



**LET'S DO THE WORK.™**

**2018 | Sustainability Progress Report**

**CATERPILLAR®**



# TO OUR STAKEHOLDERS:

***Caterpillar's efforts to drive sustainability across the company in 2018 led to outstanding business performance, which allowed us to invest in sustainable solutions that enhance communities and protect the planet.***

We achieved record financial results and profitable growth, while introducing innovative products and services. In 2018, our new enterprise strategy took firm hold, and each component — services, expanded offerings, and operational excellence — played a significant role in our sustainability strategy.

#### **SERVICES MEANS TRANSFORMING TRADITIONAL PRODUCT SUPPORT IN WAYS THAT REDUCE ENVIRONMENTAL IMPACT**

Caterpillar and our dealers provide services that support customers with digital solutions, e-commerce offerings, financing and more. The newly refreshed Cat® digital model guides investment in advanced technology to create connected fleet solutions, autonomous machines and apps for monitoring equipment. In the process, we help customers reduce fuel consumption, lower emissions, improve productivity and enhance worker safety. Today, Caterpillar has one of the world's largest industrial connected fleets at 850,000 assets — and it's growing every day.

Caterpillar's remanufacturing and rebuilding businesses increase the lifespan of equipment, reusing instead of discarding components, reducing waste and keeping nonrenewable resources in circulation for multiple lifetimes. In 2018, Caterpillar received more than 150 million pounds of end-of-life material for remanufacturing.

#### **EXPANDED OFFERINGS MEANS THE RIGHT SOLUTIONS FOR CUSTOMERS AND THE ENVIRONMENT**

Our team continues to expand offerings across all business lines in innovative and sustainable ways. Innovations to make our products and our customers' operations more sustainable have included the introduction of the Cat D6 XE. This model uses up to 35 percent less fuel, lowers service and maintenance costs, and boosts customer profitability compared to prior models. And, our Energy & Transportation team is helping the cruise industry find ways to reduce the emissions footprint of marine transport. We have developed dual-fuel engines for cruise ships that can be operated with either diesel fuel or natural gas, with the potential for the latter to realize significant exhaust emissions reduction.

#### **OPERATIONAL EXCELLENCE MEANS BUILDING A SUSTAINABLE ADVANTAGE IN OUR BUSINESS AND OUR COMMUNITIES**

Operational excellence speaks to the core of social responsibility — safety, quality, continuous improvement and waste reduction.

We want every person at Caterpillar to go home safely every day. As we make our facilities safer with automation — for example, implementing robotic solutions that have the potential to reduce employees' ergonomic injuries — we also improve efficiency. In 2018, we continued to reduce lost time injuries with a 6 percent improvement over 2017 and a 95 percent improvement against our 2003 baseline.

#### **PEOPLE ARE BOTH THE REASON AND THE INSTRUMENT FOR BUILDING A BETTER, MORE SUSTAINABLE WORLD**

When we have the best talent assembled on a globally diverse team, we're best prepared to meet customer needs and make a difference in the communities where we live and work. We champion diversity, treat people fairly, prohibit discrimination and foster an inclusive environment. Full inclusion drives business results.

Through the Caterpillar Foundation, we set a goal in 2013 and are on track to help 50 million people rise out of poverty by 2020. Since 1952, the Foundation has contributed more than \$740 million to help make sustainable progress possible around the world. Our team members amplify this impact by giving money and time. The Caterpillar Foundation also launched the Value of Water campaign to raise awareness of global water issues.

I'm proud of all that our global team has accomplished this past year — creating strong company performance and reaching key sustainability milestones. We are proud to make Fortune's World's Most Admired Companies for 2018. And, for the 19th time, our company was named to the Dow Jones Sustainability Indices, including both the World and North America indices in 2018. I'm excited about the opportunities that lie ahead. Our team is empowered and ready to make great things happen for our customers, for our communities and for our world.

Jim Umpleby  
Chairman & CEO

# HOW CATERPILLAR'S STRATEGY IS HELPING TO BUILD A BETTER WORLD

Over the past year, Caterpillar continued executing our enterprise strategy to achieve long-term profitable growth – supporting our customers, rewarding our shareholders and providing opportunity for our employees and the communities where we live and operate. As we execute this strategy, we're not only driving growth, but also furthering our sustainability journey.



## OPERATIONAL EXCELLENCE

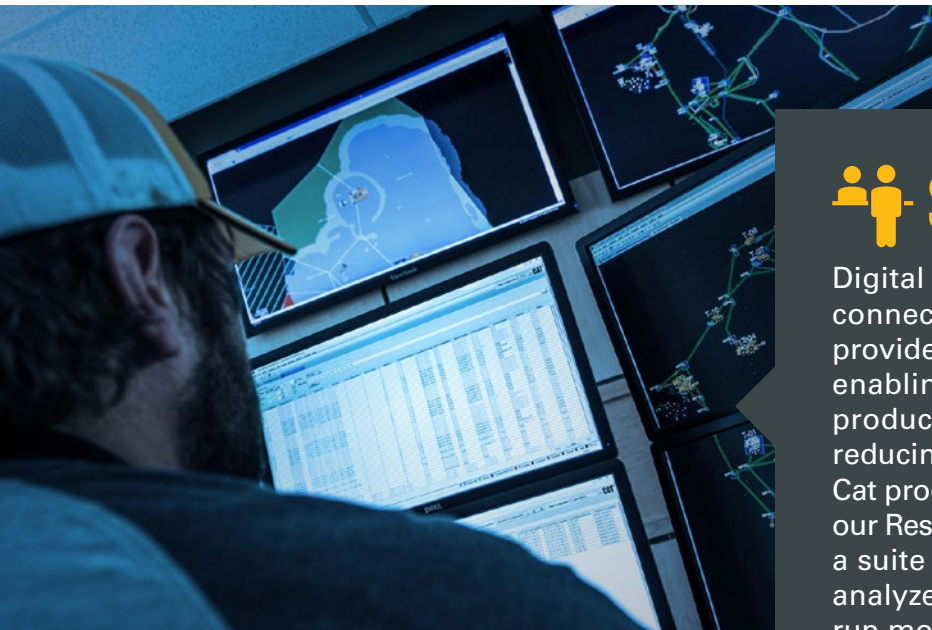
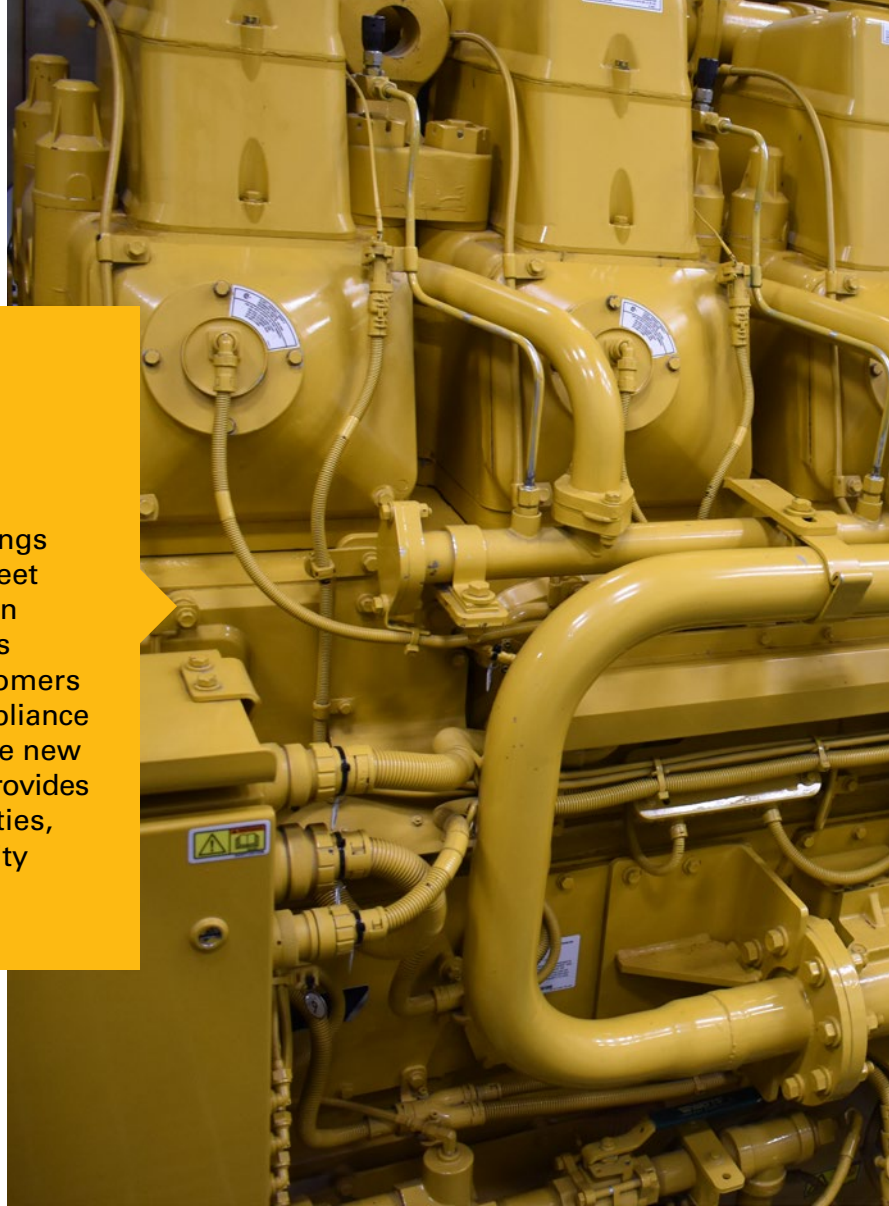
Our focus on excellence translates into initiatives that improve safety, deliver high-quality products and implement Lean principles to enhance efficiency and resource conservation. For instance, our facility in Thiruvallur, India, is located in a water-stressed area and relies on groundwater for its operations. Following an extensive water analysis and employee survey, projects implemented across the facility have reduced water use by 14.2 million gallons of water per year.





## EXPANDED OFFERINGS

Expanded product and technology offerings help us reach new markets and better meet the unique needs of our customers. As an example, our updated Cat® G3600 A4 gas compression engine better enables customers to pursue opportunities that require compliance with strict environmental regulations. The new model increases the engine's power and provides greater flexibility for different fuel qualities, all while allowing operators the possibility of complying with stringent site-specific emissions thresholds.



## SERVICES

Digital technologies and aftermarket services connect engines, machines and entire fleets to provide our customers with new levels of insight, enabling them to work smarter by optimizing productivity. That often means using less fuel, reducing emissions and extending the life of their Cat products. One technology leading the way for our Resource Industries' customers is Cat MineStar™, a suite of technologies that collects, organizes and analyzes a myriad of data points, helping machines run more efficiently and keeping operators out of harm's way.



# PRODUCT

## WORKING TO OFFER MORE EFFICIENT SOLUTIONS

*Caterpillar has a long history of and a strong process for innovation in research and development.*

We develop products that are efficient, safe and designed for remanufacture. By continually improving the performance of our products, we meet customer demand to make their operations more sustainable, while driving our industry to improve.

Our strategy continues to move beyond traditional iron product offerings to include job site connectivity, which unlocks even more operating efficiencies. Our Job Site Solutions team, for example, works with Cat® dealers to help customers improve their operations and be more competitive. Solutions often deliver sustainability benefits, such as extending a machine's life, which in turn reduces raw material consumption. When customers require new machines or components, we offer remanufactured and rebuilt products that not only provide cost savings, but also help customers extend life cycles and use materials more efficiently. This life cycle approach allows us to provide sustainable solutions that help customers build a better world.



### Cat® Connect Technologies Offer Sustainability Benefits

- **Cat Detect** – Creates a safer job site by tracking vehicles and assets
- **Cat Link** – Provides comprehensive information about site operations and productivity
- **Cat Compact** – Speeds compaction time, saving fuel and material costs
- **Cat Command** – Enables operators to run equipment remotely, making work safer and more precise





# STAYING SAFER IN THE LINE OF FIRE

In 2018 in the United States alone, **8.6 million** acres of land burned. The cost of fighting wildfires has increased more than **500%** over the past **20 years**.

Wildfires are increasing in number and intensity around the world, causing devastation and damage. Alongside forestry management and firefighting agencies on the front lines of these fires are Cat® D6N Fire Suppression Tractors, which have helped protect forests, property and lives for decades. Firefighters and first responders count on the D6N to move combustible material, clear fire lines, open roadways and assist firefighting equipment over challenging terrain. Although the dozer, built for construction and land clearing, is ideally suited for these tasks, the harsh environmental conditions presented by fires such as falling trees, ash-filled air and extreme temperatures require extensive modifications.



We now offer comprehensive, factory-installed equipment on the D6N for fire suppression applications. It includes extensive heat and fire insulation on fluid and electrical lines, machine guarding, enhanced cab air filtration and additional powerful lights. Maintaining an operator's safety and keeping the tractor running is paramount. Machines can run 24 hours a day, seven days a week, with several operators alternating until every last flame is extinguished.



# NEW MACHINES PAIR PERFORMANCE & SUSTAINABILITY

Our customers want to reduce energy costs and associated emissions – but they can't afford to sacrifice power in the process. With new Cat® machines for a range of applications, they don't have to compromise.

**THE NEW 320 NEXT GENERATION HYDRAULIC EXCAVATOR** reduces fuel consumption to levels comparable to our full hybrid system, without a hybrid system's complexity. The system optimizes lever commands, reducing fuel consumption by up to 25 percent compared to previous models without compromising the machine's performance or cost. Once the technology is deployed across our entire excavator product line as planned, it could lead to carbon dioxide emission reductions of up to 2.2 million metric tons per year.

**THE C9.3B DIESEL ENGINE** is used to power applications from agriculture and forestry to excavation. Designed to be a worldwide platform, it is certified to U.S. EPA Tier 4 Final and EU Stage V emission standards and is prepared to achieve emerging new standards like China NonRoad Stage IV. This platform update offers up to 4 percent fuel economy improvement and up to 18 percent increased power density when compared to the C9.3 ACERT, allowing original equipment manufacturers to downsize their engine platforms, lower installation costs and maximize uptime.

**ROTECHBOOSTER FROM SOLAR TURBINES** addresses a concern we hear frequently from customers: the need for compressor dry gas seals to provide a clean and consistent supply

of gas, without frequent depressurization, which releases methane. With input from a multidisciplinary team, Solar Turbines designed a new system that needs to be depressurized only once per month on average, rather than every few hours. The new compressor will reduce methane emissions by roughly 13.5 tons a year per unit sold.



## Scooping Up Production Gains

At the Argos Roberta limestone quarry in Alabama, our Job Site Solutions (JSS) team, working closely with the Cat dealer and customer, developed a high-performance plan for the site to address productivity improvements in the operation. New insights from JSS's site-specific analysis allowed the quarry to increase production over 10 percent with 359 fewer machine hours in just over six months.



# SETTING SAIL WITH LOWER EMISSIONS

An even more sustainable cruise isn't far off in the future – it's here today, and Caterpillar is helping find ways to reduce the emissions footprint of marine transport, which has historically depended on heavy fuel oil for power.

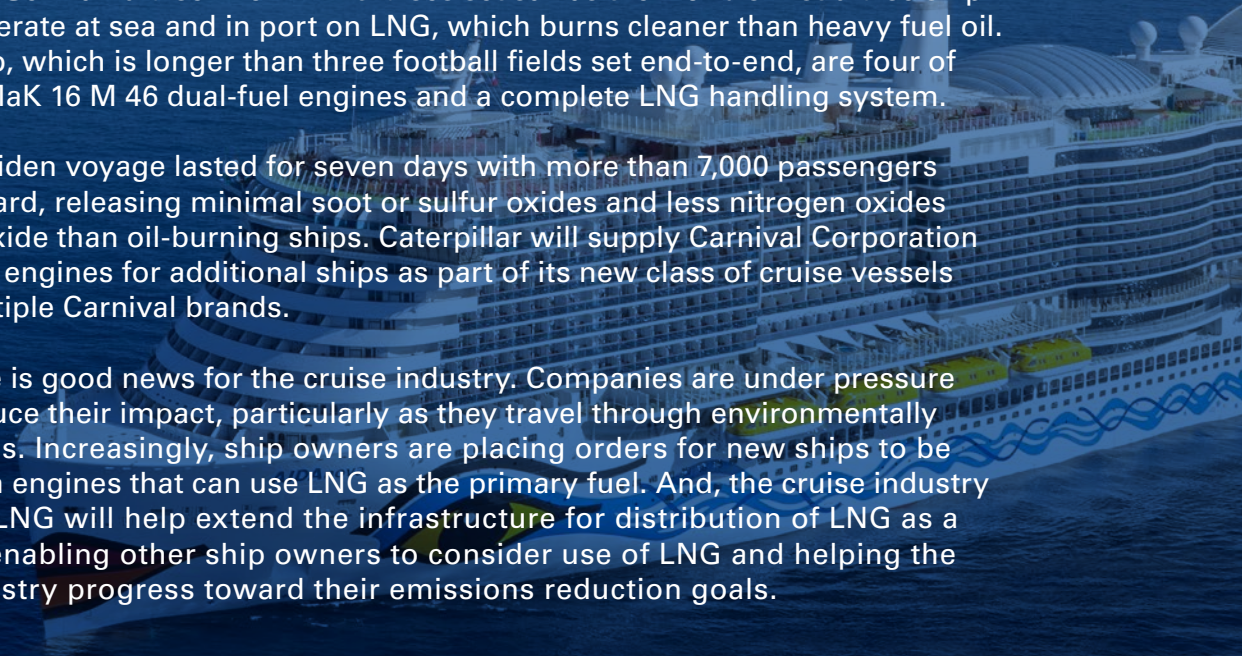
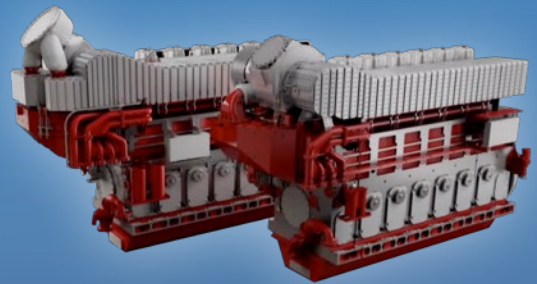
As natural gas has become more affordable and the shipping industry takes steps to further reduce emissions, the marine transport sector has begun to embrace liquefied natural gas (LNG) as a fuel source.

Ports for LNG refueling are growing in number worldwide, and Caterpillar is meeting this demand with our MaK™ brand dual-fuel engines. The dual-fuel engines are designed for continuous operation on LNG, marine diesel oil and heavy fuel oil.

These engines have been at sea for several years aboard cargo vessels and are now being used inside a wider variety of ships. In 2018, the AIDAnova of Carnival Corporation's German cruise line AIDA Cruises set sail as the world's first cruise ship enabled to operate at sea and in port on LNG, which burns cleaner than heavy fuel oil. Inside the ship, which is longer than three football fields set end-to-end, are four of Caterpillar's MaK 16 M 46 dual-fuel engines and a complete LNG handling system.

The ship's maiden voyage lasted for seven days with more than 7,000 passengers and crew aboard, releasing minimal soot or sulfur oxides and less nitrogen oxides or carbon dioxide than oil-burning ships. Caterpillar will supply Carnival Corporation with dual-fuel engines for additional ships as part of its new class of cruise vessels spanning multiple Carnival brands.

The milestone is good news for the cruise industry. Companies are under pressure to further reduce their impact, particularly as they travel through environmentally sensitive areas. Increasingly, ship owners are placing orders for new ships to be equipped with engines that can use LNG as the primary fuel. And, the cruise industry utilization of LNG will help extend the infrastructure for distribution of LNG as a marine fuel, enabling other ship owners to consider use of LNG and helping the shipping industry progress toward their emissions reduction goals.







# PROCESS

## WORKING TO REDUCE OUR OPERATIONAL IMPACT

*Before Cat® machines get to work on customer sites, many are assembled in our manufacturing facilities. Caterpillar is committed to doing this work in a way that minimizes our environmental footprint, including conserving energy and water, reducing greenhouse gas (GHG) emissions and reducing the amount of waste we send to landfills.*

We have established global performance standards for environment, health and safety at our facilities that extend beyond compliance with laws and regulations. Our 2020 sustainability goals include targets for energy, water and waste in our operations. These goals provide focus for our efforts to reduce our footprint while maintaining or improving performance and customer satisfaction.

We encourage all employees to actively participate in improving our operational performance. Caterpillar also collaborates with our suppliers to assess sustainability performance and identify opportunities for improvement.

↓ 33%\*

**Operational energy intensity**  
2006–2018

↓ 44%\*

**GHG emissions intensity**  
2006–2018

↓ 38%\*

**Water consumption intensity**  
2006–2018

↓ 16%

**Waste generation intensity**  
2006–2018

\*Data assurance details provided in our [ESG Priorities & Approach](#).



## Sun-Powered Solutions in Mexico

Three Caterpillar buildings in Mexico are now offsetting 100 percent of their power usage with energy backed by solar power sources and clean energy certificates, thanks to a new five-year agreement with Ampper, a local renewable energy company. An additional two buildings run on a combination of solar power from Ampper and electricity produced by Caterpillar Mexico Energy Center natural gas-powered generators. Caterpillar Mexico plans to expand renewable and alternative energy use to more facilities.



# EMPLOYEES INSPIRE ENERGY SAVINGS

The Perkins facility in Aurangabad, Maharashtra, India, produces engines for customers primarily in India and elsewhere in the Asia/Pacific region. At the facility, 4000 Series engines undergo end-to-end machining, assembly and testing, following rigorous manufacturing processes.

While the facility has only been in operation for a few years, plant managers saw an opportunity to improve processes to conserve energy. They invited employees to identify ways to reduce energy and resource consumption in their daily operations. Then they selected the best ideas for implementation.

Projects ranged from use of more efficient light fixtures to reusable pallets that cut down on packaging waste. In many cases, small changes led to significant energy and emissions reductions. One employee observed that the facility's 90-kilowatt air compressor was more powerful than the facility needed and required substantial energy to operate. Replacing it with a 25-kilowatt compressor saved more than 249 MWh per year while meeting the facility's needs.


Another project involved diesel fuel consumed during engine testing. Team members identified process improvements to increase efficiency of testing, thereby reducing the fuel used. The team also found a way to recover and repurpose diesel fuel previously earmarked for the testing process. Improvements to the test process lowered emissions by about 130 metric tons CO<sub>2</sub>-equivalents.

The facility team was proud to implement solar water heaters for use in the employee canteen area. Previously, six individual hot water heaters were used to provide heated water for food preparation and dish washing. Now, rooftop units use solar power to heat the water, saving about 57 MWh per year.






# A SUSTAINABLE PLAN FOR EVERY PART




The remanufacturing process is built on the concept of reusing raw materials and starts when a component reaches the end of its serviceable life. Dealers return the used iron (core) to Caterpillar where it is cleaned, inspected, salvaged and remanufactured to original factory specifications using state-of-the-art salvage techniques, strict reuse guidelines, advanced remanufacturing processes and unequalled quality control. Cat Reman customers receive remanufactured products with same-as-when-new performance and durability at a lower cost than buying new. Cat Reman also obtains limited amounts of nonconforming material (NCM) – parts that are defective or do not meet requirements, and would otherwise be scrapped – from our facilities that are producing new products. Cat Reman salvage technology and processes can transform this NCM from a conventional loss into an enterprise and customer win.



It is often taken for granted that facilities simply transfer the right scrap material to Reman, but until recently, this process has been manual and inconsistent. A Caterpillar team in Fargo, North Dakota, discovered an opportunity to strengthen collaboration and standardize transfer of NCM. The team organized a Kaizen event, a Lean manufacturing approach that brings multidisciplinary teams together to brainstorm solutions. Based on this work, they developed standard processes and a database of NCM products that can be used by Cat Reman.

**NCM**



**THE RESULT:** In 2018, the new standard procedures saved approximately \$1.7 million in production costs across five facilities and established increased collaboration between Cat Reman and new product teams. The procedures also led to decreased energy consumption and raw material use. Rather than melting down NCM as scrap, 240 tons of material was salvaged for Cat Reman products.



# PROCESS IMPROVEMENTS LEAD TO A SAFER WORKPLACE



Sometimes one solution can be the answer to multiple problems. It was true at one of our engine facilities in Seguin, Texas, where the system for unloading and packing finished engines onto shipping pallets presented a host of opportunities to improve employee safety and ergonomics. The engines had to be moved using a manually operated bridge crane. But the crane's controls were not ergonomically adjustable for operators who were unable to comfortably reach the controls, such that they had to stoop to install brackets. These conditions also regularly put operators behind cycle time. To top it off, human and forklift traffic occupied the same area.



A team of engineers at the facility worked on a solution, using 3D modeling, simulations and interviews of fellow team members to understand the scope of the need. They determined a multipurpose robot, nicknamed BRUTUS (Broader Robotic Utilization Through Unmatched Strength) would be an effective solution, working alongside operators to make engine loading smoother. BRUTUS functions as both a robot, unloading engines and moving them to a skidding table, and as a jib arm, giving operators the leverage they need to move engines into position. The team gained leadership approval for their proposal, and operators are already seeing positive results.

The Seguin facility utilized safety tools to measure the elements of the process. The safety risk of two elements was eliminated completely, and the third element saw a significant safety risk reduction. In addition, teams are meeting cycle times due to less congestion in the process. And, because teams are working more efficiently, the facility is saving approximately \$45,000 per month due to improved efficiency.





# PEOPLE

## WORKING TO INVEST IN OUR PEOPLE

*There's more to work at Caterpillar than the work itself. We're a workforce made up of smart, diverse, committed people who work together to help build a better world, from supporting our customers through groundbreaking solutions to giving back in our local communities.*

To continue to innovate and maintain our global leadership, we must attract, retain and develop the top talent. We do so by giving our people opportunities to explore different career paths within Caterpillar – using their skills and capabilities by moving between business units, locations and job functions. Employees can also learn through a variety of formal and informal programs. We cultivate a workplace where team members feel supported and that reflects the diverse base of customers we serve worldwide.

We are dedicated to the safety of employees at Caterpillar, as well as our extended team of contractors, dealers, suppliers and customers. This 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.

Given Caterpillar's role in sustainable development projects across the world, we have a stake in making scalable progress possible for all. We encourage employees to engage in activities that contribute to society by volunteering or investing financial resources in worthwhile community projects.



### 2018 Awards and Recognition

- America's Best Employers for Diversity, *Forbes*
- Best Employers for Women, *Forbes*
- Human Rights Campaign Corporate Equality Index
- Top 50 Employers, *CAREERS & the disABLED Magazine*
- Top 50 Employers, *Minority Engineer Magazine*
- Top 50 Employers, *Woman Engineer Magazine*



# INCLUDING EVERYONE IN WOMEN'S ADVANCEMENT

At Caterpillar, we believe diverse ideas and experiences lead to deeper understanding. Our Women's Initiative Network (WIN) employee resource group in Singapore demonstrated this in a big way.

WIN surveyed female employees to learn how to improve Caterpillar's culture and create opportunities for growth. The top answer: get more men involved. While men make up 85 percent of Caterpillar's Singapore workforce, they comprise a small percentage of WIN membership and participants in the group's events. WIN members wanted to develop men as allies and advocates for their female colleagues. They made progress with a number of initiatives, including a celebration of International Women's Day, promotional videos and professional development discussions on best practices for supporting women in leadership. A series of mentoring sessions organized in collaboration with other Fortune 500 companies provided mentees – both men and women – with access to new role models and networking opportunities.

As a result of these initiatives, the WIN Singapore chapter's core membership grew from 10 percent to 35 percent male, while its advisory board is now split evenly between men and women. In addition, men now make up nearly 40 percent of participants at WIN Singapore events. Overall participation in these events has doubled over the past year, showing that this work is relevant to both women and men.

## Solar Turbines Welcomes an Untapped Source of Talent

The National Foundation for Autism Research (NFAR) Tech program teaches young adults with autism software testing skills to prepare them for jobs in the tech industry. When employees from Solar Turbines' Package and Systems Engineering (PSE) team toured NFAR's facility, they quickly realized that the students could be an excellent fit for Solar.

The PSE team worked with NFAR to develop a software testing internship program for individuals with autism. The first wave of interns immediately exceeded expectations. They quickly ran through quality gates and test cases and brought a new perspective to the testing, even discovering software issues that existing testers had never noticed. In under a year, the team saw an almost 90 percent reduction in its issue backlog. To date, the team has hired nine NFAR Tech interns, and Solar is grateful to have discovered this special source of talent.





# CREATING PATHWAYS TO CAT<sup>®</sup> DEALER CAREERS



For a global company like Caterpillar, we depend on talented people to run dealerships, repair our equipment and launch businesses that use Cat<sup>®</sup> machines. We know there are people across the world eager to take on these roles – they just need training and mentorship to help them get started.

This training gap inspired us to create Technicians for the World, an online program sponsored by Caterpillar that meets the growing need for skilled service technicians. The program began with Technicians for Africa, which launched in Nigeria, Mozambique and the Democratic Republic of the Congo. It has since expanded to 12 countries. We also launched Technicians for Arabia in 2018 and will start Technicians for the Caribbean in 2019.

The Technicians for the World curriculum is based on the Caterpillar University Global Service Technician training program and takes between three and six months to complete. It is appropriate for those considering a career as a service technician, as well as existing technicians who want to improve their skills. Over 18 courses, students learn about the Cat product line, as well as the basics of electricity, hydraulics, drivetrains and more. After students complete their coursework, Caterpillar notifies a local Cat dealer, helping put them on the path to employment.

Building this new skill base will benefit not only Caterpillar, but also our industry, as program graduates take jobs with our dealers, customers and peers. With this program, we are proud to help raise the bar for technical skills worldwide.



**1,642**

**have earned  
certification of  
completion**

*2015 through year-end 2018*

# SHARING THE VALUE OF WATER

Water is a fundamental human need – essential for drinking, cooking, washing, growing crops and much more. Yet across the world, according to the World Health Organization, one in nine people lacks access to clean and safe water. As a result, a child dies from a water-related disease every 90 seconds. Safe, readily available water is critical to the future of the developing world, not only because it can improve health, but because it frees individuals, particularly girls and women, to spend time on other tasks, like earning an education or running a business.

That's why in 2018, the Caterpillar Foundation turned its focus toward examining the most pressing water challenges of our time, declaring 2018 the Year of Water and launching the Value of Water campaign.

Through this campaign, we highlighted our work with grant partners such as charity: water, Ducks Unlimited, Global Citizen, Living Lands & Waters, Opportunity International, The Nature Conservancy and Water.org, which includes:

- **BRINGING CLEAN WATER** to rural communities in Africa through the construction of new wells and innovative pipe systems
- **RESTORING CRITICAL WETLAND** habitats that provide flood protection and water filtration
- **REDUCING RIVER POLLUTION** throughout the United States
- **STRENGTHENING THE HEALTH** of the world's vital rivers
- **DELIVERING RUNNING WATER** to homes in Africa, Asia and South America

In addition, through our longtime partnership with Water.org, the Caterpillar Foundation supports WaterCredit, which provides small loans to connect families living in poverty with water and sanitation access. With safe water and a toilet at home, individuals gain time and reduce health risks, important steps toward breaking the cycle of poverty. These locally managed projects can create a domino effect within communities as one generation teaches the next. Through this and other grants over the past several years, the Caterpillar Foundation has reached an estimated 2 million people with access to water – a significant contribution toward the Foundation's goal to help 50 million rise out of poverty by 2020.



 **844 M**  
people worldwide  
lack access to  
safe water

**\$1** invested in water  
and sanitation yields  
**\$4** in economic  
return 

**~2 M**   
people have gained access to  
water through the Caterpillar  
Foundation's support



# 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.

We focus on efficiency improvements, and these efforts contributed to year-over-year performance gains in most areas in 2018. Improved sales and revenue, in addition to efficiency gains made in the last several years, are reflected in the improved performance toward our 2020 intensity targets.

GOAL/KPI	BASELINE	2015	2016	2017	2018	2020 GOAL	PERSPECTIVE
<b>OPERATIONS</b>							
<b>GOAL: Reduce recordable workplace injury rate to 0.6 and lost-time injury case rate to 0.15 by 2020.</b>							
<b>RECORDABLE INJURY FREQUENCY (RIF)</b> Recordable injuries per 200,000 hours worked	<b>6.22 (2003)</b>	<b>0.59</b>	<b>0.50</b>	<b>0.49</b>	<b>0.53</b>	<b>0.60</b>	<p>We have improved our Recordable Injury Frequency rate by 91.5 percent from our 2003 base year. However, our RIF increased by 8 percent from 2017 to 2018. Relentless focus on safety is important for our team members in all work areas. Our vision has always been, and continues to be, zero injuries. Our safety goals represent expected progress on our path to zero. While we acknowledge that our current RIF has surpassed our long-established goals, we will continue to strive for improvement until we reach our ultimate goal of zero.</p> <p>We have improved our Lost-Time Case Frequency Rate by 94.6 percent from our 2003 base year. We are encouraged that our LTCFR declined by approximately 6 percent from 2017 to 2018, even when our RIF increased modestly. We strive for all team members to go home safe, every day.</p>
<b>LOST-TIME CASE FREQUENCY RATE (LTCFR)</b> Work-related injuries resulting in lost time per 200,000 hours worked	<b>2.97 (2003)</b>	<b>0.20</b>	<b>0.19</b>	<b>0.17</b>	<b>0.16</b>	<b>0.15</b>	
<b>GOAL: Reduce energy intensity by 50 percent from 2006 to 2020.</b>							
<b>ENERGY INTENSITY<sup>1</sup></b> Absolute gigajoules energy use/million dollars of revenue	<b>692 (2006)</b>	<b>525</b>	<b>598</b>	<b>521</b>	<b>466</b>	<b>346</b>	Operational energy intensity has decreased 33% from the base year, while absolute energy consumption decreased 11% during the same period.

End notes providing additional details regarding the data presented are available in the [ESG Priorities and Approach](#), see About this Report.



GOAL/KPI	BASELINE	2015	2016	2017	2018	2020 GOAL	PERSPECTIVE
<b>OPERATIONS</b>							
<b>GOAL: Use alternative/renewable sources to meet 20 percent of our energy needs by 2020.</b>							
<b>ALTERNATIVE/ RENEWABLE ENERGY<sup>4,5,6</sup></b> Alternative and renewable electrical energy use/total electrical use x 100	<b>N/A*</b>	<b>27.1%</b>	<b>27.9%</b>	<b>31.2%</b>	<b>32.5%</b>	<b>20%</b>	In 2018, 32.5% of our electrical energy was from renewable or alternative sources. In 2018, 17.4% of our electrical energy was from renewable sources.
<b>GOAL: Reduce greenhouse gas emissions intensity by 50 percent from 2006 to 2020.</b>							
<b>GHG EMISSIONS<sup>1,2</sup> INTENSITY</b> Absolute metric tons of CO2e/million dollars of revenue	<b>72.1 (2006)</b>	<b>48.6</b>	<b>54.2</b>	<b>46.4</b>	<b>40.3</b>	<b>36.0</b>	GHG intensity has decreased 44% since the base year. In addition, our absolute GHG emissions decreased by 26% from the base year; however, they increased 4.7% from 2017 to 2018.
<b>GOAL: Reduce water consumption intensity by 50 percent from 2006 to 2020.</b>							
<b>WATER CONSUMPTION INTENSITY<sup>1,7</sup></b> Absolute thousand gallons of water/million dollars of revenue	<b>76.3 (2006)</b>	<b>58.9</b>	<b>66.0</b>	<b>58.1</b>	<b>47.2</b>	<b>38.2</b>	Water consumption intensity has decreased 38% since the base year and 19% from 2017 to 2018. In addition, absolute water consumption has decreased by 35% since 2006 and reduced 5% from 2017 to 2018.
<b>GOAL: Reduce by-product materials intensity by 50 percent from 2006 to 2020.</b>							
<b>BY-PRODUCT MATERIALS INTENSITY</b> Absolute metric tons of by-product materials/ million dollars of revenue	<b>13.8 (2006)</b>	<b>14.3</b>	<b>14.5</b>	<b>13.2</b>	<b>11.6</b>	<b>6.9</b>	By-product materials intensity has decreased 16% since the base year.

\*NA=not applicable

End notes providing additional details regarding the data presented are available in the [ESG Priorities and Approach](#), see About this Report.



GOAL/KPI	BASELINE	2015	2016	2017	2018	2020 GOAL	PERSPECTIVE
<b>GOAL: Design all new facility construction to meet Leadership in Energy and Environmental Design (LEED) or comparable green building criteria.</b>							
<b>BUILDINGS DESIGNED</b> in accordance with the U.S. Green Building Council's LEED BD+C (Building Design and Construction) certification process or comparable criteria	N/A*	33%	100%	100%	100%	100%	Facilities designed to the LEED criteria are more energy- and resource-efficient than traditional construction.  In 2018, our Zebra, Czech Republic, facility met the requirements of certification in accordance with the U.S. Green Building Council's LEED BD+C (Building Design and Construction) process.
<b>PRODUCT STEWARDSHIP</b>							
<b>GOAL: Provide leadership in the safety of people in, on and around our products.</b>							
SEE PAGES 6, 12-13							
<b>GOAL: Increase managed fleet hours by 100 percent from 2013 to 2020.</b>							
<b>FLEET HOURS</b> Percent increase from 2013	N/A*	68%	98%	124%	249%	100%	Demand from our customers continues to grow for solutions provided by our Job Site Solutions team in partnership with our Cat® dealers.
<b>GOAL: Increase remanufactured and rebuild business sales by 20 percent from 2013 to 2020.</b>							
<b>REMAN</b> Percent business sales growth since 2013 <sup>8</sup>	N/A*	-15%	-13%	2%	7%	20%	Our remanufacturing and rebuild businesses provide customers with immediate cost savings, help extend product life cycles and use materials more efficiently. We seek to continue to grow these businesses.
<b>REBUILD</b> Percent business sales growth since 2013 <sup>8</sup>	N/A*	-3%	-10%	14%	17%		
<b>GOAL: Leverage technology and innovation to improve sustainability of our products, services and solutions for our customers.</b>							
<b>REPORTED SALES AND REVENUES</b> derived from products, services and solutions that demonstrate an improved sustainability benefit over prior offerings <sup>10</sup>	N/A*	18%	21%	21%	19%	NA*	Caterpillar has a long history of and a strong process for innovation in the research and development of products and solutions.

\*NA=not applicable

End notes providing additional details regarding the data presented are available in the [ESG Priorities and Approach](#), see About this Report.

# About this Report

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Caterpillar publishes an annual Sustainability Report that highlights our progress and performance. This report is available in a digital format on our corporate website, where we also make available discussions of our Environmental, Social and Governance (ESG) priorities and a Global Reporting Initiative (GRI) Content Index. Information regarding reporting boundaries, data assurance and details regarding the data is available within our [ESG Priorities & Approach](#) content on our website.

## Forward-looking Statements

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Certain statements in this Sustainability Progress 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 including the impact of U.S. tax reform; (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.

