CATERPILLAR®

BUILDING **BETTER**

2016 SUSTAINABILITY REPORT

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ABOUT THE COVER:
Great Lakes Dredge & Dock Company restoring beaches as part of Hurricane Sandy recovery efforts

TO OUR **STAKEHOLDERS**

FOR MORE THAN 90 YEARS, CATERPILLAR HAS BEEN BUILDING BETTER: BETTER LIVES, BETTER COMMUNITIES AND, ULTIMATELY, A BETTER WORLD. OUR CUSTOMERS USE OUR EQUIPMENT TO DEVELOP INFRASTRUCTURE, ENERGY AND NATURAL RESOURCE ASSETS THAT IMPROVE LIVING STANDARDS AND MAKE SUSTAINABLE PROGRESS POSSIBLE AROUND THE WORLD.

JIM UMPLEBY
Chief Executive Officer

Our dedication to building better is stronger than ever. Caterpillar, our customers and dealers are investing to help address the world's persistent challenges, such as resource and energy scarcity, poor sanitation, unsafe water and poverty. This year's report covers efforts in several of those areas. I'll highlight a few in this letter.

NATURAL INFRASTRUCTURE

Cat® products build infrastructure – roads, dams, airports and schools – that support local, regional and national economies. Cat products are also at work restoring *natural* infrastructure – forests, prairies, farmlands, wetlands and coastal landscapes – that are essential for healthy economies, societies and environmental preservation.

Natural infrastructure removes carbon from the atmosphere and returns it to the earth as a valuable component of soils, plants and ecosystems. That returns land to a more healthy state, and when land is healthy, it's productive for farming, recreation and many other uses.

Unfortunately, much of the world's natural infrastructure has been lost or degraded.

We're helping reverse this in three ways. First, our customers use Cat products and solutions at restoration job sites. Second, our company and the Caterpillar Foundation fund and support restoration projects. Third, we're collaborating with public and private partners to raise awareness and advocate for policies that support natural infrastructure restoration.

CIRCULAR ECONOMY PRACTICES

Through remanufacturing and rebuilding our used machines and components, we are also an active participant in the circular economy. Every year, we extend the life of Cat equipment and components and divert millions of pounds of end-of-life material away from landfills.

Cat Reman recovers materials and restores engines and components to same-as-when-new specifications. These solutions are a win-win-win for our customers, the environment and Caterpillar.

We've been supporting the circular economy for decades. We're committed to making these practices available to as many customers in as many countries as possible.

ENERGY ACCESS

Availability and access are also major sustainability goals for our energy businesses. We know affordable and dependable energy is essential for economic prosperity, growth and security, and we've been a leader in developing products to address these needs.

For example, we provide solutions that include combined heat and power, waste to energy, landfill gas to energy, coal mine methane to energy, and more. We're also excited about the potential to bring a host of new innovations in renewable energy technologies for applications in both developing and developed regions.

A BETTER CATERPILLAR

As we contribute new solutions to solve global problems, we're always working to be a better company. We've made progress, but know there is always room to improve. That's why we are committed to safety, diversity and inclusion improvements for our employees, and sustainability practices in what we manufacture and how we manufacture it.

In 2016, we moved forward on these fronts in meaningful ways:

- We lowered our recordable injury frequency rate to 0.50, a 92 percent improvement since 2003.
- We reduced absolute greenhouse gas emissions from our operations by 7 percent from 2015.
- We set targets to increase the number of women to nearly a third of our workforce and 25 percent of our leadership by 2022.
- The Caterpillar Foundation invested $36.8 million dollars in global communities in 2016.

Our stakeholders can count on us to keep working to build a better world. It's fundamental to our values, and who we are as a company and a global team.

Jim Umpleby
Chief Executive Officer

Sustainability at Caterpillar

CATERPILLAR **AT-A-GLANCE**

$38.5B
2016 Consolidated Sales and Revenues

59%
Sales and Revenues Outside U.S.

3M+
Products at Work Around the World

172
Global Cat® Dealers

470,000
Connected Assets

95,400
Employees

PRODUCTS

- Construction Equipment
- Mining Equipment
- Diesel & Natural Gas Engines
- Industrial Gas Turbines
- Diesel-Electric Locomotives

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

- 17-Year Member
- 2015 Industry Mover

VISION

A world in which all people's basic needs – such as shelter, clean water, sanitation, food and reliable power – are fulfilled in a sustainable way and a company that improves the quality of the environment and the communities where we live and work.

MISSION

Enable economic growth through infrastructure and energy development, and to provide solutions that support communities and protect the planet.

STRATEGY

We provide work environments, products, services and solutions that make safe, productive and efficient use of resources as we strive to achieve our vision.

We apply innovation and technology to improve the sustainability performance of Caterpillar's products, services, solutions and operations.

We believe sustainable progress is made possible by developing better systems that maximize life cycle benefits, while also minimizing the economic, social and environmental costs of ownership, as reflected in our sustainability principles.

We will execute our strategy by working to meet our aspirational sustainability goals.

Learn more about our sustainability principles

SUSTAINABILITY PRINCIPLES

Prevent Waste (Improve Safety, Efficiency and Productivity)

Improve Quality (Team, Community, Environment and Operations)

Develop Better Systems (Innovate)

HOW CATERPILLAR SUPPORTS THE U.N. SUSTAINABLE DEVELOPMENT GOALS

CATERPILLAR® SUSTAINABLE DEVELOPMENT GOALS

As the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives, at Caterpillar, we support sustainable development around the world. That is why we are working toward the 17 United Nations Sustainable Development Goals (SDGs), put forth in September of 2015, as a part of our corporate sustainability strategy.

1 NO POVERTY
- Work toward alleviating extreme poverty through the Caterpillar Foundation
- Help provide energy access to the developing world

2 ZERO HUNGER
- Champion programs that support providing all people with 'Basic Human Needs' through the Caterpillar Foundation
- Support programs to restore Natural Infrastructure

3 GOOD HEALTH AND WELL-BEING
- Prepare for disaster response efforts
- Provide back-up power for communities and hospitals

4 QUALITY EDUCATION
- Champion programs that support education through the Caterpillar Foundation
- Encourage Caterpillar employees to volunteer as mentors through Junior Achievement and other school programs

5 GENDER EQUALITY
- Support the Caterpillar Foundation's ToGetHERstronger campaign
- Support the Caterpillar Women in Leadership initiative

6 CLEAN WATER AND SANITATION
- Champion programs that support providing all people with 'Basic Human Needs' through the Caterpillar Foundation

7 AFFORDABLE AND CLEAN ENERGY
- Create alternative energy infrastructure including combined heat and power (CHP) technology, microgrids and biofuels
- Provide clean cook stove grants through the Caterpillar Foundation

8 DECENT WORK AND ECONOMIC GROWTH
- Maintain our core business of fostering economic development through infrastructure
- Continue to focus on Human Rights throughout all aspects of our business

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
- Support programs to restore Natural Infrastructure
- Maintain our core businesses of Construction Industries, Energy & Transportation and Resource Industries
- Invest in Research & Development
- Engage in innovative partnerships such as Uptake, XPRIZE and NASA Maker Faire

10 REDUCED INEQUALITIES
- Advocate for immigration
- Develop local workforces
- Promote global trade agreements

11 SUSTAINABLE CITIES AND COMMUNITIES
- Support programs to restore Natural Infrastructure

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- Offer remanufacturing and rebuild solutions
- Continue to focus on Human Rights throughout all aspects of our business
- Responsible sourcing of conflict minerals used in our products
- Remove hazardous materials from our supply chain

13 CLIMATE ACTION
- Help our customers achieve fuel efficiency gains, worksite efficiency and operational productivity
- Reduce our own operational GHG emissions

14 LIFE BELOW WATER
- Support programs to restore Natural Infrastructure

15 LIFE ON LAND
- Support programs to restore Natural Infrastructure

16 PEACE, JUSTICE AND STRONG INSTITUTIONS
- Implement our worldwide Code of Conduct across all of our operations
- Continue to focus on Human Rights throughout all aspects of our business

17 PARTNERSHIPS FOR THE GOALS
- Engage with stakeholders through global government affairs

STAKEHOLDER **ENGAGEMENT**

A KEY ELEMENT OF CATERPILLAR'S SUSTAINABILITY STRATEGY IS ENGAGEMENT WITH STAKEHOLDERS. ENGAGEMENT IS UNDERTAKEN ON A NUMBER OF LEVELS AND ACROSS A RANGE OF TOPICS AND ISSUES AS WELL AS WITHIN FUNCTIONAL AREAS.

Our **External Sustainability Advisory Board** is composed of experts from academia, industry and nongovernmental organizations. This group examines the concept of sustainability broadly and, more specifically, as it relates to topic areas that we have identified as important to Caterpillar and its stakeholders. The Advisory Board provides input and counsel on enterprise sustainability strategy, opportunities and challenges, emerging issues in sustainability, progress in implementation and public reporting.

In addition to providing feedback and counsel throughout the year, these experts have provided their comments on Caterpillar's sustainability report and progress toward achieving our aspirational goals.

Internally, the **Caterpillar Sustainability Steering Committee** provides guidance and support for our internal sustainability initiatives. This group is comprised of leaders from a number of business units, particularly focused on responsibilities that cross multiple divisions.

In 2016, Caterpillar launched an internal **Sustainability Advocates** program. This grassroots effort encourages all employees to learn more about sustainability at Caterpillar, share information and ideas with colleagues, provide feedback and input, and embed sustainability principles into everything we do.

Stakeholder engagement is also managed through our various business units, which is demonstrated throughout this report. We communicate with and obtain feedback from stakeholders through a variety of means, including surveys, in-person interactions, trade organizations and others.

EXTERNAL **SUSTAINABILITY ADVISORY BOARD**

▶ AIDAN DAVY
Chief Operating Officer, International Council on Mining & Metals

▶ STUART L. HART
S.C. Johnson Professor Emeritus, Cornell University; President, Enterprise for a Sustainable World; Steven Grossman Chair in Sustainable Business, Grossman School of Business, University of Vermont

▶ THOMAS LOVEJOY
University Professor of Environmental Science and Policy, George Mason University; Senior Fellow, United Nations Foundation

▶ KEVIN MCKNIGHT
Sustainability Consultant, former Chief Sustainability Officer and Vice President for Alcoa and Arconic

▶ WILLIAM R. MOOMAW
Professor, Center for International Environment and Resource Policy, the Fletcher School, Tufts University

▶ STEVE SKERLOS
Thurnau Professor of Mechanical Engineering, Director of Sustainability Education Programs, University of Michigan

▶ LEENA SRIVASTAVA
Vice Chancellor, TERI University

AFFILIATIONS & **INVESTMENTS**

Caterpillar Inc., our subsidiaries and the Caterpillar Foundation work with diverse organizations in order to advance economic, environmental and social issues and share best practices across industries. Our affiliations and investments include:

- Business Council for Sustainable Energy
- Business Roundtable
- Canada's Oil Sands Innovation Alliance
- Conflict-Free Sourcing Initiative
- Diesel Technology Forum
- Energy Technologies Institute
- Remanufacturing Industries Council
- U.S. Green Building Council
- Woody Biomass Coalition
- World Resources Institute

The Caterpillar Foundation invests with these organizations, and others, to support programs that are focused on alleviating poverty:

- American Red Cross
- Charity: water
- Feeding America
- Global Poverty Project
- International Youth Foundation
- Local Initiative Support Corporation
- ONE Campaign
- Opportunity International
- The Nature Conservancy
- United Nations Foundation
- United Way
- Water.org

Learn more about the Caterpillar Foundation

FOCUS AREAS

AS PART OF OUR WORK IN SUSTAINABLE DEVELOPMENT, WE HAVE IDENTIFIED A SET OF FOCUS AREAS THAT INTERSECT WITH OUR BUSINESS ON A DAILY BASIS AND THAT GUIDE OUR THINKING AS WE MAKE DAY-TO-DAY BUSINESS DECISIONS.

Many of these areas are associated with our 2020 aspirational, operational and product stewardship goals, while others represent areas impacting our long-term business and that are important to our various stakeholders. These focus areas were originally identified and validated as part of an assessment in 2014 and have been further refined, based on stakeholder input, over the past two years. This assessment process included:

IDENTIFICATION

A total of 35 sustainability topics were identified and surveyed, covering environmental, social and governance considerations, based on our existing strategy and goals, peer reviews and criteria in external indices and frameworks, such as the Dow Jones Sustainability Index and the Global Reporting Initiative.

EVALUATION

Survey results were discussed in a workshop that included our External Sustainability Advisory Board, as well as several Caterpillar vice presidents, selected Caterpillar leaders with sustainability responsibilities, our Sustainable Development team and our chairman and CEO. Insights gained from the workshop were combined with the survey results to refine and prioritize "material" topics. These topics inform and direct future activities for strategic improvements.

PRIORITIZATION

Stakeholders universally agreed that all 35 topics identified were important, but identified several "material" topics as among the most important to manage on a continuing basis.

ASSESSMENT

The engagement process included a survey of more than 100 customers, employees, shareholders, dealers, suppliers, nongovernmental organizations, trade organizations and academia to identify the sustainability topics most influential to them in their decisions about Caterpillar. Internally, we surveyed Caterpillar executive officers, vice presidents and other key personnel to obtain insight from our strategic leaders as to the sustainability topics most important to the success of our business.

FOCUS AREAS

FOCUS AREA	"MATERIAL" TOPICS INCLUDED WITHIN THIS FOCUS AREA
Caterpillar People	Employee occupational health and safety
Operational Impact	Energy efficiency, greenhouse gas, water and waste management
Product Stewardship	Innovation management, customer safety, energy efficiency and air emissions and life cycle product development
Value Chain	Dealer network
Governance and Ethics	Business ethics and core values, business strategy, financial performance of the enterprise, energy & climate policy and human rights

GOALS & **PROGRESS**

Caterpillar has set aspirational, long-term goals for its operations and product stewardship. We believe these standards affirm our determination to lead our industry to a more sustainable future. Intensity-based goals are measured against company sales and revenues, and a decline in sales and revenues in 2016 directly affected our progress toward these goals. Nevertheless, we continued to focus on efficiency improvements, and these efforts contributed to year-over-year performance gains in these areas in 2016 when measured on an absolute basis.

2020 **OPERATIONAL GOALS**

92%

We have improved our Recordable Injury Frequency rate by 92% from our 2003 base year and 15% from our last reporting period.

94%

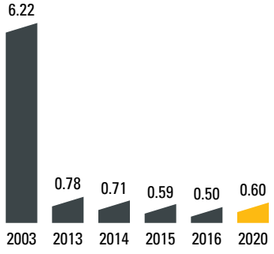
We have improved our Lost-Time Frequency Rate by 94% from our 2003 base year and 5% from our last reporting period.

SAFETY GOAL

Reduce our recordable workplace injury rate to 0.6 and lost-time injury case rate to 0.15 by 2020.

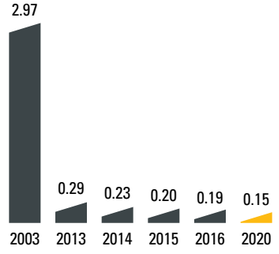
Recordable Injury Frequency (RIF)

Recordable injuries per 200,000 hours worked



Lost-Time Case Frequency Rate (LTCFR)

Work-related injuries resulting in lost time per 200,000 hours worked

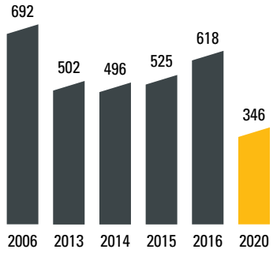


ENERGY GOAL

Reduce energy intensity by 50 percent from 2006 to 2020.

Energy Intensity[6]

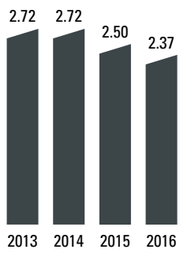
Absolute gigajoules energy use/ million dollars of revenue



Operational energy intensity decreased 11 percent from 2006 to 2016. In addition, our absolute energy consumption decreased 4 percent from 2015 to 2016.

Total Electricity Consumption

Sum of purchased and self-generated electricity in million MWh



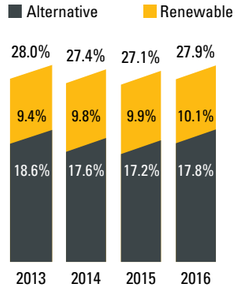
Total electricity consumption, including both purchased and self-generated electricity, decreased 5 percent from 2015 to 2016.

RENEWABLE ENERGY GOAL

Use alternative/renewable sources to meet 20 percent of our energy needs by 2020.

Alternative/Renewable Energy[1,2,3]

Sum of alternative and renewable electrical energy use/total electrical use x 100



In 2016, 27.9 percent of our electrical energy was from renewable or alternative sources.

⇩17%

ENERGY CONSUMPTION
Absolute energy reduction 2006-2016

⇩29%

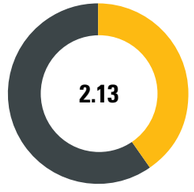
TOTAL ABSOLUTE GHG EMISSIONS
Absolute GHG emissions reduction 2006-2016

GHG EMISSIONS GOAL

Reduce greenhouse gas emissions intensity by 50 percent from 2006 to 2020.

Total Absolute GHG Emissions[4]

Million metric tons

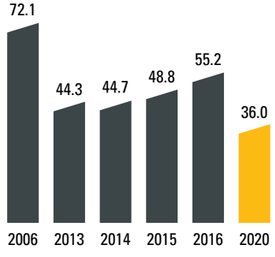


- 0.863 million metric tons Scope 1 GHG emissions (direct emissions)
- 1.265 million metric tons market-based Scope 2 GHG emissions (indirect emissions from purchased electricity, heat or steam)

1.314 million metric tons location-based Scope 2 emissions[5]

GHG Emissions Intensity[4]

Absolute metric tons of CO2e/ million dollars of revenue



Through 2016, Caterpillar has reduced GHG emissions intensity from our facilities by 23 percent compared with our 2006 base year. From 2015 to 2016, our absolute GHG emissions decreased 7 percent.

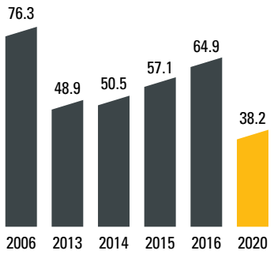
2020 **OPERATIONAL GOALS** *(Continued)*

WATER GOAL

Reduce water consumption intensity by 50 percent from 2006 to 2020.

Water Consumption Intensity[6,7]

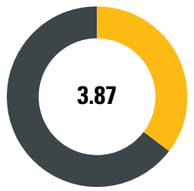
Absolute thousand gallons of water/ million dollars of revenue



Through 2016, we have reduced water consumption intensity at our facilities by a total of 15 percent from our 2006 base year.

Total Absolute Water Consumption

Billion gallons



- 1.37 billion gallons non-contact cooling water
- 2.50 billion gallons enterprise water consumption excluding non-contact cooling water

Water Sources

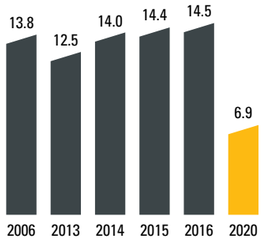
- 35% non-contact cooling water
- 28% municipal water
- 22% groundwater
- 15% surface water

BY-PRODUCT MATERIALS GOAL

Reduce by-product materials intensity by 50 percent from 2006 to 2020.

By-Product Materials Intensity

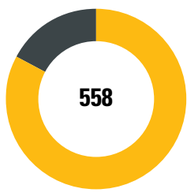
Absolute metric tons of by-product materials/million dollars of revenue



Our by-product materials intensity increased 5 percent from our 2006 base year to 2016. However, we decreased our generation of total absolute by-product materials by 17 percent from 2015 to 2016.

By-Product Materials

Thousand metric tons



- 83% recycled
- 17% disposed (sent to landfill or incinerated)

SUSTAINABLE CONSTRUCTION GOAL

Design all new facility construction to meet Leadership in Energy and Environmental Design (LEED) or comparable green building criteria.

Facilities designed to the LEED criteria are more energy- and resource-efficient than traditional construction. LEED facilities are also designed to create a healthier indoor environment for employees.

In 2016, the following Caterpillar facilities received certification in accordance with the U.S. Green Building Council's LEED BD+C (Building Design and Construction) certification process or comparable criteria:

LEED Silver
- Bevel Gear Facility, Monterrey, Mexico

LEED Certifiable
- Perkins Large Engine Facility, Aurangabad, India
- Regional Training Center, Dubai, United Arab Emirates

100%

Facilities that completed construction in 2016 met LEED or comparable green building criteria

2020 **PRODUCT STEWARDSHIP GOALS**

SAFETY GOAL

Provide leadership in the safety of people in, on and around our products.

SYSTEMS OPTIMIZATION GOAL

Increase managed fleet hours by 100 percent from 2013 to 2020.

⇧98%

Increase in fleet hours managed by Caterpillar Job Site Solutions (2013 to 2016)

⇧126%

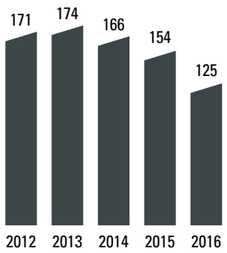
Increase in number of machines covered by service agreements with Caterpillar Job Site Solutions (2013 to 2016)

REMAN & REBUILD GOAL

Increase remanufactured and rebuild business sales by 20 percent from 2013 to 2020.

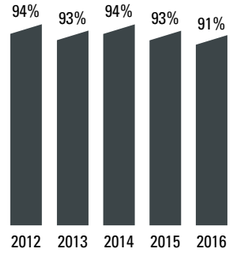
Reman End-of-Life "Take-Back" By Weight[8]

Millions of pounds of end-of-life material received



Reman End-of-Life "Take-Back" Percent[8]

Actual end-of-life returns/eligible returns x 100



Reman sales decreased 13 percent 2013-2016
Rebuild sales decreased 10 percent 2013-2016

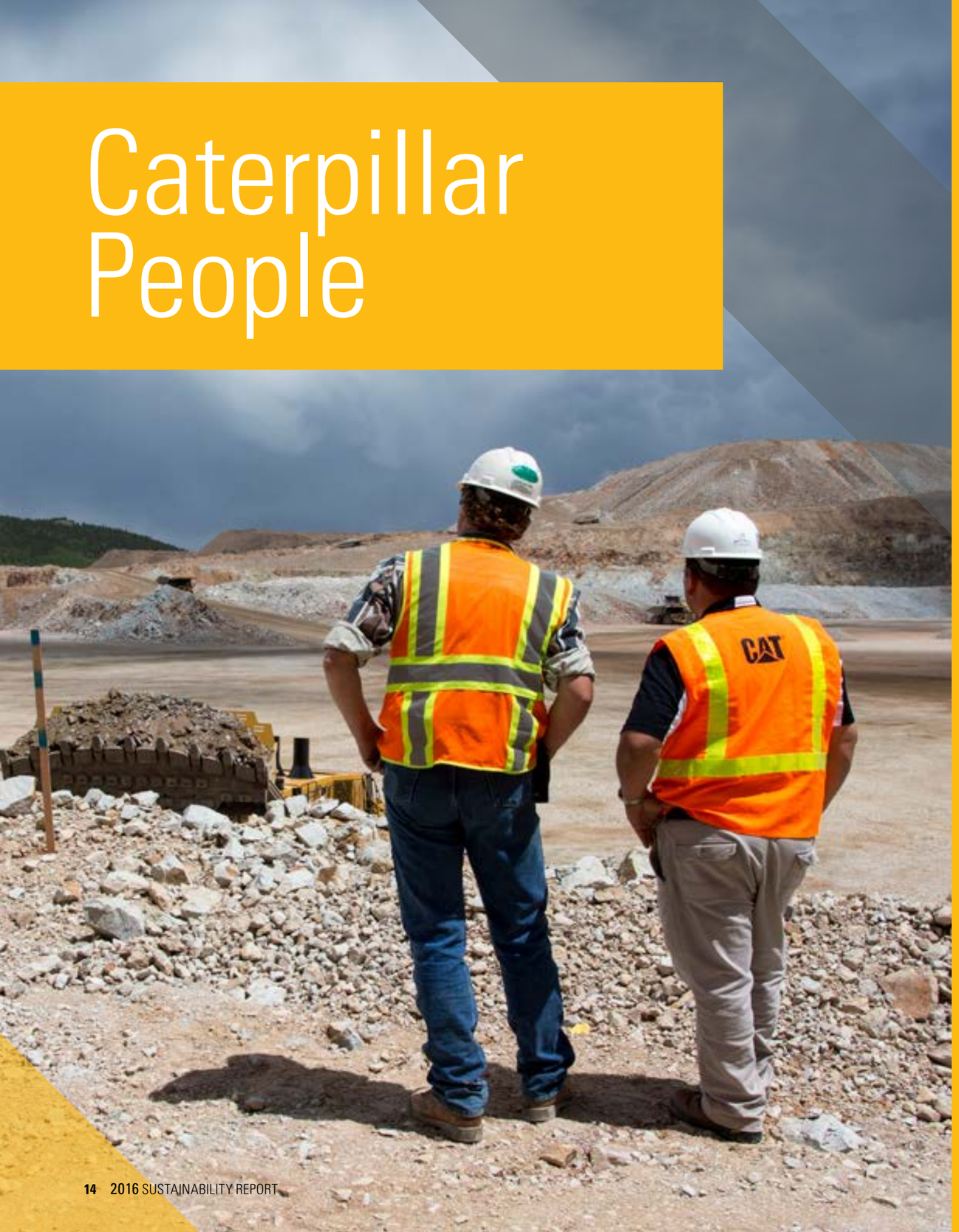
PRODUCT, SERVICES & SOLUTIONS GOAL

Leverage technology and innovation to improve sustainability of our products, services and solutions for our customers.

21%

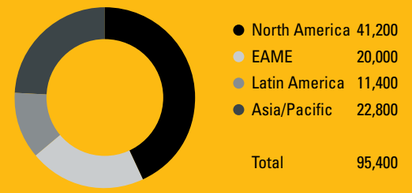
2016 reported sales and revenues derived from products, services and solutions that demonstrate an improved sustainability benefit over existing offerings.[9]

Caterpillar People



Our employees are the backbone of Caterpillar's success. They provide the innovative and diverse thinking we need to serve our customers. We are committed to fostering a diverse, inclusive and safe environment where all employees can thrive and be successful. By leveraging each individual's unique skills, abilities, experiences and cultural background, Caterpillar people can achieve superior business and personal results.

Employees by Region



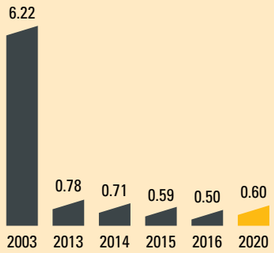
SAFETY

We are dedicated to the safety of everyone at Caterpillar, including our extended team of contractors, dealers, suppliers and customers. Our commitment to safety begins with the engineering of our products and manufacturing processes, and extends to operator training, job site solutions and promoting a culture of safety that guides the way we work.

Caterpillar's Health & Safety professionals play a key role in providing expertise and support to Caterpillar operations around the world. By leveraging culture improvement tools from Caterpillar Safety Services, many Caterpillar operations have been able to make great strides in improving their safety culture.

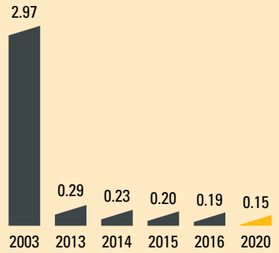
Caterpillar's risk assessment process brings a global focus to safety and ergonomic risk and has resulted in the reduction of risks for thousands of work elements, further driving the reduction in ergonomic and other injuries. Initiatives at many of our locations continue to positively impact our safety results.

Recordable Injury Frequency (RIF)
Recordable injuries per 200,000 hours worked



92%
We have improved our Recordable Injury Frequency rate by 92% from our 2003 base year and 15% from our last reporting period.

Lost-Time Case Frequency Rate (LTCFR)
Work-related injuries resulting in lost time per 200,000 hours worked



94%
We have improved our Lost-Time Frequency Rate by 94% from our 2003 base year and 5% from our last reporting period.

IMPROVING SAFETY **THROUGH CULTURE**

WITH OVER 1,000 EMPLOYEES ACROSS THREE SHIFTS, INJURIES HAVE BEEN SIGNIFICANTLY REDUCED AT SOLAR TURBINES' TURBOMACHINERY OPERATIONS (TMO) IN SOUTHERN CALIFORNIA.

In 1991, TMO recorded 248 recordable injuries and decided it was time to begin implementing safety initiatives. By 2012, the number had been reduced to 11. This, however, was just the beginning.

In 2014, the TMO leadership team turned to Caterpillar Safety Services' Zero-Incident Performance (ZIP) Process to develop a more robust safety culture through employee engagement. The ZIP Process included administering a Safety Perception Survey to identify improvement opportunities, forming a Safety Steering Team to develop and execute a strategic plan for improvement, assembling four continuous improvement teams to build or improve safety processes, and conducting employee safety training across all levels of the organization. TMO then became the first organization within Caterpillar to develop the Safety Culture Coordinator position, solely dedicated to improving safety culture throughout the organization.

Positive progress has continued. By driving safety throughout the organization, TMO realized a 26 percent reduction in Recordable Injury Frequency (RIF) in 2015 – the division's best performance to date. In addition, Solar Turbines facilities across the United States have begun to implement the ZIP Process to facilitate cultural safety improvements in their daily operations.

DIVERSITY & **INCLUSION**

Diverse and inclusive work environments embrace the values and unique talents, experiences and viewpoints of employees. This approach is aligned with our strategic goal of Best Team.

To achieve the Best Team goal, our global Diversity and Inclusion strategy includes:
- Defining roles, responsibilities and accountabilities for all employees
- Holding leaders accountable for results through diversity and inclusion metrics
- Building sustainability by embedding diversity and inclusion into key people processes

Caterpillar Employee Resource Groups (ERGs) help:
- Drive innovation
- Provide personal and professional development opportunities
- Attract talent at recruiting events
- Retain this talent through mentoring and networking opportunities

In addition, ERG members frequently reach out to serve the communities where they live and work, demonstrating their support of learning institutions, charitable organizations, crisis relief efforts and cultural and artistic programs, to name a few.

ERGs are independent, voluntary and nonprofit by nature. Membership in any ERG is open to all Caterpillar employees interested in supporting the group's stated mission and objectives. Members of an ERG help sustain an engaged workforce at Caterpillar – as evidenced by members responding more positively on engagement surveys.

DIVERSITY RECOGNITION

DiversityInc	HUMAN RIGHTS CAMPAIGN FOUNDATION	WOMAN ENGINEER MAGAZINE	CAREERS & THE disABLED MAGAZINE
25 Noteworthy Companies	Corporate Equality Index, 90%	Top 50 Employers, #7	Top 50 Employers, #2

Enterprise Employees by Gender

Includes management and production employees

Enterprise Leadership by Gender

Includes management and production employees

2022 Targets

29% Female employees

25% Female leaders

WOMEN'S **LEADERSHIP INITIATIVE**

INCLUSION DRIVES BUSINESS RESULTS, AND CATERPILLAR KNOWS THAT WHEN IT FOCUSES ON HAVING THE BEST TALENT – INCLUDING A MORE GENDER-BALANCED WORKFORCE – EVERYONE BENEFITS. THE MORE DIVERSE OUR GLOBAL TEAM, THE BETTER POSITIONED WE ARE TO MEET THE NEEDS OF OUR CUSTOMERS. OUR WOMEN IN LEADERSHIP INITIATIVE IS AN INTENTIONAL, FOCUSED STEP ON A CONTINUOUS JOURNEY TOWARD A GLOBALLY DIVERSE TEAM.

Caterpillar has set ambitious targets in several key areas to increase the mix of qualified, capable females across our enterprise to industry benchmark levels by 2022. These goals include increasing our total female workforce to 29 percent and increasing our total female leaders to 25 percent.

These aggressive goals recognize the value of improving gender balance at all levels of our organization. This focus is a global priority that will increase our competitiveness through enhanced innovation and idea sharing to solve today's complex business challenges. We need the right talent, in the right place, at the right time.

The Women in Leadership (WIL) initiative is focused on three key pillars to drive cultural change:
1) Executive sponsorship focused on driving action across all levels of the enterprise to generate internal commitment that positions us for long-standing change
2) Pipeline development that looks inside and outside of Caterpillar for creative and innovative sourcing solutions that drive talent attraction and retention
3) Culture change focused on our current policies and procedures to help us better understand what our employees seek in their work culture

BREAKTHROUGH LEADERSHIP WORKSHOPS

Since the initiative's inception, Caterpillar's standout Breakthrough Leadership for Women program has grown in size with plans to graduate nearly 1,000 women from the program in 2017. Breakthrough Leadership was created by a Caterpillar Employee Resource Group – the Women's Initiatives Network (WIN) – focused on development and retention of high-potential, high-performing, female talent. The workshop develops skills in the areas of networking, negotiating for leadership success, solving gender dilemmas and coaching on leadership challenges. Since its inception in 2014, Breakthrough Leadership has served as a catalyst to ignite the larger WIL project and is a foundational component of that strategy.

Recognizing that 80 percent of Caterpillar's workforce is male, the need to identify and develop men as advocates became clear. A similar program – Breakthrough Leadership for Men – was created in 2016. The course is designed for men to develop inclusive leadership strategies and sharpen awareness of their leadership journey, our organizational culture and gender biases. Participants explore how they can become more fully empowered, inclusive leaders and advocates of gender equality by creating more success for both men and women. We expect that more than 500 men and 200 women will participate in Breakthrough Leadership for Men in 2017.

Breakthrough Leadership for Women and Breakthrough Leadership for Men graduates come together for in-depth discussions about bias, privilege and leadership. Participants share real-life business examples, highlighting Caterpillar's organizational culture and gender biases, and leave with a personal action plan including how to identify, mentor and sponsor high-performing talent across the organization.

TALENT **DEVELOPMENT**

As a company with hundreds of global locations that serve diverse industries such as transportation, construction, oil and gas, mining, marine and forestry, we are in a unique position to offer opportunities and valuable experiences for all our employees. This includes learning opportunities both inside and outside of Caterpillar, targeted leadership, skills and language training and formal benefits such as medical plans that help promote the long-term health and wellness of our employees and their families.

We support a learning journey and recognize the importance of multi-faceted experiences through a variety of formal and informal opportunities for individuals to increase skills and knowledge.

These include:
- In-person and e-learning training
- Coaching and feedback
- Formal training programs

Our formal training and development programs include:
- Leadership Excellence in Accountability and Development (L.E.A.D.) is a global leadership program that provides the skills required to effectively develop and guide individuals and teams to achieve business results
- Digging Deep provides leaders an opportunity to travel to diverse markets such as China and Brazil, and go beyond classroom learning through participation in practical learning projects that address actual business challenges
- The Caterpillar Learning Management System is a web-based program that can be accessed through our intranet and allows employees worldwide to browse the online course catalog, register for information and courses in their local language, launch web-based training, track individual learning history and review learning experiences with their supervisor

RECOGNITION

FAST COMPANY

Top 50 Places to Interview, #3

FORTUNE

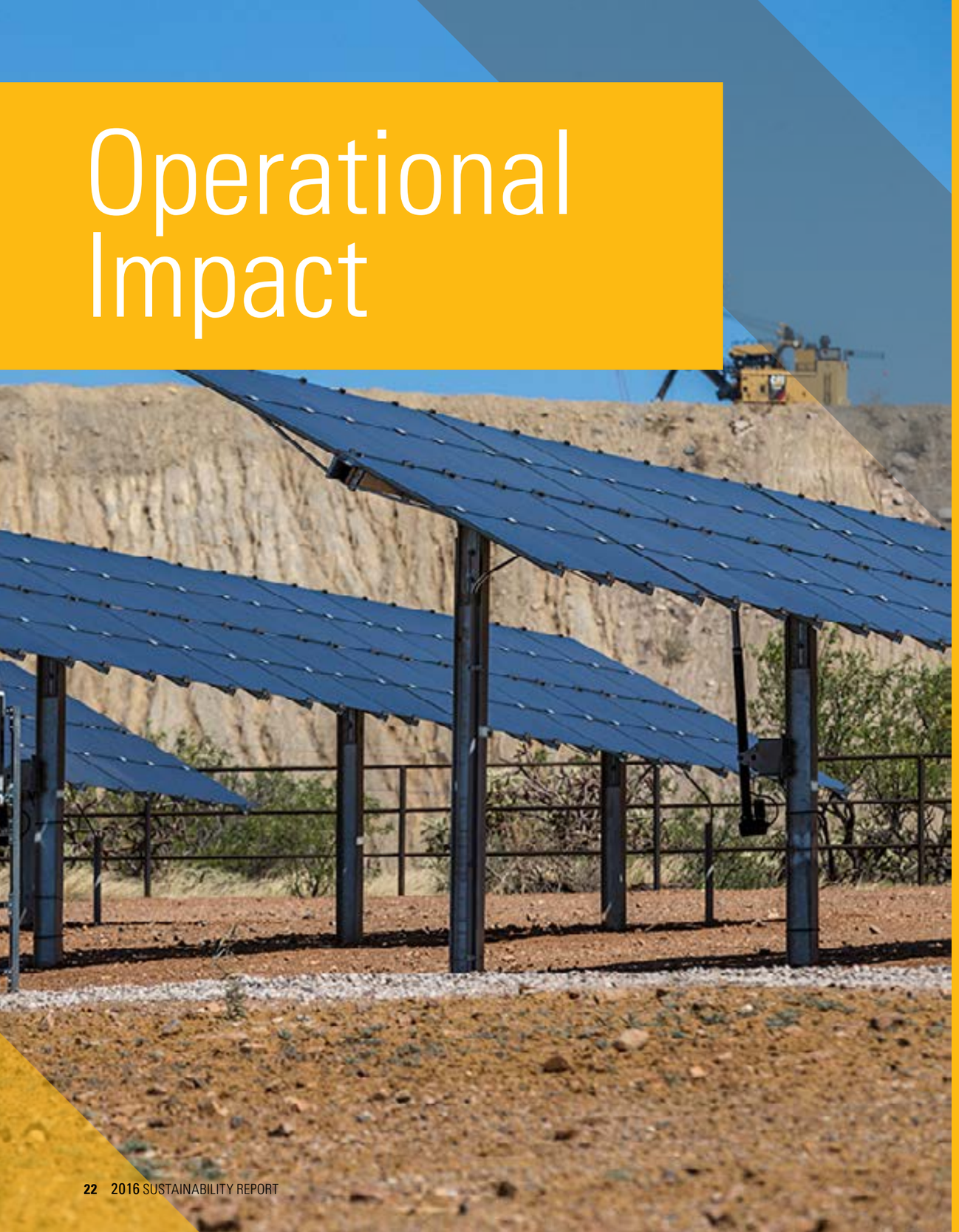
The World's Most Admired Companies, #47

COLLECTIVE **BARGAINING**

We respect the rights of our employees to join, form or not to join an employee association or trade union of their choice without fear of reprisal, interference, intimidation or harassment, and in a manner that is consistent with national law and practice. Recognizing that exercising the right to choose whether to join or not to join a trade union is an important decision that requires thoughtful consideration, we believe it is critical that our employees exercise that right with the benefit of available information.

We value the direct relationship we share with our employees. Where employees are represented by an employee association or trade union in accordance with applicable national law, we commit to seeking a constructive dialogue, or where appropriate, to bargain in good faith. We expect the same of those employee associations or trade unions seeking dialogue with us. In 2016, Caterpillar had more than 130 labor contracts with 50 different labor organizations representing employees in our global workforce.

Operational Impact



A DECADE OF PROGRESS 2006-2016

GHG EMISSIONS
-29%

ENERGY CONSUMPTION
-17%

WASTE GENERATION
-3%

ALTERNATIVE/ RENEWABLE ENERGY USE
27.9%
in 2016

WATER CONSUMPTION
-35%

WASTE RECYCLED
83%
in 2016

EHS
MANAGEMENT

Our Code of Conduct states that we "protect the health and safety of ourselves and others" and "focus on environmental responsibility and preventing waste." Our EHS Management System, known as the Caterpillar EHS Assurance Manual: A Practical Global Framework, establishes the global requirements for environmental, health and safety compliance. This assists operations in complying with the various EHS requirements around the world.

The EHS Assurance Manual sets out mandatory standards that are consistent across the enterprise and periodically assessed at the facility level to improve management of enterprise environmental, health and safety compliance. The EHS Assurance Manual applies to all Caterpillar facilities worldwide, including majority-owned subsidiaries and joint ventures, and is designed to effectively implement an EHS enterprise-wide management system.

ENERGY CONSERVATION &
GHG EMISSIONS REDUCTION

As a manufacturer of heavy equipment, some of Caterpillar's operations are energy-intensive. But even in our most energy-dense environments, Caterpillar employees have found ways to implement innovative energy solutions that reduce our energy costs as well as our environmental impacts.

We have set energy efficiency targets in our operations since 1998 and greenhouse gas emission reduction targets since 2003. We currently have operational targets for the increased reliance on alternative and renewable energy, energy intensity and greenhouse gas emissions intensity.

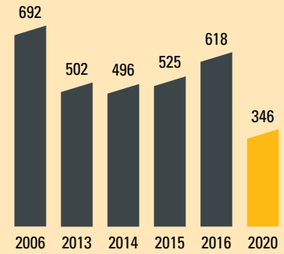
Our enterprise energy management team is instrumental in building awareness, encouraging action and developing solutions in the areas of energy efficiency and alternative/renewable power generation.

Examples of our increased reliance on renewable energy sources include facilities' installation of renewable energy sources such as biogas and photovoltaics (PV), as well as their purchase of renewable energy certificates. Our largest contribution to alternative energy consumption is the operation of combined heat and power (CHP) systems to power several manufacturing facilities. The energy management team is evaluating additional opportunities for replication of CHP at other locations.

As we work to achieve our 2020 energy-related goals, one important facet of our efforts is to continually assess and improve the efficiency of our existing operations. Systems and facilities that were state-of-the-art for energy efficiency and performance when first installed can fairly quickly be eclipsed by new technologies and best practices.

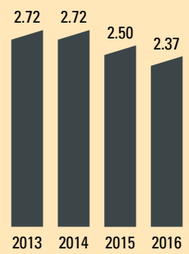
ENERGY CONSERVATION & **GHG EMISSIONS REDUCTION** *(Continued)*

Energy Intensity[6]
Absolute gigajoules energy use/ million dollars of revenue



Operational energy intensity decreased 11 percent from 2006 to 2016. In addition, our absolute energy consumption decreased 4 percent from 2015 to 2016.

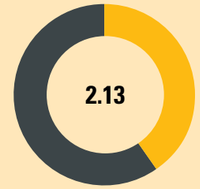
Total Electricity Consumption
Sum of purchased and self-generated electricity in million MWh



⇩17%
Absolute energy reduction 2006-2016

Total electricity consumption, including both purchased and self-generated electricity, decreased 5 percent from 2015 to 2016.

Total Absolute GHG Emissions[4]
Million metric tons

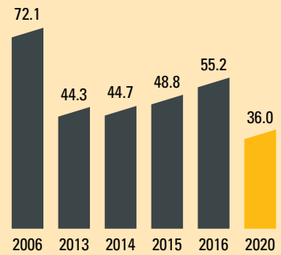


- 0.863 million metric tons Scope 1 GHG emissions (direct emissions)
- 1.265 million metric tons market-based Scope 2 GHG emissions (indirect emissions from purchased electricity, heat or steam)

1.314 million metric tons location-based Scope 2 emissions[5]

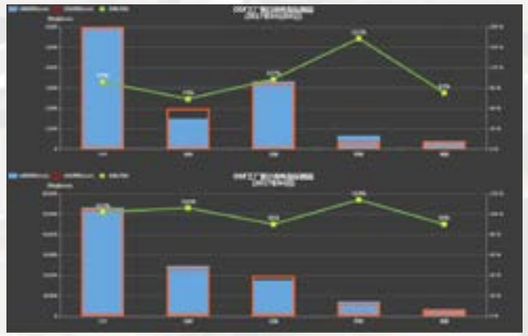
⇩29%
Absolute GHG emissions reduction 2006-2016

GHG Emissions Intensity[4]
Absolute metric tons of CO2e/ million dollars of revenue



Through 2016, Caterpillar has reduced GHG emissions intensity from our facilities by 23 percent compared with our 2006 base year. From 2015 to 2016, our absolute GHG emissions decreased 7 percent.

REAL-TIME ENERGY DATA **HELPS DRIVE RESULTS**



SEEING IS BELIEVING. THAT MAXIM HAS PROVEN TO BE TRUE AT CATERPILLAR CHINA MACHINERY COMPONENTS CO. (CCMC) OPERATOR STATION FACILITY (OSF) IN WUXI, CHINA.

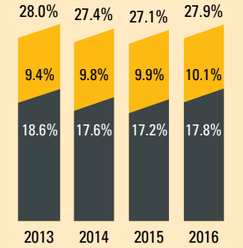
The facility utilizes real-time data to manage energy, reduce emissions and build upon its overarching sustainability culture. This data, however, is not contained to a simple spread sheet for analysis. Rather, the facility's visual management system displays real-time electricity consumption and production volume by workshop on monitors throughout the facility. This electricity consumption matrix also projects daily and incremental goals and targets in facility common areas, for all employees and leadership to see. Viewing this real-time data enables employees to act quickly to respond to abnormal incidents, such as spikes in energy use. In 2016, this and other sustainability initiatives accounted for nearly 3,100 metric tons of GHG emissions reduction, equivalent to taking 655 passenger vehicles off the road for one year.

ALTERNATIVE & **RENEWABLE ENERGY**

Across Caterpillar's global operations, our employees are exploring ways to incorporate alternative and renewable energies to improve our efficiency and sustainability performance. In 2016, 27.9 percent of our electrical energy was from renewable or alternative sources. This includes purchased and on-site generated alternative and renewable energy, as well as calculating the percentage of renewable energy from grid-purchased electricity using data obtained from the International Energy Agency.

Alternative/Renewable Energy[1,2,3]

Sum of alternative and renewable electrical energy use/total electrical use x 100



In 2016, 27.9 percent of our electrical energy was from renewable or alternative sources.

SOLAR INSTALLATIONS IN INDIA **HELP DRIVE RENEWABLE ENERGY GOAL**

BY 2020, CATERPILLAR HAS A GOAL TO USE ALTERNATIVE/ RENEWABLE SOURCES TO MEET 20 PERCENT OF ITS ENERGY NEEDS.

To this end, our Hosur, India plant recently installed 150 kilowatt solar panels on its roof, which have the capability to generate an average of 15,400 kWh per month with an annual savings of $27,000. In addition to reducing the plant's greenhouse gas emissions by over 100 metric tons per year, the solar installation is expected to provide alternative energy for about 10 percent of the facility's total energy needs.

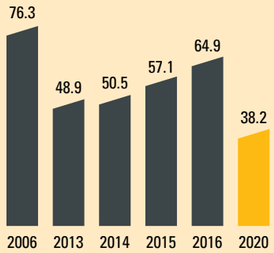
WATER **MANAGEMENT**

The scarcity of water resources is an issue that crosses cultures, geographies and industries. Today, water scarcity affects around 700 million people, and current trends indicate the problem will escalate, according to the United Nations. By 2025, two-thirds of the world's population could be living in water-stressed regions. The implications are so significant that world leaders consistently rank water crises as one of the top risks facing the global population. While our manufacturing operations are not as water-intensive as those of other industries, we nonetheless recognize the far-reaching economic, social and environmental implications that water scarcity may have in the future – and have taken steps to reduce our consumption.

We continue to implement conservation strategies to:
- Reduce water use in our operations
- Explore water-treatment technologies
- Introduce water-recycling processes at new and existing facilities
- Train employees about water resources to raise their awareness of the issue

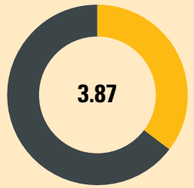
Around the world, Caterpillar facilities are taking water scarcity and water management seriously, with results that highlight the scale of positive impact that our sustainability work can have. Through 2016, our absolute water consumption, including non-contact cooling water, has decreased 35 percent.

Water Consumption Intensity[6,7]
Absolute thousand gallons of water/ million dollars of revenue



Through 2016, we have reduced water consumption intensity at our facilities by a total of 15 percent from our 2006 base year.

Total Absolute Water Consumption
Billion gallons



- 1.37 billion gallons non-contact cooling water
- 2.50 billion gallons enterprise water consumption excluding non-contact cooling water

⇩35%
Absolute water consumption, including non-contact cooling water 2006-2016

Water Sources

- 35% non-contact cooling water
- 28% municipal water
- 22% groundwater
- 15% surface water

TEST VEHICLE WASHING **HELPS SAVE WATER**

OUR FACILITY IN QINGZHOU, CHINA (CQL) IDENTIFIED A KEY OPPORTUNITY TO SIGNIFICANTLY REDUCE WATER CONSUMPTION BY REDESIGNING THE VEHICLE WASHING PROCESSES FOR ALL OF OUR CAT® 950GC WHEEL LOADER AND SEM BRANDED TEST PRODUCTS.

The initial outdoor washing method consumed water, not only from cleaning, but also from running water during the winter to prevent freezing. To reduce excess water discharge, CQL moved this process to their indoor touch-up workshop, which eliminated the need to run water during the winter entirely. Then, they began to use recycled water to wash machines, and upgraded washing equipment to allow users to regulate water pump pressure directly. Reducing water consumption is particularly important at CQL, located in an area of extreme water scarcity, as defined by the World Resources Institute. In all, new washing practices are saving this facility 1.76 million gallons of water per year, and over $13,000 in water consumption, treatment and fuel costs.

WASTE **MINIMIZATION**

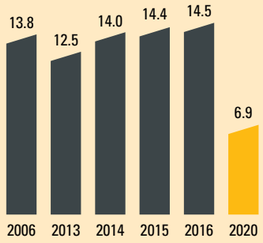
Minimizing waste in our processes not only reduces costs, but also reduces our use of materials, energy, water and land. We are focused on a goal to reduce all by-product materials, waste generated by our production processes.

The use of the term by-product materials in our 2020 aspirational goal reflects our focus on minimizing our production waste and effectively managing the remaining wastes through remanufacturing, rebuilding, reusing and recycling. We focus on by-product material reduction strategies that are associated with improved efficiency and quality measures, as these offer the greatest opportunity to enhance cost competitiveness and reduce the potential for short- and long-term environmental impacts.

By taking a critical look at every phase of our operations, teams have been able to uncover unexpected and high-impact methods to reduce waste while maintaining or improving performance and customer satisfaction.

By-Product Materials Intensity

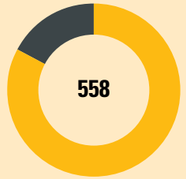
Absolute metric tons of by-product materials/million dollars of revenue



Our by-product materials intensity increased 5 percent from our 2006 base year to 2016. However, we decreased our generation of total absolute by-product materials by 17 percent from 2015 to 2016.

By-Product Materials

Thousand metric tons



- 83% recycled
- 17% disposed (sent to landfill or incinerated)

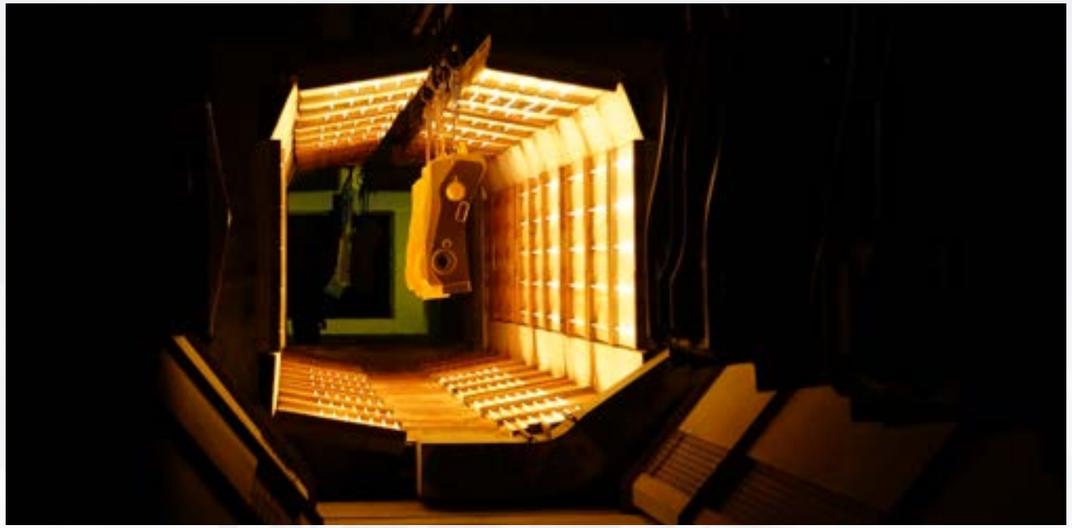
⇩3%
Absolute waste generation 2006-2016

SLAG RECYCLING **REDUCES MAPLETON LANDFILL WASTE**

OUR MAPLETON, ILLINOIS IRON FOUNDRY, WHICH CASTS ENGINE BLOCKS, HEADS, LINERS, SEAL RINGS AND OTHER MISCELLANEOUS PARTS, GENERATES ANYWHERE FROM 2,000 TO 4,000 TONS OF SLAG ANNUALLY – A BY-PRODUCT FROM THE IRON MELTING PROCESS.

While primarily a mixture of metal oxides, about 18 percent of Mapleton's slag contains valuable and difficult-to-extract metals. Historically, this slag was sent to landfill due to cost and limited recycling options. With the assistance of Veolia Environmental Services, however, Mapleton has developed a cost-effective slag recycling process. A local scrap metal recycler, CIMCO, began accepting slag. The valuable metals are now extracted from the slag and resold to steel foundries. Since the implementation of the project in 2013, more than 2,000 tons of metal have been extracted and sold, generating $76,000 and diverting a significant amount of the waste from landfill.

SIMULATION REDUCES **PAINT WASTE**



ONE OF THE LAST STOPS IN THE MANUFACTURING PROCESS IS THE PAINT SHOP, WHERE OUR MACHINES ARE COATED IN ICONIC CATERPILLAR YELLOW.

Using Computational Fluid Dynamics (CFD), we are now able to evaluate how painting equipment operates, long before our iron even sees the painting facility. For electro-coating paint systems, CFD simulation helps reduce chemical waste and energy associated with trial-and-error process development. CFD simulation also helps ensure the proper draining of parts, which reduces cross-contamination of chemical baths and the need for paint rework, all while improving the finish quality and durability. Caterpillar has used CFD simulation to evaluate the effectiveness of proposed curing oven designs before purchasing the equipment, avoiding what has historically been a two-year process for oven redesigns and commissioning. These enhancements reduce chemical waste and avoid production delays, which have both environmental and economic benefits.

Product Stewardship

Product stewardship covers the full lifespan of our equipment – from the supply chain to the customer's job site to remanufacturing. This means taking active steps to reduce potential environmental, health and safety impacts, as well as optimizing operational quality and efficiency throughout the life of the product. We accomplish this by:

- **Engineering products to eliminate hazardous substances**
- **Utilizing more sustainable energy sources**
- **Extending a product's life through the use of remanufactured parts or rebuilt machines**
- **Working with customers and distributors to encourage the proper disposal or recycling of end-of-life materials**

INNOVATION **MANAGEMENT**

Our Enterprise Technology Strategy establishes the foundation of Caterpillar's product development innovation, focusing on key technology areas that impact many facets of sustainability by:

- Providing foundational components for a wide range of digital solutions
- Reducing customers' owning and operating costs
- Promoting safety and sustainability
- Increasing product reliability
- Providing customers with the tools they need to succeed anywhere they do work
- Allowing Caterpillar to maintain a competitive advantage

The strategy direction is driven by customers' needs, deep market research, regulatory requirements and global economic indicators to inform decision making. Each of the technologies under development includes customer-focused goals that serve as targets against which progress can be measured.

Our Enterprise Simulation Strategy lays the foundation for Caterpillar's advanced use of simulation in the product development process. This strategy is closely aligned with the Technology Strategy and facilitates sustainability throughout the entire product development process. Caterpillar uses simulation in all stages of product development – from the conceptual phases of research and design through production.

Using simulation allows Caterpillar engineers to virtually explore potential product and process designs without having to first build prototypes in iron – which uses significant resources. Simulation drives R&D efficiency, saves R&D dollars and decreases time spent doing re-work, all of which allows for fast-paced innovation that benefits both our customers and the company.

Both the Technology Strategy and the Simulation Strategy are governed through multitiered councils composed of leaders from all areas of the business, from our Executive Office to engineering and technical leaders. These councils create and execute the vision for future technologies and processes at Caterpillar, as well as ensuring consistent and sufficient funding for Caterpillar's technology investments.

STANDARDS HARMONIZATION

Industry consensus standards, including those for visibility, rollover protection structures, braking and sustainability, apply to earthmoving equipment. We are involved on an international level to develop and update global standards through the International Standards Organization (ISO) and chair the technical committee for earthmoving machines. Our global standards and regulations team works closely with organizations like the ISO to enhance machine safety standards worldwide. Caterpillar also provides input to regulatory agencies to help ensure the smooth introduction of new technologies.

In 2016

25

TECHNOLOGIES WERE TRANSFERRED FROM RESEARCH INTO NEW PRODUCT INTRODUCTION PROGRAMS.

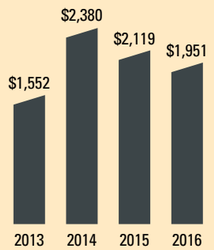
TECHNICAL EXPERTISE

Caterpillar makes management and technical expertise available to regulatory bodies in advisory roles and provides technical assistance as new product standards are developed. These activities include participation, membership and leadership roles in organizations such as:

- The International Organization for Standardization (ISO)
- Industry associations
- Governmental and nongovernmental delegations to international bodies such as the International Maritime Organization; European Union industry expertise panels; and federal advisory committees chartered under the U.S. Environmental Protection Agency

Research and Development Expenses

Dollars in millions



THE SUSTAINABILITY OF **ADDITIVE MANUFACTURING AT SOLAR TURBINES**

Above is a labyrinth seal repaired using LMD Additive Manufacturing on the right, and the left has been repaired using GTAW. While the two components are nearly identical, the right cost $120 less to repair, reduced repair time by 70 percent and took 2 hours less time to repair than the left.

ADDITIVE MANUFACTURING (AM), OTHERWISE KNOWN AS 3D PRINTING, IS THE COMPUTER-CONTROLLED PROCESS USED TO CREATE THREE DIMENSIONAL OBJECTS BY ADDING SUCCESSIVE LAYERS OF MATERIAL.

Since 2013, Solar Turbines has worked to use AM, more specifically Laser Powder Bed Fusion (L-PBF) and Laser Metal Deposition (LMD), to produce and repair production components in-house. Replacing conventional casting with these technologies allows Solar Turbines to develop and test components more quickly, produce components less expensively and repair components that would otherwise be scrapped.

The 20/20 Fuel Injector Swirler is a component which delivers an air/fuel mixture into the combustor section of our gas turbine engines. By producing the Swirler using L-PBF, rather than casting it, Solar Turbines has been able to improve the component design process, reduce annual capital and operating expenses by over $350,000, and decrease production time by several months. Not only is L-PBF manufacturing more efficient, but the Swirlers themselves also match the performance of a casted part. There are also significant potential cost savings in service parts, since AM reduces the need to hold inventory of finished goods.

Additionally, as part of the remanufacturing of their rotating gas turbine line, Solar has changed their approach to repairing labyrinth seals, which prevent turbine leaks. While they previously repaired these seals using Semi-Automatic Gas Tungsten Arc Welding (GTAW), switching to LMD for these repairs has reduced overhaul time by approximately 70 percent, which results in more than $650,000 in savings each year.

The LMD process also helps reduce waste in two key ways. First, the process itself is much more efficient, using 25 percent less metal. LMD can also repair parts that would have previously been scrapped. For example, though trials have been proposed with various repair processes, LMD is the only one capable of repairing an $18,000 'taper' for an AFT Compressor Hub, a critical component which serves as a connection/transition from the last stage of the compression to the rotor shaft. The implementation of this repair process has the potential to save Solar Turbines $1.3 million annually, while eliminating 20,975 pounds of Inconel 901 material from being scrapped. As a fully automatic and enclosed process, LMD has also eliminated safety risks such as welding arc flash, burns due to contact with hot parts and inhalation of welding fumes.

The critical process knowledge learned from their investments in AM continues to propel Caterpillar and Solar Turbines into the future of manufacturing.

CUSTOMER **SAFETY**

Caterpillar's safety culture extends beyond our internal operations to include the safe operation of our products in the field, as well as the safety and health of all individuals who come into contact with Cat® products. This commitment encompasses:

- Product design and engineering
- Operator training and certification
- Solutions for the job site
- Tools and resources to improve workplace culture

Learn more about Zero-Incident Performance

ZERO-INCIDENT PERFORMANCE (ZIP™) PROCESS

1 ENGAGE LEADERSHIP

Introduce Zero-Incident Performance principles in a Safety Culture Leadership Roundtable.

2 ASSESS THE CULTURE

Assess the health of the culture with the Safety Perception Survey and Qualitative Interviews. Communicate the findings that drive the strategic plan. Identify the milestones to create traction and ensure progress.

3 BUILD THE PLAN

Set the foundation to carry out the vision; establish the structure to elevate safety management processes; build involvement, overcome deficiencies and drive systems of accountability.

4 DEVELOP THE PROCESSES

Form Continuous Improvement Teams to arrive at the specific tactics to advance high-priority processes. Timelines, milestones and the beginnings of a safety accountability system are being put in place.

5 IMPLEMENT THE PROCESSES

Continuous Improvement Teams deliver the outcomes: what needs to improve and how. Processes developed by the Continuous Improvement Teams will be tested, then fully implemented.

6 CHECK THE PROCESSES

Ensure sustainability. An Evaluation Team observes and reports on each focus area, evaluates revised processes and identifies potential shortcomings.

CATERPILLAR ADVANCED CABIN FILTRATION **PROMOTES OPERATOR HEALTH AND SAFETY**

PROPERLY SECURED CAB ENCLOSURES PROMOTE THE HEALTH OF THOSE WHO OPERATE CATERPILLAR MACHINES.

The Caterpillar Advanced Cabin Filtration (ACF) system has been designed to promote optimal air quality and operator health, as well as to comply with increasingly strict global regulations on safe exposure limits of airborne contaminants and particulates.

The Caterpillar ACF provides twice as much fresh air as required by ISO standard 10263-4, helping operators to stay alert during machine operation. The fresh air also improves the ability of the HVAC system to pressurize the operator enclosure, keeping potentially harmful airborne particulates outside the cab. With four levels of standard particulate, HEPA, odor and sulfur dioxide/hydrogen sulfide filtrations, the ACF can be used in both standard construction and specialty applications, such as landfills and mining. The system also removes up to 99.95 percent of particulates as small as 0.3 microns in size, and its air pre-cleaning capability increases the time needed between air filter replacements to 500 hours, exceeding the typical interval by more than 300 hours. The ACF is an example of how we uphold the safety of our customers and meet their business needs as well.

CIRCULAR **ECONOMY**

Wherever possible, we keep resources in the Caterpillar value chain through a circular flow of materials, energy and water. Our focus on developing better systems optimizes our use of resources, maximizes the total life cycle value of our products and minimizes the cost of ownership for our customers. Viewing our equipment through a total life cycle lens allows us to make sustainable progress for communities, the environment and the economy.

Caterpillar strives to provide customers with quality equipment that provides the best economic proposition for their business. Our remanufacturing (reman) and rebuild businesses provide customers not only with immediate cost savings, but also help extend life cycles and use materials more efficiently. Rebuild programs increase the lifespan of equipment by providing customers with product updates for a fraction of the cost of buying a new machine.

A complete Cat® Certified Rebuild includes more than 350 tests and inspections, automatic replacement of approximately 7,000 parts and a like-new machine warranty. In addition, trained dealer service professionals perform this work using genuine equipment and parts. Caterpillar provides information, data, training and service tools to help dealers make the most appropriate decisions on which parts to reuse in order to achieve expected longevity of rebuilt components. Reuse of components helps us use materials and energy more efficiently. Given the significant role that remanufacturing and rebuild operations play in our sustainability initiatives, our goal is to grow remanufacturing and rebuild business sales by 20 percent from 2013 to 2020.

The remanufacturing and rebuild programs allow customers to maximize the built-in value of their equipment by:

- Maximizing productivity
- Increasing reliability and equipment uptime
- Driving improved cost-effective performance
- Offering a like-new warranty
- Increasing the customer's return on their investment
- Providing the customer with a variety of repair options to meet their service needs
- Providing the customer with a higher resale value
- Providing the lowest total owning and operating life cycle costs
- Preserving the majority of energy and materials required to make the original component or machine

INCREASING GLOBAL ACCESS TO REMANUFACTURED PRODUCTS

While global customers have driven demand for remanufactured products, not all customers can benefit from the significant cost and efficiency savings that Cat Reman products deliver, due to import and export challenges. Certain countries – mostly in developing markets – fail to recognize the value of remanufactured goods for the environment and their national economies and thus place trade barriers around remanufactured products.

There are typically two types of trade barriers:

- A tariff barrier might include excessive fees or taxes levied by a certain country that significantly increase the customer's cost of choosing a viable remanufactured product.
- A nontariff barrier might be customs officials categorizing remanufactured goods as "used" goods, which cannot be imported under any circumstance or can only be imported after complying with special inspection, certification, licensing or other onerous requirements.

Similar barriers are often faced when customers seek to export their cores and return them to Caterpillar in exchange for a remanufactured engine or component. With the durability, performance, quality and a warranty that is the same as all other Cat engines and components, Cat Reman products should not be treated as "used" goods for the purpose of trade barriers. Indeed, this fact has been acknowledged in a number of free trade agreements and other multinational statements such as the Asia-Pacific Economic Cooperation (APEC) Pathfinder Initiative. For the purposes of trade barriers, countries participating in the global economy should treat remanufactured products the same way new goods are treated.

Caterpillar continues to work with policymakers around the globe to open markets and expand remanufactured options for our global customers, providing them with cost-effective, sustainable solutions for extending the life of their existing equipment. The company informs and educates government regulators around the world on the sustainable benefits of Cat Reman products.

CAT CERTIFIED REBUILDS AND REMANUFACTURING **AT-A-GLANCE**

REBUILD PROGRAMS
Cat® Certified Rebuilds
Component Overhauls at Cat Dealers
Solar Turbines Overhauls
Progress Rail Service Rebuilds

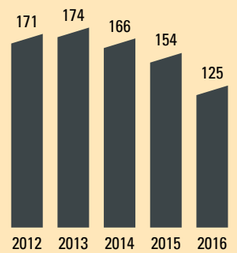
GOAL
Grow Remanufacturing and Rebuild Business Sales by
20%
2013-2020

-10%
REBUILDS
Percent Business Sales Growth Since 2013

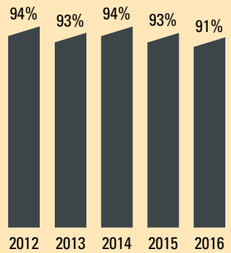
-13%
REMAN
Percent Business Sales Growth Since 2013

7,000
Approximate Parts Replaced Cat Certified Rebuild

Reman End-of-Life "Take-Back" By Weight[8]
Millions of pounds of end-of-life material received



Reman End-of-Life "Take-Back" Percent[8]
Actual end-of-life returns/eligible returns x 100



500TH CAT® CERTIFIED REBUILD **PT FREEPORT INDONESIA MINE**

CAT® MACHINES ARE A TRIPLE-BOTTOM-LINE WINNER, DELIVERING POSITIVE ENVIRONMENTAL, SOCIAL AND ECONOMIC BENEFITS FOR THE MINE AND NEARBY COMMUNITY.

Fifteen years after Caterpillar, Cat® dealer PT Trakindo and customer PT Freeport Indonesia signed a strategic alliance agreement, the group celebrated its 500th Cat Certified Rebuild in 2016.

Rebuilding these 500 machines has saved the gold mine over $350 million in replacement costs alone. Every dollar saved from this initiative has been directly reinvested into the mine or the mining community, which 32,000 people from 26 different countries call home. The entire town relies on mine-funded hospitals, health clinics, schools, religious centers and recreational centers. To further benefit the community, our dealer hired and trained 405 local employees to operate its Lowland Kuala Kencana Rebuild Center, which opened its doors 15 years ago. The center supports a total of 43 rebuilding bays and has achieved OHSA18001 certification, a health and safety management system.

Beyond the community, the benefits of rebuilding contribute positively to the mine's economic performance. Rebuilt machines lower the mine's cost per ton, so savings are compounded through the life of each product, especially the underground equipment that is approaching its fourth or fifth rebuild. This benefits the customer, the dealer and Caterpillar.

During the rebuilding process, Caterpillar also updates and improves each machine over its previous model. This results in an enhanced operator experience and enables more advanced upgrades, such as adding Command technology for Cat Load-Haul-Dump (LHD) Loaders. Command technology allows remote operation of the LHD from a safe location, and in some cases can increase the productivity of the mine. Through its rebuild and continuous improvement culture, PT Freeport Indonesia's fleet is operating 85 percent of the time and rotating through regularly scheduled maintenance practices the other 15 percent. This high availability rate means the mine can focus on operations.

The 500th Cat Certified Rebuild with PT Freeport Indonesia signifies much more than reuse of materials; it represents long-term business stability, community growth and brand loyalty for the mine. For Caterpillar, rebuilds show the value and long-term quality that come with the Cat brand, and they provide the aftermarket sales and services on which our business model depends.

REPOWERS **FOR RAIL**

CATERPILLAR'S RAIL SUBSIDIARY, PROGRESS RAIL, IS ONE OF THE LARGEST DIVERSIFIED PROVIDERS OF ROLLING STOCK AND INFRASTRUCTURE SOLUTIONS AND TECHNOLOGIES FOR GLOBAL RAIL CUSTOMERS.

Through replacing old, inefficient engines and antiquated controls systems with new, state-of-the-art technology, the company's repower programs provide customers with tailored and cost efficient solutions for upgrading older equipment.

The newly designed EMD24B is the most recent repower locomotive to be added to Progress Rail's repower portfolio. Rated at 2,000 horsepower, the EMD24B comes equipped with a single Cat® 3512C HD engine and after-treatment technologies proven to lower emissions. The EMD24B utilizes rebuilt EMD-style locomotive components and has been constructed with a remanufactured underframe and cab from an existing EMD GP-40 style locomotive.

"The EMD24B demonstrates our commitment to customers through its reliability and sustainability, while emphasizing Caterpillar's broad engine expertise, with a strong focus on lowering emissions, maintaining fuel efficiency and safety," commented Progress Rail Chief Executive Officer and Caterpillar Senior Vice President Billy Ainsworth.

The design and manufacture of the EMD24B involved various teams within the company, including Progress Rail's repower engineering team, employees from the company's Patterson, Ga., facility, and its Brazilian subsidiary, Zeit, which provided the locomotive control system.

Testing to certify the locomotive per the U.S. Environmental Protection Agency's (EPA) stringent Tier 4 emissions standards has been completed, and the EMD24B is currently undergoing the California Air Resource Board's 3,000-hour in-service verification test, launching with Pacific Harbor Line (PHL) railroad. Upon completion, this locomotive will be the first Tier 4 certified and verified repower offered by Progress Rail, with the ability to reduce fuel consumption by up to 15 percent.

CUSTOMER **SUSTAINABILITY**

As customers increasingly demand greater fuel efficiency and technology that helps them reduce GHG emissions, we are further motivated to help our customers achieve their emission-reduction goals. Their needs provide valuable business opportunities to Caterpillar.

We continue to invest in research and development aimed at products with fewer direct emissions, improved energy efficiency and/or improved productivity. In doing so, we help our customers improve their own operations, while also driving our competitors to improve.

Job site fuel efficiency, which contributes to reductions of GHG emissions, is strongly considered in our new product development efforts. By developing products, services and solutions that increase customer efficiency, we are also reducing the emissions that would otherwise have been generated from the use of less efficient products or solutions. We also collaborate with dealers and customers to deliver customized solutions that help optimize energy use and provide training for customer operators on how to use our equipment more efficiently.

A significant part of our business is committed to the supply of energy through efficient power-generation solutions. With distributed generation solutions utilizing diesel and natural gas engines, as well as alternative fuels, we help get power where it needs to be. Further, Cat® equipment helps meet the demands of the mining and resources industries to get raw materials where they need to be to create increased access to power.

21%
reported sales and revenues derived from products, services and solutions that demonstrate an improved sustainability benefit over existing offerings[9]

Caterpillar has implemented hundreds of distributed power generation systems all over the world, which contribute to improving energy access in the developing world while emitting fewer GHG emissions compared with traditional power grid systems. We provide combined heat and power systems, and combined-cycle power systems that can double the efficiency of power generation when compared with the efficiency of conventional power grids. Additionally, our power systems utilize fuels from diverse sources such as gas from landfills, livestock operations, wastewater treatment operations, mine methane, flare gas, syngas and biofuels. These systems provide energy diversity from plentiful (and in many cases, renewable) energy sources.

Golden Peacock Award for Sustainability

In October 2016, **Caterpillar India won the Golden Peacock Award for Sustainability** for their organization-wide sustainability efforts. This award, named after India's national bird, is designed to provide a powerful self-assessment tool to help organizations build brand equity on sustainability.

6020B HYDRAULIC MINING SHOVEL **FUEL EFFICIENCY**

FUEL ECONOMY CONTRIBUTES UP TO 50 PERCENT OF THE TOTAL COST OF OWNING A HYDRAULIC MINING SHOVEL.

That's why Caterpillar is constantly evolving its products to be more fuel efficient so that customers can reduce operating costs and emissions. By maximizing hydraulic system efficiency, the 6020B Hydraulic Mining Shovel has significantly reduced its fuel consumption. In a traditional Cat® hydraulic system, pumps must work as a system and operate at the pressure of the highest active circuit. The common pressure must then be adjusted per the pressure of each individual circuit. This causes "compensation loss," which amounts to a loss of 15 to 25 percent of the total available hydraulic power.

In the 6020B hydraulic system, each circuit has a dedicated pump or set of pumps. Only the required number of pumps are allocated to each circuit individually, eliminating the need for pressure compensation and its inherent losses. The new, more efficient Cat 6020B burns up to 20 percent less fuel than competitive equipment of the same size, while loading up to 10 percent more material, delivering higher production with a significantly lower emissions impact.

CAT® D6T **FUEL EFFICIENCY**

AS ONE OF CATERPILLAR'S MOST VERSATILE DOZERS, THE NEW FULLY AUTOMATIC D6T CONTINUES TO DRIVE CUSTOMER VALUE THROUGH DRAMATICALLY IMPROVED FUEL EFFICIENCY AND EASE OF USE.

The powertrain iron and controls were redesigned to include:

- An optimized torque divider and a lock-up clutch for improved efficiency;
- 4-speed transmission with an additional gear to allow for smoother shifting and longer lock-up clutch engagement; and
- The first full-time auto shift in a Cat® dozer, which automatically optimizes gear selection so operators of all skill levels can work more efficiently.

Additional enhancements include: improved shift quality; deep integration between the engine and powertrain; factory integrated grade control technology. These improvements in the powertrain and controls dramatically cut the machine's fuel consumption while still offering up to 2.5 percent productivity improvement. The result is a 15 to 20 percent reduction in fuel consumption across most applications and up to 30 percent in lighter applications, which contributes to lower greenhouse gas emissions at the job site.

BRINGING RELIABLE ENERGY **TO THE BRAZILIAN AMAZON**

THE NEARLY HALF MILLION RESIDENTS OF RORAIMA, BOA VISTA ARE SEPARATED FROM THE REST OF BRAZIL BY THE NEARLY IMPENETRABLE AMAZON RAINFOREST.

Isolated from the national power grid, the town faced the effects of aging power generation equipment in 2009 and were in dire need of an immediate energy solution. The regional electrical utility, Eletrobras Distribuição Roraima (EDR), turned to Oliveira Energia, a supplier of power plants and emergency power installations throughout the region. In eight short weeks, Oliveira Energia began supplying more than 40 MW of power from the UTE Floresta Plant, a temporary installation near an existing substation in Boa Vista that included 32 containerized Cat® 3516A and 3516B diesel generator sets.

Though these generator sets were intended to be a temporary fix until there could be a connection with the Brazilian power grid, EDR, instead, began planning for its own permanent power plant to meet current and future needs. Together, Oliveira Energia, Caterpillar and the local Cat dealer, Sotreq, got to work designing, constructing and commissioning the UTE Monte Cristo Thermal Power Plant with a capacity of 107 MW to serve 115,000 customers in Boa Vista and nine other municipalities in the state of Roraima.

Due to the region's extremely high temperatures and humidity, it was imperative to use low-emitting and strong-performing generator sets. In addition to these conditions, the team had to design the plant in a modular way that allows for physical expansion and the installation of additional generator sets as demand rises in the years ahead. Though similar projects can take up to three years to complete, this project was completed in eight months and fully outfitted with 34 Cat C175-20 diesel generator sets supplying 3150 kW of gross power in continuous power applications.

To help offset the environmental impact of the power plant, Oliveira Energia and EDR have committed to grow a million tree seedlings per year in a nursery located next to the new power plant. These will be donated to local schools, conservation groups and other volunteers to help preserve the natural beauty of the region. Oliveira Energia is also leveraging another abundant resource by training students who attend nearby technical schools and hiring local talent. In fact, nearly all of the 80 employees at the plant are from Boa Vista and the surrounding region.

"For many years, the power supply in Boa Vista was unreliable, impeding economic development throughout the region," said Orsine Oliveira, president and chief executive officer of Oliveira Energia. "These Cat generator sets not only serve as a consistent, reliable source of power for local residents and businesses, they also deliver the stability that this region needs for lasting economic and social progress."

NATURAL **INFRASTRUCTURE**

Conventional infrastructure – sanitary sewers, treatment plants, roads and bridges – is not the only infrastructure in need of rebuilding. Ecosystems that are essential to the health of our economy, communities and planet – forests, prairies, agricultural lands, estuaries, coastal landscapes and wetlands – also are in critical need of restoration. Unfortunately, a significant portion of the earth's natural infrastructure has been lost or degraded. These ecosystems purify our water and air, sequester carbon, produce nourishment and supply other raw materials. Our products and solutions are well equipped to address these types of restoration projects.

As an example, consider the New Jersey coastline. Hurricane Sandy and Winter Storm Jonas caused more than $30 billion in financial, social and environmental damage to the shoreline. In response to such events, Caterpillar is taking a proactive role supporting our customers and dealers in coastal dredging, protection and reclamation on coastlines in the U.S. and around the world.

Since these storms hit the Jersey shore, Cat® equipment is being used by multiple dredging contractors to restore the beaches and dunes. These projects – and others around the world – are examples of how Cat® machines help rebuild natural infrastructure that is vital to improving coastal resilience and help protect social and environmental assets on coastlines from future storm surge and flood damage.

To increase attention to and understanding of natural infrastructure restoration, Caterpillar is working with a group of like-minded organizations to create a coalition on restoring natural infrastructure. The planned coalition will focus initially on coastal resilience, inland waterways and dam removals. Its role is to add value by accelerating the frequency and pace of natural infrastructure projects in this area and supporting increased funding for these types of projects. It will also identify and help remove or reduce regulatory and commercial barriers to implementing projects. Other activities would include a public campaign to raise awareness of the environmental, social and economic benefits of restoring natural infrastructure and promoting a positive agenda with policymakers to provide incentives to invest in restoring natural infrastructure projects through tax benefits, federal funding and public-private partnerships, as well as other public policy initiatives.

WHY NATURAL INFRASTRUCTURE RESTORATION **IS CRITICAL**

THE MOST IMPORTANT ROLE OF NATURAL INFRASTRUCTURE IS TO SEQUESTER BILLIONS OF TONS OF CARBON. MORE CARBON RESIDES IN SOIL THAN IN THE ATMOSPHERE.

SOIL
2,500 BILLION TONS CO_2

ATMOSPHERE
800 BILLION TONS CO_2

TODAY THE UNITED NATIONS ESTIMATES:

25% LAND IS HIGHLY DEGRADED

50%+ WETLANDS HAVE BEEN LOST

NATURAL INFRASTUCTURE RESTORATION CAN REVERSE SOME OF THIS DAMAGE.

1-3 BILLION TONS ANNUALLY
Annual increase in carbon storage capacity due to soil restoration

3.5-11 BILLION TONS
Annual carbon emissions eliminated due to soil restoration

Sources:
Ontl, T. A. & Schulte, L. A. (2012) Soil Carbon Storage. Nature Education Knowledge
United Nations report, the State of the World's Land and Water Resources for Food and Agriculture (SOLAW)
Ohio State University's Carbon Management and Sequestration Center

JOB SITE **EFFICIENCY**

Our customers need to realize the full value of their assets on the job site. Our solutions business model is designed to meet that need by going "beyond the iron" to increase asset utilization. Designed and delivered by the Caterpillar Job Site Solutions (JSS) team in partnership with Cat® dealers, these solutions help customers find new and innovative ways to improve their operations and be more competitive in the marketplace. JSS leverages Caterpillar's financial, technological, application and management expertise to tailor solutions based on the customer's own needs, typically in the areas of safety, sustainability, equipment, productivity and financials. As a result, every solution is different, scalable and can range from a short-term consulting engagement to a multiyear fleet management solution.

Job Site Solutions in Action

For example, the Caterpillar JSS team helped a pulp and paper manufacturer in the United States save an estimated 60,000 gallons of fuel per year through more efficient equipment use, fleet design improvement and operator training enhancement. In total, these measures saved the facility over $114,000 in 2016.

We consistently find that the cost savings unlocked by our JSS team also deliver additional sustainability benefits. For instance, optimizing fleet efficiency not only reduces costs, but it also can improve the maintenance and component replacement cycles of individual machines. Better maintenance execution can extend the life of a machine, which, in turn, reduces fluid and maintenance parts consumption and avoids the manufacturing and resource-use impacts of purchasing an entirely new machine. The integration of these services is showcasing the three dimensions of sustainability – economic growth, environmental stewardship and social responsibility – for our customers.

JOB SITE **SUSTAINABILITY IMPACT**

TOTAL CUSTOMER SUSTAINABILITY VALUE

$1,244,000 IN 2016

$5,260,000 SINCE 2007

OPERATOR SAFETY

$649,000

Savings value realized by avoiding occupational health & safety incidents

OPERATIONAL IMPROVEMENTS

$807,000

Savings value realized by reduced tire wear and improved compaction density

ENERGY & FUEL

$3,117,000

Savings value realized by reducing energy and improving fuel economy

SITE MAINTENANCE EFFICIENCY

$688,000

Savings value realized by improving machine availability and repairing machines more efficiently

Value Chain

Caterpillar is building capabilities to deliver an integrated value chain. The company that connects its end-to-end business – from customer all the way back through its chain – will gain and maintain industry leadership. To do so, we must engineer our value chains just like we engineer our products into a synchronized system that maximizes quality, value and speed to the customer.

OUR INTEGRATED VALUE CHAIN

SUPPLIERS
Provide product inputs and materials

CATERPILLAR
Manufactures equipment and provides technology solutions

DEALERS
Distribute our products and solutions to our customers

CUSTOMERS
Use our products and solutions on job sites and in energy applications

SUPPLIER NETWORK

Our suppliers are an essential link within our value chain and our commitment to quality. We look for suppliers who demonstrate strong values and commit to the ethical principles outlined in our Supplier Code of Conduct. We expect suppliers to comply with the sound business practices we embrace, follow the law and conduct activities in a manner that respects human rights.

Our Supplier Code of Conduct was refreshed in 2015 to add several new provisions, including human rights, innovation, and diversity and inclusion. Several other provisions were enhanced, including environmental responsibility and sustainability.

To ensure impacted suppliers understand our expectations, we request that they respond to our supply network assessment or complete a training program. As issues arise, members of our senior management are apprised, and suppliers are expected to implement corrective action plans for mitigation or remediation. Any supplier's failure to take corrective actions when required may lead to additional actions, up to and including the termination of our business relationship.

Caterpillar continues to expand the Assurance of Supply Center (ASC) to support our enterprise strategy to manage a world-class supply network. The ASC is a network knowledge service organization and data platform that captures and transforms complex supply network data from dozens of systems into a suite of simple but powerful business tools that can be used for everyday decisions. This technology enables an agile supply network that delivers at the right time and right cost, while reducing waste caused by trial and error or delayed decision making.

In 2016, we completed transportation projects that reduced CO2 emissions by **2,312** metric tons. That is equal to removing 488 cars from the road.

Another supply network consideration at Caterpillar is compliance with applicable laws and regulations. Caterpillar works with its suppliers to determine the content in each of the products Caterpillar manufactures or contracts to manufacture. In some instances, Caterpillar is also required to expand its due diligence to determine the origin of certain components. A cross-functional business team develops systems and processes for conducting such reviews. Caterpillar monitors metrics that could indicate risks in the supply network. These efforts continue to be important in creating transparency in the supply network.

SUPPLIER DIVERSITY

Diversity within our supply base is important to Caterpillar and we strive to mirror the demographics of the varied markets in which we operate. Our goal is to provide sourcing opportunities to a wide range of diverse business types – minority-owned small businesses, veteran-owned small businesses and many others – throughout our enterprise. Seamless integration of these businesses allows for synergies as we assist them in growth and development.

A MORE SUSTAINABLE LOGISTICS NETWORK

For transportation, sustainability has always been a focal point of how to design shipping networks, optimize transportation modes and configure products for optimal shipping. The Global Supply Network Division (GSND) transportation team manages movement of production material and service parts around the world to support Caterpillar manufacturing and dealers. The group seeks to identify the optimal schedules to increase truckload utilization, which in turn reduces the number of trucks on the road. Transportation also works closely with packaging teams to determine the best way to stack material on a single truck or in an ocean container. Higher utilization of a single vehicle reduces the number of shipments overall.

Today we are leveraging the scale and expertise of Caterpillar's supply network to help our dealers and customers receive their products more efficiently. We now transport product from the production yard to the dealership. Dealers can collaborate with us on when and where they want a machine shipped, check the shipping status online and instantly get information on location and estimated time of arrival. By including the "last mile" as part of our overall value chain design, we are delivering products with higher dealer satisfaction, improved delivery performance and visibility, and lower cost.

China Association of Enterprises with Foreign Investment

Caterpillar China was named to the **2016 Best CSR Practices of Foreign-Invested Enterprises** in China, including the **Best Partner Award**. This recognition from the China Association of Enterprises with Foreign Investment recognizes our efforts to progress together with suppliers to improve product quality and operational efficiency by leveraging Caterpillar's outstanding enterprise management system and remarkable technological innovation.

GLOBAL PARTS EVC PROGRAM DELIVERS **PROFITABILITY WITH SUSTAINABILITY**

WITH THOUSANDS OF SUPPLIERS, PLANTS, DEALERS AND CUSTOMERS IN THE CATERPILLAR VALUE CHAIN, THERE ARE OPPORTUNITIES TO IMPROVE EFFICIENCIES IN MOVING RAW MATERIALS AND FINISHED PRODUCTS FROM POINT A TO POINT B.

This is why, in 2015, we launched the Global Parts Engineered Value Chain (EVC) program to take advantage of a shrinking world and our global capabilities. Created to remove aftermarket inventory without disrupting service levels to our customers, the program helped realize immense economic, environmental and social benefits. By collaborating across the supply network, the "Plan For Every Part" (PFEP) program evaluates total cost of ownership by optimizing order quantities, transportation, taxes and duties, and material cost. To date, the program has saved $45 million in supply chain costs alone.

In addition to the significant profitability improvements, the EVC program helps prevent product and packaging waste, reduces emissions from global transportation, conserves natural resources via raw material resource utilization and decreases utilities via lower inventory on shelf. In total, this program resulted in 300 tons of CO_2 emissions removed in the first year and is expected to increase significantly in the future. The PFEP program also creates jobs in developing countries and ensures an ethical supply base.

Consider how a spindle made in India used to travel to its destination in Singapore. Previously, a 1,600-pound spindle from India would have to travel through Grimbergen, Belgium, to be inspected, packaged and processed for reallocation where needed in the network to meet dealer demand. The spindle would then be shipped back to Asia to be stocked at our distribution center in Singapore. We replicated processes and technology in place in Shanghai to Singapore, making it an entry point capable of inspection, paint and packaging of direct supplier parts. Now these spindles move directly from India to Singapore. From the 42 spindles sold every year alone, this project reduced packaging cost and landfill waste by 40 percent, reduced travel by over 28,000 kilometers and associated CO_2, decreased transit time by 50 days, and saved $325,000 in total cost of ownership.

DEALER **NETWORK**

Our independent dealers serve as a critical link between our company and our customers. We rely on them to collaborate with us in building and maintaining our long-standing customer relationships. Cat® branded products and services are distributed through a worldwide network of Cat dealers, 49 of which are located in the United States and 123 located outside the United States.

The large majority of our worldwide dealers are independently owned and operated, and many of these businesses have been in families for multiple generations. The Cat dealer network brings value to customers through unmatched service, integrated solutions, after-sales support, fast and efficient parts fulfillment and world-class rebuild capabilities. We work with our dealers to provide products, services and support solutions necessary to satisfy customer needs worldwide. Other brands in our portfolio are distributed through their respective channels that optimize customer value in accordance with their brand value propositions.

Our distribution model, which has consistently delivered unmatched local support, is increasingly measured by global standards. Caterpillar and Cat dealers have worked together to define and lay the foundation for a strategy that addresses our mutual challenges and builds the foundation for our next century of progress. Together, we have mapped the path forward around four objectives:

- Strengthening the Cat dealer model
- Enhancing customer focus
- Achieving superior economics for Caterpillar and the dealer
- Seizing opportunities while mitigating risks

Our dealers worldwide have been working side-by-side with Caterpillar employees from every area of the company on projects focused on such things as e-business, technology-enabled solutions, service strategy, rental and used equipment strategy and parts logistics.

172
GLOBAL CAT DEALERS

157,000
CAT DEALER EMPLOYEES

Governance & Ethics

Caterpillar's current Code of Conduct – Our Values in Action – defines what Caterpillar stands for and what we believe in, documenting uncompromisingly high ethical standards for our company. The Code of Conduct helps Caterpillar employees every day by providing detailed guidance on the behaviors that support Our Values in Action – Integrity, Excellence, Teamwork, Commitment and Sustainability.

CORPORATE **GOVERNANCE**

Our commitment to good corporate governance stems from our belief that a strong governance framework creates long-term value for our shareholders, strengthens Board and management accountability and builds trust in the Company and its brand. Our governance framework includes the following highlights:

Learn more about the Board and its committees

Learn more about the Caterpillar Code of Conduct

BOARD AND GOVERNANCE INFORMATION	
Size of Board	13
Number of Independent Directors	12
Average Age of Directors	62
Board Meetings Held in 2016	9
Annual Election of Directors	Yes
Mandatory Retirement Age	72
Women and Minority Board Members	38%
Majority Voting in Director Elections	Yes
Separate Chair and CEO	Yes
Independent Chair	Yes

BOARD AND GOVERNANCE INFORMATION	
Average Director Tenure	7 years
Supermajority Voting Threshold for Mergers	No
Proxy Access	Yes
Shareholder Action by Written Consent	No
Shareholder Called Special Meetings	Yes
Poison Pill	No
Code of Conduct for Directors, Officers and Employees	Yes
Stock Ownership Guidelines for Directors and Executive Officers	Yes
Anti-Hedging and Pledging Policies	Yes
Compensation Recoupment Policy	Yes

RISK **MANAGEMENT**

Risk is an inherent part of conducting global business. Caterpillar regularly identifies and monitors business risks through a robust internal management system and engages in constructive regulation and public policy discussions that benefit employees, customers and shareholders. We manage operational, strategic, financial and compliance risk through two programs: the Business Risk Management (BRM) Program and Caterpillar's Ethics and Compliance Program.

Each year, we conduct a comprehensive Enterprise Risk Assessment by reviewing risk information from multiple sources, including business units. To better inform our decision making, Caterpillar evaluates risks using three dimensions (significance, likelihood and velocity) at the business unit and enterprise level.

The results of this BRM risk assessment are incorporated into future action plans to mitigate the identified risks. Compliance risks are also reviewed as part of the BRM risk assessment process and are managed as part of Caterpillar's Ethics and Compliance Program. These risks cover a broad range of issues, including legal and regulatory compliance, labor, and health and safety.

Every risk identified under the Ethics and Compliance program has an Enterprise Risk Owner who is responsible for managing efforts to mitigate the risk for Caterpillar. They help drive risk management through governance, evaluation, controls, communication and training, and compliance audits throughout the world. Through these programs, Caterpillar can better manage risk and gauge the potential impact of various outcomes on our ability to achieve strategic goals.

PUBLIC POLICY

Government decisions with regard to laws and regulations around the world can have a significant impact on our employees, customers and shareholders. Within applicable legal parameters, Caterpillar strives to constructively advocate for public policy outcomes that help promote sustainable business conditions for our company, dealers, customers, suppliers and shareholders. The form of advocacy Caterpillar uses may differ depending on the political system and local law.

We communicate the importance of key public policy issues to our employees and other stakeholders, including dealers, suppliers and retirees. In some countries, we may encourage them to express their views to lawmakers if this practice is consistent with local custom and citizenship rights. Our leaders will also utilize opportunities to interact with government officials directly to advocate our legislative positions.

Finally, we support many organizations and associations as they champion public policies that contribute to the success and growth of the business community and manufacturing industry as a whole. We do so by:

- Advocating and seeking implementation of policies and legislation that allow Caterpillar, our dealers and customers to succeed.
- Engaging with elected officials and policymakers to ensure their understanding on the key public policy issues that impact our business, such as trade, tax, infrastructure and energy.

Where allowable by law, Caterpillar may make corporate contributions to campaigns, individual candidates or political action committees that support public policies that we believe will have an impact on our business. As outlined in Our Values in Action, all corporate contributions are approved by Caterpillar Government Affairs.

Learn more about political contributions

Caterpillar employees in the U.S. also fund and administer the Caterpillar Employee Political Action Committee (CATPAC). CATPAC is funded through voluntary contributions by eligible employees. A Steering Committee comprised of Caterpillar non-officers who represent a diverse mix of U.S. locations and business units oversees all donations made by CATPAC. CATPAC contributions go to federal and state political campaigns and organizations.

ENERGY & CLIMATE POLICY

As a global energy consumer and industrial manufacturer, as well as a major manufacturer of energy conversion and power-generation products, Caterpillar has a fundamental interest in, and understanding of, energy needs around the world.

We are providing products with leading integrated technology to various energy markets and leveraging our technology and innovation to meet the world's growing energy needs.

Greenhouse gas (GHG) accumulation in the atmosphere is a major concern in both the public and private sectors because of the potential for these gases to affect climate patterns. As a result, many governmental and intergovernmental organizations are implementing mechanisms in an attempt to reduce GHG emissions.

Caterpillar supports integrated carbon and climate policies that effectively balance environmental and economic considerations. We understand that the most immediate and measurable benefits will occur through energy-efficiency improvements and corresponding GHG emissions reductions.

In response to the challenge of reducing GHG emissions, we are:

- Setting aggressive energy-efficiency and GHG-reduction goals for our operations.
- Investing in energy-efficiency and GHG-reduction technologies for our products that are important to our stakeholders and represent significant areas of opportunity for our business.
- Committing to the development and deployment of advanced technologies that capture and store GHG emissions.
- Supporting policies and mechanisms that harness the marketplace to drive innovation, mobilize investment and facilitate sharing these technologies.
- Encouraging the coordination of domestic and international programs that maximize the use of flexible, proven mechanisms to sequester carbon in soils, plants and ecosystems.

Additionally, we support the reduction of GHG accumulation through improved GHG management practices. Atmospheric GHG accumulation can occur as a result of inefficient or excessive fossil fuel combustion, poor waste management practices or poor land management practices. Caterpillar is a leader in the development and deployment of innovations and technologies that, through our products, assist in the mitigation of all three of these sources.

CARBON REGULATION

Despite divergent proposals under discussion worldwide, technology and innovation play a key role in any successful strategic approach to emissions reduction. Further, the private sector must take the lead in developing and deploying technology solutions to reduce GHG emissions. Ideally, regulatory structures should provide a technology-neutral and level playing field in which competitive solutions can be developed.

Businesses will struggle to find solutions if vastly differing approaches to GHG reduction are implemented around the world. That is why we continue to endorse a comprehensive, international approach that encompasses GHG-reduction commitments from all major economies. We encourage a constructive dialogue and a proactive approach to providing energy safely, efficiently and affordably to the billions of people who inhabit our planet.

CARBON RESEARCH INVESTMENTS

Carbon can offer productive uses in a variety of applications. We are investing in research and advocating for policies that support these developments in diverse areas such as improved land management, restoration of degraded lands, and carbon capture and storage technologies.

For example, we are a founding member and co-funder of the Energy Technologies Institute (ETI), a collaboration between industry and the U.K. government to accelerate the development of technologies that address the challenges of climate change and provide affordable energy access. Additionally, Caterpillar is a member of the project advisory group for the Midwest Geological Sequestration Consortium. With the objective to safely demonstrate the viability of this CO_2 emission reduction technology, the Consortium is currently gathering scientific data and monitoring the 1 million metric ton (1.1 million U.S. ton) CO_2 storage site in Decatur, Illinois.

INFRASTRUCTURE POLICY

Governments have a responsibility to maintain appropriate levels of productive investment in infrastructure while providing a level playing field for suppliers. Leveraging private investment can bring additional sources of funding, provided that investment is supported by fair and predictable policies to maximize the certainty and timeliness of financial returns.

Growth-enhancing infrastructure investments, however, cannot be fully delegated to the private sector, and public financing should continue to comprise the bulk of infrastructure investment. Governments can influence the affordability of infrastructure through the facilitation of permitting, the reduction of administrative burden and the simplification of related requirements. The role of government for infrastructure financing should be based on national needs, including urbanization, commerce and trade policy, transportation, disaster prevention and mitigation, defense and global competitiveness.

TRADE POLICY

The best means of economic development and the efficient distribution of goods and services is the pursuit of business excellence in a climate of free enterprise, free trade and global competition. Further, such international exchange promotes better understanding across borders and cultures, leading to a more peaceful world. These benefits have been demonstrated by the enormous rise in post-World War II gross domestic product and living standards in countries participating in international commerce. By contrast, many isolated countries have frequently not experienced such advantages.

Increased commercial engagement leads to economic gains that raise standards of living, improve the quality of life and promote sustainable development. More importantly, trade liberalization can promote peace and understanding and can be an important contributor to solving the global problems of hunger, poverty and disease. Economic growth through international trade is essential for poverty reduction, but also comes with challenges. Chief among them is the need to balance economic, environmental and social policies to achieve sustainable development. Balanced economic, environmental and social policies provide a common framework for allowing environmental and trade policymakers to engage stakeholders, analyze issues and evaluate policy more efficiently.

Caterpillar has a long history of advocating for free trade. Our interest comes not from the perspective of any one country, but from our global perspective and with the foundational belief that companies compete best in a free trade environment. Free trade requires us to continually improve our global competitiveness and creates an environment that allows us to better respond to our customers' needs and to grow our business. It offers us the opportunity to source globally and thus compete effectively while providing maximum value to users. Our suppliers, in turn, also have an easier time satisfying our global sourcing requirements. Our employees around the world, and their respective communities, benefit from a higher standard of living, as they have access to more product choices at lower prices. Free trade also allows us to provide more and better job opportunities, because open markets lead to improved competitiveness.

Caterpillar will continue to support policies that enhance competition in the global marketplace and reduce – or better yet, eliminate – trade and investment barriers. We believe that developed countries should adopt policies that allow the benefits of the global economy to be extended to developing countries. To this end, Caterpillar also recognizes that humanitarian and developmental assistance is necessary to fight disease, improve living conditions and combat corruption – all of which can be barriers to free trade and economic growth in the world's poorest countries.

HUMAN **RIGHTS**

Our Human Rights Policy is guided by the international human rights principles described in the Universal Declaration of Human Rights (UDHR) and the International Labour Organization's (ILO) Declaration on Fundamental Principles and Rights at Work. Our human rights program is governed by leadership with accountability across the enterprise, led by our Global Human Rights Manager, focused on awareness-raising, information sharing, external reporting, monitoring and mitigation of impacts on an ongoing basis in collaboration with process and risk owners. Through the existing grievance reporting mechanism, we investigate and respond to human rights concerns. Human rights metrics and key issues are reported to the corporate secretary and to the Public Policy and Governance Committee of the Board of Directors on a regular basis.

In 2015, Caterpillar conducted a human rights impact assessment (HRIA) to identify actual and potential human rights issues and impacts on vulnerable groups along our value chain (such as children, migrant labor, workers or local communities). In addition to the HRIA, Caterpillar has introduced mechanisms to understand our human rights impacts across our value chain with our partners. In 2016, more than 11,000 of our suppliers were asked to complete a self-assessment on a variety of the issues set out in our Supplier Code of Conduct. The human rights questions focused on whether our suppliers have policies and procedures to manage the issues determined to be salient for Caterpillar's supply network. This assessment is the first step to supporting Caterpillar's understanding and locating the areas of risk in our supply base. As part of our process, we work to investigate and mitigate identified risks.

Corrective actions were executed with the high risk suppliers to further evaluate risk exposure or mitigate the risk identified.

As we continue to advance our human rights program, we will look to engage with our suppliers on these topics as well as consider the use of on-the-ground human rights impact assessments or audits in high risk regions or facilities to improve understanding of human rights issues and impacts.

SALIENT ISSUES

Our salient issues are determined based on consultation and requests from our stakeholders, our Code of Conduct and our human rights impact assessment. We focus on nine salient issues that put us at risk of having a negative impact on rights-holders through our activities or business relationships. We recognize that other human rights may become greater priorities over time, and we regularly review our priority areas.

- Child Labor
- Wages and working hours
- Discrimination and harassment
- Health and safety
- Forced labor and human trafficking
- Impacts on local communities
- Controversial use of Cat® equipment
- Doing business in conflict-affected areas
- Freedom of association and the right to collective bargaining

In 2016, more than half of the requests or grievances from interested parties related to these three issues: controversial use of Cat equipment, doing business in conflict-affected areas and freedom of association and the right to collective bargaining. These issues are currently the focus of our attention.

117 REQUESTS RELATED TO HUMAN RIGHTS THROUGH OUR FORMAL GRIEVANCE MECHANISMS ⇨ **100%** ADDRESSED

TRAINING AND COMMUNICATIONS

In 2016, we developed a human rights awareness training program and prioritized the roll-out to executive leadership and risk owners of areas where human rights risks were deemed to be highest. Training was offered to:

- Executive leadership
- Human resources leadership and professionals
- Retail business development team
- Direct sales team
- Directors of global supply network division

In addition, training was offered within our value chain to:

- Members of the dealer human resources steering committee
- Caterpillar trademark licensees, with responsibility for the manufacturing of $2.2B in retail product sales in 2016.

We are committed to increasing the capacity of our management and employees to effectively identify and respond to concerns. In 2017, Caterpillar will require human rights training for all employees, provided in 18 languages.

SUPPORTING THE REMOVAL **OF LANDMINES**

IN MANY INSTANCES, CAT® EQUIPMENT IS USED TO FACILITATE A POSITIVE IMPACT ON HUMAN RIGHTS. ONE EXAMPLE OF THIS IS OUR SUPPORT OF THE DIGGER FOUNDATION.

About 110 million land mines are still in the ground as a result of past or current conflict or wars. Landmines restrict the movement of people and humanitarian aid, make land unsuitable for cultivation, and deny citizens access to water, food, care and trade. Thousands of people die or lose limbs from stepping on a landmine every year – and the majority of these victims are civilians. Removing landmines is critical to creating safer communities and rebuilding war-torn areas.

In 2016, Caterpillar connected with a Swiss non-profit organization called the Digger Foundation. This organization works in the field of humanitarian mine clearance by helping mine clearers increase their efficiency, improve safety and lower costs. They already use Caterpillar products for their main mine-removal tool – the D-250. Our Caterpillar office in Geneva, Switzerland collaborated with Digger which led to the donation of a Cat® 319 excavator for Digger's new project called DOME (Digger Management and Operating Environment). Digger will retrofit the excavator so it can be operated remotely – and safely – thereby not putting human lives at risk during mine clearance and removal. This prototype machine will clear cities that have been reduced to rubble and contaminated with unexploded devices. Once the system is ready, the donated excavator, fully equipped by Digger, will ultimately find its way to Iraq and be part of the humanitarian effort to clear war-torn cities.

Community Impact

Our success contributes to the social stability of regions around the world. Caterpillar and our employees focus on contributing time and resources to promoting the health and welfare of communities in which we work and live. We conduct our business in a manner that respects human rights individually.

Employees are encouraged to actively engage in activities that contribute to the betterment of society through volunteering time and talents or investing monetary resources in worthwhile community projects and initiatives. In addition, Caterpillar supports the Caterpillar Foundation, which has been dedicated to transforming lives in communities around the world since 1952. The Foundation champions programs that support education, environment and basic human needs.

ENERGY ACCESS & **POVERTY**

One of the biggest differences between a developing nation and a developed nation is reliable access to energy. Lack of access to modern energy services hinders economic and social development, making it more difficult to provide water purification, sanitation and education. Today, technology and natural resources exist to rapidly expand energy access, but the challenge is accomplishing this in an effective and efficient manner. To increase energy access, we believe:

- Access to affordable and dependable energy resources is critical for energy security, economic prosperity and growing economies. Caterpillar supports balanced and comprehensive energy policies for the responsible development and utilization of all energy resources, including traditional sources of energy and expanded use of alternative energy technologies.
- No single solution can provide abundant, reliable, secure and reasonably priced energy on a global basis. Market-based, cost-efficient energy solutions are the best way to help meet the world's growing energy demands.
- Political and industry leadership is required to forge consensus and a commitment to providing energy and related infrastructure that address economic development, stability and environmental impacts.
- When regulation is necessary, regulatory structures should provide a technology-neutral and level playing field that embraces competition and in which Caterpillar, our independent dealers and our customers can operate.
- We support the development and use of strategies and technologies to increase energy efficiency and reduce emissions.

Energy diversification – such as coal in combination with carbon capture and storage, new nuclear buildouts, new natural gas reserves, plus renewable energy sources like biogas, wind, photovoltaic or solar, tidal and others – will contribute to an energy portfolio that helps eliminate energy poverty, raises standards of living and propels economic growth with less impact on the environment. Eliminating energy poverty is a vision that can be achieved.

MICROGRID SOLUTIONS

Cost-effective electric power is a challenge for communities and industrial or commercial installations that lack access to a strong utility grid. In these situations, providers must rely on engine- or turbine-driven generator sets that, while highly reliable, typically produce power at a much higher cost than a large utility.

Now a better model, called microgrid solutions, is emerging that combines cost-effective renewable energy from solar or wind sources with conventional diesel- or gas-fueled generation. Cat® Microgrid Solutions are designed to significantly increase power system stability, reduce fuel expenses, decrease harmful emissions, lower the total cost of ownership and achieve favorable payback periods.

Aided by sharp declines in the cost of solar and wind energy, as well as lower energy storage costs relative to the price of fuel, microgrids are well suited to a host of applications, including individual buildings, resorts, mine sites, remote villages, small islands and others. The most promising applications are those with total power demand from 100 kW to 20 MW.

In addition to industrial applications, microgrids are a sustainable solution for emerging markets as well. With more than 1.2 billion people lacking access to electricity and many more needing a reliable grid for basic human needs such as access to clean water, healthcare, lighting and education, Cat Microgrids are designed to power a better world.

American Chamber of Commerce in Singapore

In April 2016, Caterpillar was one of 20 companies to receive an **American Chamber of Commerce in Singapore Cares Award**, recognizing corporate social responsibility.

TUCSON PROVING GROUND REDUCES EMISSIONS **USING NEW CAT® MICROGRID SOLUTION**

LOCATED ABOUT 30 MILES SOUTHWEST OF TUCSON, ARIZONA, CATERPILLAR'S TUCSON PROVING GROUND (TPG) CONSISTS OF LARGE OPEN-AIR TEST AREAS WHERE MINING EQUIPMENT IS TRIED BEFORE BEING BROUGHT TO MARKET.

While remote, TPG has a high demand for power with employees working on projects ranging from machine tear downs and builds to welding to office and administrative tasks.

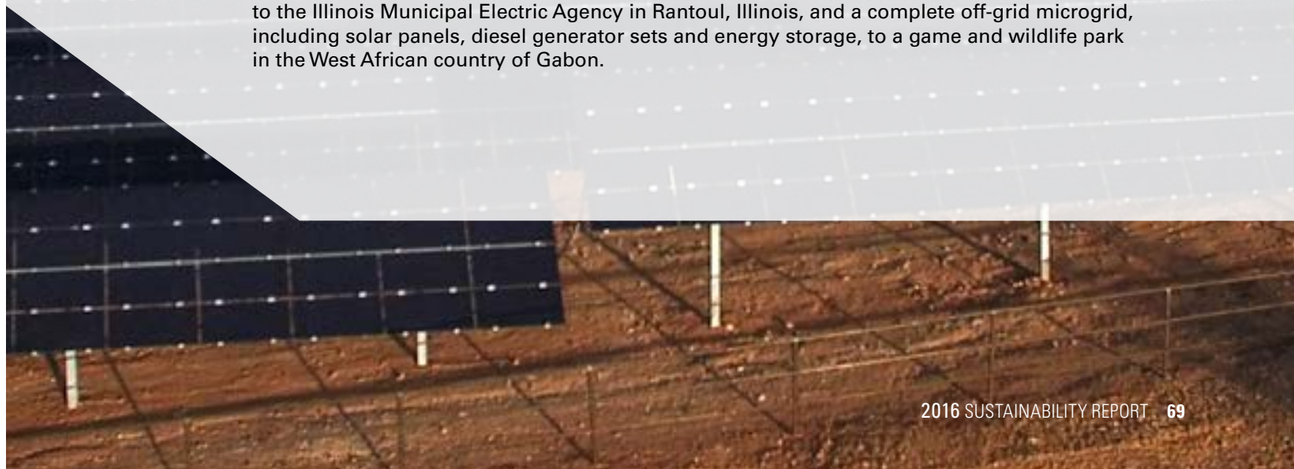
With the nearest local utility grid nearly eight miles away, the site has relied on three Cat® C15 diesel generator sets that are designed to run continuously all year long, consuming approximately 250,000 gallons of diesel fuel each year. Altogether, the generator sets typically run a combined 11,000 hours per year.

In order to help reduce fuel costs, decrease dependency on generator sets and lower emissions on the site, TPG installed 500 kWp of thin-film photovoltaic (PV) solar panels and 500 kW of short-term energy storage from the new Cat Microgrid solution suite of product offerings.

Officially launched in April 2016, the Cat Microgrid solution offers solar panels, state-of-the-art energy storage, and advanced monitoring and control systems in combination with Caterpillar's traditional line of power generation equipment, including Cat generator sets, switchgear, uninterruptible power supplies and automatic transfer switches. Ideal for a broad range of applications such as mining sites, rural electrification and telecommunication towers, the Cat Microgrid solution is designed to reduce fuel expenses, lower utility bills and decrease emissions while increasing energy efficiency in even the most challenging of environments.

Thanks to the Cat Microgrid solution, TPG expects to lower its diesel fuel use by 33 percent and its generator set operation by 25 percent, saving about 1,000 tons of carbon dioxide emissions a year.

In addition to the TPG project, the microgrid team has recently supplied a 1000 kW PV system to the Illinois Municipal Electric Agency in Rantoul, Illinois, and a complete off-grid microgrid, including solar panels, diesel generator sets and energy storage, to a game and wildlife park in the West African country of Gabon.



ECONOMIC **DEVELOPMENT**

Caterpillar and our products support economic growth around the world, both in developed countries, where aging networks need improvement, and emerging markets, where new infrastructure is required. Our products help ensure that investments in transportation, energy, telecommunications, waste and water infrastructure produce maximum benefits. We support these investments as key enablers for sustainable development, economic growth, competitiveness and long-term job creation.

Our facilities in more than 61 countries provide quality jobs and opportunities for the people in those locations. At the end of 2016, Caterpillar had approximately 95,400 full-time employees, which accounts for only a fraction of the jobs directly associated with Caterpillar, typically represented by our flexible workforce, extended dealer network and supply chain. In addition to the direct economic contributions to the local economies associated with employee, dealer and supplier compensation and other operating expenditures, additional indirect and induced contributions occur as a result of spending by the employees, dealers, suppliers and customers who visit our facilities throughout the world.

Empower a Woman, Change the World.

The Caterpillar Foundation believes that energy access empowers people to rise out of poverty, and that journey starts with gender equality. Since girls and women are disproportionately impacted by lack of energy access, this has a subsequent and profound impact on communities at large. Reliable energy access improves maternal health and reduces child mortality rates, surges women's employment and increases chances for girls to complete primary education. Attaining this financial stability, education, healthcare and nourishment, in turn, helps build healthy communities and strong economies.

$2.18T
MANUFACTURERS CONTRIBUTED TO U.S. ECONOMY IN 2016

$1.00
SPENT ON MANUFACTURING
=
$1.81
TO THE ECONOMY

~27%
HIGHER EARNINGS MANUFACTURING VERSUS NONMANUFACTURING

SOURCE: NATIONAL ASSOCIATION OF MANUFACTURERS

CATERPILLAR INVESTS **IN AFRICA**

WITH THE FASTEST-GROWING MIDDLE CLASS IN THE WORLD AND A POPULATION EXPECTED TO DOUBLE BY 2050, AFRICA HAS TREMENDOUS POTENTIAL FOR GROWTH IN THE CONSTRUCTION, AGRICULTURE, MINING, POWER, ENERGY AND TRANSPORTATION SECTORS.

Caterpillar, our dealers, and the Caterpillar Foundation, together, are committed to helping the continent realize this potential by investing in service facilities, logistics facilities, and education and skills development.

As Africa continues to grow as an emerging market for Caterpillar and other international investors, so too does the demand for a skilled, local workforce. Despite this need for talent, there is a substantial deficit of untapped human capital, as the region's workforce lacks access to appropriate training and education. The Technicians for Africa project was born out of this need for technical education support across the continent. With 18 free-of-charge courses, the program leverages Caterpillar's state-of-the-art e-learning solutions through its accessible platform made available on computers, tablets and mobile devices. Now any African worker who has an internet connection can begin to develop a career as a heavy equipment technician with eventual Caterpillar certification. Successful pilot programs in English-speaking Nigeria, Portuguese-speaking Mozambique and the French-speaking Democratic Republic of Congo are in place, and Caterpillar has now expanded Technicians for Africa to a total of 15 African countries.

Announced in 2017, Caterpillar will establish a new district office in Abidjan to enable us to be closer to our customers in Ivory Coast and neighboring countries. The office will gradually increase the number of employees in Ivory Coast over the coming years. The dealer network is present in almost every African country, serving customers that help build and power communities and, ultimately, better lives.

In addition to the company's commitment to Africa, since 2010, the Foundation has invested approximately $50 million in Africa, and has committed another $15 million between now and 2020 to support projects in Africa focused on impacting those living in poverty, and specifically girls and women, through training, policy work, entrepreneurship programs and more. These investments are benefiting hundreds of thousands with access to education, energy, clean water and sanitation, and microfinance.

PHILANTHROPY/ **SOCIAL INNOVATION**

As the company works to build a stable societal infrastructure, the Caterpillar Foundation is focused on building human infrastructure through strategic investments and collaborations focused on alleviating poverty and making sustainable, scalable progress possible for all. As a company, we collaborate across our value chain to develop programs that provide job training and increase workplace safety. Globally, our employees generously volunteer their time, skills and talents to achieve significant community impact where they work and live.

While the Foundation's total budget has decreased over the last four years, consistent with Caterpillar's sales and revenues, we are continuing to grow our influence and impact. In 2016, we formally launched Together.Stronger.™, the Foundation's collaborative impact platform that unites businesses, non-profits, governments and citizens to combine their strengths to help 50 million people rise out of poverty by 2020. We also convened leaders from key non-profit partners for our first-ever policy roundtable positioning the Foundation as a strategic thought leader in policy.

3500 Genset Giveaway

The Cat® 3500 engine platform is the industry standard for heavy duty diesel and gas engines worldwide and one of our most powerful engines. With more than 190,000 engines in the field and 3 billion operating hours in mining, rail, electric power, oil & gas and marine applications, the 3500 exemplifies Caterpillar's long-standing focus on technical innovation.

To commemorate the 35th anniversary of the 3500 engine platform in 2016, and as an expression of Caterpillar's commitment to powering human progress through energy access, the company announced it would donate a generator set powered by a 3500 engine to the St. Luke Foundation for Haiti. St. Luke's provides healthcare, education and dignified humanitarian outreach to the least-served populations of Haiti, employing more than 1,000 Haitian staff. Every year, 150,000 lives will be impacted, thanks to this generator providing energy access to the three hospitals, schools, orphanages, a fishery, a bakery and other community institutions supported by St. Luke's.

HOW WE MAKE A DIFFERENCE – **THE CATERPILLAR FOUNDATION**

Since 1952

$685M+
Contributions

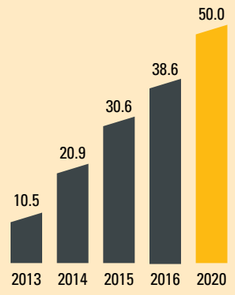
Key Areas of Support

Environment:
Restoring natural infrastructure while improving the quality of life as it relates to poverty

Education:
Numeracy and literature, improving academic outcomes, financial literacy and workforce readiness

Basic Human Needs:
Food, water, shelter, energy and disaster relief

Direct (cumulative)
Number of people in millions

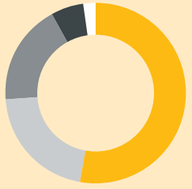


GOAL
Place **50 million people** on the path to **prosperity** by 2020.

The Caterpillar Foundation impacts people through our non-profit partners' work on the ground to directly address the root causes of poverty. Since 2013, we have worked to put more than

38.6M PEOPLE
on the path to prosperity.

Areas of Investment



- 53% Health & Human Services
- 6% Environment
- 21% Education
- 2% Arts & Culture
- 18% Policy/Advocacy

$36.8M
2016 Caterpillar Foundation **Community Investments**

$11.5M
2016 United Way Total Donations

$3.2M
Caterpillar Foundation **Matching Gifts Program**[11]

(includes employee and retiree contributions and the Foundation match)

CATERPILLAR INVESTS IN **FIRST ROBOTICS AND FUTURE WORKFORCE**

WITH THE UNITED STATES SIGNIFICANTLY BEHIND IN PRODUCING A QUALIFIED SCIENCE, TECHNOLOGY, ENGINEERING AND MATH (STEM) WORKFORCE, CATERPILLAR IS DEDICATED TO BUILDING A GLOBAL ENGINEERING TALENT PIPELINE, CRITICAL NOT ONLY TO OUR CONTINUED GLOBAL GROWTH AND COMPETITIVENESS, BUT ALSO TO THE SUCCESS OF OUR COMMUNITIES.

Our support ranges from monetary contributions that sponsor curriculum development, academic competitions, scholarships and internships to employee mentorship programs.

An example is our Caterpillar work with For Inspiration and Recognition in Science and Technology (FIRST), which provides global, mentor-based programs to help students of all ages build STEM skills. Through FIRST, students learn about STEM via hands-on activities and competitions. Students are also encouraged to build upon their own experiences and volunteer in the community.

In 2005, Caterpillar sponsored 10 teams and had over 50 employees who volunteered more than 5,000 hours with 200 students in the Peoria, Illinois, area. Today, Caterpillar sponsors over 200 FIRST teams around the world, counts 800 employee volunteers, donates over 100,000 hours and reaches 2,500-plus students annually. As a testament to the program's success, many of the FIRST mentees who participated in the pilot program over 10 years ago are now Caterpillar engineers.

More to come this year! We have some exciting upcoming sustainability initiatives, including an art contest for Caterpillar employees' children, an active presence at the 2017 Chicago Ideas Week and a Cat® generator set powered by a 3500 engine installed in Haiti this year.

ABOUT THIS REPORT

At Caterpillar, our sustainability practices focus on ways to maximize the life cycle benefits of our products while minimizing the economic, social and environmental costs of ownership for Caterpillar customers. Our most recent results are reflected in this 2016 Sustainability Report, and build on the themes and results described in our 2015 report. The reporting period is the 2016 calendar year, which is also Caterpillar's fiscal year.

In preparing report content, Caterpillar consulted the Global Reporting Initiative G4 reporting framework to serve as an informal guideline. Report content represents 100 percent of the products and operations of Caterpillar Inc. and its subsidiaries where we have a controlling financial interest. Where noted, Caterpillar's independent dealer network and supplier network are also represented. Caterpillar and subsidiary brands are listed here: **http://www.caterpillar.com/brands**.

Caterpillar's environmental and safety metrics for operations are consolidated based on the Greenhouse Gas Protocol "operational control" approach.[10] Caterpillar is currently headquartered in Peoria, Illinois, USA. Contact us here: http://www.caterpillar.com/en/contact.html.

ERM Certification and Verification Services (ERM CVS) has conducted independent assurance of selected 2016 environmental and safety data. To understand the scope, activities and conclusions of the assurance process, please see the ERM CVS Assurance Statement on the following page.

Independent Assurance Statement to Caterpillar

ERM Certification and Verification Services (ERM CVS) was engaged by Caterpillar to provide limited assurance in relation to specified 2016 data in the Caterpillar Sustainability Report 2016 ('the Report') as set out below.

Engagement summary	
Scope of our assurance engagement	Whether the Caterpillar 2016 data for the following indicators are fairly presented, in all material respects, with the reporting criteria: **Environmental data** <u>Absolute and intensity:</u> • Scope 1 GHG emissions [million metric tons CO2e and million metric tons CO2e/ million dollars of revenue]; • Scope 2 GHG emissions [million metric tons CO2e and million metric tons CO2e/ million dollars of revenue] – by location (absolute only) and market based methodology; • Total GHG emissions [million metric tons CO2e and million metric tons CO2e/ million dollars of revenue]; • Energy intensity [GJ/ million dollars of revenue] and total 2016 consumption in GJ used to calculate this; <u>Absolute only:</u> • Total electricity [MWH]; **Safety data** • Lost Time Case Frequency Rate (LTCIR); • Recordable Injury Frequency Rate (RIF) – per 200,000 hours worked.
Reporting criteria	The WBCSD/WRI GHG Protocol (2004, as revised January 2015) for the Scope 1 and 2 GHG emissions and Caterpillar's internal reporting criteria and definitions for the other indicators.
Assurance standard	ERM CVS' assurance methodology, based on the International Standard on Assurance Engagements ISAE 3000 (Revised).
Assurance level	Limited assurance.
Respective responsibilities	Caterpillar is responsible for preparing the data and for its correct presentation in reporting to third parties, including disclosure of the reporting criteria and boundary. ERM CVS's responsibility is to provide conclusions on the agreed scope based on the assurance activities performed and exercising our professional judgement.

Our conclusions

Based on our activities, nothing has come to our attention to indicate that the Caterpillar 2016 data for the indicators, as listed above, are not fairly presented, in all material respects, with the reporting criteria.

Our assurance activities

Our objective was to assess whether the selected data are reported in accordance with the principles of completeness, comparability (across the organisation) and accuracy (including calculations, use of appropriate conversion factors and consolidation). We planned and performed our work to obtain all the information and explanations that we believe were necessary to provide a basis for our assurance conclusions.

A multi-disciplinary team of EHS and assurance specialists performed the following activities:

- Interviews with relevant staff to understand and evaluate the data management systems and processes (including IT systems and internal review processes) used for collecting and reporting the selected data;
- A review of the internal indicator definitions and conversion factors;
- An analytical review of the data from all sites and a check on the completeness and accuracy of the corporate data consolidation.
- Year-end assurance activities at corporate level including the results of internal review procedures and the accuracy of the consolidation of the data for the selected indicators from the site data.

The limitations of our engagement

The reliability of the assured data is subject to inherent uncertainties, given the available methods for determining, calculating or estimating the underlying information. It is important to understand our assurance conclusions in this context. As our engagement was limited to the 2016 data we do not provide any assurance on reduction from baselines which we did not assure.

ERMCVS
Informed Assured

Jennifer Iansen-Rogers, Head of Corporate Assurance Services
8 May 2017

ERM Certification and Verification Services, London
www.ermcvs.com; email: post@ermcvs.com

ERM CVS is a member of the ERM Group. The work that ERM CVS conducts for clients is solely related to independent assurance activities and auditor training. Our processes are designed and implemented to ensure that the work we undertake with clients is free from bias and conflict of interest. ERM CVS staff that have undertaken this engagement have provided no consultancy related services to Caterpillar in any respect.

Endnotes

1 Total includes purchased and on-site generated alternative and renewable energy, as well as calculating the percentage of renewable energy from grid-purchased electricity using data obtained from the International Energy Agency.

2 Renewable Energy: Caterpillar defines renewable energy as energy resources that are naturally replenishing over a short period of time and virtually inexhaustible. Power generation examples include wind, solar, hydro, geothermal, tidal, wave, biomass and biogas from anaerobic digestion.

3 Alternative Energy: Caterpillar defines alternative energy as any source of usable energy that offers substantial environmental benefits compared to the conventional sources of energy that it replaces. Power generation examples include landfill gas, coal mine and abandoned mine methane, combined heat and power (cogen, trigen and quadgen), coal with carbon sequestration and localized power generation. Transportation fuel examples include pure methanol, ethanol blends of 85 percent or more with gasoline, pure natural gas, natural gas blends of 85 percent or more with diesel fuel, liquid fuels domestically produced from natural gas (compressed natural gas, liquefied natural gas and gas to liquid fuels), propane, coal-derived liquid fuels, hydrogen and electricity.

4 GHG emissions intensity reduction goal is based on our combined Scope 1 (direct) and Scope 2 (indirect, market-based) GHG emissions using a 2006 baseline year. Likewise, total absolute GHG emissions are a sum of Scope 1 and Scope 2 (market-based) emissions.

5 Location-based Scope 2 GHG emissions are provided in accordance with the GHG Protocol updated Scope 2 guidance. In 2015, the GHG Protocol provided updated Scope 2 calculation guidance. Our market-based Scope 2 emissions are calculated using the updated Scope 2 Quality Criteria. The following instruments were used in calculating our market-based Scope 2 emissions: Renewable Energy Guarantees of Origin, energy contracts, supplier specific emission rates, Caterpillar owned combined heat and power cogeneration facilities, and, for the remainder of our facilities, grid average emission factors from USEPA's eGRID and the International Energy Agency's data. For 2015 calculations, Caterpillar did not use residual mix factors.

6 Data prior to 2016 has been restated due to data updates realized from improved accuracy.

7 Water consumption intensity does not include non-contact cooling water.

8 Data does not include Progress Rail, Electro-Motive or Solar Turbines.

9 This includes remanufacturing, component overhauls at Cat® dealers, power generation using alternative energy sources, customer job site optimization and innovative new products. The components are evaluated each year to adjust for acquisitions, divestitures, offerings that become standard and improvements to data accuracy.

10 Environmental data includes all manufacturing and office facilities with more than 500 employees. Safety data includes employees in all manufacturing and office facilities within Caterpillar's reporting boundary.

11 This represents employee and retiree donations made in the calendar year 2015, and the Caterpillar Foundation's match made in the calendar year 2016.

Legal Statements

Certain statements in this 2016 Sustainability Report relate to future events and expectations and are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "believe," "estimate," "will be," "will," "would," "expect," "anticipate," "plan," "project," "intend," "could," "should" or other similar words or expressions often identify forward-looking statements. All statements other than statements of historical fact are forward-looking statements, including, without limitation, statements regarding our outlook, projections, forecasts or trend descriptions. These statements do not guarantee future performance and speak only as of the date they are made, and we do not undertake to update our forward-looking statements.

Caterpillar's actual results may differ materially from those described or implied in our forward-looking statements based on a number of factors, including, but not limited to: (i) global and regional economic conditions and economic conditions in the industries we serve; (ii) commodity price changes, material price increases, fluctuations in demand for our products or significant shortages of material; (iii) government monetary or fiscal policies; (iv) political and economic risks, commercial instability and events beyond our control in the countries in which we operate; (v) our ability to develop, produce and market quality products that meet our customers' needs; (vi) the impact of the highly competitive environment in which we operate on our sales and pricing; (vii) information technology security threats and computer crime; (viii) additional restructuring costs or a failure to realize anticipated savings or benefits from past or future cost reduction actions; (ix) failure to realize all of the anticipated benefits from initiatives to increase our productivity, efficiency and cash flow and to reduce costs; (x) inventory management decisions and sourcing practices of our dealers and our OEM customers; (xi) a failure to realize, or a delay in realizing, all of the anticipated benefits of our acquisitions, joint ventures or divestitures; (xii) union disputes or other employee relations issues; (xiii) adverse effects of unexpected events including natural disasters; (xiv) disruptions or volatility in global financial markets limiting our sources of liquidity or the liquidity of our customers, dealers and suppliers; (xv) failure to maintain our credit ratings and potential resulting increases to our cost of borrowing and adverse effects on our cost of funds, liquidity, competitive position and access to capital markets; (xvi) our Financial Products segment's risks associated with the financial services industry; (xvii) changes in interest rates or market liquidity conditions; (xviii) an increase in delinquencies, repossessions or net losses of Cat Financial's customers; (xix) currency fluctuations; (xx) our or Cat Financial's compliance with financial and other restrictive covenants in debt agreements; (xxi) increased pension plan funding obligations; (xxii) alleged or actual violations of trade or anti-corruption laws and regulations; (xxiii) international trade policies and their impact on demand for our products and our competitive position; (xxiv) additional tax expense or exposure; (xxv) significant legal proceedings, claims, lawsuits or government investigations; (xxvi) new regulations or changes in financial services regulations; (xxvii) compliance with environmental laws and regulations; and (xxviii) other factors described in more detail in Caterpillar's Forms 10-Q, 10-K and other filings with the Securities and Exchange Commission.

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