



HIGH Tech

HIGH Value



How *innovation* and *technology*
deliver value for our customers in order to make
sustainable progress possible.

CATERPILLAR®

2012 SUSTAINABILITY REPORT



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HIGH Tech HIGH Value



Douglas R. Oberhelman
Chairman and CEO

Chairman's Message

I can describe Caterpillar's strategy in one word — customers. We wake up thinking about our customers every day. What do they need? How can we add more value? What challenges do they face?

Of course each and every customer is unique, but there are a few needs that our customers share across the board. Whether a small contractor with a single machine, or a multinational mining company; whether in Brazil or India; just about every customer talks to me about how we can help them operate more efficiently. They want to move materials quickly, safely and efficiently — in short, they want to operate more sustainably.

When our customers talk, we listen. When they have a problem big or small, we are there to support them. But when our customers all agree, when they have a common concern, we focus the full power of the Caterpillar team to find solutions.

And the role technology plays is significant in finding those solutions.

You might be surprised to learn about all of the high-tech features in our products. Many of our large mining trucks can be customized to drive themselves, supervised from the comfort of a control room, and our dozers can be operated by remote control. Our internal combustion process is more difficult to simulate than the process that powers the space shuttle. Most of our machines and engines are designed to run 10,000 hours before overhaul — equivalent of 500,000 miles on your car. Our machines are designed to be rebuilt two or three times. We have designed engines that meet each new tier of emissions standards, the latest being Tier 4, which, in its final phase, will take particulate matter and NOx emissions to near-zero levels. This has been accomplished without sacrificing power or performance, and with a 5 to 20 percent decrease in fuel consumption. Our dealers and customers can watch many of their products working on their smartphones — Cat® Product Link™ gives them real-time data on product health, performance, uptime and fuel consumption. I could go on and on, but you get the picture.

Being a world-class manufacturer requires excellence in innovation, but we rarely innovate simply for the sake of making something new. Instead, we use our technology to solve problems.

Sustainability and innovation at Caterpillar is a bit of a "chicken and the egg" dilemma. I don't know which is first — whether innovation helps

our customers be more sustainable, or the need to be more sustainable helps us become more innovative. Either way, it's a good thing!

At Caterpillar, helping our customers operate in a more sustainable manner is one of our biggest drivers of innovation. In 2012, we invested \$2.5 billion in research and development.

Our approximately 10,000 engineers and technologists worked on solutions involving natural gas and alternative fuels, advanced hybrid technology, electronics to enable autonomy, and remote control and advanced power trains to enable better fuel consumption, responsiveness and traction control.

All of these research themes have one thing in common — they are aimed at helping our customers operate more efficiently, often with less impact on people and the environment. And they all fit in with the three principles of sustainability we adopted in 2012.

You'll read more about our sustainability principles later in this report, focusing on preventing waste, improving quality and developing better systems. You'll see terrific examples of how these principles have been applied to improve the sustainability of our processes, products, services and solutions. What I like about the principles is that they are simple, yet effective, and they are relevant to all aspects of our operations, our supply chain and our customers' needs, as well as the environment and the communities in which we live and work.

When I look at our sustainability principles and our technology efforts, it becomes clear we are making great strides in sustainability through our innovation efforts. We aren't trying to be flashy. We aren't trying to make headlines. We are simply working hard every day to help our customers and our communities succeed.

Sincerely,

Doug Oberhelman
Chairman and Chief Executive Officer of Caterpillar Inc.



Our Approach

IN THIS SECTION

ABOUT THIS REPORT
VISION & MISSION
SUSTAINABILITY PRINCIPLES
LEGAL STATEMENTS

For more than 85 years, Caterpillar Inc. has been making sustainable progress possible and driving positive change on every continent. With 2012 sales and revenues of \$65.875 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 also is a leading services provider through Caterpillar Financial Services Corporation, Caterpillar Remanufacturing Services and Progress Rail Services Corporation.

Caterpillar is a global leader, a worldwide enabler of sustainable progress. Caterpillar operates hundreds of offices and facilities around the world and has more than 125,000 employees. We serve customers in more than 180 countries. Caterpillar's global presence, product breadth and financial strength enable us to win in today's competitive marketplaces.



About This Report

The need for sustainable development is rapidly becoming a priority across the globe. Constraints associated with the availability and quality of energy, materials, water, land, food, education, health care and other resources affect everyone. We have focused this report on innovation and technology breakthroughs that are improving the sustainability of these systems.

At Caterpillar, 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. This is reflected in the sustainability principles we developed in 2012. These principles and strategies are featured prominently throughout this report, which carefully shows how we apply innovation and technology to improve the sustainability performance of Caterpillar products, services, solutions and operations.

This report has been prepared by keeping two primary approaches to sustainability practices in mind.

The innovation approach, emphasized by Caterpillar and other forward-thinking companies, proactively gathers and uses data to identify sustainability constraints and priorities. This information is used to drive the development and implementation of efficient methods, innovative solutions and technology breakthroughs to create more sustainable systems, and in the development of performance-based sustainability policies and regulations to promote innovation. This approach is highlighted through this report's feature stories that describe how sustainable development is integrated into our day-to-day business operations.

The prescriptive approach, emphasized by many governmental and nongovernmental organizations, focuses on data collection, data reporting, transparency, development of standards and development of policies and regulations. Compliance and enforcement measures are then developed and implemented that are intended to lead to more sustainable systems. You will find evidence of this approach in the Goals & Progress section, where we report on Caterpillar's performance against our 2020 aspirational goals for operations and products, services and solutions.

Both approaches are important with respect to improving the quality of our environment, communities and business performance. As our sustainability journey progresses, our focus on innovation and technology will be paramount in order to fully achieve sustainable development solutions that meet the needs of our enterprise, customers, communities and planet.

Vision & Mission

Our vision is a world in which all people's basic requirements — such as shelter, clean water, sanitation, food and reliable power — are fulfilled in an environmentally sustainable way.

Our mission is to enable economic growth through infrastructure and energy development, and to provide solutions that support communities and protect the planet.

Our strategy is to provide work environments, products, services and solutions that make efficient use of the world's natural resources and reduce unnecessary impacts on communities, the environment and the economy.

We apply innovation and technology to improve the sustainability performance of Caterpillar 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.

CRITICAL SUCCESS FACTORS

Culture. Create a culture of sustainability in all our business units and in all our daily work.

Progress: We identify and share best practices to promote our employees' awareness and understanding of sustainability. We continue to foster a corporate culture of transparency, disclosure and engagement.

Operations. Be consistent with our sustainability principles and contribute to 2020 aspirational sustainable development goals.

Progress: The Caterpillar Production System provides the recipe for efficiency and excellence in our facilities. We actively encourage employees to conserve resources and be more efficient. Operating in a more efficient and sustainable manner will reduce impacts on people and the environment, and help us and our customers save money.

Business Opportunities. Identify and pursue business growth opportunities created by sustainable development.

Progress: We are actively embedding sustainability throughout our Caterpillar brand portfolio, our new product development process and our technologies. Our business leaders continue to drive growth in sales of products, services and solutions that help customers meet their sustainability challenges. We utilize 6 Sigma methodologies to focus our work and drive measurable benefits.

We will execute our strategy by working to meet our long-term aspirational sustainable development goals. We set yearly targets where possible and are working on additional targets to help us measure our annual progress.

Our sustainability Principles & Strategy Ranking

In 2012, Caterpillar launched three sustainability principles and the strategy ranking. The three core sustainability principles will be used to drive our commitment to make sustainable progress possible. As shown in the graphic below, these principles focus on preventing waste, improving quality and developing better systems; and they are relevant to everyone in the enterprise regardless of their role, status or geographic location.

Most individuals and organizations consider **preventing waste** to be an important strategy for competing in today's markets. Improving the efficiency of products, processes, services and solutions not only reduces cost, but also leads to environmental benefits associated with reduced materials, energy, water and land utilization. Caterpillar recognizes that unnecessary impacts to people, communities and the environment are also a form of waste. Consequently, preventing waste is of paramount importance to improving sustainability.

Improving quality by proactively implementing measures that prevent waste is another key sustainability principle at Caterpillar. Traditionally, this principle applies to the quality of the processes, products, services, solutions and safety practices utilized throughout the Caterpillar enterprise. However, it also applies to the quality of life for our employees, as well as the quality of the communities and the environment in which Caterpillar operates. Healthy people,

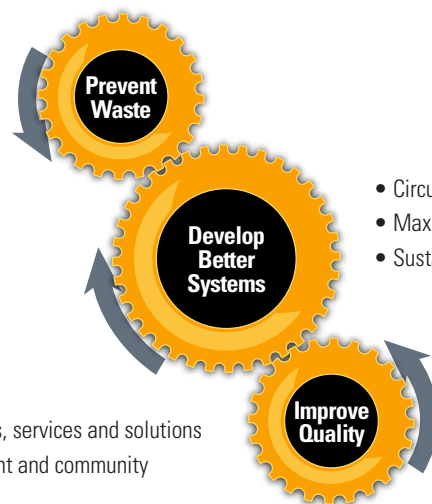
communities and environmental resources are all valuable components for a thriving Caterpillar enterprise.

Preventing waste and improving quality measures provide the key drivers for **developing better systems** that are inherently more sustainable. When Caterpillar brings people, materials, energy, water and land into the various systems found throughout the enterprise, care must be taken to ensure that these resources are not harmed or wasted. Keeping resources in the value chain through a circular flow of materials, energy and water is critical to maximizing total life cycle benefits while minimizing the cost of ownership. This leads to sustainable progress for communities, the environment and the economy.

SUSTAINABILITY STRATEGIES

The sustainability principles described above complement the five key strategies described in the graphic on page 8. It is noteworthy that the strategies described toward the top of this ranking tend to offer more sustainability benefits than those described at the bottom of the ranking. Strategies associated with **preventing waste and emissions** through improved efficiency and quality measures are preferred because they offer the most opportunities to enhance cost competitiveness and reduce the potential for unnecessary impacts to communities and the environment in both the short and long term.

- Materials, energy, water and land
- Impacts to people, communities and the environment



- Circular flow of materials and energy through the value chain
- Maximum life cycle benefits and minimum cost of ownership
- Sustained progress for economy, environment and community

- Safety, processes, products, services and solutions
- Life, workforce, environment and community

(continued)

Our sustainability Principles & Strategy Ranking (continued)

SUSTAINABILITY STRATEGY RANKING



Remanufacture/rebuild options can preserve most of the embedded energy and materials invested in the original production of equipment and components. **Reuse/recycle** strategies also can be effective measures for keeping valuable materials, energy and/or water by-products in the Caterpillar value chain and out of costly waste streams.

Treatment/control options for waste and emissions can reduce associated environmental impacts and may be necessary when more efficient measures are not feasible. These options tend to be less desirable than waste avoidance or reuse/recycling options, because most treatments and controls add significant costs and complexity to the production and/or operation of products, services and solutions. As a last resort, **disposal/discharge** of waste and/or emissions in an appropriate and lawful manner may be considered acceptable.

Roadmap Milestones

- 2000** Became founding member of Diesel Technology Forum
- 2001** Joined World Business Council for Sustainable Development
- 2002** Became lead corporate sponsor for Nature Conservancy's Illinois River Emiquon Preserve restoration and preservation project
- 2003** Set Vision Zero Safety Goal
 Joined U.S. EPA Climate Leaders
 Developed innovative battery materials technology
 Supported the Tropical Forest Foundation program to help deliver the first reduced-impact, logging-certified lumber in the United States
- 2005** Published first Sustainability Report
 Updated Worldwide Code of Conduct
 Designated Sustainable Development as Enterprise Strategic Area of Improvement
 Became lead corporate sponsor for Nature Conservancy's Great Rivers Project
- 2006** Led Dow Jones Sustainability World Index Industrial Engineering Sector
 Acquired Progress Rail Services, Inc., a provider of rail and transit products and services, including remanufacture or recycling of equipment.
 Acted as co-leading corporate sponsor of the World Resources Institute Center for Transport and the Environment EMBARQ project
- 2007** Became founding partner of Energy Technologies Institute in the United Kingdom
- 2008** Awarded first U.S. EPA International Combined Heat and Power Award to customer in China
 Introduced Cat® D7E Electric Drive Track-Type Tractor
 Introduced electric drive mining trucks
- 2009** Formed Sustainability Council to drive increased revenues and foster dialogue on sustainability initiatives
 Announced remanufacturing joint venture in China with Yuchai Machinery and opening of R&D center in China
 Received U.S. EPA Clean Air Excellence Award for Cat® D7E
 Earned Leadership in Energy and Environmental Design (LEED) Existing Building Gold Certification for Corporate Headquarters and Caterpillar Financial Services Corporation Headquarters
- 2010** Updated Worldwide Code of Conduct
 Acquired Electro-Motive Diesel, Inc., manufacturer of diesel-electric locomotives
 Received Greenmark Gold Plus certification for Singapore remanufacturing facility
 Earned LEED Gold certification for Suzhou, China, Medium Wheel Loader/Motor Grader facility; Wuxi, China, R&D facility; Tianjin, China, Asia Power Systems facility; and Washington, Ill., Instrument Applications Center
- 2011** Acquired Bucyrus International, Inc., manufacturer of high-productivity mining equipment
 Acquired MWM Holding GmbH, Germany-based manufacturer of natural gas reciprocating engines
 Launched first Annual Chairman's Sustainability Awards
- 2012** Introduced Cat® 336E H Hybrid Excavator
 Introduced 966K XE Wheel Loader with advanced powertrain
 Acquired Medina Valley Co-Gen facility in Mossville, Ill., providing alternative power to the Technical Center and Mossville Engine Center
 Launched Caterpillar sustainability principles to drive continued awareness and promotion of sustainable progress across the enterprise
- 2020** Achieve enterprise goals in the areas of workplace and product safety, energy efficiency, greenhouse gas emissions, water consumption, materials efficiency, waste reduction and LEED building criteria

Forward-Looking Statements and Trademark Information

Certain statements in this 2012 Sustainability Report relate to future events and expectations and are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "believe," "estimate," "will be," "will," "would," "expect," "anticipate," "plan," "project," "intend," "could," "should" or other similar words or expressions often identify forward-looking statements. All statements other than statements of historical fact are forward-looking statements, including, without limitation, statements regarding our outlook, projections, forecasts or trend descriptions. These statements do not guarantee future performance, and 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 economic conditions and economic conditions in the industries and markets we serve; (ii) government monetary or fiscal policies and infrastructure spending; (iii) commodity or component price increases, fluctuations in demand for our products, or limited availability of raw materials and component products, including steel; (iv) our and our customers', dealers' and suppliers' ability to access and manage liquidity; (v) political and economic risks and instability, including national or international conflicts and civil unrest; (vi) our and Cat Financial's ability to: maintain credit ratings, avoid material increases in borrowing costs, and access capital markets; (vii) the financial condition and credit worthiness of Cat Financial's customers; (viii) changes in interest rates or market liquidity; (ix) changes in financial services regulation; (x) inability to realize expected benefits from acquisitions, including ERA Mining Machinery Limited, and divestitures, including the divestiture of the Bucyrus International, Inc. distribution business to our independent dealers; (xi) international trade and investment policies;

(xii) market acceptance of our products and services; (xiii) changes in the competitive environment, including market share, pricing and geographic and product mix of sales; (xiv) successful implementation of capacity expansion projects, cost reduction initiatives and efficiency or productivity initiatives, including the Caterpillar Production System; (xv) inventory management decisions and sourcing practices of our dealers or original equipment manufacturers; (xvi) compliance with environmental laws and regulations; (xvii) alleged or actual violations of trade or anti-corruption laws and regulations; (xviii) additional tax expense or exposure; (xix) currency fluctuations; (xx) our or Cat Financial's compliance with financial covenants; (xxi) increased pension plan funding obligations; (xxii) union disputes or other labor matters; (xxiii) significant legal proceedings, claims, lawsuits or investigations; (xxiv) compliance requirements imposed if carbon emissions legislation and/or regulations are adopted; (xxv) changes in accounting standards; (xxvi) failure or breach of information technology security; (xxvii) adverse effects of natural disasters; and (xxviii) other factors described in more detail under "Item 1A. Risk Factors" in our Form 10-K filed with the SEC on February 19, 2013 for the year ended December 31, 2012. This filing is available on our website at www.caterpillar.com/secfilings.

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Our Views

IN THIS SECTION

ENERGY & CLIMATE

- Energy Poverty
- Climate Policies
- Operating in a Carbon-Constrained World

GROWTH & TRADE

- Advocating Free and Open Markets
- Harmonizing Global Standards
- Infrastructure
- Infrastructure Innovation and Support

PEOPLE & PLANET

- Safety
- Environment
- Supporting Human Rights
- Opposing Bribery & Corruption
- Corporate Governance
- Code of Conduct

Caterpillar is a global company. With more than 500 locations worldwide and more than half of our sales outside the United States, we serve customers around the world. We understand that there are many different governmental forms and economic and political philosophies globally. We acknowledge and respect the diversity of social customs and cultural traditions in the countries in which we operate. And, we maintain the flexibility to adapt our business practices to them — to the extent that we can do so in keeping with Our Values in Action. In certain areas, however, our positions are clear and long standing. These areas include Energy & Climate, Growth & Trade and People & Planet.



Energy & Climate

OVERVIEW

Caterpillar has a fundamental interest in, and understanding of, energy as a global energy consumer and industrial manufacturer, as well as a major manufacturer of energy conversion and power generation products. We are one of the world's leading technology suppliers to various energy markets and leverage our technology and innovation to meet the world's growing energy needs.

THE CHALLENGE

Energy is a key requirement for sustainable progress and development around the world. As a result, energy consumption is rising rapidly, driven by worldwide population growth, swiftly developing economies, improving global living standards and the burgeoning use of ever more energy-dependent technologies. Global demand for energy is expected to increase significantly over the next 20 years.

OUR POSITIONS

- Energy sources need to be developed and used in an environmentally responsible and sustainable manner.
- There is no one single solution to providing abundant, reliable, secure, clean and reasonably priced energy on a global basis. Political and industry leadership is required to forge consensus and a commitment to providing energy and related infrastructure that address economic development, stability and environmental impacts.
- Caterpillar supports market-based, cost-efficient energy solutions to help meet the world's growing energy demands.
- Access to affordable and dependable energy resources is critical for energy security, economic prosperity and growing economies. Caterpillar supports balanced and comprehensive energy policies that include the responsible development and utilization of all energy resources, including traditional sources of energy and expanded utilization of alternative energy technologies.

- When regulation is necessary, Caterpillar supports regulatory structures that provide a competitive, technology-neutral and level playing field in which Caterpillar and our customers can operate.
- Caterpillar supports the development and use of strategies and technologies to increase energy efficiency and reduce emissions.

ENERGY POVERTY

Nearly 1.3 billion people, close to one-fifth of the global population, do not have any access to electricity. Lack of access to modern energy services hinders economic and social development, making it more difficult to provide for needed water purification, sanitation and education. Today, the technology and natural resources exist to rapidly expand energy access, but the challenge is how to accomplish this in an effective and efficient manner.

One of the biggest differences between a developing nation and a developed nation is access to energy. We support and are committed to increasing that access, helping economies grow and reducing energy poverty where it hits the hardest.

Since energy is a key requirement for development, we focus our talents on reducing emissions while increasing energy access in order for that development to be sustainable. Caterpillar does this every day by leveraging technology to create more efficient power generation solutions. With distributed generation solutions utilizing diesel and natural gas engines as well as alternative fuels, Caterpillar is positioned to get power where it needs to be.

Further, Caterpillar-built equipment helps meet the demands of the mining and resources industries to get raw materials where they need to be in order to create increased access to power. Coal is an important fuel — both today and for the future. Coal is available in the quantity, volumes and geographic locations needed to satisfy the

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Energy & Climate (continued)

world's energy needs. All energy sources play a role in the solution to the world's energy challenges, and coal will be a significant part of that solution since it is abundantly available and has the scale to meet the primary energy needs of the world's rising population and expected economic growth over the next several decades.

Studies show that using coal to produce energy creates 70 percent fewer of certain key emissions today (from a particulate matter (PM), oxides of nitrogen (NO_x), sulfur dioxide (SO₂) and mercury perspective), than just a couple of decades ago. New coal-fired power plants are 15 to 45 percent more efficient than the oldest ones still in operation today around the world. Carbon capture and sequestration technologies that can remove most of the CO₂ emissions associated with coal are being developed today. Efforts are needed to commercialize this technology around the globe as part of a path for low carbon-emitting energy. This energy can help the largest populations that don't have access to reliable energy today.

Energy diversification — such as new nuclear buildouts, new natural gas reserves, plus renewable energy sources like wind, photovoltaic, tidal and others — will contribute to an energy portfolio that helps eliminate energy poverty, raise standards of living and propel economic growth with less impact on the environment. Natural gas production, for example, has increased 13 percent from 2006 through 2011, resulting in economic growth for many communities with recoverable reserves. Products capable of using alternative or blended fuels are also increasingly available. Eliminating energy poverty is a vision that can be achieved.

CLIMATE POLICIES

More and more governmental and intergovernmental organizations are implementing mechanisms in an attempt to reduce greenhouse gas emissions. We support intelligent, responsible public policies addressing climate and energy issues and are:

- Investing in emissions-reduction technologies that are important to our customers and represent significant areas of opportunity for our business.
- Committing to the development and deployment of advanced technologies that reduce greenhouse gas emissions.
- Supporting policies and mechanisms that harness the marketplace to drive innovation, mobilize investment and allow technologies to be shared.
- Encouraging the coordination of domestic and international programs to maximize the use of flexible, proven mechanisms to reduce emissions.

Through these activities, Caterpillar will continue making contributions to efforts designed to reduce greenhouse gas emissions.

OPERATING IN A CARBON-CONSTRAINED WORLD

Caterpillar believes in the importance of providing energy-efficient products and technologies for our customers and our facilities, as well as advocating for policy solutions that are both environmentally and economically sustainable. We work with policymakers on developing economy-wide emissions reduction programs in the United States that work in conjunction with international efforts to reduce greenhouse gas emissions.

Many countries already control greenhouse gas emissions, and more jurisdictions are evaluating plans to do so. Just as business cannot operate efficiently under 50 different sets of state standards in the United States, business will struggle with vastly differing approaches to emissions reduction around the world. That is why we'll continue to advocate for a comprehensive international approach that encompasses emissions reduction commitments from all major economies. We realize that we cannot reduce carbon emissions in isolation. Rather, we must look at the issue with an eye toward energy security, energy availability, technology, price and global competitiveness.

Innovation will be key to developing new energy sources, and we will continue to call for policies that encourage innovation to improve the performance of existing energy resources — particularly coal, oil and natural gas. We cannot afford to overlook any solution.

Despite the divergent proposals under discussion worldwide — from carbon caps and carbon taxes to strict emissions control regulation — we all agree that technology plays a key role in any successful strategic approach to emissions reduction. The private sector must take the lead in developing and deploying technology solutions to reduce greenhouse gas emissions. Regulatory structures should provide a competitive, technology-neutral and level playing field. We believe we should not disparage any solution that hasn't been fully developed.

Ultimately, unilateral action to reduce greenhouse gas emissions will not be successful. We need national policies that integrate well into a global system of emissions reduction initiatives. The most immediate and measurable benefits can occur through energy-efficiency improvements and corresponding greenhouse gas emissions reductions. We support legislation that is both environmentally effective and economically sustainable. And we encourage a constructive dialogue and a proactive approach to providing energy safely, efficiently and affordably to the billions of people who inhabit our planet.

It's a tall order — but one that is critical to the future of business.



Growth & Trade

ADVOCATING FREE AND OPEN MARKETS

Caterpillar has long believed that the pursuit of business excellence and profit in a climate of free enterprise, free trade and unencumbered competition is the best means for efficient development and distribution of goods and services. Further, we believe such international exchange promotes better understanding across borders and cultures, leading to a more peaceful world. The enormous rise in post-World War II gross domestic product and living standards in countries participating significantly in international commerce has demonstrated such benefits. In contrast, countries that have been isolated as a result of lack of infrastructure, protectionist policies, conflict or economic sanctions have not enjoyed these advantages.

The economic growth brought about by international trade is essential for poverty reduction, but it comes with challenges. Chief among them is the need to balance economic, environmental and social policies in support of sustainable development. When this happens, sustainable development can become a shared objective and provide a common frame of reference that allows environmental and trade policymakers to engage stakeholders, analyze issues and evaluate policy more efficiently.

Caterpillar has a long history of advocacy for free trade. Our support comes not from the perspective of any one country, but from a global context. We believe that companies compete best in a free trade environment. When trade barriers are removed, we can better meet our global customer needs and grow more efficiently. Our suppliers benefit through satisfying our global sourcing requirements more efficiently. Our employees benefit from a higher standard of living as they have access to more product choices at lower prices. Free trade also allows us to provide more and better job opportunities because open markets lead to improved competitiveness.

Caterpillar will continue to promote policies that reduce trade and investment barriers. At the same time, we will continue to speak out against protectionist policies. We believe that developed countries should adopt policies that allow the benefits of the global economy to be extended to developing countries. Caterpillar also recognizes humanitarian and developmental assistance is necessary to fight disease, improve living conditions, combat corruption and provide the knowledge to drive economic growth and trade in many of the world's poorest countries. We support the goals of initiatives aimed at increasing economic growth and reducing poverty in developing countries.

HARMONIZING GLOBAL STANDARDS

On an international level, Caterpillar is actively involved in developing International Standards Organization (ISO) criteria and chairs the committee that develops industry consensus standards for earth-moving equipment, including standards for visibility, rollover protection structures, braking and sustainability. Our global standards and regulations team works closely with these organizations to enhance machine safety standards worldwide. Caterpillar provides input to regulatory agencies to help ensure the smooth introduction of new technologies.

Caterpillar regularly makes its management and technical expertise available to regulatory bodies in advisory roles and provides technical assistance as new product standards are developed. These activities include participation and leadership roles in organizations such as the ISO; membership in governmental and nongovernmental delegations to international bodies such as the International Maritime Organization; participation in formal European Union industry expertise panels; and participation in federal advisory committees chartered under the U.S. Environmental Protection Agency.

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Growth & Trade (continued)

INFRASTRUCTURE

From growth economies where new infrastructure is required, to developed areas where aging networks need improvement, Caterpillar supports investment in transportation, energy, telecommunications, and waste and water treatment infrastructure as a key enabler of sustainable development, economic growth, competitiveness and long-term job creation.

In order to promote growth, competitiveness and the general well-being of their citizens, governments have a responsibility to maintain appropriate levels of productive investment in infrastructure while providing a level playing field for private investors and suppliers. Leveraging private investment can bring additional sources of funding when supported by fair and predictable policies to maximize the certainty and timeliness of financial returns. Growth-enhancing public investments, however, cannot be fully delegated to the private sector; and public financing should continue to comprise the bulk of infrastructure investment. Governments can influence the affordability of infrastructure through the facilitation of permitting, the reduction of administrative burden and the simplification of related requirements. The government role for infrastructure financing is based on national need, including urbanization, commerce and trade policy, travel, emergency preparedness, defense and global competitiveness.

INFRASTRUCTURE INNOVATION AND SUPPORT

The Caterpillar Foundation is supporting the World Resources Institute (WRI) to catalyze the development of smart cities, which promote infrastructure development that is economically and environmentally efficient and serves as a model for sustainable development. The development of blueprints for smart cities in China, India and Brazil is intended to provide practical solutions for urbanization throughout the world. Read more about this initiative in the Sustainable Urbanization section of this report.

Caterpillar supports communities planning for natural disaster mitigation and those who are unfortunately impacted by disaster events. From the San Francisco, Calif., earthquake in 1906 when a Holt Steam Traction Engine #37 was used in cleanup efforts, to more recent events throughout the world, emergency Cat® generator sets and non-road equipment have been used in the wake of disasters to save lives and property. In addition, Cat® equipment powers systems for prevention or mitigation of disasters, such as storm surge gates and pumping systems.



People & Planet

SAFETY

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

Caterpillar’s Global Health & Safety team plays a key role in providing expertise and support to Caterpillar operations worldwide. Caterpillar Safety Services supports enterprise facilities, dealers, suppliers and customers by leveraging cultural assessment tools, guiding continuous improvement processes and delivering a wealth of free, industry-specific safety resources through safety.cat.com. This site provides access to a wide range of interactive online training courses for safety, health and the environment — in full support of our vision: Safely home. Everyone. Every day.™ Read about our most recent progress in Operational Safety and Product Safety in the Goals & Progress section of this report.

ENVIRONMENT

We design products and services that help people and communities as they strive to create better lives for themselves. As the global population continues to grow, pressure on the availability of natural resources may also grow, and the need for our products and services as enablers of sustainable development becomes even more important. Caterpillar delivers products, services and solutions that provide sustainable value to our customers through fuel efficiency and productivity. Additionally, sustainable value extends to the repair, rebuild, remanufacture or upgrade of existing equipment. Our research portfolio is customer-focused, striving to continuously improve product performance, reliability, durability, sustainability, fuel economy and emissions.

Further, we establish and adhere to environmentally compliant policies and practices in product design, engineering and manufacturing in all of our facilities worldwide. Caterpillar’s Environment, Health & Safety Assurance framework helps ensure that we comply with applicable laws and regulations. Successfully identifying and managing environmental issues helps protect the environment we all live in and makes good business sense.

SUPPORTING HUMAN RIGHTS

We believe that Our Values in Action — Caterpillar’s Worldwide Code of Conduct, effectively articulates our long-standing support for, and commitment to, human rights and the dignity of all people. Caterpillar values teamwork with our employees, dealers, suppliers and other stakeholders. We seek suppliers and business allies who also demonstrate strong values and ethical principles. We avoid those who violate the law or fail to comply with the sound business practices we promote.

We feel strongly that Our Values in Action creates a work environment that recognizes the rights of our employees around the globe. While we respect the messages laid out in other voluntary conventions, frameworks and standards that offer direction on how to promote the rights and freedoms of people, including those brought forward by the United Nations, we do not see the need to become signatories. Our employees and management receive regular training and participate in annual assessments to ensure that they are aware of and able to apply the principles contained in Our Values in Action. We also maintain internal reporting mechanisms to hold employees and management accountable for failing to comply with Our Values in Action.

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People & Planet (continued)

OPPOSING BRIBERY AND CORRUPTION

Caterpillar believes fair competition based on quality, innovation and overall value is fundamental to free enterprise and economic growth. Bribery and corruption can have serious social, environmental and economic consequences — impeding trade, competition, investment and economic growth, and limiting a nation's ability to reduce poverty and improve standards of living. In some areas of the world where Caterpillar does business, bribery and corruption are significant issues. As a result, we strongly advocate and enforce anticorruption policies throughout our company.

CORPORATE GOVERNANCE

Caterpillar's corporate governance is designed to serve the interests of stockholders with the highest standards of responsibility, integrity and commitment to compliance with applicable laws. These standards are developed and implemented by our Board of Directors and global management team, who oversee the company's performance and governance policies.

<http://www.caterpillar.com/company/governance>

CODE OF CONDUCT

Our Values in Action — Caterpillar's Worldwide Code of Conduct, first published in 1974 and updated most recently in 2010 in conjunction with our corporate strategy update, defines what we stand for and believe in, documenting the uncompromisingly high ethical standards our company has upheld since its founding in 1925. The Code of Conduct helps Caterpillar employees put the values and principles expressed within into action every day by providing detailed guidance on the behaviors and actions that support our values of Integrity, Excellence, Teamwork and Commitment.

<http://www.caterpillar.com/company/strategy/code-of-conduct>



Our Community

IN THIS SECTION

SUSTAINABLE URBANIZATION
ECONOMIC DEVELOPMENT
JOB TRAINING
SAFETY TRAINING
WILDLIFE PRESERVATION
GREENER COMMUNITIES

As a global company and engaged corporate citizen, Caterpillar takes seriously its responsibility to give back to the communities around the world in which it operates. Through strategic collaborations, we seek to leverage our unique strengths to make contributions that support our commitment to sustainable development. The Caterpillar Foundation, which has invested more than \$550 million worldwide since its inception in 1952, allows us to enhance our community involvement with investments that support our sustainability efforts. In addition, we collaborate across our value chain to develop programs that provide job training and increase workplace safety.



Making Sustainable Urbanization Possible

"At Caterpillar, we always ask ourselves, 'What do our customers need? What does the world need?' WRI asks those same questions about the communities it serves, and truly delivers some amazing results."

Doug Oberhelman,

Caterpillar chairman and CEO and member of WRI board of directors

More than half of the world population lives in cities today. This continuing trend of urbanization poses substantial environmental and societal challenges.

In an effort to develop solutions to these challenges, the Caterpillar Foundation invested \$3 million during 2012 in a World Resources Institute (WRI) project to promote the development of sustainable cities in China, India and Brazil. Through this smart cities initiative, WRI will partner with up to five cities on strategies to increase energy efficiency, curb greenhouse gas emissions, and improve water quality, urban mobility and land use.

Specific project goals include solutions that will reach one billion people with new public transportation options; avoid 617,000 metric tons of CO₂ emissions in the transportation area; reduce nitrogen, phosphorus and ammonia water pollution by 15 percent; and provide more reliable energy to 11 million industrial, corporate and residential consumers. In total, the Caterpillar Foundation expects to support this project with \$12.5 million over five years.

"People worldwide need solutions to respond to today's urban challenges. WRI is working with partners to ensure that cities in developing countries provide economic growth, environmental sustainability and social benefits. We are deeply grateful to Caterpillar for their generous support and collaboration in pursuit of these goals," said Manish Bapna, WRI managing director.

The smart cities initiative has three phases. The blueprint phase will identify key steps toward addressing climate, water, land use and mobility challenges. The second phase moves from blueprint to action by kicking off large, high-profile demonstration projects that address one or more of the key challenges. In the third phase, WRI will target decision-makers in other emerging cities with communications that highlight the benefits of following new, smarter paths to urban growth.

"At Caterpillar, we always ask ourselves, 'What do our customers need? What does the world need?' WRI asks those same questions about the communities it serves, and truly delivers some amazing results," said Doug Oberhelman, Caterpillar chairman and CEO and member of WRI board of directors.

WRI puts ideas into action, working globally with governments, business and civil society to build transformative solutions that protect the earth and improve people's lives. Their mission dovetails with the Caterpillar Foundation's mission to enable economic growth through infrastructure and energy development, and to provide solutions that protect people and preserve the planet.

The Caterpillar Foundation makes sustainable progress possible in our communities in the areas of basic human needs, disaster relief, education and environmental programs. The Foundation has invested more than \$550 million worldwide since its inception in 1952.



Financing Brings Opportunity to Africa

"Our customers not only want us to provide them with the equipment, but also to be able to offer them integrated equipment purchasing solutions."

Loutfy Mansour,
CEO of Mantrac Unatrac Group

Economic development is welcome in any part of the world, but especially in emerging economies. In these areas, financing new business is often a struggle due to a lack of lending institutions or lending policies. That's where Caterpillar Financial Services Corporation (Cat Financial) comes in.

Cat Financial and Standard Bank, Africa's largest banking group, are collaborating to provide equipment financing to Caterpillar customers in Ghana, Kenya, Nigeria and Tanzania countries covered by the Mantrac Unatrac Group of Cat® dealerships.

While there is an existing banking culture in these locations, asset financing is not as common. "Our customers not only want us to provide them with the equipment, but also to be able to offer them integrated equipment purchasing solutions," Loutfy Mansour, CEO of Mantrac Unatrac Group, explained. "This collaboration will make this possible for our clients."

Standard Bank's on-the-ground banking operations in Africa are staffed by expert teams who are familiar with local business conditions and regulations, ensuring that Caterpillar customers receive the highest quality of service. Cat Financial brings valuable equipment knowledge and remarketing mechanisms to the table to complete the relationship. Caterpillar customers benefit from this unique combination of Caterpillar marketing initiatives, flexible deal structures and affordable financing options.

"Our aim is to support the dealer network in the sale of Cat® equipment by providing a dedicated, professional financial service, which will reinforce the Cat brand through the active marketing of Cat Financial-branded products and services," said Ben Kruger, Standard Bank Deputy Group chief executive.

After the initial rollout, plans are to extend services and products, and the opportunities they bring, into Uganda and Sierra Leone.





Ensuring Good People for Good Jobs

"This program is designed to cover those key areas that a skilled operator should know in addition to running the machine—working safely, taking care of the equipment, taking care of the environment and how to work most efficiently and productively."

Michael Duncan,
Caterpillar Forest Products industry manager

Local economies always need good jobs, and local employers always need qualified candidates. To help this combination become reality in Greenville, N.C., Caterpillar Forest Products, Cat® dealer Gregory Poole Equipment and Pitt Community College have joined forces to develop top-notch logging-equipment operators.

Pitt created a 12-week course to train logging-equipment operators who, upon graduation, are certified by the North Carolina Association of Professional Loggers as entry-level logging-equipment operators. To support the course, Caterpillar Forest Products donated \$1.25 million in equipment to the program, including a Cat® 525C Skidder, a Cat® 573 Wheel Feller Buncher and a Cat® 559 DS Loader package, while Gregory Poole is maintaining the equipment. Pitt's first class graduated in summer 2012, with several of the graduates finding jobs immediately upon graduating.

"Traditionally, equipment operators have learned on the job, which can leave gaps in what they need to know to be a good operator and steward of the environment," explained Michael Duncan, Caterpillar Forest Products industry manager. "We are supporting this program because it is designed to cover those key areas that a skilled operator should know in addition to running the machine — working safely, taking care of the equipment, taking care of the environment and working most efficiently and productively."

A similar philosophy is behind another Caterpillar training initiative under way in North Carolina. Last summer, 17 high school students were inducted into the first class of the Caterpillar Youth Apprenticeship Program in Sanford, N.C., where our Building Construction Products Division has a manufacturing facility. This two-year training program for welders prepares students for entry into the adult apprenticeship program and potential employment at our plant upon high school graduation.

Upon completion of the program, students will receive a welding certificate from Central Carolina Community College. In addition, they will have completed the 80-hour Caterpillar Accelerated Training Program, which is a necessary credit toward an adult apprenticeship.

Both the Greenville and Sanford programs demonstrate innovative approaches to developing skilled labor to fill jobs, an ongoing challenge for our customers and the industries they serve. It's a win-win process for all involved — technical career skills and well-trained individuals who can do the jobs Caterpillar and our customers require.



Safety Leadership Training for Today's Workplace

"In 2008, S.T.A.R.T.™ was rolled out as the foundation of our Wagner Safety Culture. Every year since, we have seen a reduction in our TRIR (total recordable incident rate) and a decrease in severity of injuries."

Curt Siroky,
Environmental Health and Safety manager Wagner Equipment

More than one million U.S. workplace injuries required people to miss days from work in 2011, according to the Bureau of Labor Statistics. Such statistics make increasing workplace safety essential for the bottom line of business, but more importantly for the safety of our employees. In 2012, Caterpillar Safety Services rolled out an update to the successful Supervisor Training in Accident Reduction Techniques, or S.T.A.R.T.™, program to help safety management teams reduce incidents and develop a culture of safety in contemporary work environments.

"In 2008, S.T.A.R.T. was rolled out as the foundation of our Wagner Safety Culture," explains Curt Siroky, Environmental Health and Safety manager at Cat® dealer Wagner Equipment. "Every year since, we have seen a reduction in our TRIR (total recordable incident rate) and a decrease in severity of injuries."

S.T.A.R.T. provides an innovative formula for business success that elevates safety so that it is valued as deeply as productivity and quality. The training program explains why safety accountability works, how a positive safety culture impacts the bottom line and what supervisors can do to make a difference. In addition, the updated program details the value of an integrated safety culture that demands and rewards participation across a company, from the top floor to the shop floor.

In 2012, Wagner Equipment revised its company values to include safety as one of the six values from which all decisions are made. "S.T.A.R.T. was the foundation on which all of this was built," adds Siroky. The end result is a safer working environment for everyone and a positive impact on the bottom line.

In December 2012, Wagner hosted a S.T.A.R.T. Workshop in its Aurora, Colo., training center that allowed representatives from several companies in a variety of industries to learn how the program can drive positive, sustainable change in any organization committed to safety excellence.





Helping Small Animals in a Big Way Down Under

"This is a great example of Cat® equipment being deployed in a very practical way to halt and reverse the extinction crisis."

Atticus Fleming,
Chief Executive of the Australian Wildlife Conservancy

The same Cat® equipment that makes massive infrastructure projects, such as bridges, highways and hydroelectric dams possible also is contributing to the survival of some of the world's most vulnerable creatures.

In Australia, one of the key factors driving the decline of small, indigenous mammals is habitat destruction by feral herbivores such as donkeys, cattle, buffalo, horses and pigs. These larger animals trample vegetation and the habitats of smaller, native mammals, destroying their food sources and making them easy prey for other animals. As the number of feral animals grows and their range increases, the population of smaller, native mammals falls. In fact, Australia has one of the highest mammal extinction rates in the world, according to the Australian Wildlife Conservancy (AWC).

In an effort to revive the population of small native mammals, such as the endangered northern quoll and bandicoot, the AWC is deploying Cat equipment — including a 140G Motor Grader, a D6H Track-Type Tractor and a 950 Wheel Loader — to establish the largest feral herbivore-free area on mainland Australia. For this significant conservation effort, the AWC fenced more than 250,000 acres (100,000 hectares) of the Wongalara Wildlife Sanctuary in the remote Top End of Australia to keep the feral herbivores out and create the environment native mammals need to thrive. Cat equipment cleared the way for the 105 miles (165 kilometers) of fencing that encloses the feral herbivore-free area of tropical woodlands and wetlands. This equipment will continue to be used to maintain the fencing and fence line track, and to establish and maintain firebreaks across the area.

"This is a great example of Cat equipment being deployed in a very practical way to halt and reverse the extinction crisis," Atticus Fleming, Chief Executive of the AWC, said.

The AWC has successfully used this strategy before to establish smaller feral herbivore-free areas. At a site half the size of Wongalara, the number of small mammals doubled soon after feral herbivores were excluded. Previous success makes the AWC hopeful about this new project, which is viewed as particularly important to the native animal population. The Wongalara location is near Kakadu National Park, which has seen a 75 percent decline in its small mammal population over the last decade. Within weeks of completing the Wongalara fence, 1,000 feral herbivores were removed from the new feral herbivore-free zone, a significant step in the recovery of the area and the rebirth of Australia's small, native mammals.





Trees on the Move

How do you safely move something that stands 56 feet tall, 100 feet wide and weighs 518,000 pounds? Simple, you use Cat® equipment.

That is exactly what Hess Landscape turned to when asked by officials in League City, Texas, to move a 100-year-old Ghirardi Compton Oak tree to make way for road widening. Hess successfully employed Cat® track-type tractors and Cat® excavators to maneuver this enormous, beloved piece of the town’s history. Looking like something that crawled off a sci-fi movie set, the Cat® equipment gently moved the tree 1,500 feet to its new home at WaterSmart Park, a water conservation education park, where the tree is thriving.

On the other side of the world, Caterpillar is also helping trees thrive. China’s Caterpillar Forest project began on World Earth Day 2011, when Caterpillar China employees and volunteers planted 45,000 trees on 106 acres (43 hectares) of land just north of Beijing.

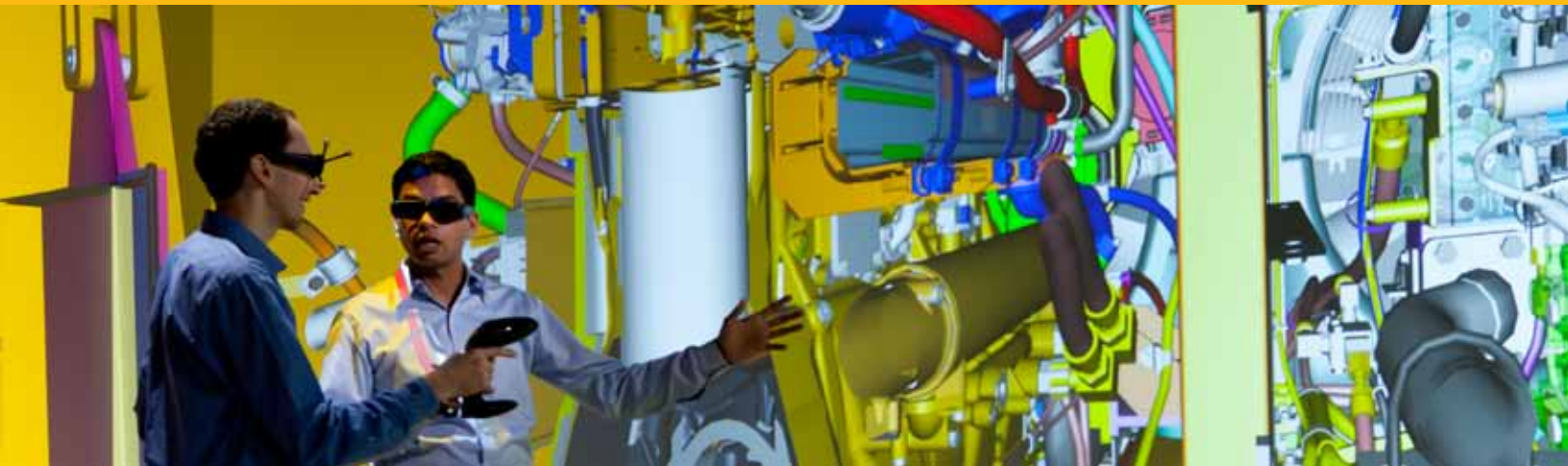
World Earth Day 2012 saw smaller Caterpillar forests spring up across China as Caterpillar Suzhou Co., Ltd. (CSCL), Caterpillar Wuxi and Asia Power Systems (APS) joined Caterpillar China to support this sustainability initiative. More than 350 employees and guests of CSCL and Caterpillar Wuxi planted 2,800 trees around Taihu Lake, while the APS team worked with volunteers from Jinnan Middle School to plant 1,000 trees in Tianjin. The Caterpillar China team continued to support the Caterpillar Forest project, planting 1,600 trees in Yanqing County with help from Caterpillar Beijing and the China Environmental Protection Foundation.



**IN THIS SECTION**

PRODUCT DEVELOPMENT
NATURAL GAS
OPERATIONAL EFFICIENCY
REMANUFACTURING
NEW WHEEL LOADER
HYBRID EXCAVATOR
CATERPILLAR TECHNOLOGY AND
JOB SITE SOLUTIONS
COAL MINE METHANE
MORE SUSTAINABLE MINING
INFRASTRUCTURE DEVELOPMENT

This year, our Sustainability Report features stories about how our products and solutions help create customer value. Innovation at Caterpillar is driven by our customers' needs to operate more efficiently, improve the bottom line and meet their own sustainability goals. Our significant technology investments lead to products that help customers lower their owning and operating costs, while increasing energy efficiency, lowering emissions, reducing waste and enhancing safety. In the process, we help our customers to make sustainable progress possible.



Product Development

INSIGHT BEFORE IRON

Engineers love to solve problems. Developing new products and technologies presents a unique set of problems that can only be solved by trial, error and physics. Engineers analyze design ideas using complex equations that seek to prove that, when built in iron, the design will do precisely what the engineer intends it to do.

Before the age of sophisticated virtual design tools, engineers were forced to build numerous, often expensive, prototypes, test them, make improvements and then repeat the process. Now, engineers are building, analyzing and even allowing operators to drive prototypes virtually, all before an iron model is ever constructed. The result is higher-quality design, reduced environmental impact from the design process and more productive engineers.

“Physics-based modeling is changing the landscape of product development at Caterpillar. The amount of iron and the time required to develop a product are substantially reduced, while the number of designs we are able to explore affordably has exploded. The result is a more efficient, sustainable product development process that explores alternatives on a computer, not in iron,” Dave Damerell, Engineering Services Support manager, said.

Nowhere has the value of virtual product development at Caterpillar been demonstrated more effectively than in the design and manufacture of products that meet stringent non-road diesel emissions standards. This eight-year development program, involving more than 300 products and 14 engine platforms, is the largest in Caterpillar’s history.

Several new computer simulations have been critical to this effort. A new combustion simulation, for example, enables engineers to study the complete combustion system and analyze alternative combustion schemes to discover the lowest possible emissions at the best possible fuel consumption and service interval. Similarly, a full machine simulation includes all major machine systems, a soil interaction model and an operator model. Engineers use this program to simulate work cycles, enabling structural durability and performance analysis over a range of operations.

A key element of these simulations is immersive visualization, which provides a full-scale, three-dimensional virtual environment. In this environment, product teams can interact with product and manufacturing process designs in order to assess product quality, operator comfort, manufacturability and serviceability before prototype designs are finalized.

Virtual product development at Caterpillar has become so robust that the development of the K-series large wheel loaders eliminated iron prototype testing completely, using only simulation, analysis and pilot machines to test product and manufacturing design integrity. This innovation reduced the development time of the new wheel loaders by one-and-a-half years over the typical introduction timeline, while improving machine performance. The new K-series offers improved fuel efficiency for lower customer operating costs and improved reliability, durability and serviceability for minimized downtime.

“Virtual product development has proven to be an essential tool for the large wheel loader product team to achieve our aggressive cost, quality and timeline requirements,” said Kurt Norris, product manager.

(continued)

Product Development (continued)

As the K-series wheel loaders demonstrate, virtual product development technology translates directly into customer value. Most importantly, better product performance with optimized systems helps lead to lower customer owning and operating costs, increased efficiency and reduced material waste.

APPLYING OUR SUSTAINABILITY PRINCIPLES



Through the virtual product development process, we are **DEVELOPING BETTER SYSTEMS** that result in higher-quality design, reduced environmental impact from the design process and more productive engineers. We are **PREVENTING WASTE** associated with constructing multiple prototypes.



Natural Gas

FOCUSING ON NATURAL GAS

Numbers — big numbers — underscore the potential of natural gas in today's energy-hungry world. China's annual output of shale (natural) gas is expected to jump from near zero currently to 6.5 billion cubic meters by 2015 and at least 10 times that by 2020. The U.S. has more than doubled its estimate of recoverable shale gas to 827 trillion cubic feet. Such abundant supply is prompting many of our customers to make the switch from diesel to natural gas, which enables them to realize fuel cost savings from 30 to 50 percent. The environmental benefits are significant as well. Natural gas is the cleanest burning of conventional fossil fuels, producing fewer pollutants per unit of energy than coal or oil.

"Caterpillar is focusing on natural gas. A natural gas option is good for our customers and, therefore, we are investing in the products and support that they need to be successful. These are not short-term decisions. The investments required are significant, including the allocation of deep expertise from around the Energy & Power Systems businesses at Caterpillar," declared Joel Feucht, general manager for gas engines at Large Power Systems Division.

With a firm understanding of the value that natural gas can bring to our customers, Caterpillar is moving aggressively to support their growing interest in this alternative fuel. Many of our Solar™ turbines are already powered with natural gas. In 2011, we acquired MWM, a leading global supplier of natural gas and alternative-fuel engines. This acquisition strengthened our position in the traditional reciprocal engine segment, where the primary buying criteria is fuel efficiency.

In addition, because many Caterpillar customers are in other markets where power density and engine response are the primary purchasing considerations, Caterpillar is introducing an entire lineup of dual-fuel reciprocating engines and retrofit kits. In late 2012, retrofit kits using Caterpillar's patent pending Dynamic Gas Blending technology began to ship to oil and gas customers. The Dynamic Gas Blending kit automatically adjusts to changes in incoming fuel quality and pressure, allowing engines to run on a wide variety of fuels, from associated gas to liquefied natural gas (LNG), to maximize gas substitution.

To support our mobile equipment customers, Caterpillar announced an agreement with Westport Innovations in 2012. This relationship allows us to combine Westport High Pressure Direct Injection technology with Caterpillar strengths in engine and non-road equipment development and Electro-Motive Diesel (EMD) locomotive expertise to accelerate natural gas technology into mining trucks and locomotives.

Customers visiting the 2012 Caterpillar MINExpo exhibit got a preview of some of the plans for our first LNG-powered mining trucks and locomotives. These included three large mining trucks — the Cat® 793, 795 and 797 — as well as locomotives from EMD, a Caterpillar subsidiary that builds diesel-electric locomotives. Both the trucks and the locomotives are in the first stages of development with commercial launch expected by 2017.

(continued)

Natural Gas (continued)

In addition, Caterpillar and EMD are developing retrofit solutions to convert existing mining trucks and locomotives to natural gas.

The abundance of natural gas is expected to be a game changer in high-horsepower equipment and a significant opportunity for our customers to realize improved efficiencies and more sustainable solutions. “We believe that our product lineup must be comprehensive so we can bring customer value that will drive competitiveness, improve their environmental footprint and save them money,” says Joel Feucht. Our natural gas initiatives undertaken so far, as well as ongoing product development, will help make our customers’ transition into the natural gas era a successful one.

APPLYING OUR SUSTAINABILITY PRINCIPLES



Caterpillar natural gas products provide our customers with opportunity to increase energy diversification, which helps **IMPROVE QUALITY** of life and communities through raised standards of living and economic growth for many communities with recoverable natural gas reserves. Natural gas fuel **PREVENTS WASTE** by producing fewer pollutants per unit of energy than coal or oil.



Operational Efficiency

INNOVATING TO REACH OUR GOALS

It can be argued that the most difficult type of innovation involves bringing new ideas to existing processes. Caterpillar engineers have done just that. In two recent instances, though vastly different situations, both innovations deliver improved efficiencies and sustainability benefits.

Our Electric Power and Large Power Systems Division engineering teams at the Caterpillar Lafayette Engine Center (LEC) in Lafayette, Ind., must operate preproduction generator sets for tens of thousands of hours in order to prove durability and reliability. This endurance testing process generates energy, which until recently was released as waste heat through load banks without a viable infrastructure to harness it. New thinking by our engineers at the engine center has led to a process that not only captures the energy, but also uses it to power the facility itself.

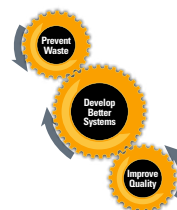
The new Endurance Facility is producing up to 6.5 MW of the 9.0 MW of baseload power required to operate LEC, which offsets annual electric utility purchases by up to \$3.5 million. The natural gas and ultra low sulfur diesel fueled generator sets maintain low nitrous oxide and carbon monoxide emissions that surpass all federal and local requirements, thanks to specialized catalytic exhaust after-treatment systems. The generated power produces about half of the carbon emissions and one-third of the nitrous oxide emissions of electricity from the utility grid, generated by coal-fired power plants. "Our products are known for their reliability and durability. Engine and generator set testing in our new Endurance Facility combines the creation of customer value with energy production for our manufacturing facility in a more sustainable and cost-effective way," says Frank Starke, Gas and Petroleum product manager, Large Power Systems Division. This innovative power program comes as LEC,

one of Caterpillar's key facilities for developing marine, petroleum, electric power, locomotive and industrial power systems, celebrates its 30th anniversary.

Material efficiency is the primary benefit of new thinking at our Franklin, Ind., remanufacturing facility. Caterpillar takes near end-of-life parts and restores them to original engineering specifications through remanufacturing, an advanced form of recycling. The conventional process for remanufacturing the cylinder bore wall on an engine cylinder block had been to oversize the bore and then install new, oversized pistons and rings. But, engineers have had to reduce the wall thickness of the cylinder bores in order to meet new emissions and fuel-efficiency requirements. As a result, the conventional process is no longer viable.

A new innovative process, known as Plasma Transferred Wire Arc (PTWA) spray, solves the problem by applying a spray coating to the cylinder wall to return the bore to original equipment specifications. In addition, the spray-welded metal coating of the PTWA process also creates a more durable wear surface, as well as producing a more fuel-efficient engine. At the current production rate, PTWA prevents more than 5 million pounds of iron from entering the scrap process each year.

APPLYING OUR SUSTAINABILITY PRINCIPLES



Innovations at two Indiana facilities are **PREVENTING WASTE** of energy and materials. The PTWA spray process is also **IMPROVING QUALITY** of product parts through improved durability.



Remanufacturing

MAKING GOOD USE OF OLD IRON

How do you eliminate the need for 15,000 tons of new steel plus the accompanying 18,000 tons of CO₂ involved in the production of the steel? Make good use of old steel. This is the concept behind our businesses that focus on remanufacturing, rebuilding and repowering existing Cat® products. Our remanufacturing business allows us to keep thousands of tons of material from landfills, while offering our customers the needed upgrades to minimize their total cost of ownership.

Cat Reman is a driving force in minimizing customer operating costs. The services ensure that parts otherwise destined for the scrap yard can be reused — an important step toward our goal of zero waste. Caterpillar takes near end-of-life parts and restores them to original engineering specifications through remanufacturing, an advanced form of recycling. This makes both economic and environmental sense because it reduces waste and consumption of raw materials and provides a lower cost to the customer. Through remanufacturing, Caterpillar makes one of the greatest contributions to sustainable development — keeping nonrenewable resources in circulation for multiple lifetimes.

Cat Reman continues to implement new technologies to the remanufacturing process, as evidenced in the use of laser light for cleaning. Laser cleaning is a cost-effective process that removes contaminants such as paint, rust, carbon and gasket, without the need for chemicals or media in most applications, and reduces hazardous waste generation. It incorporates a filtration system that extracts and filters all dusts, fumes and gases, improving the operator's work environment. Laser cleaning is also unique in that it removes all contaminants without affecting the original material below. Cat Reman has used laser cleaning to clean special chemical-resistant

paints used in oil field applications and is currently exploring laser cleaning for high tolerance gas turbine shaft cleaning.

Also, consider the case of one of our North American customers and its several hundred locomotives. The customer has worked with Progress Rail Services and Electro-Motive Diesel, both wholly owned subsidiaries of Caterpillar, to reconfigure up to 500 locomotives that date back to the 1950s. This project will eliminate the need for more than 13,600 metric tons of steel for new locomotives and the associated generation of more than 16,300 metric tons of CO₂ emissions. The repowered locomotives will meet the latest emissions regulations and run on B5 biodiesel, while maintaining the character of locomotives from a bygone era.

A similar Progress Rail project is under way with another North American customer to repower 16 locomotives that service the ports of Long Beach and Los Angeles, Calif. A new Cat® 3512C HD engine and a custom-made diesel particulate filter will allow the repowered locomotives to reduce emissions of particulate matter (PM) by around 90 percent, an important consideration in the Los Angeles area.

In our heavy equipment business, a new solution allows customers to upgrade their D11R engine system to newer performance and emissions standards using a convenient kit along with a new or remanufactured D11T engine. The fuel savings and reported sound level improvements are just a few of the operational and service benefits for the customer, and the resulting emissions reductions can exceed 40 total tons per year of CO₂, carbon monoxide (CO), oxides of nitrogen (NOx) and PM. "Flow meters were used on customer sites to measure fuel consumption in side-by-side, real-world tests and confirmed roughly 10 percent savings. Consistency with newer model

(continued)

Remanufacturing (continued)

production parts is often cited as another reason for upgrading,” said Jeffrey Jacobs, business development manager Caterpillar Emissions Solutions.

We also have developed new dynamic gas-blending retrofit kits to upgrade existing diesel engines. The dynamic gas-blending system allows an engine to run on natural gas and diesel simultaneously. Designed for use with existing land-drilling rig controls and multi-generator set control systems, the gas-blending kit automatically optimizes the amount of diesel being substituted with natural gas by up to 70 percent, while maintaining diesel performance, existing service intervals and component life.

“This is a completely integrated solution that continuously adjusts to varying fuel quality and requires no retesting. It allows the engine to run at maximum substitution while maintaining a high level of reliability and durability,” explained Sam Ternes, Caterpillar Global Petroleum engineering specialist.

In addition to fuel flexibility, there are other benefits of these retrofit kits. The retrofit kits incorporate flame arresters to protect the engine and offer bolt-on component installation, full warranty coverage, ease of order with one part number for the kit and exceptional life with genuine parts. The upgraded engines use ADEM™ A4 and EMCP 4.4 controls, which improve display performance and troubleshooting

capability. The retrofit engines also have the capability of consuming dry field gas, while maintaining the original certified diesel engine emission levels. Cat® Dynamic Gas Blending reduces diesel fuel consumption and storage, which reduces the number of fuel delivery trucks on the road.

During 2013, Dynamic Gas Blending technology will extend to a variety of machine, marine and petroleum applications.

Whether remanufacturing components, repowering engines or rebuilding equipment, these Caterpillar businesses continue to offer customers a highly cost-effective means to realize more efficient, more sustainable solutions.

APPLYING OUR SUSTAINABILITY PRINCIPLES



Our remanufacturing businesses exemplify the principle of **DEVELOPING BETTER SYSTEMS** by creating a circular flow of energy and materials throughout the value chain and maximizing life cycle benefits. Remanufacturing **PREVENTS WASTE** through its reuse of materials and the accompanying resource savings.



Wheel Loader

WORKING SMARTER TO INCREASE EFFICIENCY

Wheel loaders are among the hardest-working, most versatile machines in the world. They load a variety of materials, from aggregate to timber, on worksites throughout the world. Furthermore, they are used in a variety of applications — from snow removal and waste applications to stockpiling and truck loading. With a list of tasks that goes on and on, a wheel loader that is more efficient and more sustainable can deliver an exceptional level of value for our customers.

This is the thought behind our new 966K XE Wheel Loader that is equipped with an advanced powertrain system engineered to deliver efficiency. The first powertrain of its kind in the wheel loader segment, the 966K XE offers industry-leading fuel efficiency, with up to 25 percent savings per machine and related CO₂ emissions reductions, compared to the standard 966K.

Energy efficiencies are derived from an integrated continuously variable transmission system with a hydraulic pump and motor variator unit. This system allows for a smooth and continuous gear ratio change between engine speed and machine speed, which in turn enables the engine to run at a more efficient operating range, independent of machine ground speed. The key advances are delivered through systems integration and power balance of engine, powertrain and implement systems to provide quick response, acceleration and power, while significantly improving fuel efficiency.

A Cat® C9.3 ACERT™ Diesel Engine delivers a peak net horsepower rating of 220kW (290 hp), while meeting EU Stage IIIB emissions standards and providing an efficient burn. “This is a machine with never-ending power and low fuel consumption. The machine does exactly what I want,” says Manfred Rehberg, of Kern & Co. KBI.

The engine achieves additional efficiency benefits during deceleration, when machine momentum can be recovered as free energy to power

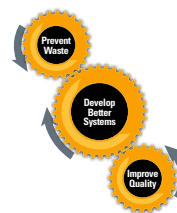
implements or the cooling fan. At the same time, lower working engine speeds result in reduced heat loads and lower sound levels than had been previously attainable in a wheel loader application. Other energy savings are realized during aggressive digging, when the continuously variable transmission consumes approximately half the energy of a conventional transmission.

Beyond its energy-saving features, the 966K XE also simplifies operator technique while enhancing safety. The integrated advanced powertrain means there are just two pedals — Stop and Go — that allow the operator to concentrate on bucket fill and digging without having to manually shift gears. In addition, when the operator is filling or digging, the machine automatically reduces speed while maintaining full power, again without the need to downshift.

A low-effort electro-hydraulic joystick steering system permits operators to work in a comfortable, ergonomically neutral position. The joystick also is designed to mimic the machine’s articulation angle, provide for improved steering control at higher speeds, offer greater visibility and reduce operator fatigue, all of which increase safety.

By keeping our focus on our customers and their needs, we continue to deliver innovative technology in the versatile machines they need to get so many jobs done — safely, efficiently and sustainably.

APPLYING OUR SUSTAINABILITY PRINCIPLES



The 966K XE Wheel Loader helps **PREVENT WASTE** through increased fuel efficiency, **IMPROVES QUALITY** through optimal performance and helps customers to **DEVELOP BETTER SYSTEMS** for their job site.



Hybrid Excavator

A THOUSAND ENERGY-SAVING OPPORTUNITIES

In a typical quarry, an excavator may repeat the same movement thousands of times daily, which can represent thousands of energy-saving opportunities. Each time an excavator slows or stops, kinetic energy is lost during braking. Caterpillar engineers realized that if they could capture that energy, store it temporarily and redeploy it upon swing acceleration, the result would help customers gain greater fuel efficiency and cost savings. Our engineers have done just that with the revolutionary new Cat® 336E H Hybrid Excavator.

The new 336E H Hybrid Excavator uses up to 25 percent less fuel per hour than the standard 336E and up to 50 percent less fuel per ton of material moved than the predecessor 336D, without sacrificing performance. “We found an approach that will save our customers money by lowering their owning and operating costs as well as their carbon footprints,” explains Randy Peterson, advanced technology development manager, Advanced Component and System Division.

The new 336E H hydraulic hybrid has technology developed by Caterpillar that includes more than 300 filed patents. It is the latest in a family of excavators that has become the industry standard in general, quarry and heavy construction applications since its introduction in 1994. Caterpillar introduced the 336E excavator in 2010 to meet Tier 4 Interim and EU Stage IIIB emissions standards. The 336E featured more horsepower, fuel efficiency, lift capability and digging force than its predecessor, and added automatic aftertreatment regeneration.

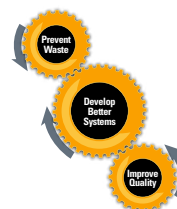
The 336E H takes fuel efficiency to an even higher level through three technologies that 1) conserve fuel using engine power management, 2) optimize performance using restriction management via the patented Cat® Adaptive Control System (ACS) valve and 3) reuse captured energy via the hydraulic hybrid swing system. The net result is a machine that lowers owning and operating costs for the

customer while reducing its emissions from fuel combustion. Like the 336E, the 336E H is built to be fully remanufacturable and can operate on either ultra-low sulfur diesel (ULSD) fuel with 15 ppm of sulfur or less or up to 20 percent biodiesel fuel blended with ULSD. In addition, the 336E H is quieter than the predecessor 336D, increasing comfort for the operator and the communities in which it operates.

This is only the beginning. Through a grant from the California Energy Commission, Caterpillar is continuing to develop the next generation of hydraulic hybrids, including two pilot machines currently being evaluated by customers. Leveraging this technology across other models and products will drive further progress toward our 2020 aspirational goal to reduce customer greenhouse gas emissions by 20 percent.

“Caterpillar has an extraordinary team of people working on hybrid technology solutions for the next generation of Cat® hydraulic excavators,” notes Ken Gray, global product manager for large hydraulic excavators for Caterpillar’s Excavation Division. “They are among the very best and brightest minds, and they are listening very closely to our customers. It’s exciting for me to see their enthusiasm for this project and the quality product they have developed in the 336E H, and we’re just getting started.”

APPLYING OUR SUSTAINABILITY PRINCIPLES



The ability of the 336E H to conserve fuel and reduce emissions **PREVENTS WASTE**, resulting in lower owning and operating costs. The 336E H helps customers to **DEVELOP BETTER SYSTEMS** for their job site.



Caterpillar Technology and Job site solutions

TECHNOLOGY TO MANAGE BIG BETTER

On large jobs such as road construction sites and quarries, a fleet of machines stands out as the most visible equipment, but it is not the only important equipment. Often what can't be seen is key to completing a job most efficiently, on time and on budget.

Certainly that was the case in Texas, where everything's bigger, including the size of road construction projects. But if you're Kiewit, the firm leading the \$1 billion Dallas-Fort Worth Connector project, you're looking for ways to manage resources most effectively. With the help of Caterpillar's technology solutions — the unseen tools at this job site — Kiewit was able to streamline equipment-operating costs and expects to ultimately finish the complex project in just three years, a year earlier than anticipated.

The project involves 8.4 miles of busy highway construction and more than 60 pieces of Cat® equipment. Kiewit credits effective communication with completing this massive project early and on budget. Cat® technologies such as Compaction Control and Product Link™ communicated important information to operators and supervisors in real time, allowing them to manage the project in the most efficient way possible.

Compaction Control helps eliminate onsite guesswork by providing information to the operator that helps them understand the state of the materials being compacted, whether it is an indication of soil stiffness or the temperature of an asphalt mat. This technology ensures that the stiffness and strength parameters called for in pavement designs are met. Compaction Control also enables the operator to see results in real time and focus on areas that need additional compaction, while bypassing areas that meet specifications, improving compaction quality and jobsite efficiency.

The second tool, Product Link™, provides operators, service personnel and managers information on vital machine functions as detected by sensors integrated into the machine. Product Link™ improves availability, component life and production efficiency while reducing both repair cost and the risk of a catastrophic failure.

At the Cemex Lyons limestone quarry in Lyons, Colo., our Job Site Solutions (JSS) team proved that good things come in packages both large and small. The JSS team was challenged to increase overall fleet efficiency, reduce costs and increase productivity with a fleet designed to meet more challenging environmental regulations, notably dust emission limitations. Caterpillar and our dealer Wagner Equipment Co. worked with Cemex to design a site-specific fleet and management services support system. The system includes capabilities from five key areas: equipment management, production optimization, safety, sustainability and financial design. Using all the tools in the JSS toolbox and integrating the tools' application into customer operations, the team was able to improve management of truck payloads, haul roads and idle time, resulting in significantly increased productivity (30 percent or greater). In addition, the JSS team improved Cemex's bottom-line results in the safety and sustainability of the site by lowering dust emissions and increasing fuel efficiency.

"The collaborative nature of the JSS approach is unique because it's about working with the onsite team for better results, not to simply replace what they do. The JSS process uses the collective expertise of all parties to innovate together. The result is improved operational efficiency, improved environmental sustainability at the site and an improved financial outcome for the customer," explains Craig Olmstead, Job Site Solutions manager.

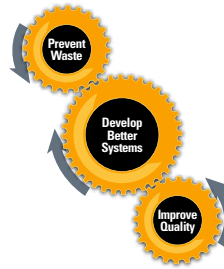
(continued)

Caterpillar Technology and Job site solutions (continued)

Our JSS teams have a range of customizable tools to use when they collaborate with customers to deliver site-specific fleet management solutions. JSS is currently managing 20-plus projects throughout the United States in applications such as Quarry & Aggregate, Industrial Sites, Distribution Centers, Regional Mining and Agriculture Feedlots.

In each case, the opportunity to improve sustainability performance through reduced energy consumption, lowered costs, increased operational efficiency and optimized productivity is significant thanks to the collaboration of the management teams of the customer, dealer and JSS. This collaborative approach that leverages the latest advancements in technologies and Caterpillar Production System principles is redefining how customers improve their bottom-line results and make an even bigger impact with their customers.

APPLYING OUR SUSTAINABILITY PRINCIPLES



From delivering improved safety to conserving fuel to moving less material, our technology solutions and Job Site Solutions are examples of how we are **DEVELOPING BETTER SYSTEMS** that are inherently more sustainable. JSS **IMPROVES QUALITY** through optimization of our products, services and solutions and **PREVENTS WASTE** on the job site.



Coal Mine Methane

CONVERTING EMISSIONS INTO ENERGY

In the city of Jincheng, in China's Shanxi province, the air was once gray and tasted of sulfur dioxide, and the streets were empty of people. Today, families enjoy being outdoors in the city square. Chen Jifeng not only appreciates the changes in Jincheng's environment, but also is proud of the work that his own company is doing today.

Chen is a production manager at the Jincheng Anthracite Mining Group's Sihe Gas Power Plant, the world's largest coal mine methane (CMM) power plant. Coal mining has long been the driving force behind Shanxi's economic development. CMM emissions, released during mining activity, are a major target for greenhouse gas emissions-reduction efforts. In the past, CMM has been treated as waste and discharged directly into the atmosphere. Capture and reuse of CMM reduces impacts to both the local and global environment.

Until recently the technology to capture and convert CMM to energy did not exist. Cat® G3520C Gas Power Generators have helped to solve that problem by providing the means to turn CMM waste into energy and reduce greenhouse gases.

"Our power plant is the world's first coal mine methane project under the Clean Development Program," said Chen. The program, established under the United Nations Framework Convention on Climate Change, offers an opportunity to earn carbon credits by investing in projects in developing countries that reduce greenhouse gas emissions. "Over the seven years during which it can generate credits, this plant will reduce emissions worth more than \$140 million," Chen proudly notes.

Since 2006, the Jincheng group has been working with Caterpillar to transform the Sihe plant, along with two affiliated plants. In an effort to upgrade the existing gas generating functions, the plant added another six Cat® G3520C Gas Power Generators recently, increasing power-generation efficiency by approximately 70 percent.

Today, the total installed capacity of the group's Cat® gas power generator sets is 189MW. Jincheng is working toward the goal of building the world's largest gas power generation cluster. In doing so, the company and its employees will have the satisfaction of not only generating emissions-reduction credits, but also providing energy for the region.

APPLYING OUR SUSTAINABILITY PRINCIPLES



Cat® gas power generators **PREVENT WASTE** by capturing coal mine methane emissions and reusing the emissions as a valuable power source. This **IMPROVES QUALITY** of the work environment for the mining employees.



More Sustainable Mining

THE NEW LOOK OF MINING

At a time when population growth and urbanization are increasing the demand for mined minerals, mining companies are innovating to make their activities more sustainable than ever. A great example can be found in Malartic, Quebec, where Osisko Mining Corporation has made environmental sustainability and community engagement their priorities. Osisko's Canadian Malartic mine is one of the largest open-pit gold mines in Canada. The mine's size and its location at the edge of the town of Malartic have posed unique developmental challenges, many of which have been overcome in collaboration with residents.



For example, to accommodate the mine's development, a neighborhood of more than 200 houses and five institutions, plus the infrastructure to support them, has been relocated and rebuilt using much of the demolished material. Additional demolished material has been recycled to construct a 49-foot-high (15-meter) landscaped ridge between the mine and town to visually shield mining operations and help decrease noise.

To further reduce noise levels, Caterpillar developed an extra-quiet package that has been retrofitted to Osisko's original 793F trucks

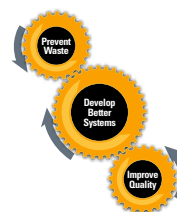
already on site and will be included on any future 793F orders. To keep dust away from residents, Cat® trucks fitted with dust suppression systems are used on site at all times.

Furthermore, Osisko addressed water conservation by creating a new pond that will collect rain and snow melt for ore processing. "We've managed to maximize water utilization in a way to minimize the need for external sources. As far as water is concerned, we are very sensitive to maintain a high level of recirculation to minimize impact on outside environment," Denis Cimon, vice president of technical services for Osisko Mining Corporation, explains.

Osisko's commitment to incorporating innovation and technology into its processes for a more efficient and sustainable mine is evident even in the company tagline: A Fresh Outlook on Mining. "We wanted to change the image of mining here," says Cimon.

In a town where the unemployment rate previously stood at 40 percent, the Canadian Malartic mine is also delivering much-needed economic benefits. The project created 650 new jobs for its mine along with new suppliers established in this community of 3,700 residents. More than 1,000 indirect jobs were created, as well as the implementation of a local economic development policy that is increasing the number and success of small businesses in the area. The Canadian Malartic mine has emerged as a case study in more sustainable mining.

APPLYING OUR SUSTAINABILITY PRINCIPLES



Caterpillar innovations, such as reducing noise levels from truck operations and reducing dust generation, are helping Canadian Malartic mine implement more sustainable mining processes, **IMPROVING QUALITY** of life for both the employees and community.



Infrastructure Development

IMPROVING INFRASTRUCTURE, IMPROVING LIVES

Sustainable infrastructure development drives local economies, improves standards of living and does so in a way that balances environmental considerations. Caterpillar supports sustainable infrastructure projects around the world with products and services that facilitate efficiency.

One such project is the La Yesca hydroelectric dam in Mexico. The second-tallest concrete face, hydroelectric dam in the world and largest in Latin America sits on the border of Jalisco and Nayarit. Completed in 2012 by Empresas ICA, S.A.B. de C.V. (ICA), the renewable-energy dam has the capacity to generate enough energy to meet roughly 50 percent of the electricity demand for the city of Guadalajara. In addition, the project has generated more than 10,000 jobs in the area, helping to improve residents' quality of life.

Cat® dealer Trasca supplied approximately 150 Cat® machines, including medium tractors, large excavators, large wheel loaders and articulated trucks, in addition to crushers and other necessary equipment. Caterpillar Financial Services Corporation and Cat® dealer Trasca supported the project through leasing and customer service agreements for all Cat® machines for the duration of the project, maintaining high levels of Cat® fleet availability and contributing to the project's success.

On the other side of the globe, Geostroy has deployed Cat® equipment in the development of the Zagorskaya power station in Russia. The power station, located 62 miles (100 km) from Moscow, is unique in Russia. As a hydro-accumulating power station, it pumps water from a lower reservoir to a higher holding pond when extra electricity is available. When more power is needed, the water streams back to the lower reservoir through a turbine to generate electricity. This type of power station also offers the ability to smooth the peak energy load during the day by supplying electricity to the grid. The Zagorskaya power station also absorbs surplus electricity from a thermal power station as well as nuclear power stations to avoid voltage overages.

Cat® dealer Zeppelin Russland is providing equipment and services needed for this project, including Eco Operator TrainingSM to ensure Geostroy employees operate equipment more efficiently and with less fuel consumption. In addition, Cat® Product LinkTM monitors, manages and optimizes fuel consumption, workload and equipment health at the site.

HIGH Tech HIGH Value

Infrastructure Development (continued)

In ports and on beaches around the world, Great Lakes Dredge & Dock Co. (GLDD) relies on Cat® equipment to operate the largest dredging company in North America. GLDD uses Cat® engines and dozers for infrastructure projects, such as channel and harbor maintenance or deepening, to provide safe access for ships in and out of a port facility. Their work also includes beach renourishment to protect people, homes and property from the sea during high tides and hurricanes. They rehabilitate damaged wetlands and other aquatic habitats.

“For us to compete in this global marketplace, our equipment must be reliable, cost efficient to purchase, operate and maintain, and comply with the required emissions standards of the U.S. Environmental Protection Agency or International Maritime Organization,” Carl Pfeil, senior project engineer of GLDD, explained. “Caterpillar meets and exceeds all of these requirements.”

APPLYING OUR SUSTAINABILITY PRINCIPLES









Infrastructure projects are essential to **IMPROVING QUALITY** of life around the world by **DEVELOPING BETTER SYSTEMS**, such as transportation, energy, water management and sanitation. At these project job sites, our machines are often **PREVENTING WASTE** through fuel efficiency and material handling optimization.

Goals & Progress

Caterpillar has set aspirational, long-term goals for its operations as well as its products, services and solutions. We believe these standards affirm our determination to lead our industry to a more sustainable future. (Baseline 2006)

2020 GOALS FOR OPERATIONS

 <p>Reduce recordable workplace injury rate to 0.6 and lost-time case rate due to injury to 0.15.</p>	 <p>Increase energy efficiency by 25%.</p>	 <p>Reduce absolute greenhouse gas emissions from existing facilities by 25%.</p>	 <p>Use alternative/renewable sources to meet 20% of our energy needs.</p>
 <p>Eliminate waste by reducing waste generation and reusing or recycling all that remains.</p>	 <p>Hold water consumption flat.</p>	<p>LEED</p> <p>Design all new construction to meet Leadership in Energy and Environmental Design (LEED) or comparable green building criteria.</p>	

2020 GOALS FOR PRODUCTS, SERVICES & SOLUTIONS

 <p>Provide leadership in the safety of people in, on and around our products.</p>	 <p>Reduce customer greenhouse gas emissions by 20%.</p>	 <p>Increase customer energy efficiency by 20%.</p>	 <p>Increase customer materials efficiency by 20%.</p>
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Health & Safety

OPERATIONAL GOAL

Reduce recordable workplace injury rate to 0.6 and lost-time case rate due to injury to 0.15.

OVERVIEW

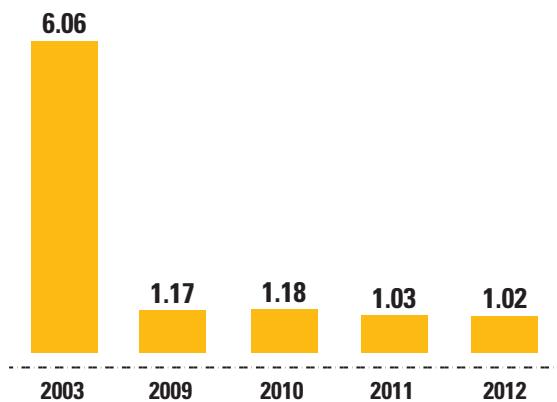
Vision Zero is our commitment to creating a zero-injury workplace. We continue to maintain a strong focus on personal safety and strive for zero injuries.

For Caterpillar facilities as of December 2012, the year-end performance results showed 41 percent of our facilities reached zero recordable injuries and 65 percent of our facilities reached zero lost-time injuries.

It's not about the metrics, but about our people!

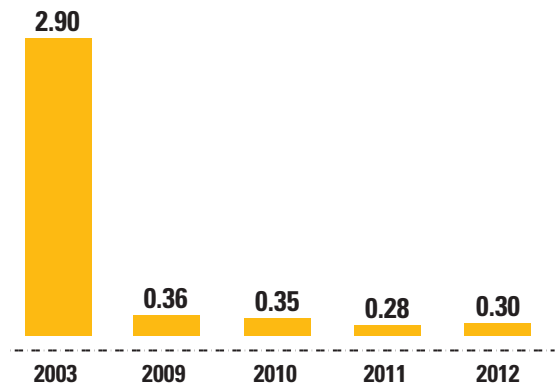
PERFORMANCE SUMMARY

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



We have improved our Recordable Injury Frequency rate by 83 percent from our 2003 baseline year and 1 percent from our last reporting period.

0.30 Lost-Time Case Frequency (LTCFR)
(Lost-time injuries per 200,000 hours worked)



We have improved our Lost-Time Case Frequency Rate by 90 percent from our 2003 baseline year. Our 2012 LTCFR increased 7 percent from 2011. Through continued emphasis of our EHS Assurance program and global risk assessment initiative, we will continue to implement improvements in 2013, striving to maintain progress toward Vision Zero.



In 2008, Caterpillar launched a global risk assessment initiative that has resulted in the reduction of thousands of high-risk work elements to medium or low risk.

In 2012, facilities continued their focus on safety and ergonomic risk reduction by establishing baselines for new or modified jobs. Our focus on ergonomics has driven continued reduction in ergonomic-related injuries. By year-end 2012, less than 1 percent of all job elements assessed remained high-risk jobs.



Health and Safety

PROGRESS HIGHLIGHTS

MAPLETON'S SAFETY CULTURE EVOLUTION

Since the early 2000s, Caterpillar's Cast Metals Organization had worked to lower its recordable injury frequency (RIF). However, from 2006 to 2010, the average RIF had remained essentially flat and one of the highest in the company. In late 2010, facility management created the Safety Leadership Team to drive change throughout the foundry.

Facility management set an ambitious goal to reduce RIF. Managers developed a Safety Action Plan to improve safety accountability, address injury trends, engage and recognize employees, and build a safety culture of hazard recognition. In just 20 months, the foundry improved its RIF nearly 50 percent. In addition, significant economic benefits, including a nearly 25 percent reduction in workers' compensation costs, have accrued.

THE PSYCHOLOGY OF SAFETY CULTURE

Psychology students from a local university have helped reduce the number of safety incidents at Caterpillar Mexico's Integrated Manufacturing Operations facility in Santa Catarina. The recordable injury frequency (RIF) rate had fallen nearly 91 percent from 2004 to 2010 due to a series of safety initiatives instituted at the facility. When progress plateaued, the Ergonomics, Health and Safety Department commissioned a University of Monterrey research project to identify and address psychological factors involved in occupational injuries.

Based on the students' recommendations, the facility instituted programs to bring employees together as a cohesive unit, and training to help employees recognize unsafe behaviors. By the end of 2012, the RIF rate had dropped another 21 percent.

SAFER FIXTURES FOR A SAFER FACILITY

A new process has reduced assembly time and improved safety in our facility in Elkader, Iowa. A project team created a safer and faster positioning process for the production and welding of large u-blade and bracket assemblies. The team decided to place the assemblies in a positioner that would hold them for the welds. An unused turn fixture was recruited, and a saddle was created for the u-blade to sit in when placed in the fixture. A second turn fixture was adapted to hold the bracket assembly. This significantly decreased the need for overhead cranes and improved employee ergonomics.

A time study was done once the fixtures were complete, and employees were trained on their use. Before the project, u-blade assembly took five hours and bracket assembly took two hours. Once the new system was in place, u-blade assembly time dropped to 1.5 hours and bracket assembly to 0.5 hours. In addition, the fixtures are easier and safer for employees to use.

SAFER AND MORE PRODUCTIVE IN INDIA

A new four-stage assembly process at the backhoe assembly plant in Thiruvallur, India, uses dedicated hoist cranes at each stage, plus ergonomically designed fixtures and steps, to reduce operator fatigue and increase safety, while increasing productivity. The result is a reduction in the job risk score from 76 to 24 and an ability to reach a goal of 20 assemblies per single shift, a significant increase from the previous average of three per shift.

EMERGENCY SYSTEM MAKES WORKING ALONE SAFER

In the engine block washing cabin at Caterpillar's Kiel Engine Center in Germany, work has been optimized so that it requires only one person. This optimization, however, created a potential risk, as there were no video cameras or other employees to monitor the safety of the worker. The safety team concluded that a personal emergency signal system was the solution. The employee now wears a device that triggers an alarm after a period of time has elapsed with no movement or if a certain angle of inclination is exceeded. The alarm center can identify the exact location and send an immediate response.

↑ 25%

Energy Efficiency

OPERATIONAL GOAL

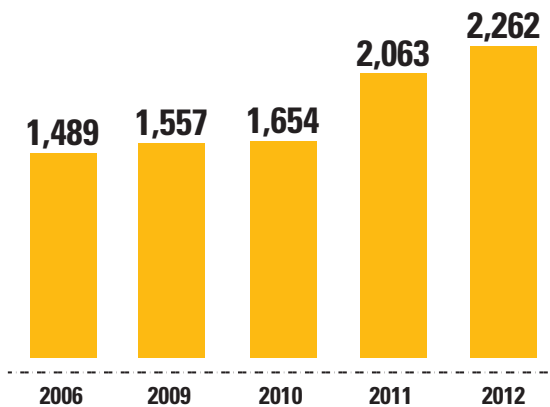
Increase energy efficiency by 25 percent.

OVERVIEW

Energy efficiency is a continually evolving field, and we are currently evaluating this metric against other standards and best practices. We continue to launch individual projects as they are identified by our enterprise energy management team through research and analysis.

PERFORMANCE SUMMARY

2,262 Dollars of revenue/absolute gigajoules energy use
(Baseline: 2006)



The 2012 result exceeds our 2020 aspirational goal by 22 percent.

Note: Data does not include facilities acquired after June 1, 2011, Caterpillar Japan Ltd — Direct Dealer operations, or Electro-Motive Diesel (EMD) operations.

Previously reported data has been restated due to:

- a) acquisitions,
- b) data updates realized from improved accuracy,
- c) divestitures.

↑ 25% Energy Efficiency

PROGRESS HIGHLIGHTS

MODERNIZATION SAVES ENERGY IN EAST PEORIA

A \$200 million modernization of the track-type tractor undercarriage components facility in East Peoria, Ill., is expected to increase production levels by nearly 30 percent from prior levels. The multiphase upgrade began in 2011, and is already generating environmental benefits. The new full-link machining system has reduced electrical power consumption by more than 60 percent, while better mist collection systems have reduced air particulate emissions by more than 80 percent.

REDUCING POWER CONSUMPTION IN PETERBOROUGH

A compressor retrofit at our Perkins engine factory in England is generating energy and cost savings. Rather than purchasing a new compressor to supply compressed air for site processes, an old compressor has been retrofitted with a heat recovery option. The retrofit has brought the compressor back into working order, and reduced power consumption by recovering and reusing waste heat to warm engine wash water. The heating system, installed in November 2011, has realized cost savings of approximately £57,000 and gas savings of more than 1,890,000 kWh, while improving the reliability of the wash tanks.

CCMC REDUCES GREENHOUSE GAS EMISSIONS

A project team at Caterpillar China Machinery Components (CCMC) in Wuxi, China, set a goal to reduce energy, water and steam use at the plant in order to bring down costs and reduce greenhouse gas emissions. The team's suggestions included upgrading air compressors and switching from metal halide to LED lamps in the plant. These two projects have provided a total reduction of approximately 200 metric tons of CO₂e annually. Other actions taken by the team include the reuse of water in the paint line, which helps reduce water use by 14,400 cubic meters annually, and the reuse of condensate water for the paint line and the wash station, which saves 3,400 cubic meters of steam each year.

IMPROVING ENERGY EFFICIENCY IN CORINTH

Reducing energy consumption is a continuous goal at Caterpillar's Cardinal Drive facility in Corinth, Miss. Beginning in 2009, the facility initiated a multiphase project to reduce electricity consumption and associated greenhouse gas (GHG) emissions. By reducing the power used for heating, ventilation and air conditioning (HVAC) systems and changing to more energy-efficient lighting, the facility reduced electricity consumption by approximately one-third and reduced GHG emissions by approximately 5,700 metric tons of CO₂e. In 2012, the facility started a compressed air efficiency project and began replicating the lighting project at other Caterpillar facilities. As a result of the HVAC system improvements, the facility was recognized by the state of Mississippi for outstanding achievement in energy-efficiency and energy management. The project benefits also extended to the community as proceeds from the sale of unnecessary lighting equipment were donated to charity on behalf of the employees in Corinth.

↓25%

GHG Emissions

OPERATIONAL GOAL

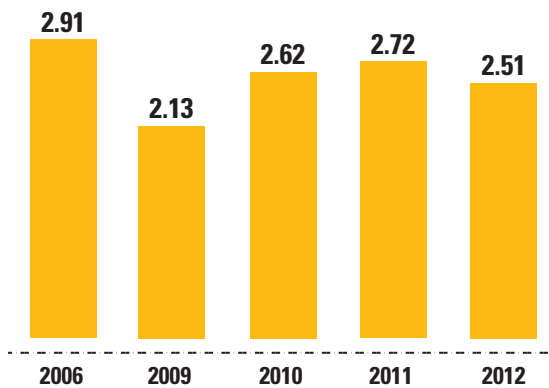
Reduce absolute greenhouse gas emissions from existing facilities by 25 percent.

OVERVIEW

The 2012 result is 5.3 percent better than our 2012 target of 2.65 absolute million metric tons of CO₂e, continuing progress toward our 2020 aspirational goal of 25 percent reduction of absolute greenhouse gas emissions from existing facilities. The 2012 gains were achieved through key energy efficiency/GHG reduction projects, which included lighting upgrades, energy load monitoring and metering, and employee training for energy reductions.

PERFORMANCE SUMMARY

2.51 Absolute million metric tons of CO₂e
(Baseline: 2006)



The 2012 absolute GHG emissions were 14 percent improved, relative to the established baseline year of 2006, and 5.3 percent better than our 2012 target.

Note: Data does not include facilities acquired after June 1, 2011, Caterpillar Japan Ltd — Direct Dealer operations, or Electro-Motive Diesel (EMD) operations.

Previously reported data has been restated due to:

- a) acquisitions,
- b) data updates realized from improved accuracy,
- c) divestitures.

↓ 25% GHG Emissions
PROGRESS HIGHLIGHTS

NEW CONTROLS REDUCE ELECTRICITY USAGE

To bring down electricity usage, which accounts for 90 percent of the greenhouse gas emissions at the manufacturing facility in Nuevo Laredo, Mexico, new thermostat and lighting controls have been installed to coordinate with the plant's work schedule. Lighting locations were also studied and updated to maximize the skylight benefits of the facility. The new controls reduce electricity usage by more than 3,660,000 kWh and costs by nearly \$442,000 annually across three buildings, which equates to a reduction in approximately 1,600 metric tons of CO₂e.

USING OUTSIDE AIR TO KEEP DATA COOL

Caterpillar's main data center has improved greenhouse gas emissions by about 2,500 metric tons of CO₂e annually, the equivalent of removing nearly 500 cars from roads. This has been achieved by efficiency improvements to the building's air conditioning system, which runs continuously. Improvements include an automation system that uses more efficient motors for the existing air handlers and equipment that takes advantage of outside air to cool the office during cooler months. In addition, a waterside economizer uses a heat exchanger and outside air in cold months to make chilled water to cool the inside air. Finally, an efficient chilled water plant creates the cold water necessary to keep the data center and office spaces at suitable temperatures in warmer months.

SKYLIGHTS DELIVER ENERGY REDUCTION AND COST SAVINGS

The Monterrey, Mexico, Integrated Manufacturing Operations Division plant has installed skylights to reduce energy use and save money. The installation has resulted in a reduction of 440 metric tons of CO₂e and a cost savings of approximately \$336,000 annually, while delivering the appropriate amount of light using installed photocells to adjust light levels for the plant's production processes.

20%

Alternative/ Renewable Energy

OPERATIONAL GOAL

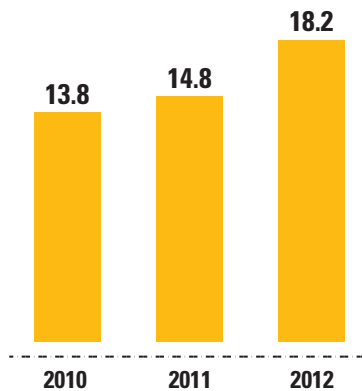
Use alternative/renewable sources to meet 20 percent of our energy needs.

OVERVIEW

We continue to make progress toward achieving our 2020 aspirational goal of 20 percent alternative/renewable energy. In 2012, 18.2 percent of our energy consumption was produced from renewable sources. These gains were achieved through facilities installing renewable energy sources such as biogas and photovoltaics, as well as the purchase of renewable energy certificates. In 2012, Caterpillar defined alternative energy sources and began defining the calculation methodology.

PERFORMANCE SUMMARY

18.2 Percent alternative/
renewable energy
*(Renewable electrical energy use/total
electrical energy use) x 100*



The 2012 result indicates good progress toward achieving our 2020 aspirational goal. Data currently includes only renewable energy. Alternative energy will be included in the future.

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

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

Note: Data does not include facilities acquired after June 1, 2011, Caterpillar Japan Ltd — Direct Dealer operations, or Electro-Motive Diesel (EMD) operations.

20%

Alternative/Renewable Energy

PROGRESS HIGHLIGHTS

INVESTMENT IN COGENERATION IN ILLINOIS

Caterpillar's Global Purchasing Division acquired the 51.5 MW cogeneration plant adjoining the Mossville, Ill., Caterpillar campus in 2012. Cogeneration is an energy-efficient means of producing multiple output streams from a single fuel source, in this case, electricity, steam and chilled water from natural gas. For Caterpillar, the plant acquisition:

- Reduces Caterpillar's reported annual greenhouse gas emissions by a minimum of 12,000 metric tons CO₂e by utilizing the cogeneration plant to meet the Mossville campus energy needs as compared to purchasing electricity from the grid.
- Allows Caterpillar to proactively manage its cost structure, by eliminating a long-term utility power purchase agreement, and allowing for revenue generation through the sale of excess electricity to the regional power grid.
- Utilizes Caterpillar's own products, three Solar™ Turbines Titan 130 natural gas-fired generator sets, to produce electricity and steam.



Waste

OPERATIONAL GOAL

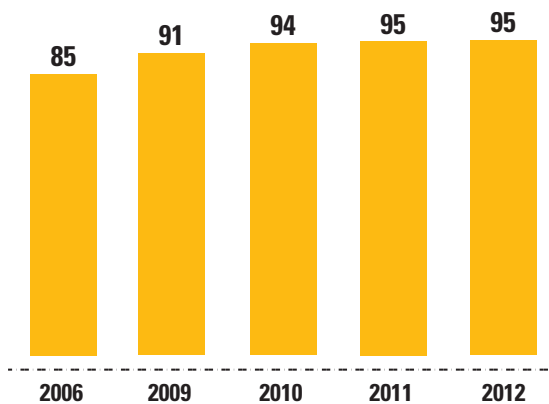
Eliminate waste by reducing waste generation and reusing or recycling all that remains.

OVERVIEW

We continue to make gains in this effort, and in 2012 we incorporated scrap metal into our enterprise recycling totals (as well as our historical metrics – shown in the performance summary). With the heavy reliance of Caterpillar on steel and castings, and the relative value of metal scrap in the market place, it is vital that metal is strategically managed as an important asset to the company and not as a waste. In 2012, 154 facilities were recycling at 90 percent or greater. We also continue to strive to reduce the generation of by-product materials as much as possible and, for the remainder, to continue to find types of beneficial reuse (such as waste to energy) or recycling.

PERFORMANCE SUMMARY

95 Percent recycled
Absolute pounds recycled waste/absolute pounds total waste x 100
(Baseline: 2006)



The 2012 result is 11 percent above our 2012 target. Caterpillar employees continue to embrace recycling efforts on a global basis. Our recycling metric includes metals recycled and energy recovery from waste to energy incineration, as well as biological conversion processes. We continue to look for opportunities to further increase our by-product material efficiency.

Note: Data does not include facilities acquired after June 1, 2011, Caterpillar Japan Ltd — Direct Dealer operations, or Electro-Motive Diesel (EMD) operations.

Previously reported data has been restated due to:

- a) acquisitions,
- b) data updates realized from improved accuracy,
- c) divestitures.



Waste
PROGRESS HIGHLIGHTS

PACKAGING SWITCH SAVES RESOURCES

Caterpillar Suzhou Co. Ltd. (CSCL) in China has switched from wooden packaging to reusable containers for shipping transmissions and axles to reduce packaging waste and freight costs. In addition, the new containers meet higher safety standards and offer better content protection. The new packaging saved \$1.56 million, reduced wood usage by 1,000 metric tons per year and saved more than 4,800 hours in operations time from reduced handling.

REVAMPED SCRAP RECYCLING IN PIRACICABA

A team at Caterpillar Brasil Ltd. (CBL) in Piracicaba, Brazil, has improved its recycling index through a number of improvements to its scrap disposal program. The name of the recycling area has been changed to Byproduct Central to better identify it as an area for materials that can be a source of revenue. The team also has found a new receiver for scrap, consolidated and organized the area where recyclables are stored, and identified additional materials that can be recycled rather than thrown away. At the end of 2012, the facility's recycling index was 98.13 percent, on its way to a goal of 100 percent by 2020.

OIL RECLAMATION IN ILLINOIS

Two Caterpillar facilities have found ways to reclaim oil, delivering cost savings and environmental benefits. The Advanced Components & Systems Division facility in Joliet, Ill., collects more than 33,000 gallons (125,000 liters) of waste oil from assembly lines and testing stands. Previously, the oil was treated as waste or partially collected to be sold to a waste oil vendor for less than 10 percent of its original price. Through new processes, the oil is collected, filtered, treated and reused in-house, resulting in an annual savings of about \$202,000 and a significant positive environmental impact.

Similarly, a project team at the Integrated Manufacturing Operations Division facility in East Peoria, Ill., has developed a system to optimize the oil extracted from the plant waste oil stream, clarify it to a high quality and sell it for more than was realized previously from lesser-quality oil. Over the course of 14 months, the new process nearly tripled the return of the previous process.

EMD UPGRADES CLEANING PROCESS

The Electro-Motive Diesel facility in LaGrange, Ill., has replaced a diesel engine cylinder liner cleaning process that used molten caustic salt and large amounts of electricity, natural gas and water with a new process that uses an automated mild alkaline wash and stainless steel shot blast to clean the liners. The new process delivers an annual savings of about 124,000 kWh of electricity, 20.5 billion BTUs of natural gas and 5,236,000 gallons (19,820 cubic meters) of water. In addition, the reduction in electricity and natural gas usage decreases CO₂e emissions by 1,290 tons (1,150 metric tons), and the project keeps 34,900 lbs. (15,800 kg) of waste from the landfill and about \$190,000 each year.



Water Consumption

OPERATIONAL GOAL

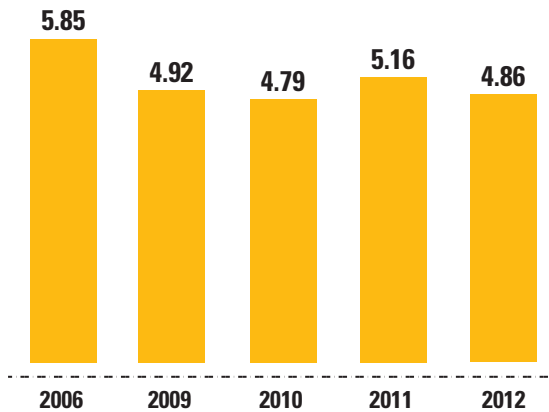
Hold water consumption flat.

OVERVIEW

We continue to move forward with water-reduction efforts through alternative treatment technologies, water recycling studies and employee awareness training on water management.

PERFORMANCE SUMMARY

4.86 Absolute billion gallons used
(Baseline: 2006)



The 2012 result is 17 percent better than our 2020 aspirational goal to hold water consumption flat to our established baseline year of 2006.

Note: Data does not include facilities acquired after June 1, 2011, Caterpillar Japan Ltd — Direct Dealer operations, or Electro-Motive Diesel (EMD) operations.

Previously reported data has been restated due to:

- a) acquisitions,
- b) data updates realized from improved accuracy,
- c) divestitures.



Water Consumption

PROGRESS HIGHLIGHTS

TECHNICAL CENTER TURNS WATER USE AROUND

Our Technical Center in Mossville, Ill., has implemented cooling tower efficiency improvements that have resulted in more than 100 million gallons (380,000 cubic meters) of water recycled annually, delivering a 30 percent reduction in process cooling water consumption. Another project focused on process water softener rebuilds and control strategy enhancements saved an additional 35 million gallons (130,000 cubic meters) of water per year. These and other upgrades have resulted in a 58 percent improvement in water consumption over the baseline year of 2008.

UK PAINT PLANT RECYCLES WATER

A team at Caterpillar's Building Construction Products in Desford, England, has developed a wastewater recycling program that recycles water from the deionized water tank in the paint plant pretreatment area, allowing that water to be reused. The introduction of the deionized wastewater recycling system reduces water demand, plant costs and environmental impact. In two years, water usage has dropped 33 percent and more efficiencies are expected.

REDUCTION OF WATER CONSUMPTION IN FRANCE

The undercarriage and parts production facility in Grenoble, France, uses groundwater for many cooling purposes in production. Beginning in 2011, the facility conducted a program to reduce the groundwater consumption for cooling purposes. The facility identified and fixed all water leaks and invested in closed-loop cooling systems with heat exchangers that use much less water. In 2012, the facility used 35,000 cubic meters less than the annual amount of groundwater permitted by the city as a result of this initiative.

UPGRADING SAVES WATER AND CUTS EMISSIONS

In China, our Xuzhou hydraulic excavator facility has responded to water shortages by installing a greywater recycling system, which provides 100 cubic meters of greywater per day for hydraulic excavator washing, painting, landscaping and more. In the first year of use, Caterpillar Xuzhou reduced its freshwater consumption by 25,900 cubic meters.

The facility has also upgraded its paint line to solve problems with capacity, high water consumption and excess emissions. Through careful planning, the new painting line has increased paint capacity from 50 to 80 units per day, water use has been cut 75 percent and volatile organic compound (VOC) emissions have been reduced 31 percent.

UPGRADE DELIVERS MORE EFFICIENT EFFLUENT DISCHARGE

The Caterpillar India facility in Thiruvallur, India, is undergoing a rapid transformation toward increasing production capacity. To help increase capacity, the facility installed an effluent treatment plant (ETP) that treats 100 percent of the effluents generated by the painting processes at the facility. In addition, the ETP provides for the recycling and reuse of more than 6.5 million gallons (25,000 cubic meters) of water each year and a 38 percent annual reduction in freshwater use.

LEED

Leadership in Energy and Environmental Design

OPERATIONAL GOAL

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

OVERVIEW

The collection of buildings or projects below represents varying degrees of certification or certifiable status attained in accordance with either the U.S. Green Building Council's New Construction, Existing Buildings, or Commercial Interiors certification processes or comparable green building criteria.

The buildings/projects consist of new construction and existing buildings.

PERFORMANCE SUMMARY

In 2012, the following Caterpillar facilities received certification in accordance with the U.S. Green Building Council's LEED-NC (Leadership in Energy and Environmental Design — New Construction) certification process or comparable criteria:

SILVER — Winston-Salem, N.C., Axle Manufacturing Facility

SILVER — Clayton, Ohio, Cat Logistics Distribution Center

Certifiable — Xuzhou, China, Building K

PROGRESS HIGHLIGHTS

LEED GOLD WUXI, CHINA, R&D CENTER EXPANDS

The Caterpillar Wuxi Research & Development Center (CRDC Wuxi), one of the few R&D centers in China to achieve LEED Gold certification, incorporated further sustainable features in 2011 and 2012. These included enhanced refrigerant management, a high-reflectance roof, 75 percent of the space using daylighting and non-toxic paints and carpet. These measures saved 34 million gallons (130,000 cubic meters) of water, reduced electricity consumption by 2.05 million kWh and reduced waste by 88,000 pounds (40,000 kg) in 2012. CRDC Wuxi has consistently demonstrated its strong leadership in sustainable development throughout facility design, construction and operations, which not only benefits the environment but also the enterprise. CRDC Wuxi received awards from the Wuxi government, including the "Enterprise Strategic Footprint Development Award" and the "Outstanding Leadership in Top Talent Attraction Award," ranking first among 76 Global Fortune 500 companies and more than 2,000 other companies that have operations in Wuxi. In 2012, CRDC Wuxi was recognized by Jiangsu province government as the best R&D center in the province for its leadership in innovation and sustainability.

include external sunshades, automatic daylight controls, architectural glazing design for increased daylighting, enthalpy wheels to recover heat energy and a heat recovery chiller. Water conservation features include water-efficient landscaping design through local and native plantings, a rainwater harvesting system and low-flow plumbing fixtures. These energy-saving features reduce energy use by as much as 45 percent for a typical building of its size, while water-saving programs reduce interior water usage by about 46 percent.

ACHIEVED LEED SILVER IN WINSTON-SALEM, N.C.

Caterpillar's new 850,000-square-foot (79,000 square meters) truck-axle manufacturing facility in Winston-Salem, North Carolina, achieved LEED Silver certification, earning the distinction of the largest LEED Silver-certified manufacturing facility in North Carolina. During building construction, the recycle and reuse of building materials whenever possible led to 90 percent of all construction waste being diverted from local landfills. The source of building construction materials was considered resulting in 34 percent recycled material content being used and 51 percent of materials sourced from within 500 miles of the project. Environmental features in the facility include geothermal wells for heating and cooling, rooftop solar panels, motion sensing lighting controls, daylight harvesting skylights and foam insulation. The facility protected, restored or created a total of 40 acres of habitat, which is also used to filter stormwater runoff. As a result of these and other features, the facility uses 12 percent less energy and 45 percent less potable water than buildings of a similar size.

PURSUE LEED GOLD AT CATERPILLAR VISITORS CENTER

The Caterpillar Visitors Center, which opened in Peoria, Ill., in 2012, has applied to receive LEED Gold certification from the U.S. Green Building Council. The building features solar panels that provide about 10 percent of the center's projected annual energy use, while reducing greenhouse gas emissions approximately 80 metric tons per year. Other energy conservation features



Customer Health & Safety

PRODUCTS, SERVICES & SOLUTIONS GOAL

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

OVERVIEW

Caterpillar offers a suite of safety services to customers either individually or as part of a Fleet Management Services agreement and remains committed to expanding the availability of safety information and materials.

PERFORMANCE SUMMARY

Operator and jobsite health and safety is promoted at safety.cat.com to help our customers use our products safely and improve their safety performance. This dedicated website includes safety culture solutions that offer assessments, coaching and training to develop a stronger safety culture.

PROGRESS HIGHLIGHTS

MOTOR GRADER ACCESS SYSTEM IMPROVES SAFETY

The new Cat® 16M Motor Grader access system option consists of a wrap-around access platform, tandem walkway with guardrails, primary foldable ladder and secondary emergency cab egress ladder. The access system provides a safe and sturdy surface for accessing the operator station, servicing the motor grader and window washing with reduced risk of slips, trips or falls.

SUPPORTING SAFETY IN A NEW INDUSTRY

Caterpillar Safety Services has taken the lead in designing a training program tailored to the wind power industry's unique set of work circumstances — the top of tall turbines — and its often-isolated locations. Working with wind industry leaders, Caterpillar has created a customized program that leverages successful leadership training methods and allows anyone with a commitment to elevating safety performance to learn and share the elements necessary for a positive, sustainable safety culture.

PROXIMITY AWARENESS DELIVERS MINE SAFETY

Proximity Awareness, part of the Cat® MineStar™ System, delivers a new level of mine safety by providing information to equipment operators and mine administrators about the environment surrounding mobile equipment. Global Navigation Satellite System receivers and data radios on site equipment continually report machine positions to each other and to a central office, allowing every operator to know the real-time position of all other reporting machines. Proximity Awareness uses this information to define a machine body, create avoidance areas within and around the machine, and provide a warning if a collision is anticipated.

NEW ROLLER OFFERS SAFETY AND INCREASED PRODUCTIVITY

The new Cat® CW34 Pneumatic Roller offers operator comfort, safety and visibility in an extremely productive machine. The new console design, standard sliding station and full floor-to-ceiling glass in the cab enable the operator to easily view wheel edges, while an LCD display and push button controls simplify operation. The ability to coast delivers lower sound levels, further increasing comfort and decreasing noise pollution.

HAZARDOUS LOCATION SOLUTIONS

Cat® C15 ACERT™ engines for use in hazardous locations save oil and gas industry customers time and money by reducing project complexity and decreasing certification-related risks. The engines and solutions are primarily used for offshore blending, cementing, nitrogen pumping and coiled tubing applications where personnel and rig safety are critical. In addition, various explosion-proof solutions are available for most of the petroleum product line.

↓ 20%

**Customer
GHG Emissions**

PRODUCTS, SERVICES & SOLUTIONS GOAL

Reduce customer greenhouse gas emissions by 20 percent.

OVERVIEW

We want to help our customers achieve their emission reduction goals, too. Their needs provide potentially valuable business opportunities for us.

PERFORMANCE SUMMARY

Customers are demanding greater fuel efficiency and using our technology to help them reduce GHG emissions.

PROGRESS HIGHLIGHTS

MOTOR GRADERS DELIVER EFFICIENCY AND PERFORMANCE

The Cat® M series 2 motor graders, equipped with an ACERT™ engine and Cat Clean Emissions Module, deliver the performance and efficiency customers demand, while meeting EU Stage IIIB and Tier 4 Interim emissions standards. Integrated machine systems and technologies improve productivity for greater accuracy, lower fuel use and reduced machine wear. Decreases in fuel consumption result in a decrease of combustion of carbon, reducing greenhouse gases. The cab design assures excellent visibility to the work area and two electrohydraulic joysticks deliver enhanced operator comfort and efficiency.

DIESEL GENERATOR SET OFFERS REDUCED FUEL CONSUMPTION

The Cat® C175-16 Diesel Generator Set is certified to meet Tier 4 Interim emissions standards, delivering reduced fuel consumption and lower emissions in a compact footprint. The C175-16 includes the Cat® Clean Emissions Module, which is an aftertreatment system designed to reduce oxides of nitrogen, hydrocarbons and particulate matter.

NEW FUEL-EFFICIENT TRACTORS

New Cat® D6T, D7E and D8T Track-Type Tractors deliver the productivity, reliability and durability of their predecessors while reducing emissions and fuel consumption. Total machine fuel-efficiency improvements of 2 to 12 percent decrease carbon emissions and customer fuel cost. Compared to previous models, the new machines reduce particulate matter by 90 percent and oxides of nitrogen by 50 percent.

↑ 20%

Customer Energy Efficiency

PRODUCTS, SERVICES & SOLUTIONS GOAL

Increase customer efficiency by 20 percent.

OVERVIEW

Efficiency gains will vary by product, application and segment. We continue to work with our product groups and customers to define further efficiencies.

PERFORMANCE SUMMARY

We collaborate with our dealers to deliver highly customized and site-specific solutions that result in optimized use of our equipment and an improved bottom line for our customers. We offer training to our customer operators on how to use our products more efficiently.

PROGRESS HIGHLIGHTS

PERFECT PAIR FOR FUEL-EFFICIENT MINING

The next generation 992K Wheel Loader and the 777G Off-Highway Truck are perfectly matched for efficient mining with the safety features and operator comfort customers need. As a system, these two machines conserve resources by burning less fuel, resulting in reduced emissions and cost savings for customers. In addition, 98 percent of the 992K is recyclable or reusable at the end of life.

NEW ENGINES OFFER IMPROVED FUEL EFFICIENCY

New C4.4 and C6.6 engines, designed to meet Tier 4 Interim and EU Stage IIIB emission standards, deliver improved fuel efficiency and reduced emissions, while also lowering the cost of ownership through increased productivity. They operate at reduced noise levels, increasing operator comfort and decreasing noise pollution. The engines also were developed using virtual product technology, which reduced emissions and energy used during development.

↑ 20%

Customer Materials Efficiency

PRODUCTS, SERVICES & SOLUTIONS GOAL

Increase customer materials efficiency by 20 percent.

OVERVIEW

Remanufactured, rebuilt and certified used parts provide cost savings to our customers and help us achieve our goal of using materials more efficiently. Retrofits and upgrades provide significant customer benefits through the avoidance of obsolescence of older generation parts.

PERFORMANCE SUMMARY

We work to enable our customers to conserve and reuse resources.

PROGRESS HIGHLIGHTS

COMPUTER AIDED EARTHMOVING FOR LANDFILL EFFICIENCY

Caterpillar's Computer Aided Earthmoving System (CAES) enables the re-engineering of landfill site planning and production processes from the machine cab. CAES is available on compactors and track-type tractors for use in landfills. When installed on a compactor, the system indicates to the operator when effective compaction has been achieved. Operators of track-type tractors receive real-time grade and slope information to better utilize cover soil, minimize airspace consumption and work more efficiently with the site plan to reduce costs. CAES also allows the identification of site-specific storage areas for materials such as hazardous waste, medical, industrial, organic and others.

REDUCE WASTES WITH NEW HYDO™ ADVANCED OILS

Caterpillar has recently introduced a new class of hydraulic oils, HYDO™ Advanced SAE 10 and SAE 30 fluids. These advanced fluids are designed from premium additives and higher-quality base oils for optimal protection and performance of all Caterpillar machine hydraulic systems. These new oils extend the drain interval to 6,000 hours, two to three times the previous drain interval. Cat® HYDO Advanced fluids reduce owning and operating costs, increase uptime, reduce oil consumption and disposal costs and extend the life of machine components.

LONGWALL SHEARER DELIVERS HIGH PRODUCTION

The Cat® EL3000 Longwall Shearer mines mid-to-high seams with a high production capacity of more than 5,500 tons (5,000 metric tons) per hour. Features such as advanced automation and monitoring, along with the easily upgraded design, deliver long machine life while allowing customers to take advantage of the latest performance-enhancing updates.

DURABLE EMD SD70ACE LOCOMOTIVE DESIGNED FOR REBUILD

The advanced technologies of the Electro-Motive Diesel (EMD) SD70ACE locomotive provide safety, reliability and sustainability solutions for mining operations and delivery of minerals to market. Safety features include the crashworthy QuietCab, which is compatible with all cab signaling and safety systems. Simplified maintenance processes, a longer maintenance interval, advanced diagnostics and remote monitoring capabilities increase reliability. The fuel-efficient machine delivers more than 600 ton-miles per gallon (230 tonne-kilometers per liter). This durable machine is in a line of locomotives that last 40 years or more, and can be rebuilt reusing 80 percent of the core components to extend locomotive life.

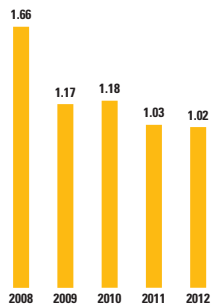
IMPROVED PERFORMANCE FROM A NEW FELLING HEAD

Improvements to the performance and durability of the HF201B Felling Head make it an ideal match for use with Cat® track feller bunchers. The felling head's weight has been reduced by 900 pounds (408 kg) and redistributed to extend head life and reduce operator fatigue. Simplified hydraulic plumbing allows for easier hose maintenance and decreases the opportunity for leaks. The grab and accumulator arms have been redesigned with single cylinders, reducing hydraulic flow demand on the carrier by 40 percent and adding to the head's durability.

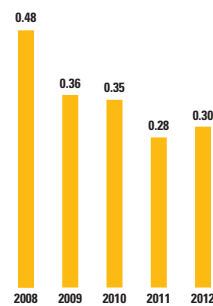
Performance At-A-Glance

WORKPLACE SAFETY

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



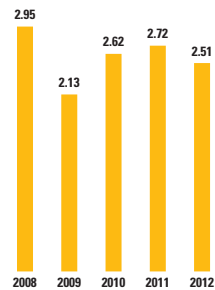
Lost-Time Case Frequency Rate (LTCFR)
(Lost-time injuries per 200,000 hours worked)



1. Data does not include facilities acquired after June 1, 2011, Caterpillar Japan Ltd — Direct Dealer operations or Electro-Motive Diesel (EMD) operations.
2. Data prior to 2012 has been restated due to a) acquisitions, b) data updates realized from improved accuracy, c) divestitures.
3. Based only on renewable energy. Alternative energy will be included in the future.
4. Data does not include Progress Rail or EMD operations.
5. Data does not include Progress Rail, EMD or Solar operations.

ENVIRONMENTAL IMPACT^{1,2}

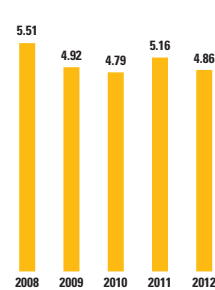
Absolute GHG
(Absolute million metric tons of CO₂e)
(Baseline: 2006)



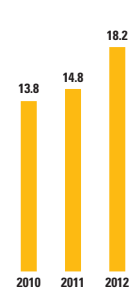
Percent Recycled
(Absolute pounds recycled waste/
absolute pounds total waste) x 100



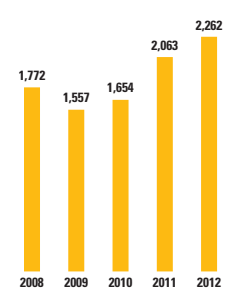
Water Use
(Absolute billion gallons used)
(Baseline: 2006)



**Percent Alternate/
Renewable Sources³**
(Renewable electrical energy use/total
electrical energy use) x 100

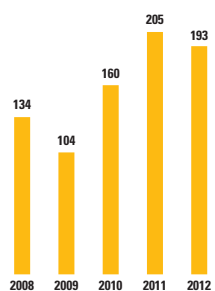


Energy Efficiency
(Dollars of revenue/absolute
gigajoules energy use)
(Baseline: 2006)



REMANUFACTURING (REMAN)^{2,5}

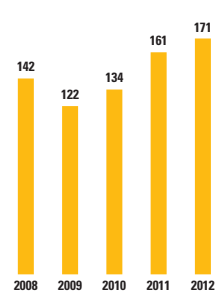
Reman Business Growth
(Percent revenue increase over 2001 base)



**Reman End-of-Life
"Take Back" Percent**
(Actual end-of-life returns/eligible
returns) x 100

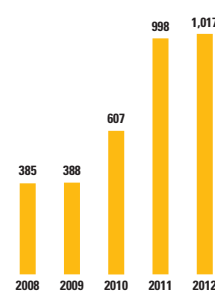


**Reman End-of-Life
"Take Back" by Weight**
(Millions of pounds of end-of-life
material received)



CAT® CERTIFIED REBUILD⁴

**Cat® Certified Rebuild
Business Growth**
(Percent revenue increase over 2001 base)



External Advisors & Comments

Our thanks to the advisory council of experts who provided their comments on Caterpillar's sustainability progress. Inclusion below indicates they provided feedback; it does not indicate they endorse the contents of the report. Comments below are advisory in nature and do not necessarily reflect corporate policy.

LUKE DANIELSON

Sustainable Development Strategies Group

BRUCE M. EVERETT

Professor, The Fletcher School, Tufts University

BRADLEY GOOGINS

Professor, Carroll School of Management; Former Director, Center for Corporate Citizenship, Boston College

"Caterpillar, like all global companies today, faces a world of relentless change, incredible technological breakthroughs and ferocious competition, all of which call for an equal dose of innovation. It is only through continuous adaptation and the leading edge of innovation that business today can compete and contribute to a sustainable world. Leading companies that are approaching sustainability as a value driver are rediscovering that innovation, the unique asset core to any company, can be strategically transferred and adapted to social and environmental issues, bringing a potent new force for good to business and society."

STEPHANIE HANFORD-HASS

President, Connectivity Consulting, LLC

"Kudos to Caterpillar for focusing on innovation and technology as a key driver for sustainability. Moving beyond efficiency, toward significant progress, demands applied creativity in both the ways we view our challenges, as well as the ways we aspire to tackle them. Innovation, to me, has many facets, namely technological, behavioral and environmental. I hope that when Caterpillar approaches its sustainability challenges, it seeks to secure its place in the market by focusing not only on today's challenges but on those that its customers and future customers will have for many years to come."

STUART L. HART

S.C. Johnson Chair in Sustainable Global Enterprise, Johnson Graduate School of Management, Cornell University

"While not flashy, Caterpillar, through its focused and concerted efforts to create more eco-efficient, safe and productive machinery, has raised the world bar when it comes to construction and new infrastructure development."

THOMAS LOVEJOY

Biodiversity Chair, Heinz Center for Science, Economics and the Environment

"Looking ahead, there will be a need for extensive ecological restoration to conserve biodiversity, bring back ecosystem services and draw carbon dioxide out of the atmosphere to incorporate into ecosystems. Cat® machines are already being used for such purposes and will be needed even more widely."

MARK B. MILSTEIN

Professor and Director, Center for Sustainable Global Enterprise, Cornell University

WILLIAM R. MOOMAW

Professor and Director, Center for International Environment and Resource Policy, The Fletcher School, Tufts University

KEVIN SWEENEY

Center for Responsible Business, Haas School of Business, University of California, Berkeley

"Caterpillar assumes its heavy machines will be rebuilt two or three times over their lifetime — they embrace the notion at the design stage. This is exactly how we should be thinking about production. It applies to apparel, household items and, especially, heavy machinery."

WILLIAM A. WALLACE

Past President and Member of the Governing Board, Engineers Without Borders — USA

DURWOOD ZAEKE

President, Institute for Governance & Sustainable Development; Director, International Network for Environmental Compliance and Enforcement

Our Affiliations

Dow Jones Sustainability Indexes

Included since 2000; sector leader 2006-2007-2008-2010
sustainability-index.com

Asia-Pacific Partnership on Clean Development and Climate

Solar Turbines is a task force member for the Asia-Pacific Partnership on Clean Development and Climate, an innovative effort to accelerate the development and deployment of clean energy technologies.
asiapacificpartnership.org

Business Council for Sustainable Energy

Solar Turbines is a member of the Board of Directors of the Business Council for Sustainable Energy, which promotes clean energy technologies as solutions to economic, environmental and national security challenges.
bcse.org

Business Roundtable

Caterpillar is a member of the Business Roundtable, which supports sustainable development through its member companies in addressing a vast range of environmental, social and economic issues to help ensure a sustainable future.
businessroundtable.org

Diesel Technology Forum

Caterpillar is a member of the Diesel Technology Forum, a leading resource and educator on the importance and unique value of diesel engines, fuels, equipment and emissions control technology.
dieselforum.org

Energy Technologies Institute

Caterpillar is a member of the Energy Technologies Institute, a U.K.-based public-private organization focused on projects that create affordable, reliable, clean energy for heat, power and transport.
energytechnologies.co.uk

The Nature Conservancy

Caterpillar has an active role on the International Leadership Council and, through the Caterpillar Foundation, became the lead corporate donor in the Great Rivers Partnership Project in 2005.
nature.org

Opportunity International

Through the Caterpillar Foundation, Caterpillar collaborates with Opportunity International to provide microfinance loans, savings, insurance and training to over four million people working their way out of poverty in the developing world.
opportunity.org

Tropical Forest Foundation

Caterpillar became a founding member of the Tropical Forest Foundation in 1990. The Tropical Forest Foundation works to advance environmental stewardship, economic prosperity and social responsibility through sustainable forest management.
tropicalforestfoundation.org

U.S. Green Building Council

Caterpillar is a member of the U.S. Green Building Council, a nonprofit community of leaders working to make cost-efficient and energy-saving buildings available to everyone within a generation.
usgbc.org

Woody Biomass Coalition

Caterpillar is a member of the Woody Biomass Coalition, which provides advocacy, education, information and outreach to public and private entities to promote research, development and funding for sustainable woody biomass utilization and markets in the U.S.
woodybiomass.net

World Business Council for Sustainable Development (WBCSD)

Caterpillar is a member of the World Business Council for Sustainable Development, a CEO-led, global association of some 200 companies dealing exclusively with business and sustainable development.
wbcsd.org

World Food Programme

Through the Caterpillar Foundation, Caterpillar collaborates with the World Food Programme, the world's largest humanitarian agency, to fight hunger worldwide, delivering food wherever and whenever it is needed most.
wfp.org

World Resources Institute

Caterpillar's Chairman and CEO is a member of the Board of Directors of the World Resources Institute, an environmental think tank that goes beyond research to find practical ways to protect the earth and improve people's lives. The Caterpillar Foundation is supporting the World Resources Institute to catalyze the development of smart cities, which promote infrastructure development that is economically and environmentally efficient and serves as a model for sustainable development.
wri.org