employees used Community Impact Six Sigma to identify structural energy efficiencies, allowing the school to devote more resources to educate hearing-impaired students.  | \$161,700 | SANTIAGO, CHILE                 | Un Rincon de Alegria              | Cummins employees who won the 2015 Environmental Challenge by creating “eco-bricks” chose to direct their award to this educational community, which guides children to provide “love and service to their peers.”           | \$2,000  | CHARLOTTE, NORTH CAROLINA (U.S.A.) | YMCA of Greater Charlotte  | Atlantic employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition chose to support this YMCA’s efforts to “connect and engage people to enhance lives and build community.”                     | \$1,250* |
| FORT WORTH, TEXAS (U.S.A.)     | Tarrant Area Food Bank  | Southern Plains employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition decided to award “the primary source of donated food for hunger-relief charities and feeding programs in 13 North Texas counties.” | \$1,250*  | EDMONTON, ALBERTA               | United Way Alberta Capital Region | Western Canada employees who won the 2015 Environmental Challenge through the Green Machine waste-collection competition supported this chapter’s efforts to “mobilize collective action to create pathways out of poverty.” | \$1,250* |                                    |  |  |          |

\* Employees who participated in the Environmental Challenge through the Distribution business’s “Green Machine” project elected to divide their \$10,000 grant prize among several community partners.

*In Pune near Cummins India's headquarters, teams have expanded their water neutrality initiative at the Khadakwasla dam to include a walking path and outdoor fitness area.*



SOCIAL JUSTICE/  
EQUALITY OF  
OPPORTUNITY

GUARULHOS,  
BRAZIL

Associação do Centro  
Comunitário Irwin Miller

*Cummins employees' long-term commitment to the "Pano Pra Manga" sewing project helped in its move to new facilities, purchase of sewing machines and economic development contributions to the community.*

\$11,000

GUARULHOS,  
BRAZIL

Associação do Centro  
Comunitário Irwin Miller

*Distribution employees supported a sewing shop staffed by women, who provided quilts to at-risk youth. Employees also engaged youth through vocational classes and art-based mental health activities.*

\$5,000

GUARULHOS,  
BRAZIL

Associação Semente  
do Amanhã

*Filtration employees supported a facility update that allowed an after-school program for low-income children to expand from 50 to 260 students and decrease their exposure to drugs, crime and other harmful activities.*

\$23,000

BEIJING,  
CHINA

Beijing Hearing Society

*Distribution employees introduced picture books along with corresponding games in 15 auditory rehabilitation centers specially designed for children's recovery of hearing capabilities.*

\$10,322

DAVENTRY,  
U.K.

Crick Jubilee Wood

*Engine Business employees supported the creation of a nature pathway to give people with disabilities, small children and families access to a safe recreational area where they can develop a greater connection to the environment.*

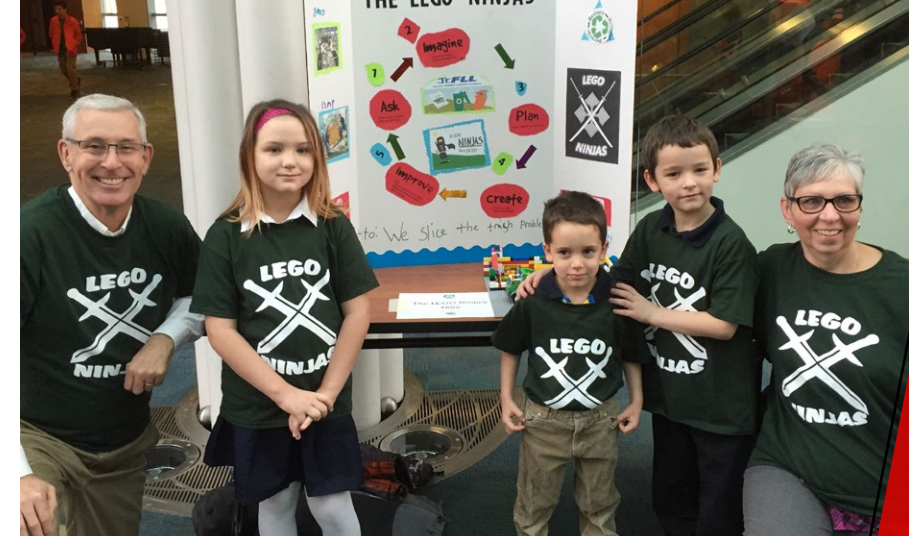
\$11,000

| SOCIAL JUSTICE/<br>EQUALITY OF<br>OPPORTUNITY |   | SOCIAL JUSTICE/<br>EQUALITY OF<br>OPPORTUNITY |  | SOCIAL JUSTICE/<br>EQUALITY OF<br>OPPORTUNITY |   |
|---|---|---|--|---|---|
| <b>SAN LUIS<br/>POTOSÍ,<br/>MEXICO</b>        | <b>CTS Embarq</b><br><i>To drive urban design and infrastructure improvements to the La Pila neighborhood, Cummins employees supported an assessment of community safety projects, social spaces, reforestation, signage updates and vehicle flow.</i><br>\$24,000                          | <b>STOCKTON,<br/>DARLINGTON,<br/>U.K.</b>     | <b>The Food Store</b><br><i>Cummins employees helped establish an urban garden to supplement the King's Church food banks' need for fresh produce while regenerating and beautifying an unused urban space to enhance the local environment.</i><br>\$9,200            | <b>COLUMBUS,<br/>INDIANA (U.S.A.)</b>         | <b>Hoosier Trails Council</b><br><i>To reach underserved Hispanic American and Latino youth and encourage greater diversity within the community, Cummins employees supported the hiring of a bilingual program aide at the local Boy Scouts of America chapter.</i><br>\$34,000                          |
| <b>COLUMBUS,<br/>INDIANA (U.S.A.)</b>         | <b>Development<br/>Services Incorporated</b><br><i>A Community Impact Six Sigma project led Cummins employees to replace a workshop model to help adults with special needs be creative, feel supported, learn new skills, explore opportunities, and reach personal goals.</i><br>\$22,950 | <b>COLUMBUS,<br/>INDIANA (U.S.A.)</b>         | <b>Foundation For Youth (FFY)</b><br><i>To help local teenagers access STEM education, life skills and one-on-one mentoring, Columbus Technical Center employees helped update FFY's Teen Room learning center.</i><br>\$16,000  | <b>INDIANAPOLIS,<br/>INDIANA (U.S.A.)</b>     | <b>Indiana University–Purdue<br/>University Indianapolis School<br/>of Informatics</b><br><i>Cummins employees supported in-school, STEM-based curriculum for low-income high schoolers to increase progress among women and minorities toward earning two- or four-year college degrees.</i><br>\$25,000 |
| <b>STOCKTON,<br/>U.K.</b>                     | <b>The Employability Trust</b><br><i>By updating a local warehouse, an IT training room and facility security, Cummins employees created the environment to prepare underserved youth for the workforce through technical and equipment training.</i><br>\$112,000                          | <b>MARSHFIELD,<br/>WISCONSIN<br/>(U.S.A.)</b> | <b>Frederic Ozanam<br/>Transitional Shelter</b><br><i>Filtration employees secured resources to construct facilities for donated materials, a severe weather storm shelter and family learning area for underprivileged children to learn life skills.</i><br>\$42,648 | <b>WUXI,<br/>CHINA</b>                        | <b>KE YI HUI Social Club</b><br><i>Turbo Technologies employees identified workplace improvements at a local service center where adults with special needs work and participate in social activities.</i><br>\$15,240  |
| <b>STAMFORD,<br/>U.K.</b>                     | <b>Evergreen Care Trust</b><br><i>After a care service for vulnerable adults transitioned to a virtual program, Power Generation employees supported the "Evergreen Angels" pilot program to provide physical, onsite support in a self-sustainable manner.</i><br>\$37,500                 | <b>NORTH VERNON,<br/>INDIANA (U.S.A.)</b>     | <b>Good Samaritan Food Pantry</b><br><i>Through the installation of a generator, walk-in cooler/freezer, dock ramp and reclamation room updates, Engine Business employees enabled a local food pantry to serve more people.</i><br>\$39,143                           | <b>VIA MONLUÈ,<br/>ITALY</b>                  | <b>La Grangia di Monlué</b><br><i>Distribution employees helped around 50 asylum seekers and refugees in impoverished conditions get access to a system of bike sharing, which will enable them to reach the workplace while also benefiting the environment.</i><br>\$9,904                              |
|   |   | <b>NASHVILLE,<br/>INDIANA (U.S.A.)</b>        | <b>Helping Hands</b><br><i>To address local hunger needs, Engine Business employees helped install cleaner, safer and energy-efficient appliances for a food-pantry partnership between Mother's Cupboard and Habitat for Humanity.</i><br>\$20,000                    |   |   |

| SOCIAL JUSTICE/<br>EQUALITY OF<br>OPPORTUNITY              |   | SOCIAL JUSTICE/<br>EQUALITY OF<br>OPPORTUNITY    |   | SOCIAL JUSTICE/<br>EQUALITY OF<br>OPPORTUNITY          |  |
|--|---|--|---|--|--|
| <b>TVER,<br/>RUSSIA</b><br><br>\$23,500                    | <b>Mednoe Sanatorium<br/>Boarding School</b><br><br><i>Children ages six- to 15-years old with special medical needs from low-income households or no families at all received safer recreational infrastructure through support from local Distribution employees.</i>       | <b>SUWON,<br/>SOUTH<br/>KOREA</b><br><br>\$9,400 | <b>Nanum House</b><br><br><i>Filtration employees expanded and improved the safety of a cooking room, enabling the organization to better run its services, including a library and after-school activities, for low-income seniors and children.</i>   | <b>SAN LUIS<br/>POTOSÍ,<br/>MEXICO</b><br><br>\$19,500 | <b>Oasis Alzheimer<br/>Guadalupe Palau A.C.</b><br><br><i>As part of their neighborhood approach, Engine Business employees from New and Recon Parts helped implement an energy-savings program and education initiative for disadvantaged members of the community.</i>     |
| <b>FRIDLEY,<br/>MINNESOTA<br/>(U.S.A.)</b><br><br>\$55,000 | <b>Metro Meals on Wheels, Inc.</b><br><br><i>Power Generation employees assisted in implementing the Access Technology Initiative to improve the availability of nutritious meals and social connections, so seniors and people with disabilities can remain independent.</i> | <b>BEIJING,<br/>CHINA</b><br><br>\$36,560        | <b>New Day Foster Home</b><br><br><i>Disabled and abandoned children were supported by Engine Business employees who contributed to safer and more sanitary facilities and the translation of their service and rehabilitation records.</i>   | <b>SANTIAGO,<br/>CHILE</b><br><br>\$40,146             | <b>Revintarse Foundation</b><br><br><i>Cummins employees provided youth offenders with technical knowledge, administrative skills, and soft skills to prepare them for the labor market and promote the positive, formative behavior needed for a family environment.</i>    |
| <b>MEMPHIS,<br/>TENNESSEE<br/>(U.S.A.)</b><br><br>\$12,500 | <b>Mid-South Food Bank</b><br><br><i>Distribution employees provided support for implementing new software that will enhance efficiencies in the collection and distribution of food to the 250 agencies served by the Mid-South Food Bank.</i>                               | <b>BEIJING,<br/>CHINA</b><br><br>\$27,790        | <b>New Sunshine<br/>Charity Foundation</b><br><br><i>Cummins employees served more than 500 people with disabilities through tailor-made assistive technology projects to help those in need conduct their daily affairs and lead more independent lives.</i>                                     | <b>QUIMPER,<br/>FRANCE</b><br><br>\$8,673              | <b>Secours Populaire Français –<br/>Comité de Quimper</b><br><br><i>Filtration employees improved storage and display areas for selling clothes, food, furniture, toys and books to families in need. The work allowed volunteers to spend more time impacting families.</i> |
| <b>BEIJING,<br/>CHINA</b><br><br>\$26,313                  | <b>Minguyan School Project</b><br><br><i>As part of a regional strategy at Cummins to support the needs of migrant children, company employees identified and contributed to facilities in need of safety improvements.</i>   | <b>BEIJING,<br/>CHINA</b><br><br>\$14,179        | <b>New Sunshine<br/>Charity Foundation</b><br><br><i>In conjunction with their other assistive technology (AT) efforts, Cummins employees focused this AT project on improving the lives of people with disabilities in business locations to strengthen their access to equal opportunities.</i> | <b>BOGOTA,<br/>COLOMBIA</b><br><br>\$82,500            | <b>SoyDoy Foundation</b><br><br><i>With 43 percent of Colombian children affected by malnutrition, Distribution employees supported addressing children's hunger needs, healthcare and values training, which included lessons in the arts and reading.</i>                  |
| <b>FRIDLEY,<br/>MINNESOTA<br/>(U.S.A.)</b><br><br>\$85,000 | <b>Minnesota Indian Women's<br/>Resource Center (MIWRC)</b><br><br><i>Power Generation employees provided staff resources to MIWRC, which creates internship programs and career development for American Indian women in need of opportunity.</i>                            |  |   | <b>STAMFORD,<br/>U.K.</b><br><br>\$76,100              | <b>Stamford Welland Academy</b><br><br><i>Employees improved and provided increased access to a safe space for local youth and adults participating in recreational activities, which will encourage more intergenerational programs and social interaction.</i>             |

| SOCIAL JUSTICE/<br>EQUALITY OF<br>OPPORTUNITY |   |
|---|---|
| <b>COLUMBUS,<br/>INDIANA (U.S.A.)</b>         | <p><b>Su Casa Columbus</b></p> <p><i>Engine Business employees supported Su Casa's three-year plan to hire an executive director, who will ensure educational programming is directed toward the community's growing American Hispanic and Latino population.</i></p> <p>\$32,500</p> |
| <b>BUENOS AIRES,<br/>ARGENTINA</b>            | <p><b>TECHO</b></p> <p><i>Cummins employees supported training in technical and craft courses, including electricity, plumbing, mechanics and handicrafts to help impoverished families and the unemployed obtain education and employment opportunities.</i></p> <p>\$18,000</p>     |
| <b>COLUMBUS,<br/>INDIANA (U.S.A.)</b>         | <p><b>Turning Point</b></p> <p><i>Employees helped replicate in Jackson, Johnson and Shelby counties support for victims of domestic violence and sexual assault while engaging teens and the broader community to prevent acts of partner violence.</i></p> <p>\$275,000</p>         |
| <b>COLUMBUS,<br/>INDIANA (U.S.A.)</b>         | <p><b>United Way of Bartholomew County</b></p> <p><i>IT employees supported the purchasing and installation of upgraded computers, monitors, and peripheral components to increase telephone specialists' ability to serve their 2,000 households in need.</i></p> <p>\$10,803</p>    |

| SOCIAL JUSTICE/<br>EQUALITY OF<br>OPPORTUNITY     |   |
|---|---|
| <b>CHARLESTON,<br/>WEST VIRGINIA<br/>(U.S.A.)</b> | <p><b>United Way of Central West Virginia</b></p> <p><i>A Community Impact Six Sigma project among Distribution employees led to their support of the Backpack Buddy program to supplement the nutritional needs of disadvantaged students during weekends and summer months.</i></p> <p>\$25,000</p> |
| <b>CLOVIS,<br/>NEW MEXICO<br/>(U.S.A.)</b>        | <p><b>United Way of Eastern New Mexico</b></p> <p><i>To improve housing, financial literacy, access to employment and cleanliness of neighborhoods, Engine Business employees helped secure three years' worth of support for a community volunteer center.</i></p> <p>\$99,000</p>                   |
| <b>WALTON,<br/>KENTUCKY<br/>(U.S.A.)</b>          | <p><b>UpSpring</b></p> <p><i>Engine Business employees provided contributions over a three-year period to support academic and enrichment summer day camps for improving homeless children's math, literacy and social skills.</i></p> <p>\$195,000</p>   |
| <b>WUHAN,<br/>CHINA</b>                           | <p><b>Xile Children's Rehabilitation Centre</b></p> <p><i>Cummins Filtration employees supported a rehabilitation center for children with autism and physical disabilities by participating in life-skill activities both in and outside the classroom.</i></p> <p>\$7,940</p>                       |



# THE CUMMINS FOUNDATION

*The Cummins Foundation  
is governed by these  
individuals and committees:*

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# TAKING HEALTH AND SAFETY TO THE NEXT LEVEL

*Cummins saw improvements in several key safety metrics in 2015, including a 15 percent improvement in the Ergonomics Incidence Rate compared to a year earlier.*



The company, however, missed aggressive goals in several categories that Cummins leaders want to improve on in 2016.

“There was a lot of good news in 2015, but we set very aggressive targets because the stakes are so high – our employee’s health and well-being,” said Michelle Garner-Janna, Executive Director – Corporate Health & Safety.

“Our workforce is becoming more actively engaged in preventing injuries and promoting healthy and safe behaviors,” she added. “There is always room for improvement, though, when it comes to protecting our most important asset, our employees.”

#### Highlights for 2015 included:

- » *The 15 percent improvement in the Ergonomics Incidence Rate, the rate of ergonomics-related injuries per 100 employees, compared to 2014.*
- » *An 8 percent improvement in the Incidence Rate, the relative number of recordable injuries and illnesses per 100 employees, compared to the previous year.*
- » *A 7 percent improvement in the Major Injury Rate, the rate of major injuries per 100 employees, compared to 2014.*

**Rocky Myers, a Safety Engineer with Corporate Facilities at Cummins, plays a board game based on a Cummins health and safety training called “Live It. Lead It.” with children visiting their parents’ workplace at Columbus Engine Plant in Columbus, Indiana (U.S.A.).**

## POWERING WHAT’S NEXT

As part of Corporate Health & Safety’s holistic approach, health leaders are also exploring the connection between personal health and safety.

Kelli Smith, Occupational Health Director, said Corporate Health & Safety has been working closely with Cummins Chief Medical Director Dr. Dexter Shurney and the company’s health benefits staff on initiatives such as Cummins’ LiveWell Center in Columbus, Indiana (USA).

The center, which opens in 2016, will be home to a number of physician and health related services, ranging from routine health and optometry exams to health coaching, classes on nutrition, acupuncture and chiropractic and physical therapy services.

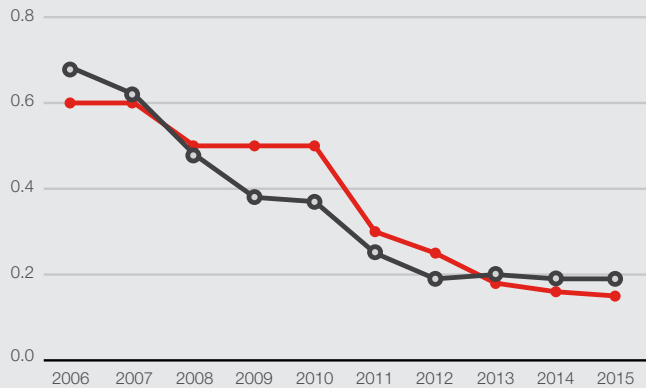
The center will be available to all active employees, their spouses and dependents over the age of 2.

“We want our employees to arrive at work feeling 100 percent,” Smith said. “Something as simple as not getting enough sleep can affect how an employee performs and that can impact safety.”

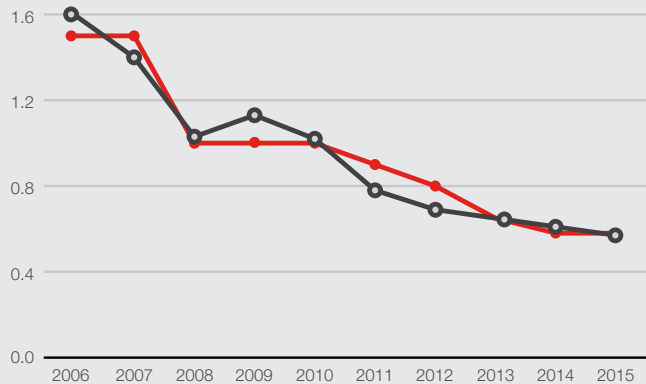
# SAFETY PERFORMANCE INDICATORS

Here's a look at key trends in safety at Cummins since 2011.

## SEVERITY CASE RATE



## INCIDENCE RATE



Actual —●—  
Target —■—

The company's Severity Case Rate is calculated based on the number of injuries and illnesses resulting in lost work days per 100 employees. Cummins Incidence Rate is the relative number of recordable injuries and illnesses per 100 employees.

## HEALTH & SAFETY

The good news also included a 36 percent improvement in the Contractor Incidence Rate and a 13 percent improvement in monthly safety training hours, both compared to 2014.

There are some areas of concern. The Major Injury Rate, for example, declined compared to 2014 but was 86 percent over the company's goal. Meanwhile, the Severity Case Rate, the number of injuries and illnesses resulting in lost work days per 100 employees, was essentially unchanged compared to 2014, but nowhere near the significant decrease leadership had set as a goal.

Lost Work Days increased slightly in 2015 to 3,301 compared to 3,232 the previous year – a 2 percent gain. However, they are down 20 percent from the 4,154 lost days recorded in 2011, despite the company having a larger workforce in 2015.

The Incidence Rate, Severity Case Rate and the Ergo Incidence Rate have all been on a consistent downward trajectory since 2011.

Over the past five years, the company has stressed the importance of leaders and employees becoming personally involved in safety and the need for everyone to look after their co-workers in addition to themselves.

In 2016, Corporate Health & Safety plans to implement a safety pledge card campaign to build on its previous efforts to make safety personal. Employees will be asked to sign a pledge to not only look out for the safety of themselves but the safety of their co-workers, too.

The initiative will build on the roll out to employees in 2015 and 2016 of the "Live It. Lead It." training. The training started initially as a way to encourage leaders to take a personal interest in safety. It proved so popular that leaders insisted it be offered to employees, too.

"We want everyone thinking about what motivates them to return home safely when their work day is over and what makes their colleagues want to do the same," Garner-Janna said. "By making safety personal, I think we are naturally more likely to create a culture where we look for problems and fix them before incidents happen."

# WORKPLACE VIOLENCE STRIKES CUMMINS

In March 2016, at Cummins' Seymour Technical Center in Seymour, Indiana (U.S.A.), a Cummins engineer fatally shot his manager and then himself. The company is deeply troubled and saddened by this event.

It will take time to recover.

Employees who feel like they are having trouble coping or need to talk to someone are encouraged to take advantage of Cummins' confidential Employee Assistance Program and other resources.

The company also wishes to thank all first responders at the technical center for their professionalism during this difficult event, including our own Emergency Response Team. They all displayed tremendous courage and compassion and their efforts are much appreciated.

Cummins is committed to working together with our employees to move forward and become a stronger company.

# BUILDING SAFE BEHAVIORS A BLOCK AT A TIME

*It's amazing how a game of Jenga can encourage safe behavior.*

O.K., the “Live It. Lead It.” safety training for employees at Cummins involves a lot more than stacking blocks.

But many participating employees say the class is doing more to promote safety than any training they've ever taken.

“The experience I had in the classroom was different than any training I've ever had,” said Debbie Liming, a Manufacturing Support Technician at the company's Columbus Engine Plant (CEP) in Columbus, Indiana. “The leaders were open. They talked about situations they'd had here at work and also at home – which you never hear that at all.”

Stacy Workman-Wyatt, the Health, Safety and Environment (HSE) Leader at CEP, says the training makes safety personal while involving an element of team building and fun.



“Live It. Lead It. is really a way of life,” said Workman-Wyatt, who was part of the team that put the employee training together.

***“To live it means you will share your personal values by actively caring for others,” she said. “To lead it means when you witness an unsafe behavior or unsafe condition, you correct the issue or find someone who can.”***

Live It. Lead It. started as a training for leaders to motivate them to take a personal interest in managing safety. They were asked to share their experiences with workplace injuries and the impact those injuries had on employees and their families. They were also asked to imagine how they might feel if their own family members were working at places in their plants, warehouses, laboratories or other locations with potential hazards.

The training was extremely popular and Cummins’ Corporate Health & Safety team decided to come up with a similar class for employees known as “Passport to Safety.”

One of the first things a team of CEP and Corporate Health & Safety leaders decided was the training should be led by someone who was supervising the employees participating in the class rather than a person from health and safety.

They wanted to strengthen the relationship between managers and the employees they supervise as well as among the employees themselves, demonstrating that health and safety belongs to everyone, not just the Health & Safety function.

Participants play Jenga as they post notes with suggestions for improving safety. Falling towers symbolize barriers breaking down. Then it gets personal. Participants are asked to return with pictures of what motivates them to come home safely after work. The pictures are often of family members and the stories can be very emotional.

“Employees often learn things they never knew about the people they work with,” Workman-Wyatt said.



Stan Woszczyński, Vice President – Manufacturing and Supply Chain Management, attended one of the trainings for hourly employees at Cummins.

“The employees embraced the training by citing personal experiences and participating in the exercises,” he said. “We all came away with a new outlook on staying safe.”

The training encourages safety in all aspects of an employee’s life – at home and at work. Many sites have incorporated aspects of Live It. Lead It. into a game children can play when they visit their parents’ workplace.

“A safety mindset doesn’t end when you leave work,” Workman-Wyatt said. “It’s something you practice in every aspect of your life.”

# INDIA TEAM CLAIMS FIRST PLACE IN 2015 ERGO CUP

*Rotating the heavy crankshaft for additional life when a QSK-series engine arrived at the High Horsepower Master Rebuild Center in Phaltan, India used to be a physically demanding task.*

The QSK-series includes the largest engines Cummins builds and the crankshaft, which delivers power from the engine to the wheels, can weigh thousands of pounds. Rotating it used to require three people: two to vigorously pull on a long bar attached to the crankshaft, and a third to look at the markings on the end of the crankshaft to signal when the pulling should stop.

It was not uncommon for the same two employees to have to push on the bar in the opposite direction if they happened to go too far.

But now the task can be done with the flip of a switch. A team from the master rebuild center developed a mobile hydraulic pump to rotate the crankshaft, requiring just a single employee. The invention, which improves health, safety and productivity, won first place in Cummins' fourth annual Ergo Cup competition in 2015.

"It's exciting to see such a risky task made safe by an organic solution," said Chris Shieldsmith, Global Ergonomics Leader at Cummins and the Ergo Cup Competition judge. "The gains in efficiency and productivity are great, but employee safety and risk reduction is most important. This project addresses all of these issues."



The crankshaft project topped a record-setting 96 entries from around the company. In previous years, first-place honors were awarded to a torque-reduction tool from Jamestown, New York (USA) in 2014, a part installation improvement process from Jamestown in 2013 and a power generation hoist improvement from one of the company's joint ventures in China in 2012.

Team members Malhari Gaikwad, Kiran Shinde, Umesh Inamke and Rajendra Kajarekar used Cummins' standard ergonomics analysis tool, The Humantech System, to help design the solution. The tool is able to identify the risks and hypothesize potential solutions. They eventually settled on a new device that would not only eliminate the physical risk factors, but also markedly improve overall productivity and efficiency.

***The winning Ergo Cup team figured a way to safely turn the heavy crankshaft of a high horsepower engine for remanufacturing.***

The mobile unit is powered by a hydraulic motor that easily mounts on the QSK-series engine where the starter would typically go. With the new setup, only one employee is required to perform the task. The crankshaft turns slowly and the operator can visually identify when it is in the correct location.

In addition to the ease of use and reduction of risk, the overall time to complete the task is cut by 16 minutes. Employees are thrilled with the new solution, as a single person can now complete the job.

The invention is being shared across the company with any business unit that comes in contact with high horsepower engines.

"The entries in the Ergo Cup just keep becoming more interesting and more impactful," Shieldsmith said. "I'm continually impressed by the ingenuity our employees bring to their job every day."

# TAKING ACTION TO PRESERVE CUMMINS' DIVERSITY VALUE

*Diversity is at work every day, in every location, at every level of Cummins.*

*Early on, Cummins' leaders understood that harnessing the power of diversity could set the company apart from its competitors. That vision helped shape Cummins into what it is today: a company striving to be a place where employees feel safe and welcome to share their ideas and make innovation come alive.*

*The past 12 months included an increased focus on inclusion and embracing both visible and invisible diversity through a series of initiatives.*



## INVESTIGATING COMPLAINTS

A key part of creating the right environment for success is the ability to investigate complaints made about employees' treatment of each other.

Cummins' Diversity value is part of the company's Code of Conduct. Cummins has Master Investigators around the world to look into reported abuses of the code. Employees can file complaints anonymously where allowed by law.

The company investigated 1,851 reported code violations in 2015, up from 1,559 in 2014. About 45 percent came from outside the U.S. in 2015, about the same as in 2014, and 33 percent were reported anonymously, also about the same as 2014.

About 58 percent of the total reports were ultimately substantiated in 2015, compared to 48 percent in 2014. About 28 percent of the substantiated reports resulted in terminations compared to 29 percent in 2014.

The average time to close a case was 14 work days, down one day from 2014.

## FIGHTING DISCRIMINATION

With diversity related issues taking center stage in news coverage around the world in 2015, Cummins joined the conversation through a series of focus groups, town halls, opinion pieces and other events to promote the company's Diversity value.

When anti-Muslim rhetoric in world media increased, Cummins used the controversy to reinforce its commitment to diversity and inclusion. In June of 2015, Chairman and CEO Tom Linebarger hosted a series of focus groups with Muslim employees to better understand the issues they faced and to learn what Cummins could do to create a more welcoming atmosphere both at work and in the communities in which employees live.

Linebarger encouraged all employees to reflect on their commitment as individuals to live Cummins' values and create environments where everyone has the opportunity to succeed and be treated with dignity and respect.

He also wrote an opinion piece that appeared in several publications in the United States in January 2016.

"Discrimination and intolerance have no place in our company, in our communities or in our country," he wrote. "Today, divisive rhetoric that isolates minority groups is undermining our ability to see the commonalities we share and inhibiting our efforts to improve our communities.

"It is wrong to use fear of those who are different to further enshrine discrimination against individuals for political purposes," he added, citing not only anti-Muslim rhetoric but rhetoric targeting lesbians, gays, bisexuals and transgender (LGBT) individuals and African Americans.

## GROWING DIVERSITY

In 2015, Cummins also increased its focus on regional diversity initiatives. In the Middle East, for example, the Area Business Organization looked at ways it could increase the number of women in its workforce.

In the U.S., meanwhile, the company increased its efforts to recruit, develop and retain Blacks, African Americans, Latinos and Hispanics.

The company increased its participation and engagement in recruiting efforts through conferences such as the National Society of Black Engineers and onsite networking at colleges and universities around the country. Cummins also paid close attention to advancement opportunities and retention of current employees and identified ways to improve both.

In addition, Cummins joined more than 1,100 companies from around the world in signing the Women's Empowerment Principles (<http://weprinciples.org/>). By signing the principles, Cummins pledged its commitment to diversity and a gender-balanced workforce.

Developed through a collaboration between the United Nations Entity for Gender Equality and the Empowerment of Women and the U.N. Global Compact, the seven principles emphasize the business case for corporate action to promote gender equality and women's empowerment.

## POWERING WHAT'S NEXT

### DIVERSITY AND INCLUSION

The upcoming year will focus on two key issues: unconscious bias and language barriers.

As a global company with employees in every time zone, speaking many languages, communicating effectively is critical. The Chairman's Diversity Council, consisting of top leaders at Cummins, identified the need to better inform and equip employees with the resources necessary to remove language barriers.

Unconscious bias refers to a bias that people may be unaware of. Unchecked, however, it can interfere with people's ability to be fully inclusive. Cummins will seek to educate managers and employees about this bias and how to interrupt it.

# INSPIRING WOMEN TO MAKE CUMMINS AND THE WORLD A BETTER PLACE

*Even with the expansive contacts befitting the first woman to run one of the world's three largest automakers, Mary Barra says the most influential person in her life was her mother.*

"My mom grew up in the Depression and didn't have the opportunity to go to college," said Barra, Chairman and CEO of General Motors. "She was determined that we would have a better life. And I think it's that determination that still guides me today."

Barra headlined the first Cummins Women's Conference on March 11, 2016, in Columbus, Indiana (U.S.A.). More than 250 women leaders attended the day-long event, which was designed to guide and inspire them.



**General Motors Chairman and CEO Mary Barra (right) is interviewed by Cummins' Carole Casto (left), Executive Director – Corporate Communications, at the first Cummins' Women's Conference.**

## ABOUT MARY T. BARRA

**Chairman & Chief Executive Officer,  
General Motors Company**

### CAREER HIGHLIGHTS:

- » Elected Chairman of the GM Board of Directors on January 4, 2016, and has served as CEO of GM since January 15, 2014.
- » Prior to being named CEO, Barra served as Executive Vice President, Global Product Development, Purchasing and Supply Chain, and as Senior Vice President, Global Product Development. In these roles, she was responsible for the design, engineering, program management and quality of GM vehicles around the world.
- » In 1990, Barra graduated with a Master's Degree in Business Administration from the Stanford Graduate School of Business after receiving a GM fellowship in 1988. Barra began her career with GM in 1980 as a General Motors Institute (Kettering University) co-op student at the Pontiac Motor Division.

## DIVERSITY

Barra was elected Chairman of the GM Board of Directors in January 2016 and has served as CEO of the company since January 2014. She joined GM in 1980 as a co-op student at the Pontiac Motor Division.

She talked about her 35-year personal journey rising through the ranks of the company, maintaining one of the keys to her success at GM has been her ability to communicate her vision and persuade others to follow.

"If people don't believe in you and the vision you are painting, they won't follow you," Barra said.

Cummins Chairman and CEO Tom Linebarger also participated in the event, maintaining recruiting and developing more women leaders is both good for the company and good for society, too.

"We know diverse teams solve problems better," Linebarger said. "Data shows that when women are on the team, we do better."

The conference also featured Georgia Nelson, a member of the Cummins Board of Directors, and other top female leaders from across the company. In addition to presentations, both speakers and participants also met in small group workshops as part of the conference to balance the inspirational messages with actionable knowledge.

"Being able to hear these inspiring speakers and then spend time sharing and learning from others was wonderful," said Fernanda Beraldi, Ethics & Compliance Director, Latin America and Corporate Counsel.

Vice President and Chief Administrative Officer Marya Rose ended the conference with a call to action, saying women must now reach out and help each other achieve career success.

"We have to be each other's best advocates," Rose said. "We will not succeed if we do not help each other."

Organizers plan to replicate the conference at different locations around the world.

## LIVING OUR DIVERSITY VALUE

When Sharon Barner took over the Cummins' Law Department in early 2012, she began requiring that the outside law firms working for the company show they shared Cummins' Diversity value.

In going from about 150 outside firms down to 22, she began to score them on certain diversity metrics such as whether they had a diverse relationship partner heading up Cummins' file, or for the number of hours diverse lawyers spent on the company's business.

In dealings with outside law firms, Barner says the number of minority leadership partners – lawyers who are a firm's primary contact with Cummins – has risen from zero to four. Meanwhile, the number of female leadership partners has increased from one to three. She estimates about 50 percent of the hours worked on company matters by outside firms are now done by diverse lawyers and women.

"As a law firm, you can decide whether you want to help me focus on diversity as one of my issues or not," Barner told Bloomberg's Big Law Business. "I don't make you stay on the preferred list, but if you're going to be on it, here are the things that we value, both from the legal function and as a company as a whole."



## BREAKING BARRIERS TO FLY IN SPACE

*Nothing was going to stop Franklin Chang Díaz from realizing his dream. Not language barriers. Not financial barriers. And certainly not the hard work necessary to become an astronaut.*

Chang Díaz, however, also says he was also fortunate to have a loving and supportive family and some well-timed help along the way.

"No one gets anywhere without someone else's help," Chang Díaz said as the featured speaker at a diversity forum in October 2015 called "Breaking Barriers," sponsored by the Southern Indiana (U.S.A.) Local Diversity Council at Cummins.

Over his 25-year career at NASA (National Aeronautics and Space Administration), Chang Díaz went into space seven times on the Space Shuttle and performed three space walks as part of the construction of the International Space Station.

A native of Costa Rica who is also a U.S. citizen, Chang Díaz is today Chairman and CEO of the Ad Astra Rocket Company based in Houston, Texas, which is working on a new space propulsion system. Chang Díaz is also a member of the Cummins Board of Directors, serving in that capacity since 2009.

His dream of space travel started at an early age. When he was seven, Chang Díaz remembers vividly his mother telling him

about Sputnik, the first satellite to orbit the earth on Oct. 4, 1957. He looked intently for a moving star in the night sky. "I never saw it," he said, "but I saw it in my mind."

The first person to help him realize his dream, beside his parents, would be noted rocket scientist Dr. Wernher von Braun, albeit in a most unusual way. Chang Díaz wrote von Braun, who was leading NASA then. Someone in the space agency wrote back. While the letter was positive, it cautioned Chang Díaz that he needed to be an American citizen to become a NASA astronaut.

Even though he didn't speak English and had to have the letter translated, Chang Díaz interpreted it as an invitation to the United States. In 1968, he flew to the U.S., joining relatives in Hartford, Connecticut.

After nearly flunking out of high school, Chang Díaz started to master English and school counselors tried to guide him to a community college. A friendly teacher told him he needed to go to a four-year school to realize his dream. Chang Díaz won a scholarship to the University of Connecticut.

School officials, however, initially thought he was from the U.S. territory of Puerto Rico – not Costa Rica. They told him the scholarship was only for U.S. citizens, but the Connecticut legislature passed special legislation exempting him from that requirement for one year.

With his foot in the door, Chang Díaz won other scholarships to cover his undergraduate studies. He then attended graduate school at the Massachusetts Institute of Technology (MIT), earning a Doctorate in Applied Plasma Physics. He also obtained his U.S. citizenship.

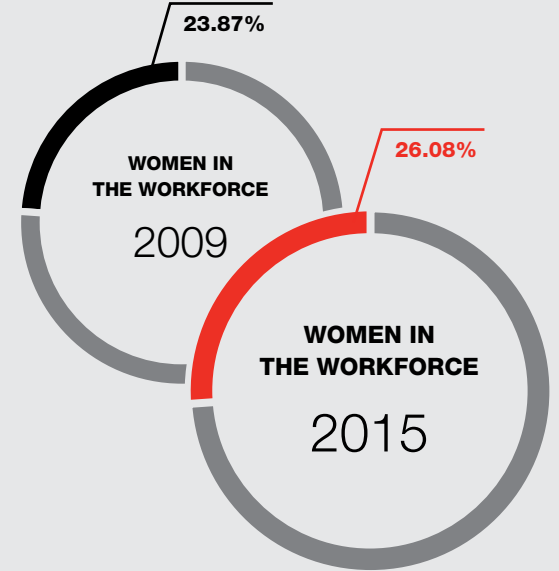
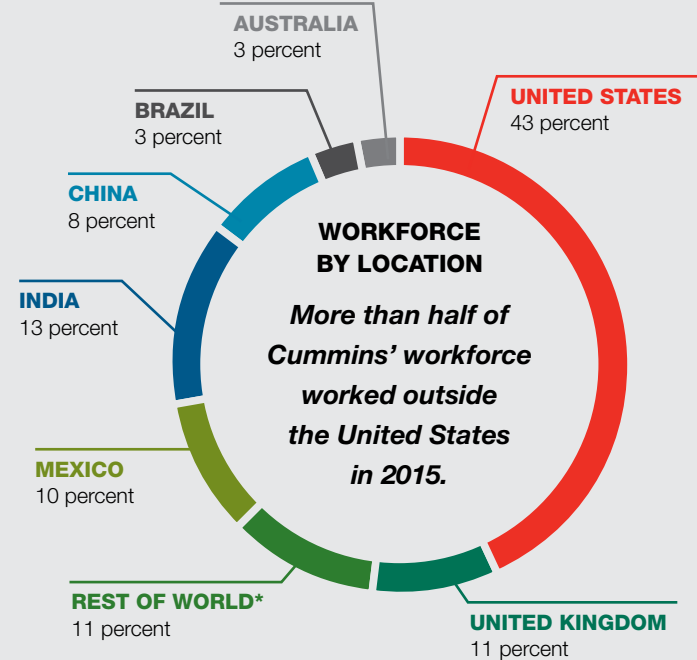
The first time he applied to NASA's astronaut selection program, Chang Díaz was turned down. He applied again, one of more than 3,000 applicants for 19 positions. This time, Chang Díaz made it, and began training in 1980.

Six years later, Chang Díaz's dream came true. On Jan. 12, 1986, he was part of a mission aboard the Space Shuttle Columbia.

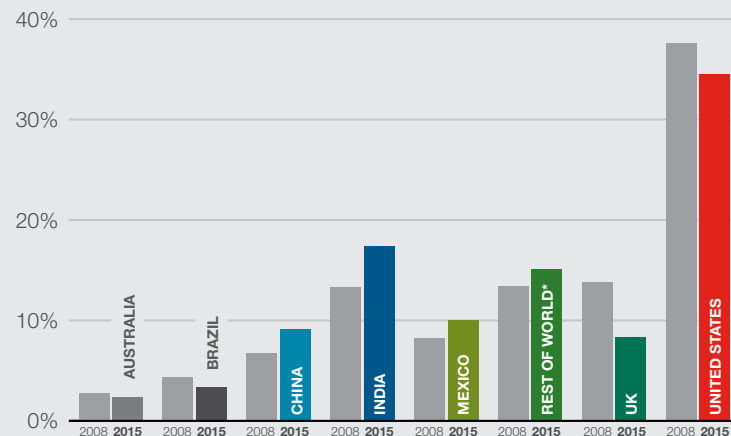
# DEVELOPING A TRULY GLOBAL WORKFORCE

Diversity at Cummins has long been about more than representation. But as a truly global company, Cummins wants to develop a workforce that closely resembles the demographics in the countries and markets where it does business.

Company leaders pay special attention to some key metrics of under-represented groups at Cummins, such as women. An employee's country of birth is another key metric to ensure leadership isn't limited to one country or group of countries. Here's a look at what's been happening in these areas.

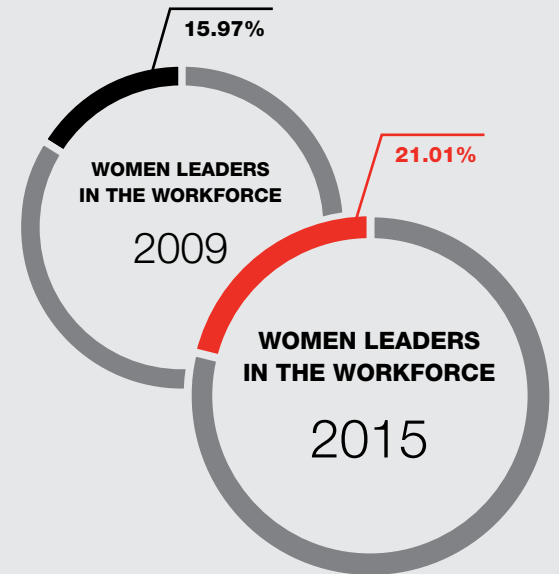
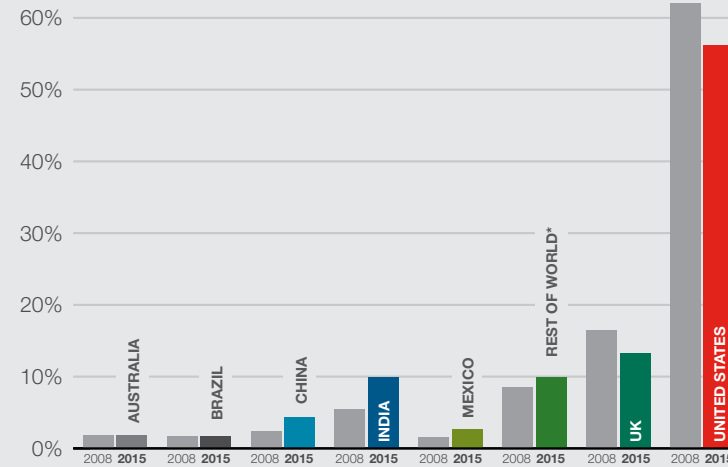


**COUNTRY OF BIRTH FOR THE WORKFORCE**



\*Rest of world category includes countries with less than 1,000 Cummins employees.

**COUNTRY OF BIRTH FOR LEADERS**



# DIVERSITY PROCUREMENT TOPS \$1 BILLION AGAIN

*Cummins for a second year in a row topped \$1 billion in business with diverse suppliers across eight categories in the U.S. in 2015 despite a challenging economy the last half of the year.*

“Our purchasing function, working with our business units, did a really good job looking for opportunities to do business with diverse and small business suppliers in 2015,” said Diversity Procurement Director Michelle Taylor. “Reaching \$1 billion again in 2016 will be a challenge, but I’m excited about the opportunity to do even more.”

In 2015, Cummins reached \$1.3 billion in spending with diverse and small business suppliers in the U.S., compared to \$1.2 billion spent in 2014.



DIVERSE SUPPLIER CATEGORIES

Cummins works with the following categories of diverse suppliers in the U.S.:

- » Minority Business Enterprises
- » Woman Business Enterprises
- » Veteran Owned Businesses
- » Service-Disabled Veterans
- » Lesbian, Gay, Bisexual, and Transgender (LGBT) Suppliers
- » SBA Small Disadvantaged Businesses
- » HUBZone Small Business Concerns
- » Philanthropic Suppliers

Outside of the U.S., supplier categories are determined by the Cummins Area Business Organization regions based on the region's demographic makeup and in concert with any diversity procurement organizations in that country.

DIVERSITY

The company's diversity procurement efforts outside the United States also continued to grow. Diverse procurement connected to Cummins Area Business Organizations (ABOs) reached \$320 million compared to \$291 million in 2014, pushing global spending with diverse suppliers to more than \$1.6 billion in 2015.

By working with diverse suppliers, Cummins increases competition for its business, which ultimately decreases costs and improves service. At the same time, diversity procurement develops economic growth in all of the communities where Cummins employees live and work, keeping with the company's Corporate Responsibility value to "serve and improve the communities in which we live."

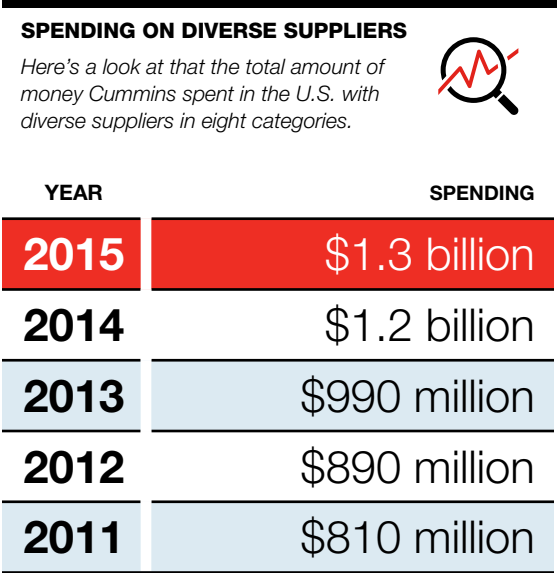
The company participated in a number of diversity procurement events around the United States ranging from the 2015 National Gay & Lesbian Chamber of Commerce Business Matchmaker held in Ft. Lauderdale, Florida, to the U.S. Hispanic Chamber of Commerce convention in Houston, Texas.

At the Houston event, Cummins was inducted into the Hispanic chamber's "Million Dollar Club," which recognizes corporations reaching \$50 million in spending with Hispanic-owned companies.

Outside the U.S., the company attended the seventh annual Minority Supplier Development China Summit in Beijing, and took steps to launch diversity procurement initiatives in Germany, Romania and Turkey.

The diversity procurement team (<http://supplierdiversity.cummins.com/>) also took on a number of initiatives designed to partner with organizations that drive diversity procurement education within their supply chain programs.

Cummins, for example, partnered with Howard University, a historically black college located in Washington, D.C. Howard leads the Supply Chain Advisory Council, which is comprised of several chief procurement officers from corporations such as GM, Dupont and Toyota committed to developing strong supply chain student leaders at the school.



Lisa Yoder, Vice President – Global Supply Chain and Manufacturing, will represent Cummins on the council and Sharon Barner, Vice President – General Counsel, is the Executive Sponsor for Cummins-Howard University recruitment team.

Looking ahead, Taylor says she wants to explore in 2016 whether there are diversity procurement opportunities at Cummins in professional services such as lease management, insurance, legal and facility maintenance.

"We really need to explore every possibility to sustain and exceed our \$1 billion efforts in 2016," she said.

# CHARTING A COURSE TO CAREER SUCCESS

*Cummins believes in a “hire-to-develop” philosophy, which means the company wants to provide employees with the tools and feedback necessary to build a career – not just a stop along the way.*

*Here’s a look at the path to a successful career at Cummins:*

01

## COMPENSATION & BENEFITS

The well-being of Cummins employees is a priority at all locations. Compensation and health and retirement benefits are designed to be competitive within local markets and countries where the company does business. Cummins complies with the law everywhere and establishes wages independent of a person’s gender or any other demographic trait.

02

## ONBOARDING

Most employees get a full week of Onboarding to learn about Cummins’ culture and foundational initiatives such as the company’s Code of Business Conduct; Vision, Mission and Values and key initiatives such as Customer Support Excellence.

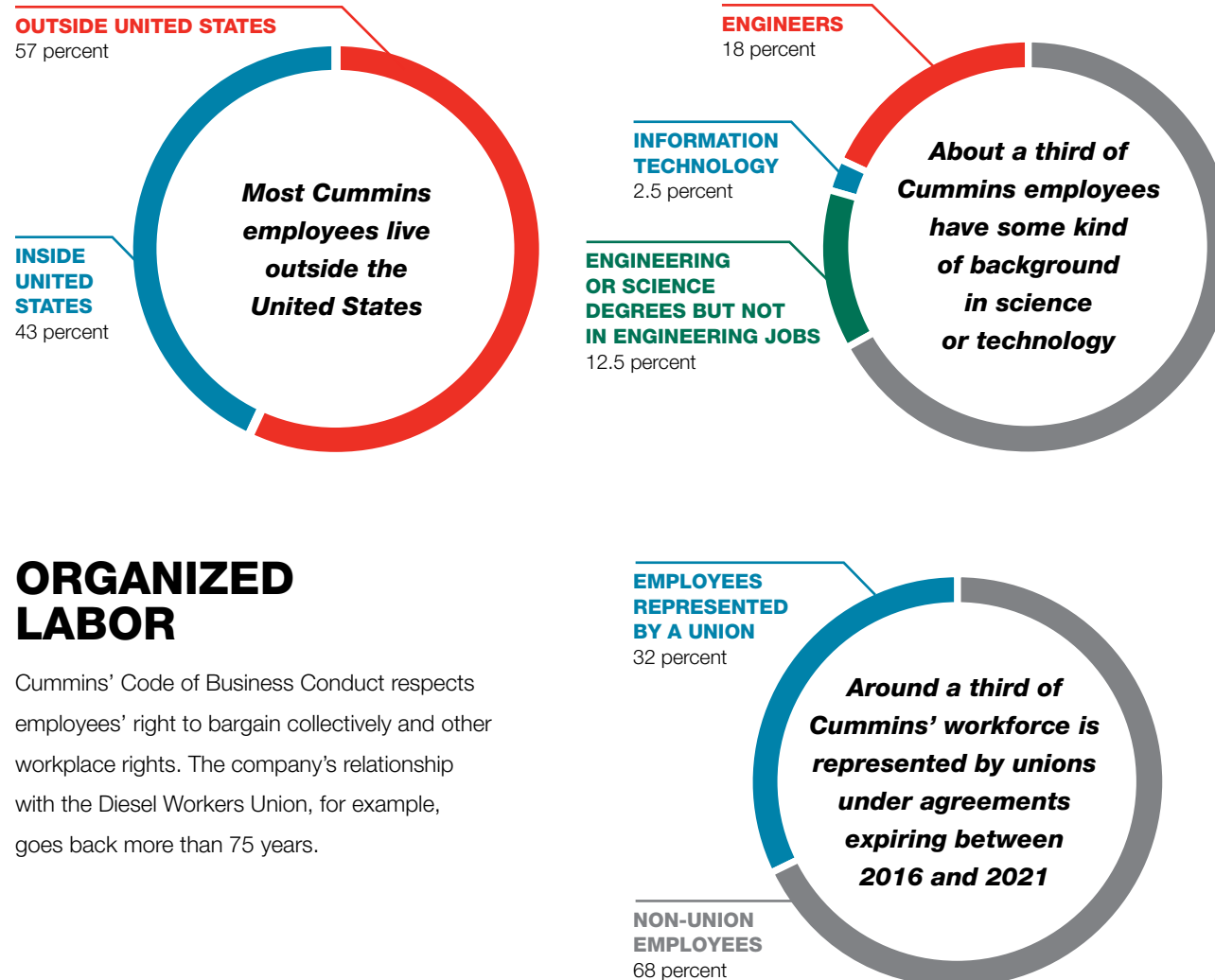
03

## DEVELOPMENT OPPORTUNITIES

Cummins promotes a culture of career-long learning and development. The company offers many opportunities to help employees master their current jobs and look ahead to their next positions. These range from on-line learning to classroom-based opportunities outside the company.

# EMPLOYMENT BY THE NUMBERS

Here's a quick look at Cummins workforce in 2015.



# ORGANIZED LABOR

Cummins' Code of Business Conduct respects employees' right to bargain collectively and other workplace rights. The company's relationship with the Diesel Workers Union, for example, goes back more than 75 years.

## CRITICAL FEEDBACK

04

New office and professional employees are introduced to the company's Performance Management System during Onboarding. The program uses a web-based tool to ensure employees know their managers' expectations. The tool facilitates the most important part of performance management – meaningful one-on-one conversations between a manager and his or her direct reports.

05

## CAREER FLEXIBILITY

Cummins believes in career flexibility, knowing an understanding of engineering or science, for example, can be helpful in any number of other areas at the company ranging from human resources to marketing and communications.

## LEADERSHIP DEVELOPMENT

06

Cummins believes nothing is as career limiting as a bad boss. The company works hard to develop leaders who have mastered coaching and developing, open communications, goal setting, managing diversity and other key aspects of leadership. The company has courses, both online and classroom based, to help employees develop critical leadership skills.

# PASSING THE BATON TO A NEW MAESTRO



*When the company's technical leaders from across the globe gathered in Columbus, Indiana (U.S.A.) for their annual fall conference in 2015, the meeting was especially poignant. In many ways, it signified a passing of the baton from Dr. John Wall to Jennifer Rumsey, Cummins' new Chief Technical Officer (CTO).*

Wall announced his retirement from that post just three months earlier, ending an illustrious career spanning nearly 30 years with the company.

During his 15 years as Cummins' CTO, Wall elevated the company's standing as an industry leader in technology.

Much as he had inherited Cummins' long-held reputation for technical innovation, a reputation dating back to Cummins' Founder Clessie Cummins, Wall passed its future care into Rumsey's capable hands.

A Cummins employee since 2000, most recently as the engineering leader of the Engine Business Unit, Rumsey used the conference to unveil her vision for the technical organization, which includes most of the company's nearly 10,000 engineers.

That vision included some key themes from the Wall era, but also a new beginning. Challenging global market conditions helped drive clarity around several changes, she said, leaving the technical organization at a crossroads.

**Approaching near-zero levels in developed markets, emission regulations on oxides of nitrogen (NOx) and particulate matter (PM), while still important, would no longer drive innovation as they have for the past decade and a half, Rumsey said.**

Cummins must continue meeting increasingly stringent NOx and PM regulations in both mature markets such as the U.S. and Europe and developing countries like China and India. But Rumsey said the next phase of innovation will increasingly depend on a deep knowledge of the company's customers and how Cummins can enable their success.

That includes a growing focus on fuel efficiency to reduce the environmental impact of Cummins' products while delivering value to the company's customers.

At a time when established business models are increasingly disrupted by innovative outsiders, Rumsey told the leaders at the conference, "We have to be positioned to disrupt ourselves."



## A REMARKABLE LEADER RETIRES

It's hard to overstate the impact former Chief Technical Officer John Wall had on Cummins and the diesel industry over the past quarter century before he retired in 2015.

Electronic high pressure fuel systems, cooled exhaust gas recirculation, wall-flow diesel particulate filters, selective catalytic reduction and NOx aftertreatment – Dr. Wall played a significant role in these breakthrough clean-air technologies and more during his illustrious career.

A champion of the environment, Dr. Wall helped Cummins partner with the Environmental Protection Agency and was at the center of many pivotal moments and initiatives in the company's history.

His lasting legacy, however, may be his mentorship and commitment to the personal development of the employees of the technical organization, which will help ensure innovative leadership at Cummins for years to come.

COMMITTED  
TO R&D

Cummins is positioning itself for that disruption through a continued investment in research and development despite challenging economic conditions. The company devoted more \$700 million to research and development expenses for a fourth consecutive year in 2015, investing \$735 million.

The company continued its research and development focus on both improving current technologies to meet future emissions and customer requirements around the world as well as developing critical future technologies. Cummins’ Advanced Engineering and Technology organization, for example, looks out six to 10 years, and sometimes longer, well upstream of product development.

This work is critical. An estimated 70 percent of a product’s environmental impacts are determined during the design phase.

RESEARCH AND DEVELOPMENT

Here’s a look at research and development spending at Cummins:

| YEAR | R&D SPENDING  |
|------|---------------|
| 2015 | \$735 million |
| 2014 | \$754 million |
| 2013 | \$713 million |
| 2012 | \$728 million |
| 2011 | \$629 million |



**A Cummins employee walks in the company’s new Seymour, Indiana (U.S.A.) Technical Center. In 2015, Cummins celebrated completion of the center, which is devoted to high horsepower engines used to power off-highway trucks, trains, ships, generators and more.**

***The new Cummins Technical Center India in Pune is nearing completion, providing space for more than 2,500 engineers and 36 engine test cell slots. The new center will be the largest technical center at Cummins.***



## NEW TECH CENTERS

The company celebrated in 2015 the completion of the new Seymour, Indiana (U.S.A.) Technical Center, devoted to high horsepower engines used to power off-highway trucks, trains, ships and generators. Hundreds of specialized engineers and technicians work in the technology-focused and collaborative work environment adjacent to the Seymour Engine Plant.

Meanwhile, the new Cummins Technical Center India in Pune is nearing completion, ultimately providing space specifically designed to encourage collaboration for more than 2,500 engineers as well as 36 engine test cells. The new center will be the largest technical center at Cummins.

## THE FUTURE OF INNOVATION

These facilities will be critical to the next phase of innovation, which is expected to include continued advancements in engine and component technologies, as well as advances related to alternative fuels and energy sources. New features leveraging telematics and data analytics are also expected to play an important role.

Some innovations will happen in shorter development cycles, while others will move along a more traditional development timeline.

“We have the brightest minds in the world working in our global technical organization, and we have the skills and abilities to achieve outstanding results,” Rumsey said. “Despite some challenging market conditions, this is a remarkably exciting time.”

# A CONVERSATION WITH CUMMINS' NEW CHIEF TECHNICAL OFFICER

*Jennifer Rumsey says she achieved her dream job when she became Cummins' Vice President – Chief Technical Officer in 2015.*

Today, she leads the company's global technical organization, responsible for research and engineering across Cummins' four business units.

After obtaining a Bachelor of Science in Mechanical Engineering from Purdue University and a Master of Science in Mechanical Engineering from the Massachusetts Institute of Technology, Rumsey initially worked at a fuel processing and fuel cell start-up company. Her early career focused on control systems and system engineering.

In 2000, she moved to Cummins and has worked in a variety of engineering roles across the company's Engine and Components business units, including advanced technology development, new product development and current product engineering.



## ABOUT RUMSEY

*Jennifer Rumsey has a Bachelor of Science in Mechanical Engineering from Purdue University and a Master of Science in Mechanical Engineering from the Massachusetts Institute of Technology.*

*A former Cummins intern, she joined the company in 2000.*

*Rumsey has received a number of awards including the Society of Automotive Engineers International Association of Equipment Manufacturers Outstanding Young Engineer Award, and 40 under 40 up-and-coming Purdue Alumni by the Purdue Alumnus magazine. She is a member of the Society of Automotive Engineers and the Society of Women Engineers.*



**Here's what she has to say about her new job, her predecessor and why she chose to build a career at Cummins:**

Q

## WHAT IS IT LIKE TO FILL THE ROLE OF YOUR MENTOR AND FRIEND, JOHN WALL?

A

John Wall had a major role in transforming Cummins products and emission technology in our industry. I intend to build on his legacy and develop that next generation of breakthrough innovations. We are focused on creating an environment where our global technical organization can work together to solve some of the world's biggest challenges.

Q

## WHY HAVE YOU CHOSEN TO BUILD YOUR CAREER AT CUMMINS?

A

This is my dream job. I found a passion for research and development as an intern at Cummins. My work matters for the environment and for our customers. I like solving problems, but I really like developing solutions that will have an immediate positive and large-scale impact.

Q

## WHY HAS CUMMINS' TECHNICAL ORGANIZATION BEEN SUCCESSFUL?

A

Our ability to identify the right technology to meet the emissions challenges and to integrate those technologies into products that meet our customers' needs has set us apart from the competition. Meeting emissions regulations will only grow in importance globally in the future, but we anticipate it will no longer drive innovation and business growth in the same way it has historically.

Q

## WHAT'S NEXT FOR CUMMINS?

A

Our next phase of success will be characterized by our ability to deliver differentiated products, information and technologies that wow and delight our customers. I believe two key ingredients drive success in innovation. The first ingredient is an understanding of and openness to technology changes and how new technologies and technical ideas may develop into innovative products.

The second ingredient is a problem or opportunity which demands a new technology or new application of an existing technology. To define these problems and opportunities requires a deep understanding of our customers, of their needs and what's important to them, and of how we can use technology and advances in our products to enable our customers' success.

# 14 HONORED WITH PERR INNOVATION AWARD

The Julius P. Perr Innovation Award is presented annually to Cummins employees for their contributions to significant technological advances benefiting the company.

In 2015, 14 scientists and engineers were honored for developing critical, robust solutions to reduce diesel emissions for challenging engine duty cycles.

***“These inventors and their novel ways of approaching and solving problems have added to the Cummins legacy of innovation and technology leadership,” said Rich Freeland, President and Chief Operating Officer at Cummins. “Dr. Perr’s commitment to this legacy and to the success of our customers helped us become a market leader.”***



Here's a look at the 2015 winners:

## **THERMAL MANAGEMENT OF DIESEL PARTICULATE FILTERS**

The ability to control exhaust temperatures within a desired temperature window has been a daunting challenge facing engine manufacturers. Cummins' engineers Linsong Guo, Tim Frazier and Morgan Andreae developed variable geometry turbocharger and fuel injection strategies to control aftertreatment temperatures while optimizing fuel consumption and avoiding damaging engine conditions.

## **CONTROLLING DIESEL ENGINE EXHAUST TEMPERATURES**

Emissions reductions and associated aftertreatment systems required significantly improved controls compared to previous diesel engine control strategies. Jennifer Rumsey and Tom Dollmeyer were able to improve diesel fuel economy and reliability through their approach which used inverted virtual sensor technology.

Dan Baker, Steve Bellinger, Melissa Dye, John Mulloy, Pat Shook, Joan Wills and Steve Wills were honored for their contributions to develop robust and effective diesel particulate filter regeneration strategies. These technologies improved diesel fuel economy while assuring that the optimum particulate filter cleaning was obtained at the proper time.

## **PREVENTION OF CARBON DEPOSITS ON AFTERTREATMENT**

Carbon deposits can build up on the front surfaces of catalysts in diesel exhaust sometimes referred to as “face-plugging.” Conrad Simon and Tom Yonushonis were honored for the development of a novel inlet surface coating that aided in the removal of deposits at low temperature exhaust conditions.

## **ABOUT THE AWARD**

The prestigious Perr awards honor Dr. Julius Perr, who retired from Cummins in 1997 as Vice President – Fuel Systems. Dr. Perr, who died in 2005, joined Cummins in 1958 after fleeing Communist Hungary. He was named as the inventor or co-inventor of 80 U.S. patents.

# USING THE POWER OF NUMBERS TO REDUCE CO<sub>2</sub>

*Kevin Brittain started getting into efficient design while an engineering undergrad at the University of Evansville in Evansville, Indiana (U.S.A.). It wasn't until he came to Cummins, however, that he fully appreciated the connection between design efficiency and reducing carbon dioxide (CO<sub>2</sub>).*

Using sophisticated computer software, Brittain looks for ways to design high horsepower engines for trains, ships, large generators and more, so they make the most efficient use of raw materials without impacting the durability and dependability customers rely on.



***“We all have a role to play in achieving our mission that everything we do leads to a cleaner, healthier, safer environment. This is one way that our engineers can make an impact.”***

**KEVIN BRITTAIN**

Applied Mechanics Engineer – Technical Specialist

***The High Horsepower Structural Analysis Team has discovered ways to remove hundreds of pounds from high horsepower products, which can mean better fuel efficiency for customers while also reducing the need to mine additional raw materials. Team members pictured are based at the High Horsepower Tech Center in Seymour, Indiana.***

The team he works on, the High Horsepower Structural Analysis Team, has discovered ways to remove hundreds of pounds from high horsepower products, which can mean better fuel efficiency for customers while also reducing the need to mine additional raw materials. Better fuel efficiency reduces carbon dioxide (CO<sub>2</sub>), the primary greenhouse gas emitted through human activities.

“We all have a role to play in achieving our mission that everything we do leads to a cleaner, healthier, safer environment,” said Brittain, who is based at Cummins’ new high horsepower technical center in Seymour, Indiana. “This is one way that our engineers can make an impact.”

Brittain, an Applied Mechanics Engineer – Technical Specialist, relies on the power of numbers to do his job. He leads a global council within the company on something called Numerical Optimization, the use of mathematical calculations and related approaches to help engineers arrive at “better designs, faster.”

He joined Cummins about five years ago because he thought it offered the best opportunity to practice the subject of his master’s thesis at the University of Illinois, Topology Optimization, a major subset of Numerical Optimization at the company.

Brittain knew of Cummins’ reputation in engineering circles for Analysis Led Design, the use of powerful computer models to simulate, in this case,

the harsh environment inside an engine and how the engine works in real-world applications. Analysis Led Design allows engineers to test an almost limitless number of design variables before an engine ever uses a drop of fuel in a test cell.

Numerical Optimization makes Analysis Led Design more efficient by helping engineers choose the design elements most likely to succeed from those limitless options, significantly reducing design time. Brittain, for example, uses Topology Optimization to help determine where material needs to stay to maintain robustness and where it can be removed without affecting durability.

Any design, of course, will be tested extensively in a test cell to make sure it delivers under real-world conditions before it goes to the customer. But the chances for success are greatly enhanced by all the work that goes into that final design.

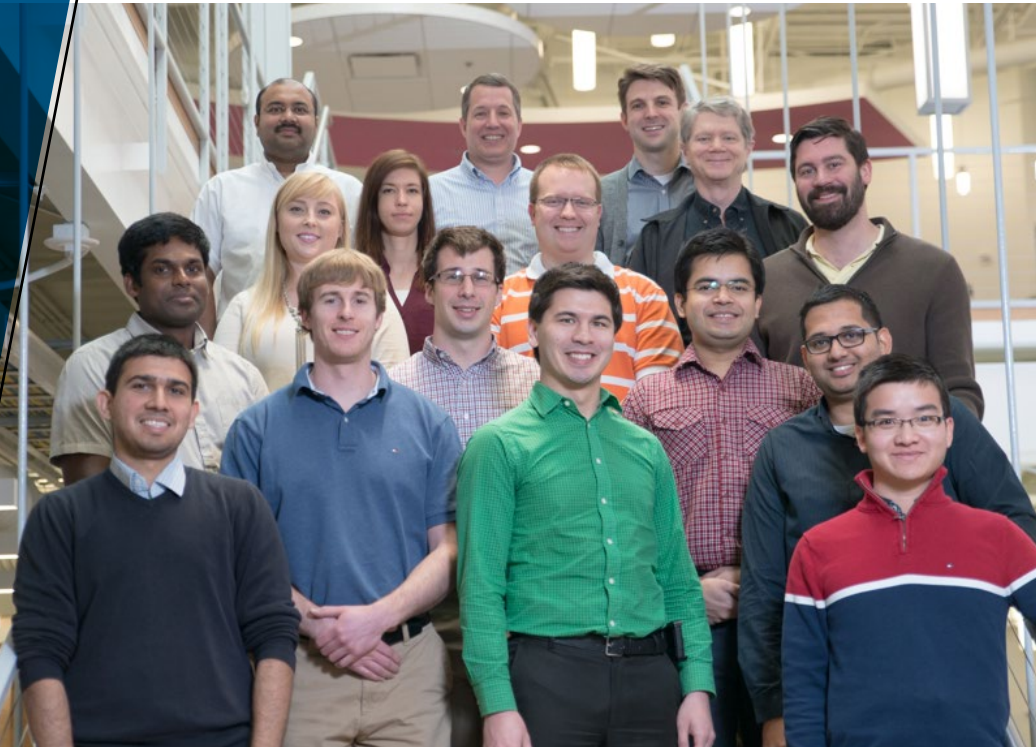
“Cummins is fortunate to have many engineers like Kevin who are helping the company reduce its carbon footprint in a

way that gives our customers the power they need to succeed,” said Madeleine Fogler, who led Cummins’ Design for Environment initiative until taking a new post at the company early in 2016.

***“The focus of Design for Environment is to reduce our product’s environmental impact by making informed decisions in the design phase,” she added. “Reducing material without compromising durability and reliability is one way to do that.”***

Brittain says he loves working on Cummins’ High Horsepower Structural Analysis Team.

“Our team is young, diverse and embraces new ideas and new methods,” he said. “We have members in the U.S., the U.K. and India and everyone has a passion for finding new ways to improve our products.”



# CUMMINS PUTS STOP-START TECHNOLOGY TO WORK FOR STANDARD BUSES

*Stop-start technology has been used in European cars dating back to the 1980s, and some say even longer. How hard could it be to bring the technology to standard buses, right?*

Cummins engineers Bill Cross and Bill Lamb have had it in their own cars for years and both say that experience helped them as part of the Cummins team bringing stop-start technology to standard buses in 2015.

They point out, however, that starting and stopping a bus engine requires a lot more torque than an automobile engine. Also, a London bus makes up to 50 stops per hour.

Over a 16-hour daily usage period, that comes to about 800 stops per day for a single bus, 5,000 stops per week and 20,000 stops per month.



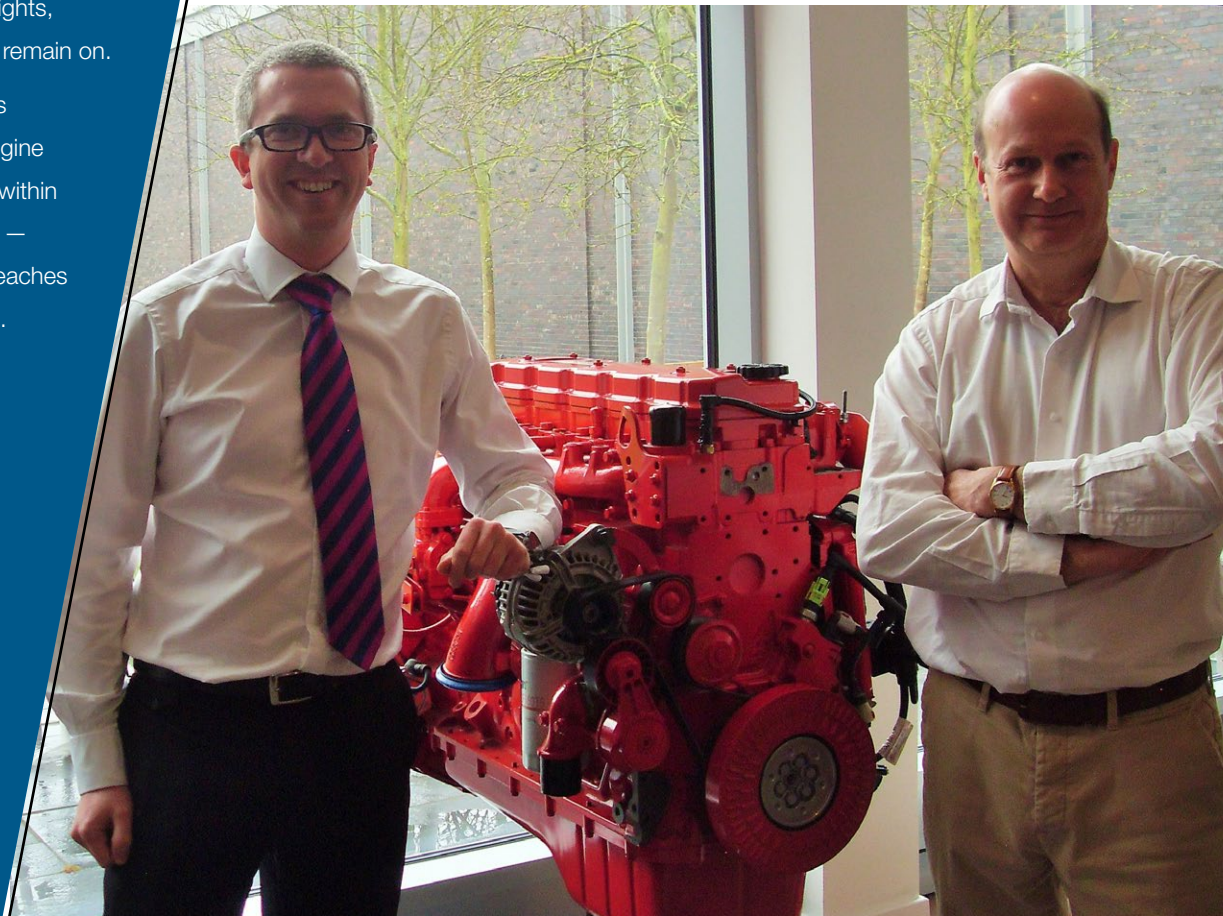
## HOW IT WORKS

*Stop-start technology saves fuel by shutting off the engine when the bus is stopped. Here's a quick explanation of how it works:*

- » When the bus comes to a stop, fuel flow is cut off and the engine cuts off, saving fuel.
- » Other bus systems – lights, ventilation fans, etc. – remain on.
- » When a driver releases the park brake, the engine automatically restarts within a fraction of a second — before the foot even reaches the acceleration pedal.

“The stops alone made by a standard bus without this technology really tests the engine over time,” said Cross, HMLD System Teams Technical Project Leader at Cummins’ Darlington Engine Plant in the United Kingdom. “When you are turning the engine off, then restarting it, the wear and tear is that much greater.”

Cummins unveiled in 2015 a new system for its ISB engines that brings the fuel economy benefits of stop-start technology to conventional buses. The technology, which saves fuel by shutting down the engine when a vehicle is at rest, had only previously been available on far more expensive diesel-electric hybrid buses.



The system for standard bus engines developed by Cummins engineers includes an upgraded starter motor capable of over 180,000 starts. Endurance tests show that more than 210,000 starts without a failure is possible.

“We have developed a system that delivers 4 to 7 percent fuel savings without significant operator investment needed and meets the durability requirements of city bus duty cycles,” said Kartik Ramanan, General Manager of Cummins Global Bus Engine segment, speaking at the 2015 Busworld Kontrijk, the preeminent bus trade show in Europe held every two years.

In addition to a more capable starter motor, hardware updates to the ISB Euro 6 engines include a new flywheel ring gear, new wiring, a new engine speed sensor, an updated fuel system and new crankshaft bearings.

Lamb, HMLD Systems Engineering Leader, points out the challenges go beyond merely starting and restarting the engine thousands of times to improve fuel efficiency.

The typical bus, for example, takes 1.5 seconds to get up to speed but because of traffic conditions in London, bus drivers typically have only 0.6 to 0.8 seconds to safely pull away from the curb.

“There’s a lot happening when a bus comes to a stop,” Lamb said. “It all has to be taken into account in designing a stop-start system that gets it back up to speed.”

The ISB engine software has been upgraded to manage the technology and provide flexible system architecture, enabling customers to tailor it to their operations.

Cummins’ launch fleet of 100 buses went into service in the fourth quarter of 2015. The fleet’s performance will be closely monitored to ensure the new system is achieving its expected savings.

Lamb and Cross say the project is truly an example of Cummins’ global reach, with engineers in the U.S. and U.K. playing critical roles since development started in 2011.

“I really believe this could be important globally as transit systems look for ways to reduce their carbon footprint and save money on fuel,” Lamb said.

# PROMOTING STEM AT A FORMER SUPERFUND SITE

*Editor's note: Innovation at Cummins isn't limited to the company's products and processes. Here's an example of one employee's creativity in helping build a stronger community.*

*Where others saw a decaying, 2,400-acre ammunition plant, closed for nearly 40 years, Cummins' Prad Pathirana saw an opportunity to introduce STEM – science, technology, engineering and math – to public school students.*

*And that's precisely what's happening now after the former plant, near Cummins Power Systems in Fridley, Minnesota (USA), was removed in 2015 from the Superfund list of the worst environmental sites in the United States.*

*Working with Pathirana and other Cummins employees, the Mounds View Public School District has turned the vacant space into a real-world, outdoor classroom, where students are performing environmental studies as public officials redevelop the former Twin Cities Army Ammunition Plant built in 1941.*



“It took Prad getting on board to push that into high gear and to look into other ways of getting involved in our district,” said Mindy Handberg, Executive Director of the Mounds View Schools Education Foundation.

## KEEPING THINGS MOVING

Pathirana kept the project moving forward with tasks, timelines and status meetings. Lab equipment fills the portable classroom trailer thanks to a grant from the Cummins Foundation that Pathirana pursued.

He engaged his co-workers along the way: Safety professionals performed a safety audit, and the sales team at nearby distributor Cummins NPower sized the trailer’s generator set. A group of employees volunteered to ready the trailer for students.

For Pathirana, the trailer represents the latest milestone since he joined the company’s Community Involvement Team four years ago, intent on building a relationship with the school district.

“I wanted to start small and do something that you could build up to,” said Pathirana, an Aftermarket VPI Lead for Cummins Power Generation.

He says it has been a team effort, crediting both school officials and his fellow employees. Pathirana and his co-workers ramped up activities with the district to get Cummins employees working alongside students, ranging from judging science fairs to building a LEGO model of a Cummins engine to starting a high school internship program.

During one meeting with school officials, Pathirana challenged district leaders to think about an environmental problem they could tackle together with the CIT, capitalizing on their mutual appetites STEM education.

The outdoor classroom project was born. It was a natural fit for Cummins. Nestled between Power Generation’s manufacturing plant in Fridley and its global headquarters in Shoreview, the Twin Cities Army Ammunition Plant was a staple in the community with 26,000 workers at peak production.

The plant closed in 1976 and was designated a U.S. Environmental Protection Agency (EPA) Superfund site a few years later.

## GETTING YOUTH INVOLVED

Developers want to include youth perspectives as they plan the commercial, retail, residential and green spaces they hope to develop at the site. Pathirana said that was critical to developing the outdoor classroom idea.

“Looking to the future, the site evolution into residential and urban development will provide multiple learning opportunities, where the students can feel like they are part of the plan,” Pathirana said. “This line of thinking is where we really came up with the outdoor classroom idea.”

More than 400 students have engaged in activities at the site during the 2015-16 school year, but Mounds View Science Coach Shane Wood said much more can be done.

“We haven’t come close to realizing all of the possibilities out there,” he said.



*Here’s a look at student activity at the site in the 2015-2016 academic year:*

**MORE THAN 450 STUDENTS**

have been on site from two high schools and three middle schools.

**MORE THAN 15 TESTING CAPABILITIES**

have been completed, from soil and water quality to animal populations, with more than 100 test samples taken.

# PREPARING FOR BETTER MARKETS AHEAD

*Cummins operates in cyclical markets around the world and inevitably the business faces periods of weak demand and reduced short-term earnings when global economic growth slows.*

Due to the company's financial strength, Cummins has been able to continue investing for future growth through tough economic times, emerging from the past two downturns with significantly improved financial performance and a stronger competitive position in a number of important markets.

Despite a challenging global economy in 2015, Cummins invested more than \$1.6 billion in capital, acquisitions, joint ventures and research and development in 2015 to position the company for future profitable growth when markets improve.



## RECORD RETURN

In 2015, Cummins returned a record \$1.5 billion or 74 percent of operating cash flow to shareholders by increasing the dividend per share 25 percent and repurchasing 7.2 million shares.

This compared to \$1.2 billion, or 52 percent of operating cash flow in 2014. In addition, Cummins Board of Directors approved a new \$1 billion dollar share repurchase program in November of 2015.

The company, for example, acquired three more of its distributors in North America in 2015, for a total of 10 distributor acquisitions over the past two years. Owning these distributors will enable Cummins to provide better customer service regardless of product type, ultimately driving more growth in key end markets in the long run.

During the acquisition process, the company successfully integrated more than 9,000 employees from the distributors it acquired without disrupting service and support to Cummins customers.

“We made significant progress in a number of our key initiatives in 2015, including gaining market share with our new products in China, successfully acquiring and integrating our North American distributors, improving the quality of our products and reducing material costs,” said Chairman and CEO Tom Linebarger.

“However, a combination of weaker end markets and a stronger U.S. dollar presented significant challenges to our performance,” Linebarger said. “As demand slowed in the third quarter (of 2015), we moved quickly to lower costs.”

## REPOSITIONING FOR THE FUTURE

Fourth quarter revenues of \$4.8 billion were down 6 percent compared to the same quarter in 2014, leading Cummins to reduce its workforce by about 2,000 positions through a combination of targeted restructuring and other staffing actions. The company also launched a number of initiatives within its manufacturing operations to reduce costs.

Cummins, for example, announced in February 2016 it would be reorganizing its manufacturing operations for power generation equipment, relocating over the next two years its generator set assembly operations from Kent in the United Kingdom, to Daventry in the U.K., Phaltan, India and Wuhan, China. The Kent site will be transformed into an important regional distribution and logistics center.

“The benefits of restructuring, material cost reduction initiatives and quality improvements combined with the launch of new and improved products in 2016 should position the company for stronger performance in the future despite the

challenges of a weak macroeconomic environment,” Linebarger said.

Revenue for all of 2015 was \$19.1 billion, 1 percent lower than in 2014. Sales increased 7 percent in North America, but international revenue declined 11 percent due to lower sales in Latin America, Europe and Asia Pacific.

Net income attributable to Cummins for the full year in 2015 was \$1.40 billion (\$7.84 per diluted share), or \$1.59 billion (\$8.93 per diluted share) excluding asset impairment charges and restructuring actions.

The company, however, generated operating cash flow of more than \$2 billion in 2015, the third straight year above \$2 billion, helping Cummins maintain an “A” credit rating from all three major credit rating agencies.

In April 2016, Cummins consolidated its high horsepower engine business with its power generation business. The two already had an interdependent relationship, with high horsepower providing many of the engines used in the company’s generators.

The new Cummins Power Systems will be more agile, streamlining the engineering process and capitalizing on the company’s scale advantage in supply chain and manufacturing to be faster to market and more cost competitive.

The company also centralized many of its customer service functions, and much of its product marketing to improve performance while finding efficiencies.

## UP TO THE CHALLENGE

Linebarger said all the moves in 2015 and early 2016 will leave Cummins well positioned for future success. It will take time, however, for markets to improve and finding greater efficiencies will continue to be important to the company throughout 2016.

“With a leaner cost structure and strengthened product and market positions, I’m confident Cummins will emerge as a stronger company when better markets return,” Linebarger said, “just as we have done following the last two downturns.”

**To learn more about the company’s financial performance, see Cummins Annual 10K Report at [investor.cummins.com](http://investor.cummins.com)**

KEY INDICATORS

Sales at Cummins in 2015 were down about one percent compared to 2014.

| FINANCIAL PERFORMANCE AT A GLANCE |                |                                       |
|-----------------------------------|----------------|---------------------------------------|
| YEAR                              | SALES          | NET INCOME<br>attributable to Cummins |
| 2015                              | \$19.1 billion | \$1.40 billion                        |
| 2014                              | \$19.2 billion | \$1.65 billion                        |
| 2013                              | \$17.3 billion | \$1.48 billion                        |
| 2012                              | \$17.3 billion | \$1.65 billion                        |
| 2011                              | \$18.1 billion | \$1.85 billion                        |

EXTERNAL SALES BY MARKET

| BUSINESS UNIT     | 2015           | 2014           | 2013           |
|-------------------|----------------|----------------|----------------|
| Engine            | \$7.54 billion | \$8.44 billion | \$8.27 billion |
| Distribution      | \$6.20 billion | \$5.14 billion | \$3.73 billion |
| Components        | \$3.75 billion | \$3.80 billion | \$3.15 billion |
| Power Generation* | \$1.63 billion | \$1.86 billion | \$2.15 billion |

\* In 2015, Cummins power business was called Cummins Power Generation. In 2016, it evolved into Cummins Power Systems.

DEBT RATING

| AGENCY                            | DEBT RATING | LAST UPDATE   |
|-----------------------------------|-------------|---------------|
| Standard & Poor's Rating Services | A+          | August 2014   |
| Fitch Ratings                     | A           | October 2015  |
| Moody's Investors Service Inc.    | A2          | December 2014 |



TOP SUPPLY CHAIN

For a fourth consecutive year, Cummins was recognized in 2015 as a Top 25 Supply Chain Company by Gartner, one of the world's leading information technology and advisory companies.

Cummins moved up one spot from 24 to 23, just ahead of Toyota and just behind L'Oreal. Other companies on the list included Amazon, McDonald's, Nike and Coca-Cola.

The ranking is based on financial performance and an evaluation of supply chain performance by industry peers and Gartner's analysts.

Cummins Supply Chain leaders, led by Lisa Yoder, Vice President – Global Supply Chain and Manufacturing, celebrated at a ceremony with Gartner officials in November of 2015.

# GUIDING EMPLOYEES TOWARD ETHICAL BEHAVIOR

*The company's Ethics & Compliance team plays a critical role in Cummins' sustainability, helping employees live the company's Integrity value, to "do what is right and what we say we will do."*

In 2015, Ethics & Compliance guided employees in many ways, ranging from reviewing the processes Cummins uses to screen suppliers at risk of violating the company's Supplier Code of Conduct to providing the necessary employee training to guard against bribery and conflicts of interest.

High on the group's list in 2016: updating the Company's Code of Business Conduct. Vice President of Ethics & Compliance Mark Sifferlen wants to make sure the code remains relevant to employees.

"People and circumstances change, so we have to continually do everything we can to help our employees understand the importance of ethical behavior," Sifferlen said.

## REVIEWING SUPPLIERS AND THIRD PARTIES

One of the major tasks undertaken by Ethics & Compliance in 2015 was to review thousands of Cummins suppliers to determine if the actions of any represent a legal or reputational risk to the company.

As a global corporation, Cummins relies on a number of external companies and vendors to sell and service its products, bid on business, obtain licenses and permits, and interact with officials to move products across borders. This group includes independent distributors and dealers, sales agents, consultants, customs brokers, and a number of other people – as many as 10,000 suppliers and third parties in all.

## CUMMINS CODE OF BUSINESS CONDUCT

Cummins Code of Business Conduct is built around 10 Ethical Principles to help make Cummins a sustainable company and a great place to work:

- 01 *We follow the law everywhere*
- 02 *We will embrace diverse perspectives and backgrounds and treat all people with dignity and respect.*
- 03 *We will compete fairly and honestly.*
- 04 *We will avoid conflicts of interest.*
- 05 *We will demand that everything we do leads to a cleaner, healthier and safer environment.*
- 06 *We will protect our technology, our information and our intellectual property.*
- 07 *We will demand that our financial records are accurate and that our reporting processes are clear and understandable.*
- 08 *We will strive to improve our communities.*
- 09 *We will communicate honestly and with integrity.*
- 10 *We will create a culture where employees take responsibility for ethical behavior.*

## CUMMINS SUPPLIER CODE OF CONDUCT

The Supplier Code of Conduct helps the company ensure that its doing business with other companies around the world sharing Cummins' values for sustainable practices. The Supplier Code of Conduct is built around seven principles:

- 01** *Suppliers must follow the law.*
- 02** *Suppliers must treat all people with dignity and respect.*
- 03** *Suppliers must do business fairly and honestly and avoid conflicts of interest.*
- 04** *Suppliers must protect the environment.*
- 05** *Suppliers must provide a safe and healthy working environment.*
- 06** *Suppliers must protect Cummins technology, information and intellectual property.*
- 07** *Suppliers must assist Cummins in enforcing the code.*

Ethics & Compliance put a special focus in these areas and used screening agencies, which have their own databases based on court records, media reports and other documents, to conduct an initial review. In a few cases, "boots on the ground" research was required to resolve questions. The team prioritized the results and put together remedial action plans where necessary, but in general didn't find many critical issues.

It did, however, conclude that it was much easier to screen companies before they became a supplier to Cummins than to review them after the fact.

To learn more, Ethics & Compliance worked with the company's Law Department, which has its own review system, and Cummins' Indirect Purchasing Department, which also has a screening process. Each process had its merits but the three groups generally agreed that improvements could be made. They are working together in 2016 to make changes.

## SUPPLIER CODE OF CONDUCT

Cummins' Supplier Code of Conduct applies to all businesses that provide products or services to Cummins and its subsidiaries, joint ventures, divisions or affiliates.

Available in 15 languages, the supplier code is built around seven principles and helps Cummins ensure that it is doing business with other companies around the world that share its values for sustainable practices.

All new suppliers receive a copy of Cummins' Supplier Code of Conduct and the company encourages them to adopt it. If the supplier already has a code that at least meets Cummins' minimum requirements, it sometimes is allowed to use its existing code.

Cummins' top suppliers, who collectively receive about 80 percent of the company's total spending, are required to certify their intent to comply with Cummins' Supplier Code of Conduct.

The company in 2016 is working to make available to suppliers Cummins' policies relevant to the supplier code to help drive home the code's importance to Cummins.

## TRAINING

Cummins uses a comprehensive compliance training program to ensure employees understand the Code of Business Conduct and company policies that support the code's **10 ethical principles**. The training program also emphasizes to employees the important role they play in enforcement of the code. Employees can report any problems they see on line or via a toll-free hotline – anonymously where permitted by law.

Using the Cummins Learning Center, Ethics & Compliance can target specific professional and administrative employee groups with the training most important to them and their

## POWERING WHAT'S NEXT

### UPDATING THE CODE

The most urgent item on the Ethics & Compliance priority list in 2016 is updating Cummins' Business Code of Conduct.

It's been three years since the code was refreshed and Vice President for Ethics & Compliance Mark Sifferlen says there are a lot of new employees at the company. In addition, Cummins has undergone a lot of changes, especially in the first quarter of 2016.

"These are important developments at our company that will make us stronger when better markets return," he said. "But we want to make sure our employees around the world continue living our Values consistent with our Vision and Mission and our Business Code of Conduct."

He doesn't expect significant changes to the code principles but he wants to make sure it remains relevant to employees no matter where they are based or how long they have been with the company.

job function. The employees receive an email when it is time to take an appropriate ethics training and then the training is delivered on line.

More than 15 courses are offered as part of the company’s compliance training, ranging from Anti-Bribery to Careful Communications and Treatment of Each Other at Work.

Both the Code of Business Conduct and the Treatment of Each Other at Work trainings start with classroom sessions for new employees as part of the Cummins OnBoarding program.

ENFORCEMENT

An annual certification process requires Cummins employees to certify their compliance with the Business Code of Conduct and the policies supporting it, and report any exceptions to the company.

In 2015, 20,577 employees and officers, including all members of the Board of Directors, completed the annual Ethics Certification. That compares to 18,979 in 2014. Internal Audit and the Cummins legal staff reviewed any exceptions to ensure they were documented and investigated.

The process was altered in 2015 to enable employees who wanted to learn more about a particular principle to get a more in-depth explanation including a look at the relevant company policies. The Ethics & Compliance staff is exploring whether it needs to increase its education efforts in areas where more information was frequently requested.

Training and agreeing to follow the code, however, is not enough. A team of Master Investigators located around the world investigate reported violations to the Code of Conduct.

COMPLIANCE TRAINING

*Thousands of employees receive ethics and compliance training every year at Cummins. These figures are accumulated enrollments of active employees since 2005, when the oldest courses were first offered. The completion rates reflect the number of completions by the end of the first quarter of 2016. The Ethics and Compliance team released Data Privacy and Export Compliance 2016 training courses in the first quarter of 2016.*

| TRAINING  | ENROLLED | COMPLETE | PERCENT COMPLETE |
|---|----------|----------|------------------|
| Anti-Bribery                                      | 28,789   | 28,155   | 98 percent       |
| Anti-Bribery Refresher                            | 27,545   | 25,472   | 92 percent       |
| Careful Communications                            | 27,551   | 27,087   | 98 percent       |
| Code of Business Conduct (refresher)              | 24,154   | 22,515   | 93 percent       |
| Conflicts of Interest                             | 756      | 651      | 86 percent       |
| Data Privacy                                      | 7,726    | 6,373    | 82 percent       |
| Doing Business Ethically*                         | 27,575   | 27,094   | 98 percent       |
| Export Compliance                                 | 16,579   | 16,165   | 98 percent       |
| Export Compliance 2016                            | 28,015   | 14,075   | 50 percent       |
| Treatment of Each Other at Work (refresher)       | 23,366   | 21,903   | 94 percent       |
| Fair Labor Standards                              | 592      | 585      | 99 percent       |
| Payment Card Industry Data Security               | 5,175    | 3,405    | 66 percent       |
| Code of Business Conduct (initial classroom)      | 51,863   | 49,694   | 96 percent       |
| Treatment of EachOther at Work (initial classroom | 51,863   | 49,541   | 96 percent       |



# PROTECTING THE INTERESTS OF SHAREHOLDERS

*Cummins' Board of Directors is responsible for exercising sound and independent judgment regarding significant strategic and operational issues at the company while representing and protecting the interests of Cummins' shareholders.*

The board currently consists of 10 directors, including nine independent directors consistent with the definition established by the U.S. Securities and Exchange Commission. Chairman and CEO Tom Linebarger is the only Cummins employee on the board. All directors are elected annually.

The board reflects the company's commitment to diversity, including two women, an African-American and two Latino men within its ranks. Regular meetings are typically scheduled five times per year and special meetings are held as required. Directors are expected to attend all meetings.

# CUMMINS BOARD OF DIRECTORS



**ROBERT J. BERNHARD**

Vice President for Research and Professor of Engineering at the University of Notre Dame. He joined the Board in 2008.



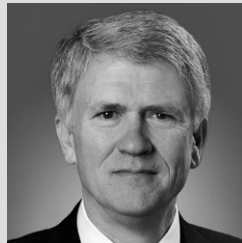
**DR. FRANKLIN R. CHANG DIAZ**

Chairman and CEO of Ad Astra Rocket Company, a U.S. spaceflight engineering company. He joined the board in 2009.



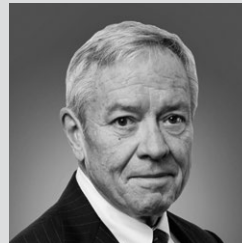
**BRUNO DI LEO**

Senior Vice President, Sales and Distribution, IBM Corporation, a global technology and consulting company. He joined the board in 2015.



**STEPHEN B. DOBBS**

Retired Senior Group President of Fluor Corporation, which offers engineering, construction and project management services. He joined the board in 2010.



**ROBERT K. HERDMAN**

Managing Director of Kalorama Partners, LLC, a consulting company. He joined the board in 2008.



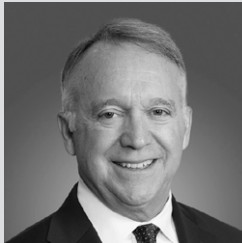
**ALEXIS HERMAN**

Chairman and CEO of New Ventures, LLC, a consulting company. She joined the board in 2001 and serves as its lead director.



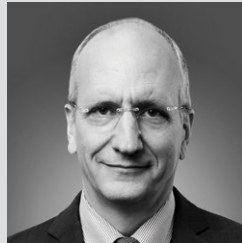
**N. THOMAS LINEBARGER**

Chairman and CEO of Cummins Inc. He joined the board in 2009.



**THOMAS J. LYNCH**

Chairman and Chief Executive Officer, TE Connectivity, a world leader in connectivity and sensor solutions. He joined the Board in 2015.



**WILLIAM I. MILLER**

President of the New York-based Wallace Foundation focused on K-12 education and the arts. He joined the Board in 1989.



**GEORGIA R. NELSON**

President and CEO of PTI Resources, LLC, an independent consulting firm. She joined the Board in 2004.

## GOVERNANCE

Directors are required to notify the board’s Governance and Nominating Committee prior to joining another public company board. Directors may not sit on more than four other public company boards in addition to Cummins’ Board of Directors, without approval from the Governance and Nominating Committee.

Under the company’s Corporate Governance Principles, the board has the freedom to determine the chairman and CEO based solely on what it believes is in the best interest of the company and its shareholders. Currently, the board believes it is in the best interests of the company for the roles of chairman and CEO to be combined and to appoint a lead director from among the independent directors. The Board of Directors reviews this decision annually.

Cummins’ board has five standing committees in addition to the Governance and Nominating Committee:

- » Audit Committee
- » Compensation Committee
- » Executive Committee

- » Finance Committee
- » Safety, Environment and Technology Committee

Cummins complies with all New York Stock Exchange and regulatory requirements concerning membership of certain committees.

The company’s Internal Audit function provides board members and senior leaders independent and objective information on the performance of the company.

Luther Peters, Vice President – Internal Audit, reports to the board’s Audit Committee. In 2015, the Internal Audit group published 87 audit reports and memos.

To ensure management has addressed and identified risks and implemented corrective action, Internal Audit has a formal follow-up process. The responsible business or function leader must present a corrective action plan to the Audit Committee of the Board of Directors when a function or business receives an “unacceptable” audit grade.

# ERM TURNS FOCUS TO 74 KEY SITES

*Cummins believes aggressive risk management is a key step toward sustainability.*

Identifying and addressing risk helps the company continue operating as efficiently and profitably as possible in the face of challenges. Sometimes, effective risk management can also determine additional opportunities for success.

With the completion of Business Continuity Plans at every Cummins site (more than 500 in all) around the world in 2015, the company's Enterprise Risk Management function focused its attention on 74 locations deemed critical to Cummins' operations.

Cummins' Risk Insurance team sponsored a Six Sigma project to identify sites critical to the company's continued operation. Senior leaders affirmed the selection of these sites as key to Cummins' on-going profitability.

Several of the 74 have undergone "stress tests," table-top exercises simulating any number of real world emergencies to assess their continuity plans. Cummins' locations in Charleston, South Carolina (USA) area, for example, underwent a stress test in 2015 that included localized flooding as one potential emergency.

Just a short time later, Cummins sites in the Charleston area experienced actual flood conditions and reported an improved response thanks to the table-top exercise they had undergone just a short time earlier.

"It's really important to work through the gaps and redundancies so you have the right people in the right places when something happens," said Bindu Yadlapalli, Director – Enterprise Risk Management in the Corporate Strategy Department. She said more stress tests are planned in 2016.

Enterprise Risk Management has other responsibilities at Cummins. In 2015, the team executed a risk assessment that involved key leaders across the company.

The objective of the risk assessment was to provide the Board of Directors, the Cummins Leadership Team and other key stakeholders with an enterprise view of significant business risks that could adversely affect Cummins' ability to achieve operational and strategic objectives.

The risk assessment accomplished three important objectives:

- » Developing a common definition and understanding of key business risks that are inherent to Cummins' operations and could damage the company.
- » The creation of a framework to evaluate risks consistently across business units and functional areas, which allowed for a company-wide prioritization of risks and risk responses.
- » Recognition of the company's risk management capabilities and controls already in place to effectively prevent risks from materializing or to minimize the impact of risk events.

Risk Management also streamlined the dashboard used by the company's Board of Directors to meet its oversight responsibilities at Cummins. The team also worked to eliminate any redundancies with Global Security and Risk Insurance, ensuring both alignment and efficiency.

Working with Corporate Security and Corporate Communications, Risk Management also helped with the company's response to the Ebola outbreak in Africa, and the unit worked with Corporate Security to update Cummins' health policy to make sure Cummins sites had everything they needed to respond appropriately.

## RISK AND THE ENVIRONMENT

Environmental risks are considered by Cummins sites as part of their risk management efforts.

Water is a key consideration. Thirty sites in nine countries listed water – ranging from utilities failure to water supply interruption – as a significant potential risk.

These sites also identified potential mitigation plans in the event there was a water-related disruption.

# GLOBAL SECURITY EMPHASIZES SAFE BEHAVIORS

*The Global Security team has supported company employees, travelers and expatriates for the past five years through the Cummins Response Center (CRC).*

The CRC is a 24/7 resource for travel, security and medical support. As the global security climate has become increasingly dynamic, Cummins recognizes that securing its people and assets is a team effort that requires commitment from every employee.

In response, Cummins Global Security has launched a behavior change initiative to highlight three security behaviors that all employees can adopt to further increase Cummins' security posture.

The behaviors include:

- 01** Displaying their identification badge when on Cummins property.
- 02** Appropriately classifying documents by their level of confidentiality.
- 03** Reporting all security concerns to site security or the Cummins Response Center.

"It is important that all employees become active participants for a more secure Cummins and adopt these behaviors," said Shelley Stewart, Executive Director of Global Security, Facilities, Aviation and Hospitality.

The behaviors were identified by a global team of security experts to ensure the behavior change initiative would be impactful and applicable across the enterprise.

With the launch of the behavior change initiative, employees will receive training on how to exhibit these behaviors as well as guidance on other security behaviors that can be adopted.

# GOVERNMENT RELATIONS AND POLITICAL ACTIVITY

*Cummins' Government Relations employees work around the world on issues that have a significant impact on both the company and the communities where it does business. The team focuses on energy policy, environmental standards and enforcement, taxes, trade, transportation, education and more.*



Cummins maintains an office in Washington, D.C. (U.S.A.), but with more than 40 percent of the company's sales coming from outside the United States, the company also has government relations employees in China, South America, India and Russia.

The government relations team works to ensure Cummins' voice is heard by government policymakers across the globe. For example, the company works extensively across multiple countries and regions to promote, protect and enforce global emissions standards, and supports government efforts to establish greenhouse gas and fuel consumption standards for commercial vehicles.

Cummins' Government Relations staff also works to foster greater international

cooperation and understanding among the various countries where the company operates. Cummins has hosted international visitors to its headquarters in Columbus, Indiana (U.S.A.), and other sites. The company also hosts U.S. and other government visits at its international sites to encourage best practice sharing on issues like emissions enforcement, development of fuel efficiency standards, and industrial efficiency through combined heat and power projects.

The Government Relations team is also working to improve Cummins communities in the U.S. and globally by supporting efforts to expand access to quality education and training as well as opposing legislation that would impact diversity and fair treatment for all employees.

MEMBERSHIPS

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 both 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.

The following is a list of U.S. trade organizations to which Cummins paid dues in excess of \$50,000 during calendar year 2015 and the U.S. Chamber of Commerce, which fell below the \$50,000 threshold.

Listed with each entity is Cummins’ estimation of the portion of these dues used by each organization for lobbying or other political expenditures.

The American Trucking Association

\$13,428.24

The Business Roundtable

\$82,500.00

The Diesel Technology Forum

\$127.00

The Engine Manufacturers Association

\$9,592.00

The National Association of Manufacturers

\$36,386.55

U.S. Chamber of Commerce

\$8,750.00

CORPORATE CONTRIBUTIONS

Cummins bans contributions using corporate funds to candidates, political parties and independent expenditures, including advertisements that support or oppose individual candidates.

The company also will not use corporate funds to contribute to 501 (c) (4) and 527 tax-exempt groups in the United States that are engaged in political activity or make payments to influence ballot issues unless the contribution or payment advances an issue directly tied to the company’s core values and business interests.

In those cases, Cummins is committed to publicly disclosing any payments including recipient names and amounts.

POLITICAL ACTION COMMITTEE

In the United States, political contributions are made by the Cummins Inc. Political Action Committee (CIPAC), funded solely by voluntary employee contributions.

CIPAC makes contributions to federal and state candidates on a bipartisan basis after review and approval by CIPAC’s Executive Committee and according to federal and state election law.

For a complete list of the political action committee’s contributions to candidates, go to [www.fec.gov](http://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.

# CONTRIBUTORS

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