We live in times when the severity and enormity of economic challenges could so easily divert us from taking a long-term view—from seeing the big picture.

Our business is all about helping our customers solve big problems. Working together, we make sustainable progress possible.

This report provides an overview of our economic, environmental and social accomplishments, and highlights some of the progress of our customers, dealers, suppliers and employees as they strive to meet the challenges of sustainable development.
Over the past five years, in the face of strong global economic growth and unprecedented customer demand, Team Caterpillar remained steadfast in our commitment to sustainable development. Even as our top-line sales and revenues grew by approximately 25 percent over the past two years, our environmental footprint showed improvements.

Our water consumption dropped while our percent of recycled material jumped to record highs (from 65 to 78 percent). Our total greenhouse gas (GHG) emissions remained nearly steady with an increase of just over one percent. As we met our initial environmental goals, we set aggressive aspirational goals for 2020. To that end, the Caterpillar Production System is helping us eliminate waste and deliver dramatic improvements in employee safety. We continue to invest in cleaner and more efficient products. And we increased our involvement in global policy advocacy.

Now the economic pendulum has swung in the other direction. Nearly every industry we serve is in economic crisis. With sales volumes declining, we’ve been forced to cut spending, reduce employment and scale back our investments in research and development. These circumstances might tempt a detour in our sustainable development journey. But we believe the current economic situation makes the pursuit of sustainability even more important to our business. Using energy, materials and water more efficiently, and reducing waste, creates both economic and environmental benefits. As just one example, this report will not be printed. This clearly provides an economic benefit, but there are certainly environmental benefits too.

Our customers—like consumers everywhere—are looking for more value from Caterpillar’s products and services. They want engines that burn less (or different) fuel, machines that work more productively and job sites that are more efficient. Some want to repair, rebuild and upgrade their current equipment instead of buying new. Team Caterpillar has these solutions.

Sustainable development continues to present a big opportunity for business growth and profitability. In 2009, we’ll strive to demonstrate this to our stakeholders.

In 2008, Team Caterpillar progressed toward our aspirational goals. Our workplaces are safer than ever, with key safety metrics improving year over year. More than a third of our facilities had zero recordable injuries in 2008, a remarkable achievement in a year of record production levels. New facilities are being designed to meet Leadership in Energy and Environmental Design (LEED) criteria, and a pilot project is underway for our corporate headquarters in Peoria to gain the LEED silver standard for existing buildings.

In our facilities, energy efficiency continues to be a focus. Record production levels pushed our GHG emissions slightly higher. Our aspirational goals in this area are aggressive—to increase energy
efficiency by 25 percent, reduce absolute GHG emissions by 25 percent and use alternative or renewable sources for 20 percent of our energy needs. We are persistently challenging ourselves to seek innovative ways to meet these goals.

We continue to work to help our customers achieve their goals in the areas of material and energy efficiency, emissions reductions and job site safety. We’re building on our existing portfolio of products and services—Cat Reman, clean diesel engines, retrofit solutions for older machines and engines, advanced safety features and our ability to convert waste gases into clean, useful energy—and continue to invest in research and technology to develop new, sustainable solutions. For example:

New products
We unveiled our AC electric drive mining trucks at MINExpo 2008 and introduced our new Cat D7E electric-drive track-type tractor—the first of its kind—at CONEXPO/CON-AGG 2008. When it becomes commercially available in 2009, the Cat D7E will burn less fuel per hour than other tractors, reducing emissions. It will consume fewer resources—parts and fluids in addition to fuel—over its working life, and move about 25 percent more material per gallon of fuel burned when compared to conventional drive systems.

New solutions
We formed a new division in 2008 focused exclusively on electronics and connected worksite solutions. Featuring products like AccuGrade™ machine control and guidance systems and Product Link™ fleet management tools, the technology brings together job site information, machine data, operator stations and office functions to help customers improve operational efficiencies, reduce waste and drive down fuel consumption and emissions.

New alliances
We announced a groundbreaking alliance in 2008 with BHP Billiton, the world’s largest diversified natural resources company. Together, we’re developing an autonomous mining haulage system that will minimize environmental impact, improve mine site efficiency and increase overall mine safety. We also formed a joint venture with Trimble, VirtualSite Solutions, to create information-rich worksites that enable customers to manage their equipment fleets more efficiently and safely, reduce fuel consumption and lower operating costs.

Also during the year, we realigned our product and marketing businesses along key customer industries: mining, excavation, earthmoving, quarry and aggregates, and waste. Doing so enables us to get closer to those we serve—to better understand their needs and design solutions to address them. It will also allow us to customize solutions to meet specific industry needs.

That’s our major focus for 2009 and beyond—continuing to make sustainable progress possible for our customers.
global GHG emissions. We believe coordinated global action is the only effective way to meet this challenge.

Ongoing research and development (R&D) is key to solving energy- and climate-related challenges. Tackling these issues will be key to helping us emerge from the current recession. It’s imperative that governments include increased R&D funding in their economic stimulus packages. We stand ready, with industry leading technologies, to respond to the increase in sustainability initiatives likely to come from these efforts—everything from advances in clean coal technology and combined heat and power applications to the increased use of rail transport and remanufacturing.

The depth and duration of the current economic crisis is still unknown. Our first priority during these trying times is ensuring the long-term viability of our company. Fortunately for Team Caterpillar and all our stakeholders, the sustainability of our business and the sustainability of the world economy are deeply intertwined. That’s why both can emerge even stronger from the current recession.

James W. Owens
Chairman and CEO, Caterpillar Inc.
For more than 80 years, Caterpillar Inc. has been making progress possible and driving positive and sustainable change on every continent. With 2008 sales and revenues of $51.324 billion, Caterpillar is the world’s leading manufacturer of construction and mining equipment, diesel and natural gas engines and industrial gas turbines. The company also is a leading services provider through Cat Financial Services, Cat Remanufacturing Services, Cat Logistics Services and Progress Rail Services.

We are proud to be a leader in building the world’s infrastructure, and in enabling progress for millions of people around the globe. We manufacture more than 300 products in 23 countries and serve customers in nearly 200 countries. We are headquartered in Peoria, Illinois.
Sustainability Roadmap

Our ambitious 2020 goals indicate where we want to go. This roadmap shows our journey, with key milestones along the way.
Sustainability
Vision, Mission and Strategy

We will execute our strategy by working to meet our long-term aspirational goals (see page 11). We set yearly targets where possible and are working on additional targets to help us measure our annual progress (please see pages 37–48).

Vision
Our vision is a world in which all people’s basic requirements—such as shelter, clean water, sanitation and reliable power—are fulfilled in a way that sustains our environment.

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

Strategy
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 people, the environment and the economy. This means that we leverage resources, including technology and innovation to:

- Promote and protect individual safety and well-being
- Provide employment, education and training
- Minimize the use of energy, materials, water and land
- Maximize recycling
- Minimize emissions
- Optimize the use of renewable resources
Embedding Sustainable Development In Our Business

We are working to embed sustainable development into our day-to-day business and are devising metrics to chart our progress. We are pursuing activities in three critical areas.

### Sustainable Development Critical Success Factors (CSFs)

<table>
<thead>
<tr>
<th>CULTURE</th>
<th>OPERATIONS</th>
<th>BUSINESS OPPORTUNITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a culture of sustainable development in all our business units and in all our daily work.</td>
<td>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—see pages 37–48 for examples.</td>
<td>We are working to embed sustainability into our Cat brand portfolio, new product development processes and our technologies. Our new Sustainability Council—made up of business leaders—will drive growth in sales of products and services that help customers meet their sustainability challenges.</td>
</tr>
</tbody>
</table>

**Progress**

Sustainable development (SD) questions on our employee opinion survey measure awareness and understanding of sustainability. We continue to foster a corporate culture of transparency, disclosure and engagement. In 2008, we used social media tools to further engage employees through a dedicated internal website. We hosted an SD summit for global process owners, established “one safe source” for SD information and created an SD blog for employees.
**Caterpillar Enterprise Goals To 2020** *(Baseline 2006)*

Established in 2007, these aspirational, enterprise-wide goals focus on sustainability in every aspect of our business.

### 2020 Goals for Operations

<table>
<thead>
<tr>
<th>Goal</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce recordable workplace injury rates to 0.6 and lost-time case rate due to injury to 0.15</td>
<td>↓</td>
</tr>
<tr>
<td>Increase energy efficiency by 25%</td>
<td>↑</td>
</tr>
<tr>
<td>Reduce absolute greenhouse gas emissions from existing facilities by 25%</td>
<td>↓</td>
</tr>
<tr>
<td>Use alternative/renewable sources to meet 20% of our energy needs</td>
<td>20%</td>
</tr>
<tr>
<td>Eliminate waste by reducing waste generation and reusing or recycling all that remains</td>
<td>0</td>
</tr>
<tr>
<td>Hold water consumption flat</td>
<td>-</td>
</tr>
<tr>
<td>Design all new construction to meet Leadership in Energy and Environmental Design (LEED) or comparable green building criteria</td>
<td>LEED</td>
</tr>
</tbody>
</table>

### 2020 Goals for Products, Services and Solutions

<table>
<thead>
<tr>
<th>Goal</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide leadership in the safety of people in, on and around our products</td>
<td>✔</td>
</tr>
<tr>
<td>Reduce customer greenhouse gas emissions by 20%</td>
<td>↓</td>
</tr>
<tr>
<td>Increase customer energy efficiency by 20%</td>
<td>↑</td>
</tr>
<tr>
<td>Increase customer material efficiency by 20%</td>
<td>↑</td>
</tr>
</tbody>
</table>


Energy and Climate, Growth and Trade, People and Planet

These are the Big Picture areas where Caterpillar can contribute to sustainable development. This section explores how our customers, dealers, suppliers and employees are using our equipment and services, as well as efficiencies in operations, to make sustainable progress possible around the world.
Energy- and climate-related matters are major challenges facing our world. We are committed to reducing our greenhouse gas (GHG) emissions and helping our customers reduce theirs. Our focus is on increasing efficiency and innovation in all aspects of our operations, products and services and, where possible, developing products that run on renewable or alternative fuels. We will also seek new applications for our clean diesel technologies. We believe international, economy-wide, market-based solutions are needed for meaningful global GHG reductions. These efforts should be focused on areas where they will have the greatest impact.
Exposed to the persistently powerful Atlantic winds, the island of Ireland is exceptionally well positioned to exploit wind energy. Caterpillar is among those taking advantage of this new energy source. In May 2008—working with our specialist partner Airtricity—our FG Wilson facilities in Northern Ireland became the first Caterpillar production site to get all its electricity from renewable sources. Our goal is to use alternative or renewable sources to meet 20 percent of our energy needs and reduce greenhouse gas emissions from existing facilities by 25 percent, by 2020. Our success in Northern Ireland is one step toward reaching this goal.
The mining industry strives to responsibly produce the minerals and metals that society needs. As a business partner, our mantra is: "Mining safely. Mining more. Mining right." This is the philosophy behind our next generation of mining trucks, previewed at MINExpo 2008. New safety features include: wider, diagonal stairways and powered access systems, integrated camera systems that give the operator an all around view and additional ground level service points for safer maintenance.
Africa’s economic powerhouse, South Africa, is desperately short of power. Infrastructure investments are needed to close the 4,000 MW gap in electricity supply and demand—more electricity than it takes to power the vibrant metropolis of Johannesburg. To keep their production running, businesses are turning to Caterpillar’s South African dealer, Barloworld Equipment, which in 2008 supplied Cat® electrical generating equipment capable of producing 500 MW.
Upgrading older, less-efficient diesel locomotives to meet cleaner emission standards and improve fuel efficiency is one way we help our rail customers meet their long-term sustainability goals while improving their operating efficiency. Progress Rail Services is currently developing a series of locomotives that range from 1,400 horsepower to over 4,000 horsepower using low-emission Cat® engines. These locomotives will allow our customers one reliable source to meet all their locomotive needs. Currently, the units are being tested and will be available in 2009.
RECYCLING COKE GAS INTO ENERGY

China

Turning coal into coke—used in steel-making blast furnaces—creates gases, which are often released to the air, missing an opportunity to turn waste into energy and at the same time reduce emissions. Our subsidiary, Solar Turbines, is helping customers use the gases as a fuel for highly efficient combined heat and power (CHP) generation. Solar™ turbines are helping Chinese coke makers recycle the gases into much-needed energy, while reducing overall impact on the environment. In 2008, Solar customer Jinneng, a coal gasification company from the Shandong Province, became the first company outside the U.S. to win the U.S. Environmental Protection Agency’s (EPA) International CHP Award. This award is given to a CHP system that demonstrates considerable fuel and emissions savings over comparable forms of conventional electrical and thermal energy generation. The U.S. EPA estimates that this CHP system effectively reduces carbon dioxide emissions by 40,000 tons per year.
LANDFILL POWER FOR PARIS

Paris, France

Landfills produce methane gas when organic matter decomposes. Methane is a greenhouse gas (GHG) and a valuable fuel. Outside Paris, France, a Mars™ 100 gas turbine manufactured by Solar Turbines transforms landfill gas into electricity. The turbine reduces GHG emissions equivalent to 58,000 tons of CO₂ per year.
A prerequisite of manufacturing success is the efficient flow of goods and materials, which also protects the environment by minimizing waste. Cat Logistics helps clients streamline their supply chains and manage their distribution networks more effectively. We serve clients globally, leveraging our rich logistical experience for their benefit. Cat Logistics is committed to using SmartWay carriers for transportation in North America. SmartWay haulers work in partnership with the U.S. Environmental Protection Agency (EPA), which provides advice on how to improve efficiency and reduce emissions.
Cat Financial Services helps customers purchase our products by providing loans. Nowhere is this more significant for sustainability than in energy generation, where Cat Financial is doing important work, providing much-needed financing for exploiting renewable energy from landfill gases. For example, in 2008 we financed the sale of two Cat G3520 engines to a Greenville, South Carolina landfill methane-to-energy project. This project won an award from the U.S. Environmental Protection Agency Landfill Methane Outreach Program. Our engines are used around the world to generate electricity by burning methane gas generated from landfills.
Caterpillar provides the technologies, products and services that help developing countries build infrastructure. Our customers in emerging economies extract valuable resources and bring them to market. In this way, jobs are created that can lift people from poverty to economic independence and long-term sustainability.
Boost productivity, improve worker safety and save money. These are just some of the benefits of Cat Connected Worksite Solutions that use global positioning systems. Combined with specialized software, the systems are used on large sites to track equipment and activity, maintaining an unprecedented level of control and efficiency. This total solution can help our customers stay competitive.
REVOLUTIONARY AND ENVIRONMENTALLY EFFICIENT

Worldwide

We have created the most fuel efficient, cost effective and productive track-type tractor in its class: The Cat D7E. The immense power and efficiency are delivered through an electric traction drive, never before used in this type of tractor, which increases dozing efficiency by 25 percent (cubic yards/gallon) and lowers lifetime operating costs by an average of 10 percent, compared with its predecessor. The D7E uses fewer parts, less fluids and up to 30 percent less fuel, helping our customers cut costs and reduce emissions.
Caterpillar can upgrade its long-lived models to meet current emissions standards. This saves money for our customers and helps them keep working with their existing machines. For example, the Cat D10N track-type tractor—first introduced in 1987 and used in heavy construction and mining—can be repowered to meet emissions equivalent to U.S. Environmental Protection Agency Tier 3 emissions standards. The upgrade results in significant reductions in emissions. The first pilot machine in the field included filters that reduced diesel particulates by an additional 90 percent.
Remanufacturing is an advanced form of recycling that returns end-of-life parts to their original same-as-new condition. Cat Reman provides customers with service parts that offer like-new reliability and durability at a fraction of the cost of new, while reducing waste and minimizing the need for raw materials to produce new components. Cat Reman uses a unique core return process that includes a financial deposit incentive to encourage return of used cores for remanufacture or responsible disposal. The Cat Reman business model has been highly successful, resulting in a world class end-of-life parts return rate of 93 percent. The company now has 17 remanufacturing facilities around the world. In 2008, the Cat Reman program was launched in Russia, our biggest geographical market. This is the country’s first commercially viable take-back program. Cat Reman looks to the future to offer innovative and cost-effective solutions to a growing global audience.
Cat products are built to be re-built. Under the Cat Certified Rebuild program, Cat dealers return used Cat equipment to their like-new state using a combination of new, Cat remanufactured and dealer rebuilt parts. Component Rebuild Centers—operated by dealers—provide customers with high quality, fully-certified rebuilds that include the latest technical updates for Cat equipment. The rebuilds provide customers with as-new equipment quickly, saving money and resources.
MINIMIZE PACKAGING, MAXIMIZE SAFETY

Minimal but effective packaging is essential when shipping heavy but delicate goods to global destinations. The challenge is to provide adequate protection (preventing unnecessary waste from damage), while reducing weight (minimizing transport emissions and wasted materials), and safeguarding employees from injury. Our designers are taking a fresh look at every aspect of our packaging—material choice, reuse, recyclability and ease of handling to protect those who move the bulky packages or extract heavy parts. We are already seeing substantial cost savings and less waste from such designs.
Ensuring Cat® engines continually produce cleaner power is one way we help our customers improve their environmental performance, while meeting mutual sustainability goals. Sustainability is a factor in our concerted efforts to take our technology to a higher level of efficiency. Our developers are perfecting the next generation of essential engine components—such as fuel injection systems and integrated control software—to further reduce emissions while improving efficiency. While these advances will meet impending more stringent non-road emission standards (U.S. Tier 4, EU Stage IIIB, Japan Step 4), our customers stand to benefit from our broader efforts to boost the efficiency of the whole machine and the entire worksite (see Cat Connected Worksite Solutions on page 23).
RECYCLING THE ROAD

There is no shortage of aggregate in the vast southwest African country of Namibia. But when renewing a major highway, why waste valuable resources when you can simply recycle the old road using the Cat RM500 rotary mixer? This is what is happening on the strategic economic artery connecting land-locked Botswana, Zambia and Zimbabwe to the deep-water port of Walvis Bay.
Helping societies provide sustainable livelihoods for their people is at the core of what we do through our products, services and solutions. We might be known for our machines and engines, but our spirit of innovation comes from our employees. It is our people who come up with the ideas and provide the services that create opportunities—social, environmental and commercial—for our global customers. *Our Values in Action*, Caterpillar’s Worldwide Code of Conduct, guides our behavior.
CREATING NEW RICE FIELDS

Jilin Province, China

Growing rice requires regular irrigation and level land, something the villagers of Jilin Province in northeastern China lacked. But the local authorities, working with Cat dealer WesTrac, accelerated the schedule to create new rice fields that are expected to produce an additional 3.6 billion pounds of rice a year. This is enough to feed millions of people and boost the incomes of almost a quarter million local farmers.

Using the right equipment for the right application, the rice fields were prepared quickly and efficiently. Inefficient local trucks were replaced by Cat 627G wheel tractor-scrapers, capable of leveling land with precision: loading, hauling and flattening.
THE ROAD TO SUSTAINABLE PROGRESS BEGINS WITH A ROAD

Bolivia

Bolivia is one of the most underdeveloped countries in South America. Poor roads hamper trade and transport, limiting access to healthcare and commerce for many in Bolivia's rural population. That's why Mano a Mano International Partners, a Bolivian and U.S. partnership that promotes health, education and economic development, turned to the local Cat dealer for help. Supported by Team Caterpillar and a donation from the Caterpillar Foundation, Mano a Mano has built new roads and improved existing routes, providing greater access to healthcare and helping to increase standards of living for many rural Bolivians.
TRAINING OPERATORS TO BE EFFICIENT

Worldwide

The manner in which our equipment is operated can improve fuel efficiency by up to one-third. Trained operators will help our customers reduce emissions and save money by using less fuel. We have developed a one-day course for customers called Cat Eco Operator Training™. The program teaches operators to maximize fuel efficiency, lower emissions and maintain high productivity while working safely.
Following simple rules and standard processes improves safety, especially when employees help make the rules that keep them safe. That is the case in Caterpillar’s Monterrey facility in northern Mexico. Despite its fully-functioning safety program, concerns were raised when recordable injuries continued to rise in the first quarter of 2007, following poor performance the previous year. Comprehensive action was taken that put teams of employees to work identifying the reasons and devising a plan to address each. The result was both dramatic and immediate. In 2008, recordable injuries were reduced by 63 percent compared with 2007, contributing to a 95 percent improvement on the 2003 baseline. This solution is being replicated at our Torreon and Reynosa, Mexico facilities.
VALUING DIVERSITY

Worldwide

One factor of our global success is the rich diversity of people who work at Caterpillar. We value our people for everything that diversity brings to innovation, originality, local understanding and experience. Equally, we value all that we have in common and promote our unity of purpose through eight affinity groups where employees can share their experiences—whether based on gender, ethnicity or life experience. It is a healthy business culture that celebrates the unique skills, abilities, experiences and cultural background of all within Team Caterpillar.
At Caterpillar, sustainability begins within our own operations. We have established high performance standards for our facilities that extend beyond compliance with laws and regulations. Proactive implementation of these standards demonstrates our commitment to sustainability leadership in our industry.

Establishing sustainability targets for products, services and solutions is also important for our growth and our focus on substantial, sustainable and profitable actions. In 2009, plans include identifying business models for the industries we serve that will establish focused sustainability targets for specific segments of our business and drive additional activity to support sustainable development.

The following pages provide progress of our performance in 2008 against our aspirational, long-term goals.
## Health and Safety

### Operational Goal
Reduce recordable workplace injury rate to 0.6 and lost-time case rate due to injury to 0.15

<table>
<thead>
<tr>
<th>Goal</th>
<th>Performance Summary 2008</th>
<th>Progress</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operational Goal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recordable Injury Frequency (RIF)</strong></td>
<td>1.66</td>
<td>25% improvement from 2007</td>
<td>Our workplaces are safer today than ever before with more than half our facilities reaching zero recordable injuries.</td>
</tr>
<tr>
<td><strong>Lost-Time Case Frequency (LTCFR)</strong></td>
<td>0.48</td>
<td>32% improvement from 2007</td>
<td>Vision Zero: We are committed to creating a zero-injury workplace.</td>
</tr>
<tr>
<td>(Recordable injuries per 200,000 hours worked)</td>
<td></td>
<td>73% improvement from 2003</td>
<td></td>
</tr>
<tr>
<td>(Lost-time injuries per 200,000 hours worked)</td>
<td></td>
<td>83% improvement from 2003</td>
<td></td>
</tr>
</tbody>
</table>

We are assessing all jobs for safety and ergonomic risk. In 2008, we assessed 87% of the jobs.

This is excellent progress, given the ergonomic risk initiative was only launched in the first quarter of 2008.

We will complete our assessments and take corrective actions based on the risks identified.

### SIGNING FOR SAFETY
After a contractor was injured working in the cafeteria of AsiaTrak and Asia Power System facility in Tianjin, China, a team of employees was tasked with identifying ways to improve contractor safety. A Safety Qualification Requirement List was created and contractors now sign an agreement that outlines safety expectations, rules and penalties.

### SAFER AND RECYCLED PACKAGING
An innovative, recyclable packaging system for engine parts at our plant in Grenoble, France, reduced handling by 90 percent, which dramatically reduced the ergonomic risks for employees. Environmental and cost savings include 23 percent fewer truck trips (saving $67,000 a year) and recycling savings of $10,000 a year.
## Health and Safety

### Goals

**Products, Services and Solutions Goals**

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

<table>
<thead>
<tr>
<th>Goals</th>
<th>Performance Summary 2008</th>
<th>Progress</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operator and jobsite health and safety</strong> is promoted at SAFETY.CAT.COM™. This dedicated website—in English, French, Spanish and Portuguese—helps our customers use our products safely and improves their safety performance.</td>
<td></td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

**JOYSTICKS REDUCE FATIGUE AND IMPROVE SAFETY**

A pair of joysticks has replaced 15 levers and a steering wheel in our new Cat M-series motor graders. This improves safety by simplifying control, reducing operator hand movements by up to 78 percent and providing better lines of sight.
## Greenhouse Gas Management

**Operational Goal**  
Reduce absolute greenhouse gas emissions from existing facilities by 26%

### Performance Summary 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Absolute million metric tons of CO$_2$eq (Baseline: 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>2.80</td>
</tr>
<tr>
<td>07</td>
<td>2.73</td>
</tr>
<tr>
<td>08</td>
<td>2.75</td>
</tr>
<tr>
<td>09</td>
<td>2.77</td>
</tr>
<tr>
<td>10</td>
<td>2.59</td>
</tr>
</tbody>
</table>

The increase from 2007 is due to higher production and expansions to existing facilities.

### Commentary

This is a new goal and reflects our determination to find innovative ways to reduce greenhouse gas emissions.

New goal was moved from: metric tons of CO$_2$ equivalent per million dollars of normalized revenue to absolute metric tons of CO$_2$ equivalent.

---

**HOT TO COLD ENGINE TESTING REDUCES GREENHOUSE GAS EMISSIONS**

Creative thinking by engineers at our Mossville, Illinois, facility cut the costs of testing engines and dramatically reduced the facility’s impact on the environment. Engineers devised ways to cut testing time by checking for leaks during assembly rather than during testing. This eliminates the need to run engines hot for long periods. The result: approximately $2,800,000 annual savings and no need for 33 tankers of diesel fuel (167,000 gallons).

**GERMAN TESTING PLANT CUTS ELECTRICITY USE**

Modifications to the cooling systems at Caterpillar’s marine engine testing facility in Kiel, Germany, have reduced the power needed to test each engine by 60 percent, with resulting reductions in electricity consumption and greenhouse gas emissions.
## Greenhouse Gas Management

### Goals

<table>
<thead>
<tr>
<th>Products, Services and Solutions Goals</th>
<th>Performance Summary 2008</th>
<th>Progress</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce customer greenhouse gas emissions by 20%</td>
<td>See Cat Connected Worksite Solutions story (page 23). See Training Operators to be efficient story (page 34).</td>
<td>Customers are demanding greater fuel efficiency and using our technology to help them reduce GHG emissions.</td>
<td>We want to help our customers achieve their emissions reduction goals too. Their needs provide potentially valuable business opportunities for us.</td>
</tr>
</tbody>
</table>

### IDLE SHUTDOWN

Idling engines waste fuel and create unnecessary emissions. Caterpillar is working to ensure its new models will include the option of an automatic idle shutdown, without jeopardizing efficiency or safety.

### BOOSTING OUTPUT WITH RECOVERED WASTE HEAT

Large engines that run on natural gas are used to generate electricity. Caterpillar is optimizing technology that recovers waste exhaust heat to generate extra electricity with no extra fuel. The technology could reduce greenhouse gas emissions by 15 percent.

### CHP SYSTEMS IMPROVE EFFICIENCY AT UTC

Solar Turbines is working with UTC Power to install combined heat and power units at United Technology Corporation’s business units, Hamilton Sundstrand, Pratt & Whitney and Sikorsky.
Materials Efficiency

Goals

Operational Goal
Hold water consumption flat

Performance Summary 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Absolute billion gallons used</th>
<th>(Baseline: 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>6.50</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>6.02</td>
<td>5.30</td>
</tr>
<tr>
<td>08</td>
<td>5.38</td>
<td>6.02</td>
</tr>
</tbody>
</table>

Progress

Although water use increased from 2007 to 2008, use in 2008 represents a 10% reduction from the 2006 baseline.

Commentary

Expanded tracking and reporting mechanisms were instituted in 2008. We are utilizing 6 Sigma to define a global water plan, including water use and discharge, and to provide targeted tools and best practices to enable the enterprise to meet the 2020 goal.

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

(This is clarification of the language used for this goal in our 2007 Sustainability Report, which stated “Send zero waste to landfills by reducing, reusing and recycling waste.”)

Goals

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

Performance Summary 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent recycled (absolute pounds recycled waste / absolute pounds total waste) x 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>65</td>
</tr>
<tr>
<td>07</td>
<td>69</td>
</tr>
<tr>
<td>08</td>
<td>78</td>
</tr>
<tr>
<td>10</td>
<td>80</td>
</tr>
</tbody>
</table>

Progress

Great improvement was made from 2007 to 2008. If metals are included, our recycling rate in 2008 was 90%. This metric does include energy recovery from waste to energy incineration.

Commentary

We are making good progress with many dedicated recycling projects throughout Caterpillar.

The elimination of waste means we reduce the generation of waste as much as possible, we recycle what cannot be eliminated and for the remainder we find some type of beneficial reuse (such as waste to energy).
### Materials Efficiency (continued)

Note: Data does not include facilities acquired after January 1, 2008, or Progress Rail operations.

<table>
<thead>
<tr>
<th>Goals</th>
<th>Performance Summary 2008</th>
<th>Progress</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliminate waste by reducing waste generation and reusing or recycling all that remains</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Products, Services and Solutions Goals

- Increase customer material efficiency by 20%

  - See Cat G3520 engine story (page 21).
  - See Cat Connected Worksite Solutions story (page 23).
  - See Cat D7E story (page 24).
  - Began offering Cat Reman program in Russia (page 26).
  - See Cat RM 500 story (page 30).

- We are working to conserve and reuse resources. For example, technical improvements have enabled extended oil service intervals. We provide long-life and renewable oil filters.

- Remanufactured, rebuilt and Cat Certified Used parts provide cost savings to our customers and helps us achieve our goal of using materials more efficiently.

- See rail story (page 17), Reman story (page 26) and Rebuild story (page 27).

#### WASTE MINIMIZATION IN BELGIUM

Factory machines need to be greased for smooth operation. Operators at our plant in Belgium found approximately 90 pounds of grease in each drum was being wasted because the pump was failing to empty the container. They devised a special floating lid that was heavy enough to force out most of the product. This saves money on new grease and expensive disposal costs.

#### SOLAR RECYCLES WASTE SAND

Cleaning metal parts by blasting them with sand is essential for high-quality painting, but the process creates waste from the used sand. Caterpillar subsidiary, Solar Turbines, avoids the problem at its Texas facility by supplying a brick maker who uses the sand in its cinder blocks.

#### SAME AS NEW

A Caterpillar subsidiary, Solar Turbines’ facility in Tijuana, Mexico, remanufactures over 600,000 gas turbine parts annually. Employees disassemble components and assemblies, then return them to “same-as-new” condition.
**Alternative/Renewable Energy**

Note: Data does not include facilities acquired after January 1, 2008, or Progress Rail operations.

<table>
<thead>
<tr>
<th><strong>Goals</strong></th>
<th><strong>Performance Summary 2008</strong></th>
<th><strong>Progress</strong></th>
<th><strong>Commentary</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operational Goals</strong></td>
<td>Use alternative renewable sources to meet 20% of our energy needs</td>
<td>Individual projects have been developed, some are in operation (see wind energy example on page 14) and others have yet to be launched.</td>
<td>Through the 6 Sigma process, operational definitions and expanded tracking were instituted in 2008. Enterprise analysis tools are under development to evaluate renewable energy alternatives for the enterprise.</td>
</tr>
</tbody>
</table>

**IMPROVEMENTS IN INDIA REDUCE ENERGY NEEDS**

Caterpillar’s plant in Thiruvallur, India, has replaced electric extractor fans with natural ventilation systems (saving approximately 130 MWh annually) and improved the operating efficiency of its air conditioning system, reducing electricity consumption.
Energy Efficiency

Note: Data does not include facilities acquired after January 1, 2008, or Progress Rail operations.

Goals

Operational Goal
Increase energy efficiency by 25%

Performance Summary 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Intensity (Gigajoules per million dollars of revenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>750</td>
</tr>
<tr>
<td>07</td>
<td>709</td>
</tr>
<tr>
<td>08</td>
<td>686</td>
</tr>
<tr>
<td>09</td>
<td>680</td>
</tr>
</tbody>
</table>

Energy intensity is not the metric we intend to use in the future to measure the energy efficiency goal. We are working to define the correct metric.

Commentary

We are leveraging the Caterpillar Production System to define energy efficiency in high impact manufacturing disciplines. We will increase energy efficiency through a combination of improvements in process efficiency and implementation of new technologies.

Products, Services and Solutions Goals

Increase customer energy efficiency by 20%

MORTON LOGISTICS UPGRADES LIGHTING SYSTEM
Simple but thoughtful changes to lighting have helped the Morton, Illinois, facility of Cat Logistics reduce greenhouse gas emissions and save more than $500,000 a year on electricity. In the warehouse, inefficient lamps were replaced with new fluorescent models that consume up to 50 percent less energy. The number of lamps needed was dramatically reduced simply by shifting location from above the shelves to over the aisles.

GOING RADIANT
One of our manufacturing buildings in our East Peoria, Illinois, facility updated its manually-operated forced-air system with an automated system utilizing radiant heat from natural gas. As a result, the facility has cut energy costs by more than $500,000 annually, and reduced greenhouse gas emissions.

SOLAR HELPS HOSPITAL ATTAIN PLATINUM STATUS
A highly reliable, low-emission combined heat and power unit at the Austin Children’s Medical Center in Texas—using a Solar Turbines Mercury 50 turbine—has helped earn the center a world first for hospitals: Platinum status from the U.S. Building Council’s Leadership in Energy & Environmental Design (LEED) program.

Efficiency gains will vary by product, application and segment. We are working with our product groups and customers to define applicable metrics.

We offer training to our customer operators on how to use our products more efficiently. See story on page 34.
## Leadership in Energy and Environmental Design (LEED)

<table>
<thead>
<tr>
<th>Goals</th>
<th>Performance Summary 2008</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Operational Goals</strong>&lt;br&gt;Design all new construction to meet LEED or comparable green building standards.</td>
<td><strong>12</strong> Buildings/projects designed to LEED standards</td>
<td>The policy was established in 2008. Our progress is encouraging.</td>
<td>We are developing a LEED policy for existing buildings.</td>
</tr>
</tbody>
</table>

| | CORPORATE HEADQUARTERS PILOT PROJECT | CAT FINANCIAL HEADQUARTERS PROJECT |
| | BEIJING OFFICE PROJECT | CATERPILLAR SUZHOU CO., LTD PROJECT |
| | PERKINS SHIBAURA ENGINES WUXI CO., LTD PROJECT | |
Performance at a Glance

These graphs provide a snapshot of performance for key indicators. For a detailed discussion of performance against our aspirational 2020 goals, see pages 37–46.

**ENVIRONMENTAL IMPACT**

1. **Absolute GHG**
   (Absolute million metric tons of CO\textsubscript{2}eq)

2. **Water Use**
   (Absolute billion gallons used)

3. **Percent Recycled**
   (Absolute pounds recycled waste / absolute pounds total waste) \times 100

4. **Energy Intensity**
   (Gigajoules per million dollars of normalized revenue)

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**WORKPLACE SAFETY**

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

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

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1. Data does not include facilities acquired after January 1, 2008, or Progress Rail operations.
2. Data prior to 2008 has been restated due to: a) facility acquisitions and divestments, b) facility data updates realized from improved accuracy, c) updated conversion and emissions factors.
3. Percent recycled waste excludes the weight of metal, which is 100% recycled. Including metal raises the level to 90% in 2008.
Performance at a Glance

(continued)

REMANUFACTURING (REMAN)

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)

Emissions

Reman Reuse and Recycle Technology Projects
(6 Sigma based)

Certified Rebuild¹
(Percent revenue increase over 2001 base)

Solar™ Gas Turbines²
(NOx emissions from SoLoNOx™ as a percent of NOx emissions from standard combustion systems)

(1) Data previously reported in units; now reported in percent revenue increase to better describe business growth.

(2) Centaur™ 50 turbine operating at full load on pipeline-quality natural gas at ambient temperatures above 0°F.
Sustainable Development Affiliations

Dow Jones Sustainability Indexes
(Included since 2000. Sector leader since 2006.)
sustainability-index.com

Ethisphere—World’s Most Ethical Companies
ethisphere.com

American Loggers Council Woody Biomass Coalition
woodybiomass.net

Asia-Pacific Partnership on Clean Development and Climate
asiapacificpartnership.org

Business Roundtable Climate RESOLVE
businessroundtable.org/initiatives/growth/climate/resolve

Carbon Disclosure Project
cdproject.net

Carbon Trust
carbontrust.co.uk

Council on Competitiveness
Energy Security, Innovation and Sustainability Initiative
compete.org/about-us/initiatives/esis

Diesel Technology Forum
dieselforum.org

Energy Technologies Institute
ergytechnologies.co.uk

The Nature Conservancy
nature.org

Opportunity International
opportunity.org

U.S. Climate Action Partnership (USCAP)
us-cap.org

U.S. Environmental Protection Agency Climate Leaders
epa.gov/climateleaders

Tropical Forest Foundation
tropicalforestfoundation.org

World Business Council for Sustainable Development (WBCSD)
wbcsd.org

World Food Programme
wfp.org

World Resources Institute—EMBARQ
wri.org/project/embarq
Credits

PRODUCED BY
Caterpillar Corporate Sustainable Development

DESIGN
VSA Partners, Inc.

PHOTOGRAPHY
Airtricity Holdings Limited
Caterpillar Television & Electronic Media Solutions
Mano a Mano International Partners
Mitch Colgan, Colgan Photographic
Navistar International Corporation
Thomas Smolinski

For More Information

We value your feedback. Please email our sustainability reporting team at sd@cat.com, send us your comments online at www.cat.com/sustainability or contact us at:

Caterpillar Inc.
Sustainable Development
100 N.E. Adams Street
Peoria, IL 61629-3350

Chinese, French, Spanish, Portuguese, German and Japanese translations of this report are available online at www.cat.com/sustainability

To learn more about Caterpillar, view our 2008 Annual Report on www.cat.com

Date of previous report: April 2008.

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