2016 CATERPILLAR SUSTAINABILITY IN CHINA Moving Toward a More Sustainable Future

In China, our customers are reclaiming mine sites with Cat[®] machines

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About Caterpillar

For more than 90 years, Caterpillar Inc. has been making sustainable progress possible and driving positive change on every continent.

Customers turn to Caterpillar to help them develop infrastructure, energy and natural resource assets. With 2016 sales and revenues of US\$ 38.537 billion, Caterpillar is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. The company principally operates through its three product segments - Construction Industries, Resource Industries and Energy & Transportation - and also provides financing and related services through its Financial Products segment.

Caterpillar has been named to the Dow Jones Sustainability Index 17 times as of September 2016.

In China, Caterpillar has more than 20 manufacturing facilities, three research and development centers, three logistics and parts centers and more than 10,000 employees.

About This Report

When preparing this report, we referred to the three national standards developed by the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) of the People's Republic of China and the Standardization Administration of the People's Republic of China (SAC). The three national standards include: GB/T 36000-2015, Guidance on Social Responsibility; GB/T 36001-2015, Guidance on Social Responsibility; GB/T 36001-2015, Guidance on Social Responsibility Reporting; and GB/T 36002-2015, Guidance on Classifying Social Responsibility Performance.

The report summarizes Caterpillar's strategy and management approach for sustainability in China, our progress, and input from our China stakeholders.

The China-specific content in this report complements our enterprise Sustainability Report. For more comprehensive information about sustainability at Caterpillar worldwide, please refer to Caterpillar's 2016 Sustainability Report at: http://reports.caterpillar.com/sr/

CEO's Message



For more than 90 years, Caterpillar has been helping people around the world move towards a more sustainable future. For more than 40 years, we've been helping build that future in China, too. We will continue to be a proud contributor to the Chinese economy and to support China as it moves forward with its sustainability goals.

Caterpillar manufactures and sells products, services and solutions that enable economic growth by providing infrastructure, energy and natural resources. Supporting communities where our people live and work and promoting sustainability is important to us in China and everywhere in the world.

We applaud the Chinese government's deepening of supply-side structural reform. It's another significant step closer to sustainable development. In China, we will use our experience and expertise in support of these goals.

You will read more about that throughout this report.

You will learn about how we are promoting sustainability in our

operations, products, value chain and in community development. Most importantly, we know our employees are our most valuable asset. You will see our specific efforts to provide a workplace that values safety, diversity and inclusion, and where employees can find support that helps them develop their career and succeed.

The Caterpillar tradition of innovation, safety and quality in our products is as strong as ever. Our equipment utilizes technology to reduce waste and increase productivity, which helps make our customers more efficient. In turn, our customers use our equipment to generate the power, build the infrastructure and extract the natural resources which improve living standards and make sustainable progress possible.

In 2016, the Caterpillar Foundation invested to improve drinking water in rural schools and in education programs for vulnerable and migrant children in China. The Foundation also contributed to disaster preparedness and relief here, and to improving the natural environment through continuing work with the Charity Forest Program.

Caterpillar is a company driven by values, and we live our Values in Action everywhere we do business. Our stakeholders in China can count on us to keep moving with them towards a more sustainable future. It's fundamental to who we are as a company and a global team.

Warneld

Jim Umpleby Chief Executive Officer Caterpillar Inc.

Caterpillar China Chairman's Message



Caterpillar's business development in China is an important part of the company's global strategy. Since 2016, the Chinese government has continued to deepen supply-side structural reform, a significant step in China's move towards sustainable development. A key part of this reform is innovation, a field where Caterpillar is very confident. We have three research and development (R&D) centers in China, and our innovative technology has been widely used in production and operations. Innovation has made our products more efficient and reduced waste, energy consumption and greenhouse gas emissions in the manufacturing process. We're merging our expertise in iron with new and evolving digital capabilities – connecting entire fleets and using that data to create solutions that help our customers run, grow and innovate their businesses, while also helping to improve the safety of their operations. At the same time, we remain committed to promoting sustainability in our value chain, as we have done for many years, using the Caterpillar China strategy and corporate sustainability principles to encourage the operations of our dealers and suppliers, and to help our customers to be more sustainable.

The Chinese government is now promoting the "One Belt, One Road" initiative, which carries enormous potential to accelerate the progress of regional cooperation and integration. At the same time, the government is also promoting China's National Plan on Implementation of the United Nations 2030 Agenda for Sustainable Development Goals, making steps towards eliminating hunger and poverty, promoting energy and water conservation and strengthening infrastructure development. As part of these initiatives, Caterpillar has played an important role in supporting Chinese contractors in undertaking projects in China and abroad. We have provided innovative solutions and products to promote construction efficiency, safety and sustainability. Today, products manufactured at our China facilities are exported to Thailand, the Middle East and Africa. These products have won consistent praise from customers, and given Cat products the proud distinction of being "Made in China." At the same time, Caterpillar has made persistent efforts to improve safety in our facilities, personnel training and philanthropy, to balance economic growth, social responsibility and environmental stewardship.

With the theme of "Moving Toward a More Sustainable Future," this report summarizes our significant sustainability progress in China in 2016. The report explains how Caterpillar China has operated according to its sustainability principles under the following four perspectives:

Our People: Employees have always been the backbone of Caterpillar's success. We attach importance to the safety of our employees. To create an inclusive and diverse environment, we adhere to the principle of gender equality, and promote female career development in the machinery industry;

Environment: Executing on our commitment to innovation, Caterpillar China continues to promote sustainability in the fields of product R&D and manufacturing. As a result, our products, services, solutions and our manufacturing processes are focused on efficient use of resources to reduce environmental impact;

Value Chain: We continue to encourage sustainability within our value chain with Caterpillar's sustainability principles;

Philanthropy: Caterpillar's philanthropic organization, the Caterpillar Foundation, focuses on poverty alleviation by building human infrastructure, making sure people have their basic human needs met – they have access to education – and they are ready to work.

I am proud of Caterpillar China's achievements in all these aspects, which inspire us to continue working with our partners to promote sustainable development. I invite you to read this report and join us as we move ahead in our sustainability journey.

Qihua Chen Vice President of Caterpillar Inc. Chairman of Caterpillar (China) Investment Co., Ltd.

We Support China's National Plan on Implementation of the 2030 Agenda for Sustainable Development

In September 2016, the Chinese Government published the National Plan on Implementation of the 2030 Agenda for Sustainable Development¹, laying out China's concrete plan for progress towards the 17 United Nations Sustainable Development Goals (SDGs). At Caterpillar, through technological development and innovation, we support the SDGs with our products, services, solutions and philanthropy programs.



We support poverty alleviation programs in China, working toward empowering 50 million people to rise out of poverty globally by 2020 through the Caterpillar Foundation.



Caterpillar Foundation supports food programs in China to provide food for children and families in need, helping impoverished households to eliminate hunger.



• Prepare for disaster response efforts;

Provide back-up power for communities and hospitals;
Caterpillar Foundation supports programs in China to provide nutritious and safe food and tableware sterilizers



Caterpillar Foundation supports educational programs at every stage of life, from early childhood to workforce readiness, helping underprivileged children and young people access quality education and resources to make a meaningful impact on

society.



Focusing on the career development of female employees, our goal is to increase our female workforce to 29 percent by 2022. We have launched a series of initiatives to make this a reality.



In China, Caterpillar Foundation supports programs to provide rural homes and schools with clean water and sanitary facilities, and to reduce the incidence of diseases which will help them to fully develop their economic and social potential.



In China, Caterpillar supports alternative energy infrastructure, including combined heat and power (CHP) technology and biogas generation systems.

improve health so that people, especially children in rural areas, can reach their potential.

to rural schools to help



We support the Chinese government's *One Belt, One Road* initiative to provide access to jobs, skills training and global opportunities to communities of the countries along the Belt and Road route.



We support the Made in China 2025 initiative by implementing our digital strategy;
We invest in innovation and R&D to strengthen local capabilities. 10 REDUCED INEQUALITIES

•We develop local talents in China;

•Caterpillar is committed to creating a diversified and inclusive working environment. Without regard to race, religion, national origin, color, gender, gender identity, sexual orientation, age and/or physical or mental disability, every employee at Caterpillar is encouraged to maximize his or her personal value.



•The Caterpillar Foundation contributes to environmental and economic betterment through a range of programs in China;

•The Caterpillar Foundation supports disaster preparedness, prevention and relief in local communities.



Caterpillar offers

 remanufacturing and
 rebuilding solutions in China;
 Caterpillar's facilities in
 China are committed to
 minimizing their
 environmental impact
 through Caterpillar's
 Sustainability Principles:
 Prevent Waste, Improve
 Quality and Develop Better
 Systems.



We help our customers achieve fuel efficiency, worksite efficiency and operational productivity;
We reduce our own operational GHG emissions.



Caterpillar supports programs to restore natural infrastructure.



Caterpillar's products support our customers to reclaim mine lands.



Implementing Caterpillar's worldwide Code of Conduct across all of our operations, we live up to our mission and values: Integrity, Excellence, Teamwork, Commitment, and Sustainability.



•Caterpillar provides services and shares successful experiences for Chinese contractors participating in One Belt, One Road initiatives; •Caterpillar advocates for free trade.

¹To learn more about "China's National Plan on Implementation of the 2030 Agenda for Sustainable Development" please refer to http://www.fmprc.gov.cn/web/zyxw/W020161012709956373709.pdf

Our Approach



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 provide solutions that support communities and protect the planet.



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.



Sustainability Principles

Sustainability is part of who we are and what we do every single day. We recognize that progress involves a balance of environmental stewardship, social responsibility and economic growth.

Prevent Waste (Improve Safety, Efficiency and Productivity):

By increasing the safety, efficiency and productivity of processes and products, we reduce cost and minimize the use of materials, energy, water and land. We provide a safe work environment and the tools and training employees need to work safely. We provide customers with products, services and solutions that improve the sustainability of their operations.

Develop Better Systems (Innovate):

Develop Better Systems

Improve

Prevent

Waste

We leverage innovation and technology to maximize efficiency and productivity. We remanufacture, rebuild and recycle to conserve resources for multiple life cycles. We develop products that contribute to communities through infrastructure development and energy access. We develop better systems throughout the value chain, "engineering the whole chain, not just the links," in order to maximize life cycle benefits.

Improve Quality

(Team, Community, Environment and Operations)

Quality We focus on improving quality for our company, customers, communities, environment and the quality of life for our employees. We use Lean and 6 Sigma to improve our operations and products. Our employees and their families experience a better quality of life when the quality of our company, communities and the environment is maintained. We attach and develop the best teams.



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.



ENERGY GOAL



Reduce energy intensity by 50 percent from 2006 to 2020.

RENEWABLE ENERGY GOAL



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

GHG EMISSIONS GOAL



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

BY-PRODUCT MATERIALS GOAL



SUSTAINABLE

CONSTRUCTION GOAL

criteria.

Design all new facility

construction to meet Leadership in Energy and Environmental Design (LEED)

or comparable green building

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

SYSTEMS OPTIMIZATION GOAL



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

REMAN & REBUILD GOAL



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

PRODUCT, SERVICES & SOLUTIONS GOAL



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

Notes:

1. Caterpillar does not set country-specific sustainability goals.

2. To learn more about the fulfillment of the goals worldwide, please read Caterpillar's 2016 Sustainability Report at http://reports.caterpillar.com/sr/

Support for Employee Development

Employees are our most valuable asset, as well as the backbone of Caterpillar's success. Caterpillar cherishes every employee's contribution to its success. For this reason, we focus on providing a workplace that values safety, inclusiveness and diversity, where support is provided for every employee's development which, in turn, promotes the company's development.





With "Zero-Injuries" as our vision for safety, Caterpillar believes that every accident and injury can be prevented through our efforts. Attention to safety has been applied in our offices and production processes alike.

In China, the Behavior-Based Safety Management system is implemented at Caterpillar facilities to help provide a safe workplace for employees. Safety management includes a wide range of measures: establishing a Safety Committee to implement safe production principles; regularly convening Safety Committee meetings to identify potential safety hazards and consult with relevant departments to find solutions; conducting regular safety inspections to check for and correct unsafe conditions and behaviors; holding a regular safety data analysis; developing a proper safety training plan and providing employees with comprehensive training on safety awareness and operation safety for various workstations; periodically checking production tools and repairing or removing those which do not meet our standards; providing visible safety notifications in workshops, including posters, operation guides and safety warnings to help staff members better understand safety work practices and rules; and encouraging full participation in safety supervision by using "continuous improvement cards." Once a year, we conduct a thorough review of our safety provisions and update them in a timely manner, as well as hold annual safety exercises to improve our employees' ability to respond to emergencies. We provide first aid training to employees on an ongoing basis at every Caterpillar China office and facility to ensure they are prepared to respond in an emergency.

Control Potential Safety Hazards



Potential safety hazards can be divided into two categories: unsafe human behaviors and unsafe material

conditions. In order to eliminate potential safety hazards, Caterpillar (Suzhou) Co., Ltd (the Suzhou facility) launched the customized Built-In-Safety (BIS) Behavior-Based Safety Observation and 5S Enhancement programs in 2015.

The BIS Behavior-Based Safety Observation program includes the creation of behavior-based safety checklists for every area of the facility. The checklists define about 1,400 unsafe behaviors in total. They are dynamically updated based on changes in production and operation. In addition, every area has a safety observation team, who will carry out safety observations on a daily basis and identify and correct unsafe behaviors in a timely manner.

The 5S Enhancement is: sort, set, shine, standardize and sustain; a series of measures taken to safeguard against unsafe material conditions. The facility divides such conditions into five processing stages and defines the tasks of each stage. The safety team carries out 5S checks and communication on a daily basis. Every area also carries out self-checks. More than 2,300 potential material safety hazards were recognized and corrected in 2016.

The Suzhou facility's number of total incidents in 2016, including new injuries and property damage, was reduced by 40 percent from 2014, and new injury frequency was reduced by 64 percent, to achieve a Recordable Injury Frequency rate of zero in 2016.

Increased Focus on Employees' Hand Safety



In the process of manufacturing, employees need to frequently handle heavy machinery with their hands, which may pose risk for their safety. In order to reduce the possible risk of hand injuries, special safety measures have been implemented in Caterpillar China facilities. Caterpillar (Qingzhou) Co., Ltd. (the Qingzhou facility) is a prime example. The facility has more than 300 cranes and more than 1,100 lifting devices, with 70 percent of employees coming in contact with these lifting devices in the course of operations. In 2014, the "11th Finger" program was launched at the Qingzhou facility, to provide employees with a range of auxiliary tools to help them accomplish jobs that are difficult or potentially dangerous to do by hand. In 2016, the scope of the program was expanded to become the "11th Finger Plus" program, and 135 auxiliary tools in seven main categories are in widespread use at present. In addition, the facility also provides instruction and pictorial

guidance to ensure that employees can use these tools correctly and efficiently. The program is being continuously upgraded to make the finger tools more convenient to use and offer higher efficiency. The "11th Finger" and "11th Finger Plus" programs have significantly reduced the rate of hand injury accidents, with a drop of 77.8 percent from 2014 to 2016.

Another example is AsiaTrack (Tianjin) Ltd., (ATL)) which developed and distributed a customized Hand Safety Handbook for employees. The handbook analyzes past incidents of hand injuries, describes any needed corrective actions, and provides common hand safety precautions to help boost employees' awareness of hand safety and improve hand protection. The number of hand injury accidents at ATL decreased from five in 2014 to one in 2016.

Increasing Employees' Safety Awareness



Caterpillar puts special emphasis on improving the safety awareness of employees. To boost participation and enthusiasm for learning, innovative methods of safety education are explored at our offices and facilities, achieving better results in safety awareness through greater interaction. Caterpillar (Wujiang) Co., Ltd. launched a series of innovative safety practice activities in 2016, including asking employees to suggest safety precautions for their respective posts and turning their suggestions into short videos for safety

education; implementing the Safety Shout Out campaign, to encourage employees to recognize and correct unsafe behaviors; and conducting a WeChat Safety Knowledge Contest with 99 percent of front-line workers engaged. These initiatives greatly increased employee safety awareness and knowledge. Another example is a Safety Awareness Week held at the Caterpillar R&D Center (China) Co., Ltd. (CRDC) in its Wuxi, Qingdao and Tianjin offices in 2016, to enhance employees' awareness of workplace violence, travel safety and crisis management. The Safety Awareness Week involved a wide range of activities including safety knowledge training, online safety knowledge testing, and safety education posters displayed on electronic screens in offices. The event also included interactive off-line safety knowledge quiz games, and employees were encouraged to report unsafe conditions or behaviors they found to help eliminate the hidden dangers in a timely fashion. In this way, every employee could become a "front-line" safety guard.

Diversity and Inclusion

Caterpillar is committed to creating a diversified and inclusive working environment, where the unique abilities, experiences and perspectives of each individual are respected. Without regard to race, religion, national origin, color, gender, gender identity, sexual orientation, age and/or physical or mental disability, every employee at Caterpillar is encouraged to maximize his or her personal value. The manufacturing industry has traditionally had a relatively high percentage of male workers. At Caterpillar, we pay attention to the issue of gender balance. Our goal is to increase our enterprise female population to 29 percent by 2022, and we have launched a series of initiatives to make this a reality.



In 2016, a "Women in Leadership" initiative was implemented in Caterpillar China, with the aim of promoting the career development and leadership of women, and to encourage women to pursue further advancement in their careers. We implemented the "Women Can Hold up Half of the Sky" campaign to invite female employees to share their career paths and ideas as inspiration for more women to join the engineering machinery industry. Many Caterpillar offices and facilities in China established Women's Initiative Network chapters, which is an employee resource group that serves as a platform for employees, especially female employees, to communicate with each other. Regular sharing groups are held, where female employees could share their experiences in career development, work and life, so that the challenges they face in work could be better understood and supported. In addition, at many offices and facilities at Caterpillar China, we set up Nursing Rooms to provide more comfortable, safe and supportive surroundings to nursing mothers among our employees.

Career Development



At Caterpillar, cultivating capable and proactive employees is one of our most significant goals. To fulfill this goal, we have set out a range of development plans to help employees grow professionally in their respective fields. We provide learning opportunities both inside and outside Caterpillar, as well as targeted leadership cultivation, and skill and language training.

As one of the leading enterprises in higher-end manufacturing, Caterpillar also attaches great importance to the training of highly-skilled workshop personnel as a positive response to China's national talent strategy, and provides support for their career development.

The Qingzhou facility launched its Apprenticeship Program in 2011, helping outstanding front-line employees to develop a more profound basis of theoretical knowledge in addition to practical experience, improving their performance and providing them the opportunity to advance to management positions. Top front-line employees who qualify to join the program complete a half-year study plan in the manufacturing technology management department, which ends with a series of examinations and an in-depth presentation. During the five-year period from 2011 to 2016, about 20 front-line employees graduated from the program, with some becoming the technical backbone of the workshop or production line managers, and others going on to serve as manufacturing engineers. In 2016, the Qingzhou facility was also granted the government-recognized qualification to evaluate highly-skilled personnel. With the support and assistance of relevant governmental authorities and educational organizations, 19 technicians and 17 senior workers received evaluation and certification at the facility by completing training, internships, testing and examinations.

Commitment to the Environment

Implementing Caterpillar's corporate Sustainability Principles - preventing waste, improving quality and developing better systems - will not only benefit our own operations, but also drive the value chain to minimize their environmental impact.

Developing Better, More Innovative Systems





Simulation Innovation helps Samples use Reduction and R&D Efficiency Improvement

In China, CRDC engineers have developed multiple innovative ideas by leveraging virtual product development methods to validate various electronic and electrical (E&E) components. The simulation is based on evaluating product failures in the real world. It allows the engineers to avoid the cost and time needed to build a sample to test, reducing R&D time an estimated 40 to 80 percent while also reducing energy consumption in the physical test. For instance, previously every E&E component required a mandatory accelerated shake table test. The duration of each component test can range from 30 to 100 hours, not including the sample building lead time and waiting time in the test lab queue. Now, with the newly-developed random vibration simulation technique, the total number of tests and sample pieces needed has been dramatically reduced.

Electromagnetic compatibility (EMC) simulation has also been recently introduced into our R&D process. A conventional EMC test is typically costly and sometimes unable to help the engineer identify the root cause of the failure, thus needing to be repeated multiple times to resolve the issue. EMC simulation, however, can pinpoint the high-risk location and identify a solution at the early concept phase. With more insights into the root cause obtained from analysis results, it can greatly improve the reliability of the design, lower the physical testing cost and reduce R&D time nearly 40 percent.

Our engineers have also applied computational fluid dynamics simulations to the study of battery fluid flow. This simple innovation has made it possible to visualize the fluid flow in the battery vent cap, providing much greater detail than a 3D printed mockup test on the bench. This innovation can save US\$ 3,100 per concept, and reduce the total duration of R&D from 6 months to 1.5 weeks.

Enhance Sustainability Benefits of Customers' Operations with Intelligent Technologies





Non-road mobile machinery represents around 35 percent of China's diesel consumption every year¹, with construction machinery being the major consumer. Decreasing fuel consumption supports environmental benefits. Caterpillar is implementing its digital strategy in China, aiming to bring digital services and solutions designed to improve productivity, efficiency, safety and profitability for our customers. The intelligent technology and services of Cat[®] Connect, which have been shown to reduce fuel consumption as much as 30 percent compared with machines without Cat Connect, form a significant part of the strategy.

1. Chinese Research Academy of Environmental Sciences, General Report on Development of Key Technical Standards for Environmental Pollutant Emission, 2013.



As a digital solution integrating a range of advanced technologies and services, Cat[®] Connect helps customers monitor and manage equipment, improve equipment fuel efficiency and predict latent faults.



EQUIPMENT MANAGEMENT





Cat Connect includes equipment management, productivity, safety and sustainability.



Each service provides relevant technologies to help customers maximize production, reduce costs and improve safety.



Mr. Zhu from Guiyang City of Guizhou Province, China has improved his operational efficiency and reduced fuel consumption by 30 percent by adopting Cat Connect grade control system.

Quality Improvement

We provide customers with durable products, which decreases the consumption of additional raw materials, and we continuously optimize our processes to eliminate quality defects as much as possible, preventing material waste caused by reprocessing.

Caterpillar's manufacturing facilities in China comply with Caterpillar's Quality Management System. From the very beginning of the product and process design, we consider how to prevent quality defects, applying the Caterpillar Production Systems (CPS) in our manufacturing process to strengthen quality control in production, and increase efficiency and stability of the production process. After the products have been introduced to the market, we continuously collect customer feedback with our dealers' help and make corresponding improvements. Our flagship facility in China, Caterpillar Xuzhou Ltd. (the Xuzhou facility), is a good example in this regard. Furthermore, it has brought new additions to the Caterpillar global process of "Built in Quality."



Quality is Excellence in Everything we do

Culture of Quality



For Caterpillar, focusing on product quality is not only a practice, but also part of our company culture. It has been rooted in the minds of every employee working in our facilities and throughout our value chain across China.

Accountability for product quality exists at all levels of the organization. For example, from 2014 to 2016, the general manager of the Xuzhou facility personally carried out pre-delivery inspections (PDI) on approximately 2,000 pieces of

equipment exported to Thailand. This focus on product quality has built global customers' confidence in the products made by Caterpillar's facilities in China.

To build up employees' quality awareness and improve quality effectiveness, the facility initiated a series of inspection measures to ensure the capability of quality inspectors to identify defects, especially those occurring with concealed parts, and reduce quality defects as much as possible. Employees at all levels from manager to front-line employees all participate in such inspections, share information on defects identified and collaboratively work on solutions for improvements.

Customer Focus



Caterpillar facilities in China attach great importance to customer feedback, working in close cooperation with dealers and suppliers to develop solutions to quality failures on a timely basis.

Following the "Built in Quality" process, when customer feedback on a quality failure is received, an emergency solution is provided within two hours, a temporary solution within 24 hours, and a long-lasting solution within one month. For example, the Xuzhou facility once

received feedback from Cat[®] dealer The China Engineers, Limited., that the glass of an excavator cab had suffered transportation damage. Within two hours, the facility notified all the other dealers to inspect their excavators to see if similar damage occurred. Then the facility inspected all related inventory in the facility within 24 hours. In the month following, the facility worked with the supplier to find out the cause of the damage and make timely improvements. The facility also kept close monitoring of the quality issue for months to make sure the defect wouldn't reoccur.

The Xuzhou facility also offers customized services to meet customer expectations. For example, as shipping machines to the United States exposes them to high salinity and dampness, the facility has implemented the antirust treatment for equipment. For customers in Africa, the facility has installed a special cooling system to adapt to local weather conditions.

Zero-Defect Process Management

Zero defects in product quality is the common goal throughout Caterpillar China facilities and our value chain management in China. To achieve this, not only do Caterpillar facilities comply with Caterpillar's quality management system, but they make an effort to help suppliers improve quality along the value chain. For example, the Xuzhou facility identifies suppliers' processes with a high risk of quality defects based on market feedback, results of incoming material inspections and weekly reviews of any of the suppliers' processes that are associated with more quality defects until the processes meet Caterpillar's quality standards. Additionally, Caterpillar shares its quality management system with its suppliers. So far, 19 suppliers are carrying out pre-delivery inspections, with the help of the Xuzhou facility. In this way, suppliers can identify any defects in their products, improve operation workflow and enhance product quality.

To keep up with the fast changing Chinese market and to meet Chinese customers' rising expectations, Caterpillar facilities have begun to implement tougher requirements for quality control when executing Caterpillar standards. While doing welding, spatter is generated and may stick to the surface of product. When not removed spatter creates a rough surface appearance. Depending on the location of the surfaces, Caterpillar quality standards often allow several spatter berries within a welding range of one meter, but to pursue higher standard, and a vision for perfect product, Xuzhou facility now strives for zero weld spatter on the surface. This means the parts suppliers must meet more challenging requirements. Such suppliers of the Xuzhou facility found that meeting these requirements has improved the stability of their processes and has lowered their production costs.

Data Driven Decisions



Data provides facilities visibility to product quality, and data analysis helps track the root of quality defects, which is essential to more precise and faster decision-making for improvement. The Xuzhou facility, for example, has established an information library for the production process of every product with high risk of quality defects to record any change in the process. If any abnormality occurs, the problematic step and cause will be identified quickly through data analysis. The Xuzhou facility also developed a quality control module for incoming materials in 2016, which has improved the efficiency of quality defects inspection on parts from suppliers from 30 to 80 percent.

With all these efforts, the Xuzhou facility has decreased the quality defects per unit by 62.5 percent from 2015 to 2016, becoming one of the best among all Caterpillar facilities worldwide.



Sustainability in Manufacturing

Caterpillar's manufacturing facilities in China implement management systems including 6 Sigma and Caterpillar Production System (CPS) to improve safety, product quality, production efficiency and cost management. In conformance with Caterpillar corporate sustainability principles, the facilities incorporate innovation in their operations to minimize their environmental impact.



A thorough understanding of the daily energy use of the facility is one of the prerequisites of reducing energy consumption. In 2016, Caterpillar (China) Machinery Components Co., Ltd (the Wuxi facility) installed a real-time electricity consumption management system. Likewise, data on daily natural gas consumption is recorded for each building; once the expected consumption is exceeded, analysis and improvement measures are taken.

While working to improve the utilization of robots and minimize paint waste, the Wuxi facility replaced the traditional temperature controller on the painting oven with a proportion integral derivative smart temperature controller. The operating temperature now adjusts gradually as needed, rather than at set intervals. This RMB 3,500 investment has led to a decrease in natural gas consumption in the ovens by 20 percent and improved paint quality.

The Wuxi facility adopted numerous measures with sustainability benefits: several facility motors were refurbished resulting in an extended service life and efficiency increased to 95 percent, saving energy consumption by 10 to 15 percent. They also equipped a high-power engine with a frequency converter, allowing the engine to adapt its power to the load, saving 5 to 15 percent of energy consumption and extending engine life; and used an automatic controller on air conditioners and lights, saving 5 to 10 percent energy consumption.

Thanks to these measures, even though the production of the Wuxi facility increased in 2016 compared with 2015, its electricity consumption was reduced by 20 percent. In total, the Wuxi facility reduced the consumption of electricity by 5,006 MWH equivalent to reducing CO₂ equivalent emissions by about 4,488 tonnes in 2016, for which it won the Ecological Contribution Award 2016 from the Wuxi New District.

Promoting Sustainability in Our Value Chain

At Caterpillar, sustainability is an integral part of our own operations, and serves as a guide for our suppliers, dealers and customers.

Sustainability throughout the Value Chain



Suppliers:

We set our expectations for suppliers with our Supplier Code of Conduct.



Caterpillar:

We drive progress by preventing waste, improving quality and developing better systems.



Dealers:

We provide dealers with guidance in corporate strategies, values and daily operation, and conduct regular collaborative assessments to further their efforts toward their sustainability goals.



Customers:

We provide the equipment, technology and solutions to support customers in their own sustainability goals.





Suppliers make up an essential part of our value chain. In 2013, Caterpillar published its *Supplier Code of Conduct*, which was refreshed in 2015 to provide more clarity on the company's position on human rights, innovation, diversity and inclusion, environmental responsibility and sustainable development.

Caterpillar now has over 350 suppliers in China, making it one of Caterpillar's largest procurement markets in the Asia-Pacific region. We maintain defined, comprehensive procedures for supplier auditing and supervision, and require our suppliers to align with values outlined in our *Supplier Code of Conduct*, including product stewardship standards, environmental protection and employee safety, in addition to various business guidelines, helping them to improve their product quality and operational efficiency.

As Caterpillar's supplier of parts for construction machinery equipment and mining equipment, Xuzhou Globe-Reach Heavy Machinery Co., Ltd. (Hereinafter referred to as "SMF") began its cooperation with Caterpillar in 1996 and became one of the first Chinese enterprises to achieve certification through Caterpillar's Supplier Quality Excellence process in 2000. While many suppliers have cut back on production in recent years to cope with dampened market demand, SMF has experienced capacity enlargement and enhanced strength despite the downturn. This is due in part to SMF's implementation of sustainability practices with strong support from Caterpillar.

Backed by Caterpillar, SMF has successfully applied several of Caterpillar's production management concepts, such as Lean Production, Built in Quality and 6 Sigma, which has helped SMF optimize systems and processes, improve quality and effectively prevent waste, and better meet the overall requirements of the Caterpillar Production System, making SMF more competitive within the market.

Caterpillar Production System Overview



With Caterpillar's advanced production management philosophy and sustainability principles, SMF optimized its facility layout and production lines, and took the bold step of increasing its investment in automated production equipment, including the implementation of welding robots. These changes have helped SMF increase its productivity by 167 percent and shorten its lead time by 50 percent, improving efficiency and productivity, lowering costs, minimizing the consumption of materials and human resources, and preventing waste. At the same time, Caterpillar CPS deployment and investment in robotics helps to achieve better ergonomics, assisting SMF to

develop a more comfortable, productive and safe operating environment.

Building upon Caterpillar's system and culture of quality and learning from Caterpillar's quality management philosophy, SMF continues to improve its product and service quality. SMF is one of the first suppliers to implement Caterpillar's PDI process. Likewise, the stable and highly skilled SMF staff contributes to improved production quality. SMF continually increased its investment in the training of highly skilled, talented staff, even during periods of downturn in the industry. With support from Caterpillar, SMF provides staff members in key positions with career development plans, professional training, and performance awards. This helps attract and retain highly skilled talented individuals in addition to improving the quality of their work. In 2016, the staff turnover rate of SMF was 4.4 percent, compared to 20.1 percent for the industry. The products supplied to Caterpillar by SMF had a product qualification rate of 100 percent and were all delivered on time in 2016.

As SMF continues to improve, the coverage of the business support it provides to Caterpillar is expanding from China to the world. Today, SMF provides products and services to Caterpillar's facilities located in countries such as India, Russia, Japan, the U.S. and Brazil as well as Europe. SMF continues to win contracts from new clients due to its high quality and efficiency. In 2016, SMF achieved sales of US\$ 68.67 million, up 30 percent from a year earlier.



Collaborating with Dealers to Advance Sustainability



Caterpillar has four major independent dealers in China: Lei Shing Hong Machinery; The China Engineers, Limited.; ECI-Metro Engineering Machinery Co., Ltd.; and WesTrac China. Caterpillar maintains a mutually respectful, trust-based, win-win relationship with our dealers in the Chinese market. We offer support to our dealers in many aspects, such as operational training and maintenance, in order to help them enhance the sustainability of their operations. At the same time, we work together to provide customers with comprehensive services to help them achieve better economic, social and environmental benefits.

Caterpillar supported WesTrac to empower China National Offshore Oil Corporation (CNOOC) to achieve stable, continuous power generation with oilfield associated gas in the LuDa 32-2 Oilfield project. This case is a demonstration of Caterpillar's support for our dealers and how we work together to help enhance the sustainability of customers.

CNOOC is one of the three major national oil companies in China. The Tianjin branch of CNOOC developed the LuDa 32-2 Oilfield in eastern Bohai Bay in 2009. It is a comprehensive platform that combines oil-gas-water processing, oil storage, and crude oil transportation.

During the development of the offshore oilfield, a kind of natural gas, oilfield associated gas, comes out of the oil well along with the oil. It is mainly composed of methane and ethane. Output of oilfield associated gas is massive. Tens or even hundreds of cubic meters of oilfield associated gas are generated for every cubic meter of oil produced. Flaring the gas directly on the site is not only a waste of energy, but also impacts the environment.

In order to maximize the potential of oilfield associated gas, LuDa 32-2 Oilfield uses Cat[®] G3616 gas generator sets to generate power with the gas. The stable and continuous operation of the gas generator sets is of great importance to LuDa 32-2 Oilfield's sustainability goals of saving energy and reducing emissions.

Since the inception of the project, WesTrac has kept track of the use of the Cat[®] G3616 gas generator sets. Westrac was the customer's first choice in the follow up tender for equipment repair and they have renewed their annual service contract with WesTrac every year since 2011. Caterpillar provided the dealer with a wide range of support, including:

Dispatching engineers to instruct WesTrac technicians on the after-sales service quality of the dealers;

Providing support to the equipment operation seminars held by WesTrac regularly and offering effective advice to the customers with queries;

In response to the urgent needs for parts from customers, Caterpillar communicated with parts suppliers as well as providing effective advice of parts application to ensure that WesTrac could work out the maintenance smoothly.

With the joint effort of Caterpillar and WesTrac, the Cat G3616 gas generator sets at LuDa 32-2 Oilfield have kept operating stably. As a result, the customer can achieve both environmental and energy benefits. According to statistics, each Cat G3616 gas generator set consumes 6,528 cubic meters of oilfield associated gas and generates 2,550 kWh of electricity every day. Currently, two Cat G3616 gas generator sets are in use, and their output accounts for 50 percent of the total power consumption of the platform.



Supporting Customers' Sustainable Development Objectives

Generating Power from Landfill Gas



Landfills are the primary way in which rubbish is disposed of in cities around the world. However, the CO_2 and methane produced by the decomposition of landfill waste not only contributes to the greenhouse effect, but also poses a hidden risk of explosions. However, this methane also holds great hidden potential, as a ready source of alternative energy. Gathering it to generate electricity can not only reduce its impact on the environment, but also improve safety.

As the largest landfill in Hangzhou, Tianziling Landfill aims to use new technologies to reclaim energy and resources from waste, helping to reduce its impact on the environment. As early as 1998, the landfill took the lead in applying gas generator sets to processing waste with the Cat[®] G3516 generator set. Today, the landfill has 12 Cat G3516 generator sets, which process 175,000 cubic meters landfill biogas and generate 280,000 kWh electricity on average every day.

The first overhaul of a generator set used in a landfill typically happens eight years after first coming into service. The first two Cat G3516 generator sets in Tianziling Landfill in Hangzhou underwent their first overhaul in 2011, after over 10 years of running successfully, a sign of their outstanding reliability and durability. Not only does the Cat[®] generator set support biogas power generation and reduce greenhouse gases, it also helps lower operation and service costs thanks to its quality and endurance.

Saving Energy and Reducing Emissions in Oilfield Power Supply

China National Petroleum Corporation (CNPC) is one of China's largest oil and gas producers and suppliers. It takes the environmental impact of its decisions into consideration wherever it does business and is dedicated to reducing the impact on the environment and climate resulting from oil production. As a major oil and gas field production unit No.1 Gas Production Plant of Changqing Oilfield Company has installed Cat[®] engines to help save energy and reduce emissions in its operations.



The No. 1 Gas Production Plant of Changqing Oilfield Company supplies natural gas to major cities like Beijing, Yinchuan, and Xi'an. As the processing of natural gas requires gas compression at various stages, natural gas compressors play a critical role in the entire process. As the power source and one of the key components of the compressors, 18 Cat[®] G3516 LE natural gas engines have been installed by the company. The Cat G3516 LE engines at the No.6 Wu Station have processed a total of 500,000 cubic meters of natural gas from 2013, when they first began operation, to 2016, and have been in continuous stable operation.

"Cat G3516 LE natural gas engines have a compact structure, operate stably, and have low emissions," said Chen Zhijun, equipment manager of the No.1 Gas Production Plant of Changqing Oilfield Company. "The Cat engines consume approximately 140 cubic meters of fuel gas at about 80 percent of their power output, depending on the operating conditions."

Distributed Energy Contributes to Higher Efficiency and Less Emissions

China is currently undergoing a major transition towards building a low-carbon economy and optimizing its energy structure, a project emphasized by the government in its Thirteenth Five Year Plan. Natural gas provides a path to energy options, with a utilization factor up to 80 percent. Caterpillar and its subsidiary Solar Turbines Incorporated, provide customers with safe, reliable distributed energy equipment to help them lower operation costs and achieve such goals as energy conservation, efficiency enhancement and emissions reduction.

National Exemplary Project "Xindu China Resources Snow Breweries Distributed Energy Project" (Xindu Project)



Solar Turbines, a subsidiary of Caterpillar, is a leading global manufacturer of distributed energy and co-generation equipment. SCEI Distributed Energy Systems Co., Ltd. is one of Solar Turbines' most important clients in China. Its Xindu Project provides China Resources Snow Breweries with steam, electricity, and the cold water that are required in the production process, using Combined Cooling, Heating and Power technology.

The project is composed of one Solar Turbines' Taurus-70 gas turbine generator set, one after-burning waste heat boiler, two gas boilers and one lithium bromide chiller. Natural gas is used as the fuel of the gas turbine generator to generate electricity. The generated high-temperature flue gas is absorbed by the waste heat boiler that creates steam to meet the needs of production, then the waste heat of flue gas generated by the waste heat boiler will be utilized to supply heat or provide refrigeration.

The project was constructed and went into operation in June 2015. It was designed to generate 43 million kWh of electricity, supply 150,000 tonnes of steam, and 280,000 tonnes of cold water per year. Its overall energy utilization efficiency is as high as 82.34 percent. The project is anticipated to reduce emissions by 18,600 tonnes of CO₂, 160 tonnes of SO₂, 43 tonnes of NO_x, and 29 tonnes of smoke and dust every year. The project was named as a "National Exemplary Project of Natural Gas Distributed Energy" by the National Development and Reform Commission of the People's Republic of China in 2016.

Shanghai's Tencent Cloud Data Center Combined Cooling, Heating and Power (CCHP) Project

Shanghai's Tencent Cloud Data Center is one of the most advanced cloud computing and cloud storage infrastructure service platforms in the Asia-Pacific region. As data centers are typically large energy consumers, the project has adopted distributed energy management.

ENN Energy Service (Shanghai) Co., Ltd, a customer of Caterpillar, built the natural gas distributed energy system with CCHP technology for the data center to maintain a stable and reliable power supply, improve the primary energy utilization rate, and boost the economic, energy-saving and environmental benefits at the same time.

The distributed energy system includes two Cat[®] G3520H gas generator sets, a hot water flue gas

after-burning lithium bromide chiller, and an energy integrated control unit. The NOx emissions of the Cat G3520H gas generator set is 250mg/Nm³ (5 percent O₂), in line with the data center's commitment to low exhaust emissions. The generator sets are highly adaptable, able to operate normally under various workloads providing the high efficiency and reliability of the distributed energy system.

The CCHP project started its test run in August 2016. After coming into operation, it has reduced emissions by about 23,300 tonnes of CO₂, 466 tonnes of SO₂ and 79 tonnes of NOX, as compared to the grid.



China's Largest Underground Distributed Natural Gas Energy Station



The Distributed Natural Gas Energy Station Project of the National Supercomputer Center in Guangzhou (NSCC-GZ) is the largest underground distributed energy project completed in China today. The project was invested in and constructed by China Southern Power Grid. NSCC-GZ serves as the computing provider of social administration services of the city, and also drives industrial design and analysis, fueling the development of high-tech industries, modern services and digital cities.

To support long-term stable operation and meet the high-capacity and high-security energy demands of NSCC-GZ, a distributed energy project from China Southern Power Grid is currently under construction, featuring a specially designed system for combined supply of cooling and power. Fueled by natural gas, the distributed energy station will be installed with four MWM[™] TCG 2032V16 4300 kW gas engine generator sets for power generation at the time of completion. High-temperature exhaust and water resulting from power generation will be entered into four lithium bromide refrigerators. This project is able to provide 30 percent of the power and cooling required by NSCC-GZ.

Compared with conventional thermal power generation, the project has increased the primary energy ratio from 36 to 72 percent, and anticipates an annual reduction of 33,000 tonnes of CO₂ emission and 141 tonnes of sulfur dioxide.

Commitment to Sustainable Community Development





Philanthropy is an integral part of Caterpillar's culture. As the company works to help build a stable societal infrastructure, such as roads, bridges and access to energy, the Caterpillar Foundation focuses on building human infrastructure, championing programs that support basic human needs, education and the environment. Together the Foundation and the company promote the development of a more dynamic, thriving and sustainable community and economy.

The vision of the Caterpillar Foundation is to reduce poverty and help more people embark on the road to prosperity.





Basic Human Needs:

Eradicating generational poverty starts with building up individuals. The Caterpillar Foundation is committed to meeting basic human needs and supporting them to more effectively pursue economic and education opportunities.



Environment:

A commitment to the environment is critical to alleviating poverty and creating shared prosperity.



Education:

Education is the driving force for poverty elimination. Access to a quality education helps break the cycle of generational poverty.





With limited funding, teachers and students in many rural schools throughout China have no access to clean drinking water. To improve the quality of drinking water and sanitary conditions in rural primary and middle schools, the China Women's Development Foundation (CWDF) launched the Water Cellars for Mothers – Safe Drinking Water for Schools program, constructing and modifying their water supply systems and washing and toilet facilities.

In 2016, with support of the Caterpillar Foundation, the program was implemented in six rural schools in Hebei, Jiangsu, Shandong and Ningxia. These efforts have benefited 4,821 teachers and students, giving them access to clean drinking water and better sanitary conditions, and helping them to develop good sanitary habits.

Before working with the Water Cellars for Mothers program, more than 2,000 teachers and students in the Fengshan No. 2 Middle School, Hebei Province, had been drinking water from a well in the campus. The pipes were seriously corroded and allowed high amounts of sediment and other material to contaminate the water. The school only had one pit toilet, with high concentrations of ammonia gas. The successful implementation of the program addressed the school's difficulties in water supply and sanitation, and provided teachers and students with purified water. In addition, the improvements made by the program saved the school about RMB 7,000 per year, which was previously used to buy drinking water for students and now can be used to improve other facilities in the school. Better schooling conditions will help students better complete their education and integrate into the wider community, helping them to break the cycle of generational poverty.

In the long run, an improvement of drinking water and sanitary conditions will also greatly reduce the incidence of diseases and thus the cost for treatment. Improvements also help attract and retain good teachers, improve the local education level and contribute to the economic infrastructure.



Disaster Preparedness and Mitigation to Reduce Disaster-induced Poverty



Disaster preparedness and prevention is an important part of ensuring the livelihood of local communities. According to data released by the United Nations International Strategy for Disaster

Reduction (UNISDR), for every dollar invested before a disaster, seven dollars will be saved after the disaster, a clear sign of the importance of disaster preparedness and prevention. In 2015, the Caterpillar Foundation co-founded the Disaster Preparedness and Mitigation Special Fund (the "Fund") with the China Foundation for Poverty Alleviation (CFPA), to help improve disaster preparedness and prevention by making pre-disaster donations.

Not only does the Fund reserve supplies for disaster relief, but it also provides training for community groups and volunteers to improve their skills for disaster prevention and relief. Meanwhile, the Fund provides education on disaster prevention and self-rescue skills for left-behind children, their parents and caregivers, to minimize human and property loss and prevent disasters from causing poverty. The Fund also helps support small and medium disaster relief efforts that were likely to be ignored by donors.

On June 23, 2016, parts of Yancheng City, Jiangsu Province, were seriously hit by sudden tornados with hail. The Caterpillar Foundation, together with CFPA, reacted within 20 hours and transported and set up 210 tents specially designed for disaster relief, one of the items kept in reserve for disaster relief by the Fund, to the affected regions. The disaster preparedness made possible by the Fund allowed for a more rapid and effective response than would be possible by relying on post-disaster donations. In late September 2016, Panzhihua city was stricken by rainstorms and floods. The Fund distributed home emergency packages to affected families, providing basic life necessities for 15 days following the disaster. Those necessities provided for clothing and warmth, basic protection, hygiene, and some special needs of women and children.

Today, an increasing number of community organizations and volunteer groups are actively involved in disaster preparedness and relief in China. From 2015 to 2016, the Fund supported CFPA in the construction of the Humanitarian Aid Network and its ability to provide disaster prevention and relief support. They held seven workshops nationwide, in conjunction with training and drills on disaster prevention, to help community organizations and volunteer groups support disaster relief in a more orderly and professional manner.

In 2016, the Fund also supported CFPA's "Tongban Plan" by providing emergency safety education for 268 left-behind children, 100 caregivers and 195 parents in 10 counties in Sichuan Province. With simulations and games, the children learned techniques and skills for protecting themselves in earthquakes, fires and floods. The participating parents and caregivers also improved their skills and awareness, learning how to better protect the children in their care. Following the activities, the 100 caregivers held "Children Safety and Prevention" activities at their respective Tongban Activity Centers, to further popularize the children safety knowledge among 35,000 children and parents.



Planting Trees to Reduce Poverty



Since 2011, the Caterpillar Foundation has been working with the China Environmental Protection Foundation (CEPF) to improve the natural environment through the Charity Forest Program. According to CEPF, more than 346,000 trees have been planted, contributing to an annual dust retention amount of 8,428 kg, carbon storage of 54,728 tonnes and oxygen release of 38,144 tonnes by the end of 2016.

Since 2014, the program has been

transitioning from forestation purely focusing on sandstorm prevention and soil reservation to planting fruit-bearing trees that generate both ecological and economic benefits. Not only does the transition help local farmers rejuvenate the land, but it also increases their incomes, especially beneficial to left-behind women and impoverished households.

To date, 350 mu (around 233,335 square meters) of apple, jujube, walnut, peach and cherry-apple trees have been planted in Yanqing County, Beijing; Xingtai City and Hengshui City, Hebei Province; as well as Ningwu County and Xixian County, Shanxi Province, all under the Caterpillar Foundation Charity Forest Program. In 2015, the Charity Forest began its production with a small quantity of fruits. 2017 will be the first year it yields a large amount of fruits, including an expected output of 7,500 kg of apples and 4,000 kg of peaches.

Poverty Alleviation through Education



In China, the Caterpillar Foundation, alongside its nonprofit partners, is helping to promote a series of education programs in impoverished communities, stretching from early education to job readiness, to help foster self-reliance, self-improvement, and better integration into the community, higher education and economic development. For many years, we have been making efforts to help improve access to pre-school

education for children in remote mountainous regions, boost migrant children's reading and literature education, and provide basic reading, writing and math knowledge to children with special needs. We also provide under-privileged youth with free-of-charge vocational education and training, including basic financial knowledge.

Meanwhile, Caterpillar China also plays a role in education with its commitment to social responsibility initiatives. For example, the Qingzhou facility has given longstanding support to local primary schools for improving schooling conditions and holding interactive activities, including reading sessions and inviting psychologist to help students relieve stress. In 2016, the facility donated a new reading room to Tuoshan Primary School in Qingzhou, with the aim of helping students to develop good reading habits. Employees at the Caterpillar Tianjin office donated clothes, books and stationery to primary schools in needy areas in Gansu Province.

Employee Volunteers Caring for Vulnerable Children



In 2016, not only did employees at Caterpillar China enthusiastically join in the "Global Volunteer Month" program, but also carried out a range of volunteer activities throughout the entire year.

In April, over 600 Caterpillar employees from seven cities participated in various volunteer activities in their respective cities. In Tianjin, Caterpillar employee volunteers gave a light-hearted and interesting English class on gourmet food to students in SOS Children's Village. They helped the children learn more daily English in the process of cooking food. In Qingzhou, volunteers accompanied special needs children on visits to local historic sites, helping them understand local culture and history. To better communicate with the children, volunteers taught themselves simple sign language. In Wuxi, the volunteers at CRDC conducted

a series of activities with students at Jiangnan University to prepare them for the workplace by helping them with vocational planning and giving them simulated job interviews. In Beijing, Xuzhou and Shanghai, volunteers planted trees, continuing a long-standing annual tradition. In Suzhou, volunteers organized a charity walk to promote the idea of green commuting.

Additionally, volunteer employees at the Wuxi facility held a series of activities to provide care for autistic children throughout 2016. They established a long-term relationship with Wuxi Early Intervention Center for Children with Special Needs to provide care and support for autistic children. The volunteer employees learned about autism before they helped the Center in organizing the Training Camp for General Kindergarten Teachers in Wuxi on Autism, which taught teachers at more than 1,000 kindergartens how to identify and help autistic children. Furthermore, the Wuxi facility invited families with autistic children to participate in parent-child activities and gave away apples produced in the Caterpillar Foundation Charity Forest to the children as afternoon snacks. The volunteers also printed pictures drawn by autistic children. The Wuxi facility plans to set up a long-term cooperative relationship with the Center to support the autistic children and contribute to the building of a more diversified and inclusive community.

Empowering Migrant Children's Education



In 2016, Caterpillar employee volunteers took part in the "Future Kingdom" reading and science carnivals under the New Citizen Program, for which they won the 2016 Beijing Top 10 **Corporate Volunteer Service Project** Award. From April to November, a total of more than 100 volunteers from Caterpillar, Cat[®] dealer and 30 students from Bai Nian Vocational School (BNVS) worked as volunteers for three carnivals. Some of the BNVS students are also beneficiaries of the vocational education program supported by the Caterpillar Foundation. The volunteers helped more than 600 migrant children

learn basic reading and scientific knowledge, develop good reading habits and foster an interest in science using a variety of games and activities, in order to prepare them for further education and better integration into the community.

With their involvement in the reading and science carnivals, the Caterpillar employee volunteers also promote the concept that those who are being helped can also help others, promoting self-reliance and self-improvement. Farmers benefiting from the Caterpillar Foundation Charity Forest Project donated 150 kg apples, which Caterpillar distributed among the children at the carnivals on behalf of the farmers. The interaction between the students from the BNVS program, most of whom are also from migrant



families, and the younger children was more engaging, dynamic and effective, due to their similar background. Their involvement sent a powerful message about the value of self-reliance, self-improvement, and readiness to help to others.

Caterpillar also works with partners along the value chain in its volunteer activities. Carnival volunteers included employees from Cat dealer WesTrac, who showed the same commitment to help improve the local community.

Forward-looking Statements

Certain statements in this 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.