

Creating
a better future

Pioneering
new technologies

Measuring
our progress

Reducing
our environmental footprint



» Jim McNerney
Chairman, President and
Chief Executive Officer

Mary Armstrong
Vice President of Environment,
Health and Safety

Environmental Affiliations

Boeing participates in focused, progressive and action-oriented programs to improve environmental performance.

Message from Jim McNerney



Climate change and pollution are serious global concerns. Recognizing that, Boeing has set a clear strategy to take action on protecting our eco-system.

Our task is to find a way to reduce the environmental impact of our operations and of our products and services. It's a momentous challenge. Aerospace is an essential part of modern life; it helps drive economic growth and prosperity, and it brings the people of the world closer together.

Because of the tremendous benefits aerospace brings to the world, our industry—and our company with it—is growing. So we have charted a pathway with clearly defined actions for Boeing to address our impact on the environment:

- As a technology leader, we will continue to pioneer environmentally progressive products and services and bring them to market.
- As a leader in aerospace, we are bringing the industry together to become more aligned on environmental-improvement opportunities.
- And as a responsible corporate citizen and neighbor, we are focused on reducing energy use, greenhouse gas emissions, pollution and waste at our facilities even as our business grows.

» Jim McNerney
Chairman, President and
Chief Executive Officer

Mary Armstrong
Vice President of Environment,
Health and Safety

(continued from page 2)

Boeing has a strong legacy of improving fuel efficiency and reducing noise in its products. We also have an excellent record of reducing pollution and ensuring compliance with environmental regulations.

But it is clear we need to accelerate our efforts. Aviation contributes 2 percent of global man-made carbon dioxide—the main greenhouse gas linked to climate-change concerns—according to the United Nations’ Intergovernmental Panel on Climate Change (IPCC). The IPCC predicts it will grow to 3 percent by 2050.

Boeing has a leadership role to play in helping our industry and communities shape frameworks for addressing climate change that are most effective on a global basis.

In April, Boeing helped bring together customers, partners and competitors in the commercial aviation industry. In Geneva, Switzerland, we jointly committed to a pathway toward carbon-neutral growth and the aspiration of a carbon-free future.

We all acknowledged that the environmental challenge can best be tackled only if we act in unison and ideally at a global level. Focus areas will include cooperation on alternative energy sources, the supply chain and the global transportation system—all elements that offer critical near- and medium-term potential for environmental gains.

Boeing is making great strides in real-world gains in fuel efficiency and transportation system improvements. We also have demonstrated that sustainably grown, non-food second-generation biofuels that do not compete with crops may offer a feasible solution for reducing greenhouse gas emissions.

This past year we’ve also taken significant steps to strengthen our work internally so that we more than offset the projected increases in our production rates with environmental improvements.

We consolidated environmentally focused initiatives inside Boeing into one corporate organization—Environment, Health and Safety. This organization is leading our enterprisewide strategy to link our products, processes and facilities; and to reach out to our suppliers, customers and communities.

» Jim McNerney
Chairman, President and
Chief Executive Officer

Mary Armstrong
Vice President of Environment,
Health and Safety

(continued from page 3)

We also created the Environment, Health and Safety policy council, which I lead. This council ensures that strategy and performance targets are set and monitored at the highest levels of company leadership.

And we aligned internal practices, this provided a foundation to drive environmental thought and action across Boeing:

- First, we acted to extend the International Organization for Standardization 14001 environmental management standard to all major Boeing manufacturing sites by the end of 2008.
- Second, we developed five-year improvement targets at our facilities. These targets set the bar for 25 percent improvements in energy efficiency, greenhouse gas emissions intensity and solid-waste recycling rates. We set a similar goal for hazardous waste reduction. These are challenging goals that have been worked into the business-planning and performance-evaluation processes that are at the heart of how we at Boeing do business. The targets require tangible action and coordinated enterprise support.

Further demonstrating our commitment, this year Boeing joined the U.S. Environmental Protection Agency's Climate Leaders program, which commits us to action on carbon dioxide reductions. We are also members of the World Business Council for Sustainable Development and the Pew Center on Global Climate Change in order to learn from our peers and communities, sponsor best practices and drive environmental improvements globally.

As you will see in the report, Boeing also supports effective and targeted environmental nonprofit activity—and we intend to increase this financial support in 2008.

It is my hope that you find this report an informative and comprehensive demonstration of how we at Boeing are taking real action to create a better future.



Jim McNerney
Chairman, President and Chief Executive Officer

» Jim McNerney
Chairman, President and
Chief Executive Officer

Mary Armstrong
Vice President of Environment,
Health and Safety

(continued from page 4)

Environmental Affiliations

Boeing participates in focused, progressive and action-oriented programs with business, government and the community to improve environmental performance:

U.S. Environmental Protection Agency (EPA) Climate Leaders

Boeing joined the industry-government partnership in 2008, committing to reduce the company's environmental impact by completing a companywide greenhouse gas emissions inventory, establishing reduction targets and reporting progress to the EPA on an annual basis.

World Business Council for Sustainable Development

Boeing joined this 200-company coalition focused on sustainable development through business leadership. Member companies can explore sustainable development, share knowledge, experiences and best practices, and advocate business positions on these issues.

Carbon Disclosure Project

Boeing has participated in the Carbon Disclosure Project, an independent nonprofit organization that has become the standard for carbon disclosure methodology and process, since 2006.

The Nature Conservancy International Leadership Council

Boeing serves as a member of the International Leadership Council, one of the world's leading corporate forums on conservation. Boeing has also been represented on the board of the Washington program of The Nature Conservancy.

Pew Center on Global Climate Change Business Environmental Leadership Council

Boeing participates in this group of major companies that exhibit environmental leadership through investment in environmentally progressive products and the support of domestic and global measures to achieve cost-effective reductions in emissions.

Department of Energy/EPA Energy Star

Boeing participates in the joint U.S. Department of Energy and EPA Energy Star program for energy management.

U.S. Green Building Council

Boeing is a member of the U.S. Green Building Council, a nonprofit organization dedicated to sustainable building practices that develops and administers the Leadership in Energy and Environmental Design building standards.

Jim McNerney
Chairman, President and Chief
Executive Officer

» Mary Armstrong
Vice President of Environment,
Health and Safety

Message from Mary Armstrong



In May 2007, Boeing expanded the role of its environmental team by creating the corporate Environment, Health and Safety organization. Our mandate is clear—to provide strategic direction and oversight, and to further embed environmental performance into Boeing's thinking, culture and action.

As a foundation, in 2008 we included, for the first time, challenging five-year environmental performance targets in the standard business plans of our operating units. At Boeing we know that to truly improve, you must first measure accurately, then set targets and finally, hold yourself accountable to beat them.

Boeing is an innovation leader, and our most critical contribution to protecting our eco-systems is—and will continue to be—bringing new technologies to market that improve the environmental performance of our air, land, space and network products as well as our support services and operations.

We also have a responsibility to be good stewards of our environment and good neighbors. We are committed to continuously reducing the environmental impact of our operations and to ensuring timely cleanup of sites that have been affected by prior practices that have created pollution.

This 2008 Environment Report details the environmental impact of our operations, the targets for improvement to which we have committed, and the strategy and actions that we will use to achieve them. The report seeks to address major environmental items in both quantitative and qualitative form and is, to the best of our ability, an accurate description of our performance. We have strived to clearly explain our methodology and reasoning.

Jim McNerney

Chairman, President and Chief
Executive Officer

» Mary Armstrong

Vice President of Environment,
Health and Safety

(continued from page 6)

The data tables refer to Boeing's own environmental impact. In future reports, we will expand our documentation of the performance of our value chain. We are engaging our suppliers both directly and through industrywide action to develop plans for improvement.

The data show we continue to make good strides in improving recycling rates, energy efficiency, greenhouse gas emissions intensity and hazardous waste at our facilities. Boeing relies on a proven productivity philosophy called Lean+ that has proved to be a natural ally of the environment. Much of our recent energy and waste improvements can be attributed to that work. Boeing also has divested some facilities and operations, and although much of that has been taken into account in our reporting, it is not always possible to capture the entire value chain's impact.

Boeing is disclosing its facilities' carbon footprint and hazardous waste figures publicly for the first time. Our challenging target over the next five years is to reduce waste and greenhouse gas emissions on an absolute basis, even as our business is growing. We have clear plans to meet that goal.

Boeing continues to perform well on regulatory compliance and preventing unwanted release of harmful pollutants leaving our facilities. However, we paid two fines in 2007—one of approximately \$471,000 for exceedances of water quality limits at the Santa Susana facility in California, the other, a \$300 penalty at the Plant 2 facility in Seattle, Wash. In both cases, we are taking action to prevent repeat issues. We strive always to meet our commitments to regulatory compliance.

We have also been recognized this year for multiple achievements—and while you can read more about our awards for environment performance in other sections of this report, I would like to highlight recognition in Renton and Seattle, Wash., where two of our facilities achieved 10 years of concurrent operations with the highest standards of water quality leaving our facilities.

We will continue to periodically provide updates on our environmental activities and successes, as well as share where we fell short of our expectations and our plans to improve.

Jim McNerney

Chairman, President and Chief
Executive Officer

» Mary Armstrong

Vice President of Environment,
Health and Safety

(continued from page 7)

I hope that you find this report informative and that it accurately conveys the sense of commitment that everyone at Boeing has to this global challenge.

Boeing is creating the technology for a better future, while committing to responsible stewardship of its operations today.

Thank you.



Mary Armstrong
Vice President of Environment, Health and Safety

Jim McNerney

Chairman, President and Chief
Executive Officer

» Mary Armstrong

Vice President of Environment,
Health and Safety

(continued from page 8)

Environmental Actions and Commitments

Since May 2007, Boeing:

- Stood up an expanded Environment, Health and Safety organization with a mandate for strategic direction and guidance on the environment and with leadership direction from the most senior level in the company.
- Committed to reduce greenhouse gas emissions at our facilities and joined the U.S. Environmental Protection Agency's Climate Leaders program.
- Set clear targets for environmental improvement at our facilities and for our commercial airplane products, while also committing to improving how we report our environmental progress and impact.
- Brought our industry together to focus on working together on real improvement opportunities.
- Demonstrated real-world solutions for reducing greenhouse gas emissions in commercial aviation using alternate energy sources for airplanes and improved transportation management systems.
- Committed to expand certification to the ISO 14001 environmental management system standard to all our major manufacturing sites by the end of 2008.

Aggressive Operations Targets

Boeing recently unveiled five-year targets for reductions in energy use, greenhouse gas emissions intensity and hazardous waste, as well as a commitment to ISO 14001 certification:

- 25 percent increase in energy efficiency
- 25 percent reduction in greenhouse gas emissions intensity
- 25 percent reduction of hazardous waste per dollar of revenue
- 25 percent increase in solid waste recycling rates
- 100 percent of major Boeing manufacturing facilities will achieve certification to the ISO 14001 environmental management system standard by the end of 2008

Environmentally Progressive
Products and Services
Air Transportation Systems
Alternative Energy Solutions
Research and Development

787 Dreamliner 20 percent more fuel and CO₂ efficient

747-8 16 percent more fuel and CO₂ efficient

Air traffic management enhancements could improve fuel efficiency and reduce CO₂ emissions by up to 12 percent.

Advanced-Generation Biofuels conducted the first commercial aviation flight using a sustainable biofuel.

Solar Cells developed record-breaking efficiency in converting sunlight to electricity.

Fuel Cells celebrated the first flight of a manned airplane powered by hydrogen fuel cells.

Pioneering Environmental Technologies



Boeing is developing industry-leading technologies in three key fields—environmentally progressive products and services, the air transport systems in which they operate, and alternative energy sources—to reduce emissions of greenhouse gases and other environmentally negative impacts. We are also devoting research and development to improve the environmental performance of our products and services—and to design, develop and build them in an environmentally responsible manner.

» Environmentally Progressive
Products and Services

Air Transportation Systems

Alternative Energy Solutions

Research and Development



Boeing is driving environmentally progressive technologies into its products and services. Pictured here is a Next-Generation 737-900ER with Blended Winglets, wing tip extensions that lower fuel use, emissions and noise.

Environmentally Progressive Products and Services

At Boeing, we have an ongoing legacy of integrating environmental performance improvements through technology advancements. Over the last 40 years, airplane CO₂ emissions have been reduced by around 70 percent and the noise footprint area has been reduced by approximately 90 percent. That legacy continues today with every airplane we design and build.

Boeing's newest airplanes, the 787 Dreamliner and the 747-8, exemplify the company's dedication to environmental design innovation. Incorporating four innovative technologies—new engines, increased use of lightweight composite materials, high-efficiency systems applications, and modern aerodynamics—the 787 is designed for the environment with an impressive 20 percent improvement in fuel use and an equivalent reduction in carbon dioxide emissions compared to today's similarly-sized airplanes. The 747-8 offers a 16 percent improvement in fuel use and carbon dioxide emissions over the 747-400.

We are also integrating environmentally progressive technologies in our current airplane programs. The Boeing 737, the most ordered and produced commercial passenger jet in the world, uses advanced technology Blended Winglets that lower fuel burn by as much as 4 percent, reduce noise on takeoff and approach, and reduce emissions through lower cruise thrust. In addition to being offered on new airplanes, winglets are also available on a retrofit basis by our joint venture partnership company Aviation Partners Boeing, providing environmental performance benefits to the existing fleet.

We have made continuous improvements to the Boeing 777 to lower fuel consumption, reduce emissions and reduce noise. The longer range 777 airplanes (777-300ER, 777-200LR and 777 Freighter) incorporate wing and system modifications, as well as a new raked wingtip, that reduce airplane drag and improve overall aerodynamic efficiency.

Our Commercial Aviation Services division is driving further improvements through our integrated support and service offerings. We apply a lifecycle solutions approach to achieve operational and environmental performance improvements, resulting in increased fuel efficiency and reduced noise and

» Environmentally Progressive
Products and Services

Air Transportation Systems

Alternative Energy Solutions

Research and Development

(continued from page 11)

emissions. For example, the Airplane Health Management (AHM) Performance Monitoring Module automates and enhances the process of fuel and carbon dioxide emissions performance monitoring by airline personnel. It applies advanced health management technology to identify conditions that may affect fuel performance and provides research tools and decision support information within the context of the overall airplane condition.

While the improvements we have made are significant, we believe we can do more. That's why we have committed to improving the fuel efficiency of each new generation of commercial airplanes by at least 15 percent.

[The Boeing 747-8 Intercontinental and 747-8 Freighter: Designed for Environmental Performance](#)

On the new 747-8 family Boeing is leveraging the technologies from the 787 Dreamliner to further its commitment to creating environmentally preferred commercial jetliners.

Lower Fuel Use

Three key features—new engines, more efficient structure and advanced aerodynamics—contribute to a 16 percent improvement (on a per-seat basis) in fuel use for the 747-8 compared to the 747-400.

The new GEnx-2B67 engines incorporate the latest technologies—such as a composite fan case and blades and a revolutionary turbine—to create double-digit efficiency gains over the engines it replaces. The ultra-efficient structure of the 747-8 provides the lowest operating empty weight per seat of any large airplane. Lastly, the new-design wing incorporates the latest aerodynamic airfoils, raked tips and a simplified lightweight flap design, further improving the overall fuel efficiency of the 747-8.

Reduced Emissions

Carbon dioxide (CO₂) is produced as a result of fuel consumption. This means that with reduced fuel use comes an equivalent reduction in carbon dioxide emissions. Another key emission standard for commercial jetliners is nitrogen oxides (NO_x). Specific regulations have already been set for future airplanes based on the thrust ratings of an airplane's engines.

» Environmentally Progressive
Products and Services

Air Transportation Systems

Alternative Energy Solutions

Research and Development

(continued from page 12)

The 747-8 is being designed to ensure that it will perform significantly better than required by today's standard, and it will be better than the future, more-stringent regulations being incorporated by the Committee on Aviation Environmental Protection (CAEP).

Quieter Takeoffs and Landings

By designing with noise reduction in mind, Boeing was able to reduce the 747-8 noise footprint around an airport by 30 percent compared to today's 747-400.

Boeing 787 Dreamliner Being Designed for Environmental Performance

With the 787 Dreamliner, Boeing is introducing new technologies to create better environmental performance for commercial jetliners.

Fuel Use Reduced

Four key technologies contribute to an impressive 20 percent improvement in fuel use for the 787 Dreamliner as compared to today's similarly sized airplane. New engines, increased use of light weight composite materials, more-efficient systems applications and modern aerodynamics each contribute to the 787's overall performance.

Emissions Cut

Carbon dioxide (CO₂) is produced as a result of fuel consumption. This means that with reduced fuel use comes an equivalent reduction in carbon dioxide emissions.

Another key emission standard for commercial jetliners is nitrogen oxides (NO_x). Specific regulations have already been set for future airplanes, using a complex formula that is based on the thrust ratings of an airplane's engines. The 787 is being designed to ensure it will be significantly better than the more-stringent regulations that have been incorporated this year by the Committee on Aviation Environmental Protection (CAEP).

Quieter Takeoffs and Landings Delivered

The 787 Dreamliner uses a number of new technologies—most importantly, acoustically treated engine inlets and high bypass ratio along with other special treatments for the engines—to ensure that all sound of 85 decibels (about the level of loud traffic heard from the side of the road) never leaves the airport

» Environmentally Progressive
Products and Services
Air Transportation Systems
Alternative Energy Solutions
Research and Development

(continued from page 13)

boundaries. In fact, the noise footprint of the 787 is 60 percent smaller than those of today's similarly sized airplanes.

Point-to-Point Travel Enabled

Connecting people more directly to their destinations offers a number of environmental benefits. A more direct route uses less fuel, which means fewer emissions. Likewise, fewer takeoffs and landings reduce the total noise footprint.

The 787 is designed to transport passengers and cargo from their city of origin to their final destinations in the most environmentally efficient manner.

Manufacturing Technologies Mean Less Waste

Because the 787 is made primarily of carbon-fiber composite material, which is trimmed like cloth, manufacturing processes will produce less scrap material and waste.

The result will be an overall manufacturing and maintenance process that produces less waste and uses fewer harmful chemicals and agents.

Environmentally Progressive
Products and Services
» Air Transportation Systems
Alternative Energy Solutions
Research and Development



Improving global air transportation systems is a critical near-term opportunity for reducing greenhouse gas emissions. Boeing's Air Traffic Management (ATM) systems laboratories are demonstrating the technologies and capabilities that will help drive improvements.

Air Transportation Systems

Our efforts to have a positive impact on the environment go beyond our products. Improving the efficiency of the global transportation system can also provide significant environmental benefits. In fact, the International Air Transport Association (IATA) estimates that air traffic management enhancements could improve fuel efficiency and CO₂ emissions by up to 12 percent.

Boeing recognizes that air traffic management improvements provide the greatest short-term opportunities to improve environmental performance of the transportation system. That's why we are working with industry, regulators, airlines and airports to improve management of the air space and ensure efficient, safe and seamless operation around the world.

Our work includes the development of air traffic management solutions that reduce fuel use by minimizing delays and holding patterns over airports and capitalizing on precision navigation technologies in modern aircraft often left unexploited in the legacy system. One example: our Tailored Arrival concept increases airplane arrival efficiency by establishing a predictable continuous descent rather than the current step-down descent, resulting in reduced fuel use, emissions and noise. Trials have demonstrated that implementing these types of advanced arrival techniques can save up to 500 gallons of fuel per flight.

Environmentally Progressive
 Products and Services
 Air Transportation Systems
 » Alternative Energy Solutions
 Research and Development

Alternative Energy Solutions

Alternative energy sources offer the potential to reduce greenhouse gas emissions. We are pioneering advancements in environmentally progressive energy sources in three key fields.

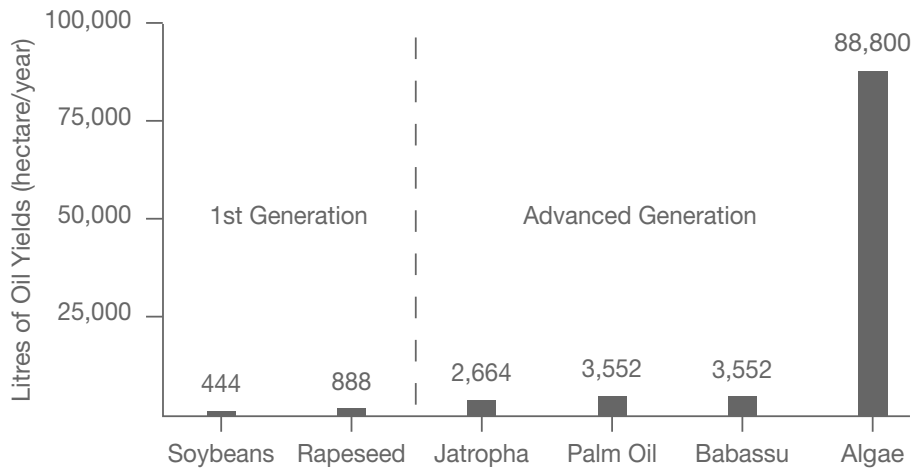
Advanced-Generation Biofuels

To highlight the technical feasibility of using biofuels in a commercial jetliner, we conducted the first commercial aviation flight using a sustainable biofuel mixed with traditional kerosene-based fuel in February 2008 with Virgin Atlantic and GE Aviation. In addition to conducting engine ground testing with Pratt & Whitney, we will conduct joint biofuel demonstration flights in 2008 with Air New Zealand and Rolls-Royce and in 2009 with Continental Airlines and GE Aviation, with an initial emphasis on sustainable biofuels that could be applied to the existing airplane fleet to reduce carbon dioxide emissions.



Future fuels must be sustainable and not compete with food crops. Boeing seeks to leverage research like that of the Hawaii Agriculture Research Center on *Jatropha curcas*, a sustainably grown, advanced generation, non-food crop that offers the potential to reduce greenhouse gas emissions.

Since first-generation biofuels may compete with food stocks, Boeing has always been focused on sustainably grown, advanced-generation biofuels. The following chart on this page highlights the relative energy density of various types of biofuels.



Solar Cells

Our wholly-owned subsidiary Spectrolab is one of the world's leading manufacturers of solar cells, powering everything from satellites and interplanetary missions to renewable solar energy companies in California, Arizona, and Australia. Spectrolab's Earth-based concentrator cells currently hold the world's record with 40.7 percent efficiency in converting sunlight to electricity—and the company is pioneering new technologies anticipated to yield further improvements.

Environmentally Progressive
Products and Services
Air Transportation Systems
» Alternative Energy Solutions
Research and Development

(continued from page 16)

Fuel Cells

Fuel cells directly convert hydrogen into heat and electricity without combustion, reducing the need for conventional fuels, eliminating emissions (except for heat and water), and lowering noise. Fuel-cell technology holds promise in providing cleaner, quieter operation of secondary airplane power systems. Led by Madrid-based Boeing Research & Technology Europe, we recently conducted experimental flight tests of a Boeing Proton Exchange Membrane (PEM) fuel cell/lithium-ion battery system in February and March 2008 in Ocaña, Spain, celebrating the first flight of a manned airplane powered by hydrogen fuel cells in aviation history. We continue to study additional fuel cell technologies, including a Solid Oxide fuel cell.

Boeing, Virgin Atlantic and GE Aviation Flew First Commercial Jet on Biofuel

Boeing, Virgin Atlantic and GE Aviation conducted the first commercial aviation flight using a sustainable biofuel mixed with traditional kerosene-based jet fuel on February 24, 2008. The biofuel flight demonstration highlighted the technical feasibility of using biofuels in a commercial jetliner and was a significant step toward a long-term vision of fully sustainable, low-carbon-lifecycle fuel solutions for the aviation industry.

The Virgin Atlantic 747-400 flew using a biofuel blend composed of babassu oil and coconut oil provided by Seattle-based Imperium Renewables. These oils are economically and socially sustainable and can be found in everyday cosmetic products including lip balm and shaving cream. In addition, the babassu nuts and coconuts were harvested from existing, mature plantations. No modifications were made to either the aircraft or its engines to enable the flight to take place.

Environmentally Progressive
Products and Services
Air Transportation Systems
» Alternative Energy Solutions
Research and Development

(continued from page 17)

“Today marks a biofuel breakthrough for the whole airline industry,” said Sir Richard Branson, president of Virgin Atlantic. “Virgin Atlantic and its partners have proved that you can find an alternative to traditional jet fuel and fly a plane on biofuel. This pioneering flight will enable those of us who are serious about reducing our carbon emissions to go on developing the fuels of the future, fuels which will power our aircraft in the years ahead.”

The results of the biofuel flight will be analyzed by the collective team and used for research and development of next-generation biofuels that can help to further reduce carbon emissions. Boeing will use findings from this flight as a baseline for conducting another biofuel flight later this year with Air New Zealand.

(continued from page 18)

Boeing Successfully Flies Fuel Cell-Powered Airplane

Boeing announced on April 3, 2008, that it has, for the first time in aviation history, flown a manned airplane powered by hydrogen fuel cells.

The recent milestone is the work of an engineering team at Boeing Research & Technology Europe (BR&TE) in Madrid, with assistance from industry partners in Austria, France, Germany, Spain, the United Kingdom and the United States.

A fuel cell is an electrochemical device that converts hydrogen directly into electricity and heat with none of the products of combustion such as carbon dioxide. Other than heat, water is its only exhaust.

A two-seat Dimona motor-glider with a 16.3 meter (53.5 foot) wingspan was used as the airframe. Built by Diamond Aircraft Industries of Austria, it was modified by BR&TE to include a Proton Exchange Membrane (PEM) fuel cell/lithium-ion battery hybrid system to power an electric motor coupled to a conventional propeller.

Three test flights took place in February and March at the airfield in Ocaña, south of Madrid, operated by the Spanish company SENASA.

According to Boeing researchers, PEM fuel cell technology potentially could power small manned and unmanned air vehicles. Over the longer term, solid oxide fuel cells could be applied to secondary power-generating systems, such as auxiliary power units for large commercial airplanes. Boeing does not envision that fuel cells will ever provide primary power for large passenger airplanes, but the company will continue to investigate their potential, as well as other sustainable alternative fuel and energy sources that improve environmental performance.

Environmentally Progressive
Products and Services
Air Transportation Systems
» Alternative Energy Solutions
Research and Development

(continued from page 19)

Spectrolab to Provide Renewable Energy to Australia

The Boeing Company announced on April 14, 2008, a third multimillion-dollar contract award with Solar Systems Pty. Ltd. for concentrator photovoltaic cell assemblies used to produce renewable energy. The cells will be used in the new 154-megawatt solar power station to be built in the state of Victoria, Australia, in addition to other power stations located throughout Australia and the United States. Contract details were not disclosed.

Under the terms of the new contract, Spectrolab Inc. of Sylmar, Calif., a wholly owned Boeing subsidiary, will provide solar cell assemblies capable of generating more than 350 megawatts of electricity. When combined with previous contracts awarded in April and August 2006, the Hawthorn, Victoria-based Solar Systems has ordered approximately 360 megawatts of renewable power from Spectrolab.

“Solar energy is in high demand, and our record-breaking conversion efficiency of over 40 percent is an industry best,” said David Lillington, president of Spectrolab. “Our partnership with Solar Systems has resulted in the demonstration of affordable and reliable concentrating solar power systems. Renewable energy is a worldwide priority, and Spectrolab is well positioned to expand its global role in this rapidly expanding industry.”

Spectrolab is one of the world’s leading suppliers of photovoltaic solar cells, solar panels, searchlight and solar simulators and is currently celebrating 50 years of supplying solar array panels to the space industry.

Environmentally Progressive
Products and Services
Air Transportation Systems
Alternative Energy Solutions
» Research and Development

Research and Development

Much of our airplane development work—be it weight reduction or advanced aerodynamics—is focused on fuel efficiency. In fact, more than 75 percent of Boeing Commercial Airplanes' research and development (R&D) effectively contributes to improving the environmental performance of our products. Fuel efficiency continues to be a core focus of our R&D efforts—lowering fuel use lowers CO₂ emissions. We are also striving to make our airplanes quieter in the community as well as inside the cabin. And we continue to explore far-reaching projects such as low-carbon alternative fuels for aviation use.

We have also developed alternative materials and processes for manufacturing and maintenance.



A Boeing lab technician conducts automated freeze-point testing on jet fuel samples at the Boeing Commercial Airplanes Fuels and Lubricants Test Laboratory in Seattle, Wash. Boeing is exploring second-generation biofuel testing to identify renewable alternative fuel sources for aviation uses.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management

Aggressive Performance Targets

15%

improvement in fuel efficiency and CO₂ emissions for each new generation of commercial airplane

25%

improvement at our major manufacturing facilities over five years in: energy efficiency, greenhouse gas emissions intensity, hazardous waste per dollar of revenue, and recycling rates

100%

of major Boeing manufacturing facilities will achieve certification to the ISO 14001 environmental management system standard by the end of 2008.

Environmental Stewardship



Being good environmental stewards means more than developing plans and stating objectives. It means working every day to find ways to lessen the environmental impact of our products, services and operations. We are driving environmental thought and action throughout our company by establishing aggressive operations and product performance targets, forming a corporate organization to lead our enterprise-wide environmental strategy, adopting an environmental policy, strengthening our environmental management system and remediating locations affected by past business operations.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management



Boeing is driving improved environmental performance into our operations, as well as our products and services. All major manufacturing facilities will be certified to the ISO 14001 environmental management system standard by the end of 2008.

Our Environmental and Climate Change Policies

Boeing is committed to operating in a manner that promotes environmental stewardship. We will strive to:

- Conduct operations in compliance with applicable environmental laws, regulations, and Boeing policies and procedures.
- Prevent pollution by conserving energy and resources, recycling, reducing waste and pursuing other source reduction strategies.
- Continually improve our environmental management system.
- Work together with our stakeholders on activities that promote environmental protection.

Boeing's Climate Change Approach

Boeing believes that climate change is a serious environmental challenge that requires credible action. Recognizing this, Boeing is committed to reduce emissions of greenhouse gases from our facilities and products.

As the global community develops approaches to reducing greenhouse gas emissions, Boeing acknowledges that voluntary measures alone may not be enough and supports development of mandatory yet flexible frameworks to address emission reductions.

Boeing recognizes that appropriate action may vary from one sector to another. A comprehensive approach would take into account the most effective way to deal with each industry sector.

As a technology and aerospace industry leader Boeing will work with our customers and other industry stakeholders to:

- Pioneer new technology to improve the global transportation system
- Increase research to improve efficiencies throughout the system: air and ground operations, in-service fleet environmental performance and introduction of sustainable second-generation fuels

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management

(continued from page 23)

- Accelerate adoption of environmentally progressive products and services
- Reduce carbon intensity of air transportation by reducing CO₂ emissions 15 percent with each new generation of commercial aircraft

Boeing's greatest contribution will continue to be through innovation—and Boeing will remain committed to improving technologies for sustainable, renewable energy systems.

In addition, Boeing has set aggressive and transparent enterprisewide performance targets to drive environmental thought and action throughout its operations. By 2012 at its major manufacturing facilities, Boeing targets 25 percent improvement goals for solid waste recycling rates, energy efficiency and greenhouse gas emissions intensity and a comparable goal for hazardous waste reduction. Boeing has also committed to extend certification to the internationally recognized ISO 14001 environmental management system standard to 100 percent of its major manufacturing sites by the end of 2008.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management



In May 2007, Boeing stood up an expanded Environment, Health and Safety organization with a mandate for strategic direction and guidance on the environment and with leadership direction from the most senior level in the company.

Environment, Health and Safety Organization

In 2007, we consolidated environmentally focused initiatives inside Boeing into one corporate organization—Environment, Health and Safety—which is developing an integrated, enterprisewide strategy that includes our products, processes and facilities, as well as our suppliers and customers.

We have a long history of continuously improving the environmental performance of our products and services, and we have a record of compliance with the environmental rules and regulations that affect our operations. With this new organization, we are sharpening our focus on important environmental issues that bear on our business by identifying and integrating them into a strategic plan that will be managed centrally and include work we do with our suppliers and customers.

The Environment, Health and Safety organization combined the existing Safety, Health and Environmental Affairs (SHEA) functions of our Shared Services Group (SSG) with new functions focused on:

- Establishing enterprise strategies and objectives to address current and potential future environmental issues associated with Boeing products, services, facilities and technologies, and those of its business partners.
- Defining and implementing enterprise environmental management systems and tools for integrating environmental capabilities into the company's core operating processes, such as design and manufacturing.
- Establishing standards, processes and guidelines for routinely tracking Boeing's and its business partners' performance to these environmental plans and objectives.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management



A site of great natural, cultural and historic significance, Santa Susana will be preserved as a vital undeveloped open space link in the Santa Susana Mountains for future generations. Boeing will continue to work closely with our neighbors, government partners and the local community toward this goal.

Commitment to Remediation

Boeing is committed to doing its part to clean up locations affected by our past business operations.

Protecting human health and the environment in the communities where we operate remains our top priority. We are engaged and play a leadership role with local communities, remediation professionals and regulatory authorities to find the best cleanup solutions and conduct our work in an open and transparent manner.

In 2007, Boeing made a landmark commitment to dedicate nearly 2,400 acres of land in the Santa Susana Mountains of California to open space parkland upon completion of a thorough and timely cleanup of the former rocket-test and nuclear energy research site. The cleanup will be conducted in compliance with stringent regulatory standards and final remedy activities will be complete by 2017. More than 15 key compliance deliverables were submitted in 2007, including work plans, investigative reports and data summaries.

To expedite cleanup activities, we continually evaluate and employ innovative engineering technologies. For example, our team in Santa Susana has partnered with regulatory agencies, the community and leading professionals to develop and implement advanced, cutting-edge technologies for the treatment of stormwater runoff from the site.

Managing stormwater runoff from the site continues to be a technical challenge, and in 2007 Boeing paid a \$471,000 penalty for failing to meet local water quality standards—approximately half of which was paid in support of research on water quality improvement, research and education programs in the local area. Boeing considers such events unacceptable and is working to implement the engineering improvements to ensure regulatory compliance.

Like our operating business, Boeing remediation staff utilize Lean+ approaches for continual process improvement and sustainability.

We have also achieved significant progress in our continuing efforts to finalize cleanup plans for the Duwamish Waterway in Washington State. Boeing continues to work closely with local, state and federal agencies, local community groups and tribes to develop cleanup plans. While this work is taking place, we have been aggressively cleaning up sources of potential contaminants from our historic operations at Boeing Field and adjacent areas.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management

(continued from page 26)

Boeing continued to make significant progress on other remediation programs in 2007. Highlights included achieving major milestones in initiating groundwater cleanup at several projects in California and obtaining agency approval on the final soil and groundwater cleanup plans for the former Chemical Commodities Inc. Superfund site in Kansas. Steady progress was made at numerous other sites with the achievement of intermediate milestones that will ultimately lead to completion of investigation and cleanup activities at these sites.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management

Performance Targets

Over the last 10 years, Boeing has reduced absolute energy use by 37 percent and hazardous waste by 52 percent.*

Reductions in hazardous waste were driven by more efficient, Lean+ manufacturing methods, such as kitting chemicals to reduce excess waste and expired material; using more environmentally progressive materials, such as a low solvent top-coat painting to reduce the amount of solvent used in painting processes; and improving material management systems.

Our energy conservation efforts, driven by reduced demand for production requirements, investments in more efficient building systems and equipment at our sites, Lean+ methods to reduce consumption and waste, and employee awareness campaigns highlighting behavioral conservation opportunities, significantly reduced our energy consumption.

It's a good start, but we are committed to doing much more.

That's why we have established five-year targets to reduce energy use, greenhouse gas emissions intensity and hazardous waste and to increase recycling rates. By 2012 at our major manufacturing facilities, we are targeting 25 percent improvement goals for solid waste recycling rates, energy efficiency and greenhouse gas emissions intensity; and we have set a comparable goal for hazardous waste reduction. This equates to an absolute 1 percent reduction in greenhouse gas emissions, hazardous waste and energy use and an improvement in recycling rates from about 60 percent to 75 percent of solid waste during a time of significant growth. While aggressive, these targets are achievable and will ensure that we hold waste and emissions down while growing our business. To achieve these, we must drive environmental thinking and action into every facet of our business.

*Normalized for the divestiture of the Wichita site.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management

(continued from page 28)

Our commitment to environmental stewardship extends beyond our operations to our products. Boeing Commercial Airplanes has committed to continue our dedication to environmental design innovation by:

- Improving fuel efficiency and carbon dioxide emissions for each new generation of airliners by at least 15 percent.
- Directing more than 75 percent of research and development to benefit environmental performance, including work on fuel efficiency.
- Improving the performance of worldwide fleet operations, focusing on an industry goal of 25 percent improvements in worldwide fleet fuel use and CO₂ emissions by 2020.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management



Through the integration of Boeing's Lean+ production philosophy, certification to the internationally recognized ISO 14001 environmental management system standard and a commitment to recycling, Boeing facilities are continually improving their environmental performance.

Environmental Management

We are committed to continuously reducing our environmental footprint. During 2008 we plan to drive improvements into our core operations in three key ways.

ISO 14001

We will certify all major Boeing manufacturing sites to the International Organization for Standardization 14001 environmental management system standard (ISO 14001) by the end of 2008 to help reduce pollution and waste and improve energy efficiency and recycling rates. ISO 14001 is considered a global benchmark of an organization's commitment to understand and continuously improve its environmental performance. It will provide the foundation of a common environmental management system for the entire company and allow a better comparison of performance at different locations.

Three Boeing facilities—Exmouth, Australia; Everett, Wash.; and Portland, Ore.—have already achieved the certification and documented improvements in environmental performance. For example, our Everett facility saved 15,800 MMBTUs of energy by implementing projects to reduce natural gas usage and 6,000 megawatt hours of energy through electrical system improvements. Combined, these energy-saving projects equaled reductions of more than 2,040 tonnes (2,249 tons) of greenhouse gas emissions in 2007.

Lean+

Lean+, a set of continuous improvement principles and practices, is a natural ally of the environment. While not strictly an environmental program, its key components include increasing operational efficiency, minimizing waste and conserving resources. We are applying Lean+ across the company and its value stream. Through the relentless prevention and elimination of waste and replication of best practices across the company, even relatively small efficiency gains add up to yield impressive results. In just four years, we have reduced our hazardous waste output by 42 percent, electricity use by 21 percent and water use by 19 percent.

(continued from page 30)

Between 1999 and 2005, Lean improvements have produced notable results in specific areas:

- Boeing Commercial Airplanes: 737 Airplane Program
 - 23 percent reduction in hazardous waste
 - 24 percent reduction in acreage
 - 41 percent reduction in factory size
 - 52 percent reduction in power consumption
- Integrated Defense Systems: F/A—18 Super Hornet Program
 - 73 percent reduction in hazardous materials
 - Built in program requirements for hazardous materials management
 - Introduced a non-ozone depleting fire suppressant
- Shared Services Group: Enterprise Energy Conservation
 - 37 percent reduction in energy use
 - 27 percent reduction in water

A Commitment to Recycling

We are working to ensure that materials used in our products, services and operations, including metals and composites, are recycled for high-value industrial uses. We also reduce and recycle everyday materials, including paper and packaging, and are identifying waste reduction opportunities such as paper-free work processes.

And recycling goes beyond our operations. That's why in 2006 we brought 19 companies into a common industry working group called the Aircraft Fleet Recycling Association (AFRA). The AFRA network provides the most complete set of tools for aircraft owners to deal with the end-of-life of their equipment—now and in the future. The association's members share a commitment to

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management

(continued from page 31)

improving older fleet asset management and fostering the recovery and the safe and environmentally progressive reuse of aerospace materials. In less than two years, member organizations have:

- Remarketed (returned to service) approximately 2,000 planes
- Scrapped more than 5,000 commercial aircraft
- Scrapped more than 1,000 military aircraft (800 tactical)

Our objectives for aircraft recycling include offering airline customers end-of-life and maintenance options that will resell planes that are fit to return to service; offering safe parts recovery; scrapping and recycling planes that are not fit for service; and greatly improving materials recovery from retired planes and manufacturing scrap.

Our Environmental and
Climate Change Policies
Environment, Health and
Safety Organization
Commitment to Remediation
Performance Targets
Environmental Management



Three Boeing Facilities — Exmouth, Australia; Everett, Washington; and Portland, Oregon — have been certified to the ISO 14001 environmental management system standard. These facilities have documented numerous environmental improvements.

(continued from page 32)

Improving Environmental Performance

Boeing sites in Exmouth, Australia; Everett, Wash.; and Portland, Ore. — all of which are ISO 14001 certified — have documented myriad improvements in environmental performance. Boeing’s Shared Services Group and the operating groups at these locations have played a key role in implementing these and many other projects focused on reducing Boeing’s environmental footprint and increasing operating efficiency. Here’s a look at some of the many numbers relating to this work.

6,000

Megawatt hours saved in Everett through electrical system improvements. That’s enough to light more than 2,000 homes for one year and equals a reduction of more than 1,200 tonnes (1,323 tons) of greenhouse gas emissions)

15.8 billion

Number of BTUs Everett saved by improvements to a natural-gas system. This amount of energy equals 840 tonnes (926 tons) of greenhouse gas emissions.

1,100

Pounds (500 kilograms) of R-22 refrigerant, an ozone-depleting compound, no longer used in Everett’s 40-83, thanks to retrofitting air-conditioning equipment. This change also cut electrical energy consumption by 256,000 kilowatts annually.

44.5

Percentage reduction in the volume of waste sent to landfills by Exmouth in 2007, compared to 2006, thanks to recycling efforts.

25

Percentage decrease in water consumption at Exmouth in 2006, compared to the previous year

8.7 million

Pounds (4 million kilograms) of metal recycled by Portland in 2007.

93.9

Percentage of all solid waste recycled — which includes metal ships — by Portland in 2007.

Energy Conservation
Carbon Dioxide Emissions
Water Conservation
Hazardous Waste and Recycling
Toxic Release Inventory
Environmental Awards

Operational Performance Improvements

On a revenue-adjusted basis since 2002, Boeing has reduced:

- Carbon dioxide emissions by 24 percent
- Energy consumption by 24 percent
- Hazardous waste by 30 percent

Environmental Recognition

Boeing has won numerous environmental awards, including:

- Water quality awards
- EPA Environmental Outstanding Achievement Award
- Clean Air Campaign Awards
- Secretary of the Navy Award for Environmental Excellence

Operational Performance

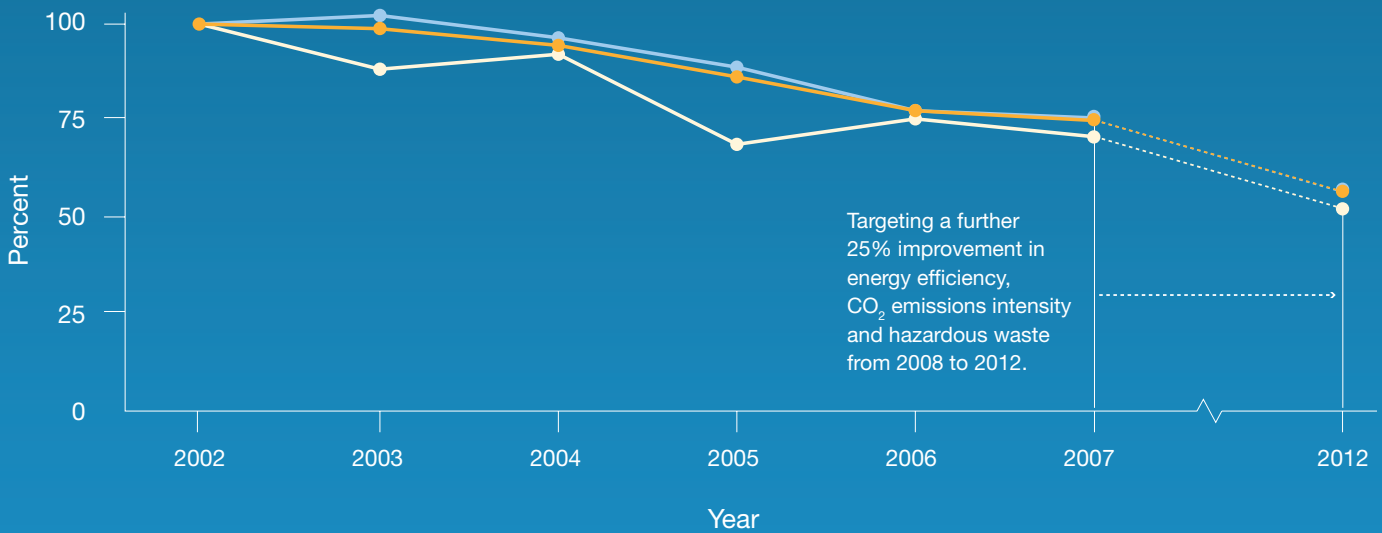


The work that we have done to date is the foundation for the extensive efforts that lie ahead. Here is a snapshot of our operational environmental performance in some key areas, as well as the recognition we've received for our environmental efforts.

- Energy Conservation
- Carbon Dioxide Emissions
- Water Conservation
- Hazardous Waste and Recycling
- Toxic Release Inventory
- Environmental Awards

Operational Performance

Energy, Emissions and Waste – 2002 to 2007



Progress achieved as of 2007

- Energy Efficiency: -24.8%
- CO₂ Emissions Intensity: -24.4%
- Hazardous Waste -30.7%

Performance indicators normalized to revenue. Energy: MMBtu / \$mil. CO₂ Emissions: metric ton / \$mil. Hazardous Waste: ton / \$mil.

» Energy Conservation

Carbon Dioxide Emissions

Water Conservation

Hazardous Waste and Recycling

Toxic Release Inventory

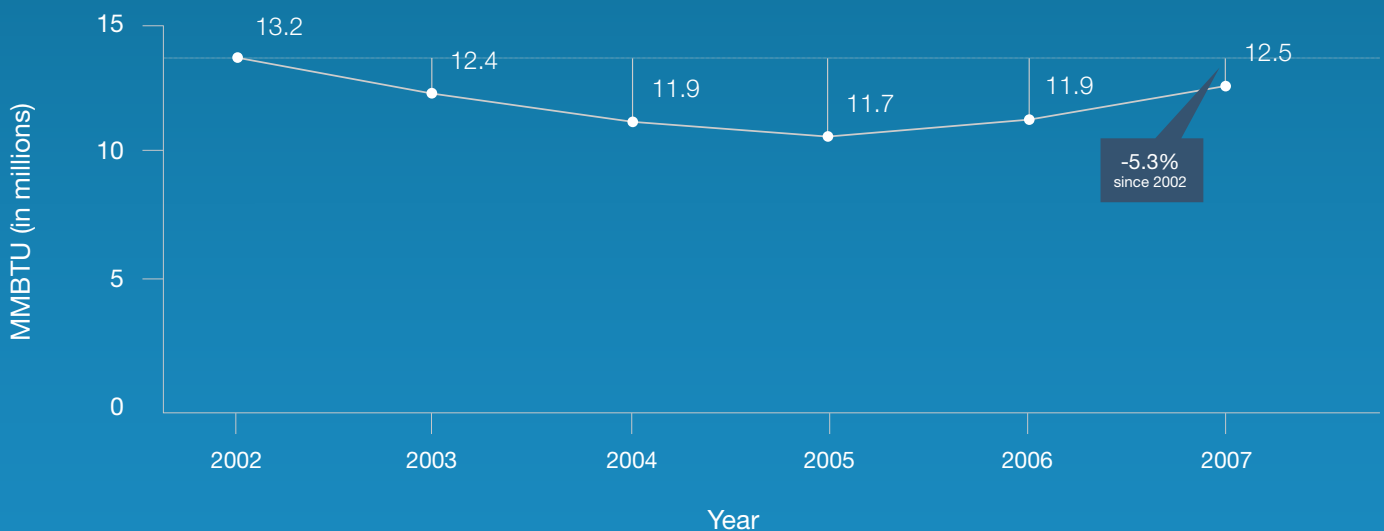
Environmental Awards

Energy Conservation

Taking into account our production rate increases, we have reduced energy consumption on a revenue-adjusted basis by 24.8 percent since 2002. From 2002 to 2007, we conducted 43 Lean energy events at sites across the United States, identifying potential energy savings of 518,000 MMBtus. We sponsor internal energy awards to document and replicate best practices across the company; from 2002 to 2006, our sites submitted 72 projects that resulted in annual energy consumption reductions of 861,300 MMBtus.

We also diligently implemented energy conservation programs and increased efficiencies by upgrading lighting, energy management control systems and HVAC and other mechanical systems in our buildings and sites. We also improved our wall insulation and increased communications with our employees to raise awareness of behavioral conservation opportunities. Increased conservation and infrastructure investments are anticipated to yield further reductions, in support of our target to increase our energy efficiency by 25 percent in the next five years so that we more than offset the projected increases in our production rates with environmental improvements.

Energy Use at Major U.S. Sites



Footnotes:

- Energy is calculated only from electricity and natural gas. Other fuels are not represented in these totals.
- Normalized for divestitures by excluding Wichita, now Spirit AeroSystems, from 2002 to 2005. IDS Wichita is included.
- Reflects energy use from major U.S. manufacturing operations.

» Energy Conservation

Carbon Dioxide Emissions

Water Conservation

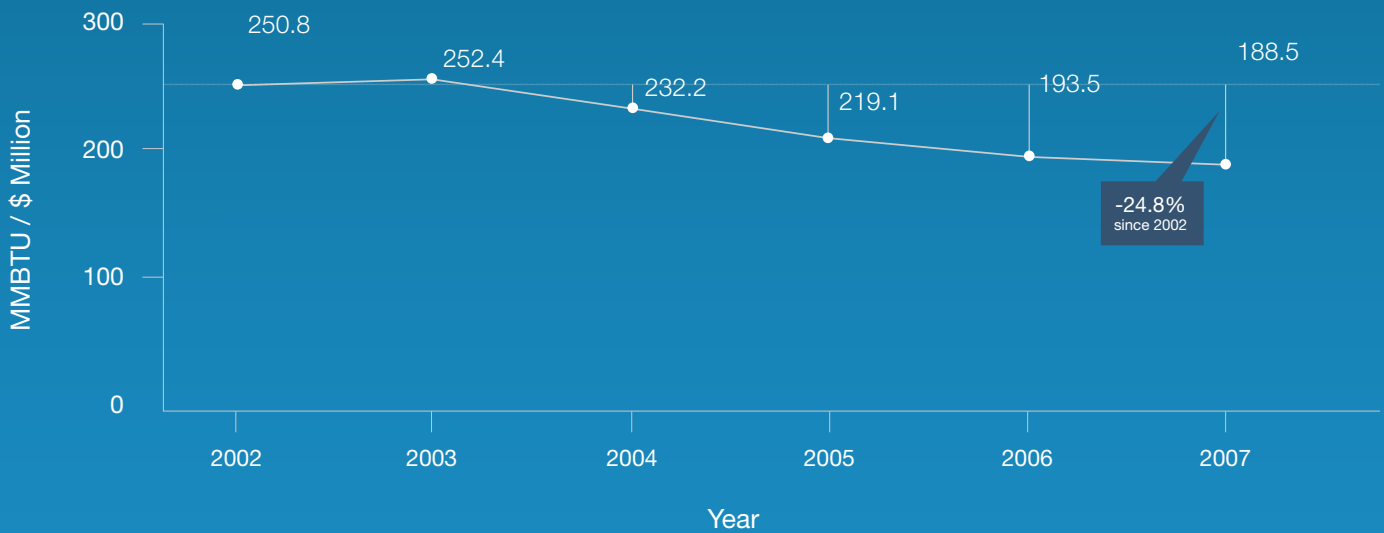
Hazardous Waste and Recycling

Toxic Release Inventory

Environmental Awards

(continued from page 36)

Energy Efficiency at Major U.S. Sites



Footnotes:

- Energy is calculated only from electricity and natural gas. Other fuels are not represented in these totals.
- Normalized for divestitures by excluding Wichita, now Spirit AeroSystems, from 2002 to 2005. IDS Wichita is included.
- Reflects energy use from major U.S. manufacturing operations.

- Energy Conservation
- » Carbon Dioxide Emissions
- Water Conservation
- Hazardous Waste and Recycling
- Toxic Release Inventory
- Environmental Awards

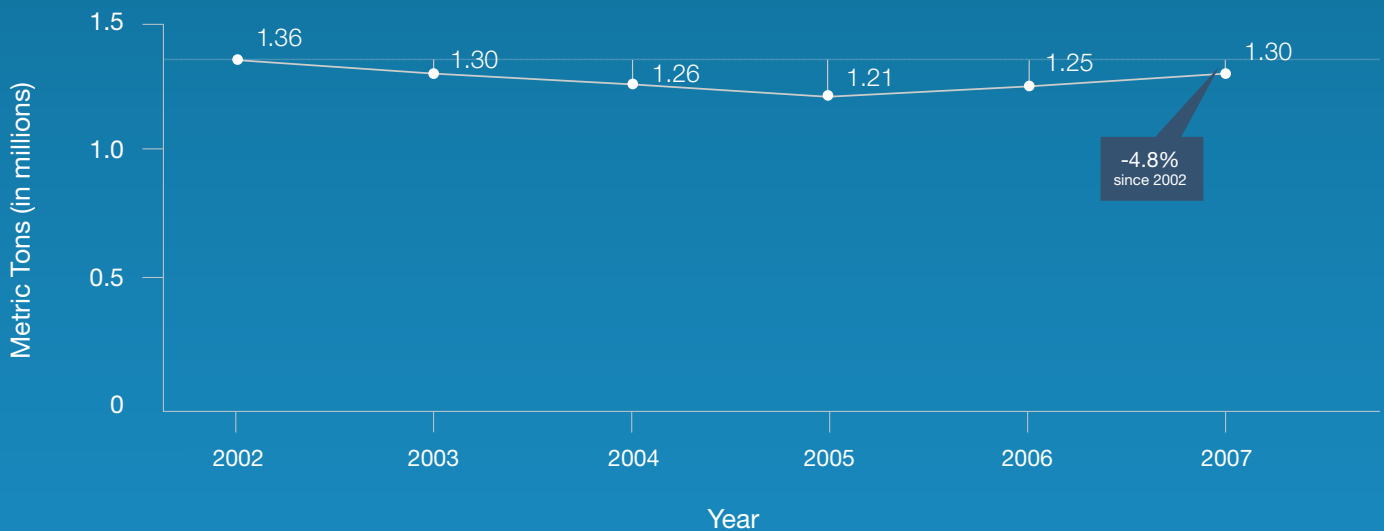
Carbon Dioxide Emissions

Reductions in carbon dioxide emissions result from our reduced energy consumption. Taking into account our production rate increases, we have reduced our CO₂ emissions on a revenue-adjusted basis by 24.4 percent since 2002. And we will continue to reduce emissions to support our goal of reducing greenhouse gas emissions intensity by 25 percent in the next five years so that we more than offset the projected increases in our production rates with environmental improvements.

In this report, Boeing uses measurements of carbon dioxide emissions and energy use from major U.S. facilities. This method allows us the most consistent and accurate way to measure targets and performance improvements. The energy consumption at those facilities in 2007 resulted in 1.3 million tons of CO₂.

Boeing may later in 2008 disclose an estimate of more comprehensive carbon dioxide emissions and energy use figures under the scope of the Carbon Disclosure Project (CDP6).

CO₂ Emissions at Major U.S. Sites



Footnotes:

- Boeing calculates its corporate-wide emissions using the Climate Leaders GHG Inventory Guidance, which defines how Partners working with EPA inventory and report their GHG emissions. This Guidance is based on the existing GHG Protocol Corporate Accounting and Reporting Standard developed by the World Resources Institute and the World Business Council for Sustainable Development.
- Like energy use, CO₂ emissions are calculated only from electricity and natural gas. Other fuels are not represented in these totals.
- Normalized for divestitures by excluding Wichita, now Spirit AeroSystems, from 2002 to 2005. IDS Wichita is included.
- Reflects CO₂ emissions from all major U.S. manufacturing operations.

Energy Conservation

» Carbon Dioxide Emissions

Water Conservation

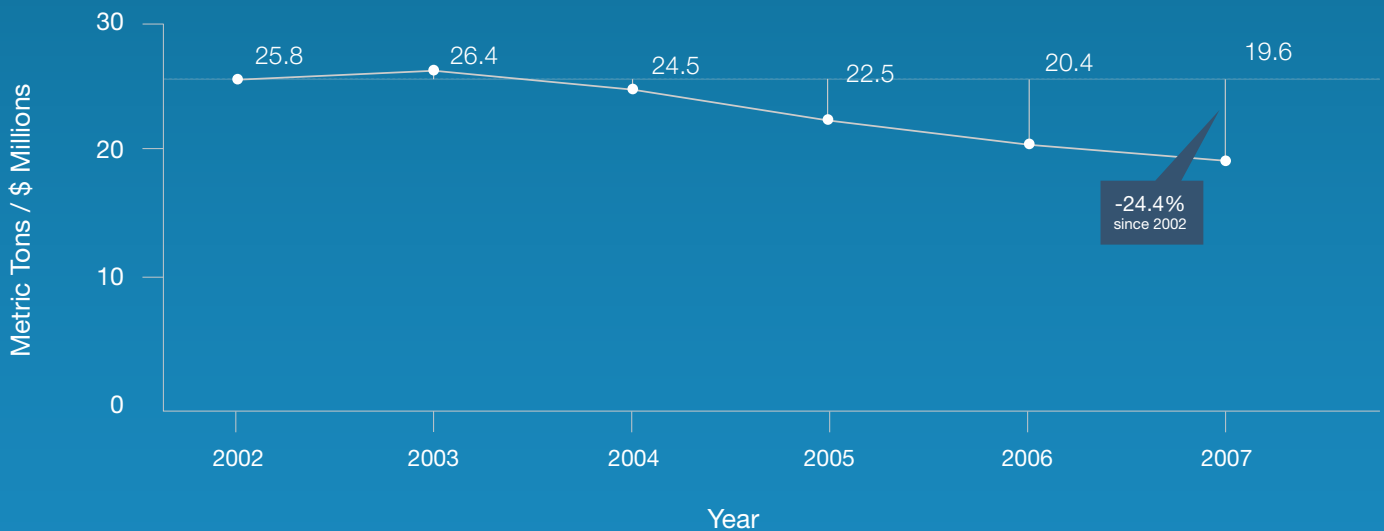
Hazardous Waste and Recycling

Toxic Release Inventory

Environmental Awards

(continued from page 38)

CO₂ Emissions Intensity at Major U.S. Sites



Footnotes:

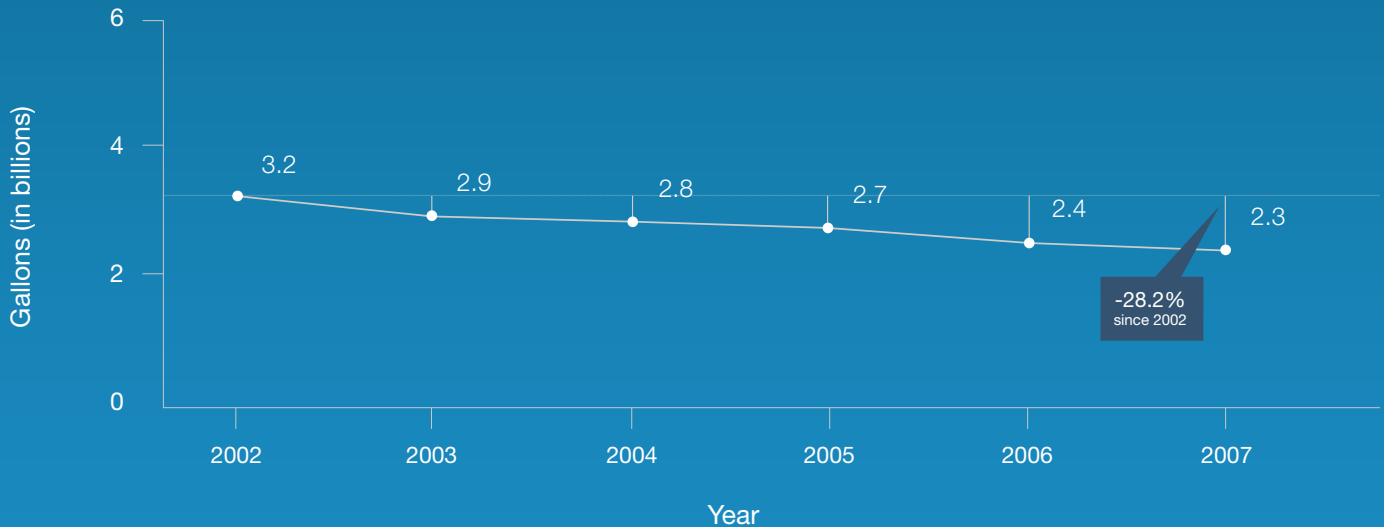
- Boeing calculates its corporate-wide emissions using the Climate Leaders GHG Inventory Guidance, which defines how Partners working with EPA inventory and report their GHG emissions. This Guidance is based on the existing GHG Protocol Corporate Accounting and Reporting Standard developed by the World Resources Institute and the World Business Council for Sustainable Development.
- Like energy use, CO₂ emissions are calculated only from electricity and natural gas. Other fuels are not represented in these totals.
- Normalized for divestitures by excluding Wichita, now Spirit AeroSystems, from 2002 to 2005. IDS Wichita is included.
- Reflects CO₂ emissions from all major U.S. manufacturing operations.

- Energy Conservation
- Carbon Dioxide Emissions
- » Water Conservation
- Hazardous Waste and Recycling
- Toxic Release Inventory
- Environmental Awards

Water Conservation

Boeing has reduced water consumption by 28.2 percent since 2002 by aggressively implementing improvements in our production processes and building systems equipment. We chartered a Water Conservation team to lead our improvement efforts, implemented major water reduction projects ranging from total wastewater and steam condensate recycling to rinse water reduction, and outfitted our newly constructed and renovated buildings with low-flow toilets, faucet aerators and auto-off faucets. And we will continue to pursue further improvements in this important area, even as our production rates increase.

Water Use at U.S. Sites



Footnotes:

- Reflects water usage from U.S. operations only.
- Includes Wichita, now Spirit AeroSystems, from 2002 to 2005.
- 2007 water use data is estimated.

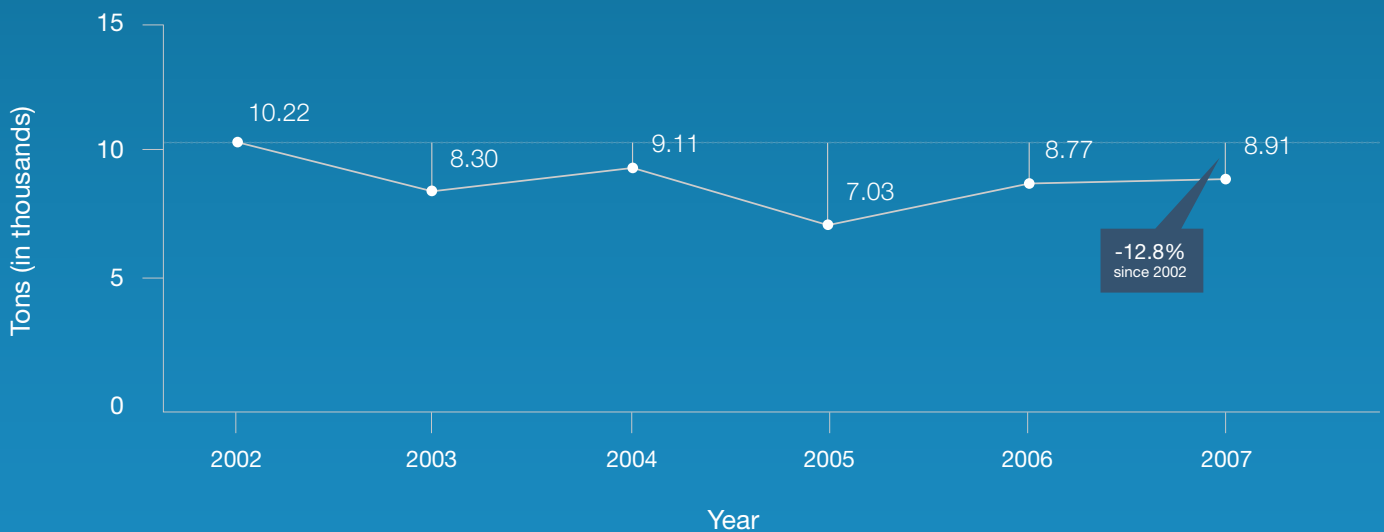
- Energy Conservation
- Carbon Dioxide Emissions
- Water Conservation
- » Hazardous Waste and Recycling
- Toxic Release Inventory
- Environmental Awards

Hazardous Waste and Recycling

Boeing is aggressively pursuing reductions in hazardous waste across the value stream, from better coordination with our partners to reduce unused chemicals to replacing hazardous materials with more environmentally progressive solutions. Since 2002, hazardous waste has been reduced by 30.7 percent on a revenue-adjusted basis. Last year, Boeing’s Mesa facility began using a new, chrome-free paint primer on Apache helicopters in production to reduce chrome usage and manufacturing waste. And our paint hangars in Everett, Seattle and Renton, Wash., have replaced the conventional chromated conversion coat with a Boeing-invented sol-gel material to eliminate chromium. At our Everett paint hangar in 2007, the chemical substitution resulted in a reduction in rinse water usage by 160,000 gallons and eliminated chromated wastewater for this process.

We will boost our recycling rates from approximately 60 percent to 75 percent by 2012 through a number of different initiatives, including the maturing of office recycling programs to reduce cans, bottles and paper from landfills. Specific sites have already made significant improvements; for example, our fabrication facility in Portland, Ore., recycled 93 percent of all solid waste in 2007.

Hazardous Waste at U.S. Sites



Footnotes:

- Reflects hazardous waste from U.S. operations only.
- Totals normalized for divestitures by excluding Wichita, now Spirit AeroSystems, from 2002 to 2005.
- Operational hazardous waste does not include remediation and construction activity.

Energy Conservation

Carbon Dioxide Emissions

Water Conservation

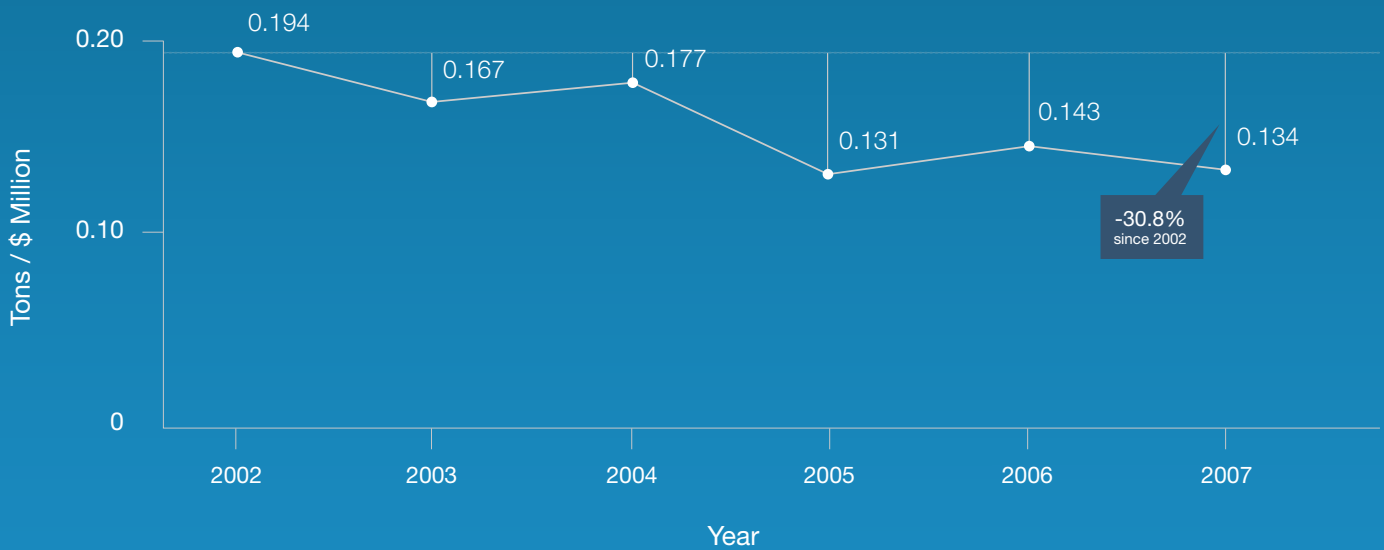
» Hazardous Waste and Recycling

Toxic Release Inventory

Environmental Awards

(continued from page 41)

Hazardous Waste Normalized to Enterprise Revenue



Footnotes:

- Reflects hazardous waste from U.S. operations only.
- Totals normalized for divestitures by excluding Wichita, now Spirit AeroSystems, from 2002 to 2005.
- Operational hazardous waste does not include remediation and construction activity.

- Energy Conservation
- Carbon Dioxide Emissions
- Water Conservation
- Hazardous Waste and Recycling
- » Toxic Release Inventory
- Environmental Awards

Toxic Release Inventory

Boeing significantly reduced its Toxic Release Inventory releases through the reformulation of more environmentally progressive manufacturing materials and the application of Lean principles to minimize usage and waste.

However, transfers increased in 2006 due to production rate increases and a reduction in the amount of chemicals we treated on-site at some of our facilities (which resulted in offsite shipments for treatment).

Toxic Release Inventory (TRI)*

Releases**	2002	2003	2004	2005	2006
Releases (millions of lbs)	0.61	0.47	0.33	0.22	0.25
Percentage change		-23%	-46%	-64%	-59%
Normalized to revenue (lbs/million \$ revenue)	12	10	6	4	4
Percentage change from normalized		-18%	-45%	-65%	-65%
Transfer***					
Transfers (millions of lbs)	2.1	1.7	1.8	1.7	3.3
Percentage change		-19%	-14%	-19%	57%
Normalized to revenue (lbs/million \$ revenue)	40	34	35	32	54
Percentage change from normalized		-13%	-12%	-20%	35%
Total					
Total release and transfers (millions of lbs)	2.7	2.2	2.1	1.9	3.5
Percentage change		-19%	-22%	-30%	30%
Normalized to revenue (lbs/million \$ revenue)	51	45	41	35	57
Percentage change from normalized		-13%	-20%	-31%	11%
Revenue (billions)	52.7	49.3	51.4	53.6	61.5

* Normalized for major divestitures, including the Wichita site.

** Releases are direct to air, water and land.

*** Transfers are shipments off-site and to Public Owned Treatment Works (POTW).

Energy Conservation
Carbon Dioxide Emissions
Water Conservation
Hazardous Waste and Recycling
Toxic Release Inventory
» Environmental Awards

Environmental Awards

We are committed to working with the community and being transparent in our operations and remediation activities. Our efforts have been recognized by a number of independent organizations. But our real satisfaction comes from knowing our work is having a positive effect on the environment.

- Five Boeing employees—Steven Baughcum, Mikhail Danilin, Douglas DuBois, Stephen Henderson and Donald Sutkus—were presented certificates of appreciation by the International Panel on Climate Change (IPCC) for contributing substantially to the work leading to the Nobel Peace Prize awarded the IPCC in 2007 for its efforts on man-made climate change research. The employees served as lead authors on chapters focused on aircraft emissions scenarios, modeling of aircraft emissions impact on atmospheric composition, aircraft technology, and aircraft-produced aerosols and cloudiness for the 1999 IPCC Special Report on “Aviation and the Global Atmosphere.” Baughcum and Danilin have also actively served as technical reviewers of the main IPCC climate change assessment reports over the last ten years. Boeing is continuing to study how aviation can lessen its environmental impact.
- Boeing’s Renton and North Boeing Field sites in Washington State were recognized by the King County Department of Natural Resources for meeting all of the industrial wastewater discharge permit terms and conditions. This recognition marked North Boeing Field’s 11th consecutive annual Gold Award and Renton’s 10th consecutive annual Gold Award.
- The F/A-18E/F and EA-18G Acquisition Programs Green Hornet Team recently captured its fourth consecutive Chief of Naval Operations Environmental Excellence in Weapon System Acquisition team award. Established in 1993, the team focuses on developing ideas that lead to improving existing processes or products—or sometimes replacing them with more environmentally progressive substitutes. The team’s work has had a direct impact at St. Louis-based Boeing facilities, helping to reduce hazardous wastes by more than 62 percent since 2005.

Energy Conservation

Carbon Dioxide Emissions

Water Conservation

Hazardous Waste and Recycling

Toxic Release Inventory

» Environmental Awards

(continued from page 44)

- The P-8A Poseidon Environment, Safety and Occupational Health team recently received the Secretary of the Navy Award for Environmental Excellence and the Chief of Naval Operations Environmental Excellence in Weapon System Acquisition team award for exceptional environmental stewardship. The team was recognized for incorporating environmentally progressive design, material substitution, pollution prevention and recycling into the acquisition process. By undertaking environmental assessments for flight testing and incorporating a robust methodology, compliant with federal regulations DoD 5000.1 and 5000.2, to more efficiently manage environmental considerations throughout the airplanes' life cycle—from design to operations to end-of-life disposal—the team has implemented significant improvements.
- Boeing Mesa, Ariz., captured an EPA Environmental Outstanding Achievement Award for its contributions to protecting the environment in Arizona.
- Boeing Mesa, Ariz., received Clean Air Campaign Awards for Outstanding Trip Reduction and Outstanding Alternate Mode User (Bicyclist).
- Boeing San Antonio, Tex., received the Alamo Area Council of Governments Environmental Stewardship Award.
- Local water quality awards were presented by water treatment districts to many Boeing sites, including Portland, Ore.; Wichita, Kan.; St. Louis and St. Charles, Miss.; the Boeing Electronics Center in Renton, Wash.; and San Antonio and El Paso, Tex.

Energy Conservation
Carbon Dioxide Emissions
Water Conservation
Hazardous Waste and Recycling
Toxic Release Inventory
» Environmental Awards

(continued from page 45)

U.S. Navy Honors Green Hornet Team Environmental Efforts

The F/A-18E/F and EA-18G Acquisition Programs Green Hornet Team recently captured its fourth consecutive Chief of Naval Operations Environmental Excellence in Weapon System Acquisition team award.

Established in 1993, the team focuses on developing ideas that lead to improving existing processes or products—or sometimes replacing them with more environmentally progressive substitutes. The team’s work has had a direct impact at St. Louis-based Boeing facilities, helping to reduce hazardous wastes by more than 62 percent, since 2005.

Led by the U.S. Navy’s F/A-18 and EA-18G program office, PMA-265, the team is composed of members from Boeing and other key Super Hornet suppliers, including Hornet Industry Team members Northrop Grumman, Raytheon and GE Aviation.

The team has made extensive progress, such as investigating ways to reduce engine noise and greenhouse gas emissions. Other successes include reducing—sometimes eliminating—airborne paint dust created by sanding operations. The new paint removal process developed by the team reduced paint dust particles and slashed process time by more than four hours per aircraft.

Boeing Environmental
Philanthropy
Boeing-Sponsored Employee
Volunteerism

Boeing made cash contributions of nearly \$10 million over the last five years to support innovative environmental programs.

Boeing employees collectively donate thousands of hours of their own time to company-sponsored environmental volunteer events each year.

Investing in Our Communities



Boeing, through its Global Corporate Citizenship function and together with individual employees, is actively involved in efforts to preserve the environment.

» Boeing Environmental
Philanthropy
Boeing-Sponsored Employee
Volunteerism



Through Green Corridor's Tree Buddies program, students are taught environmental awareness. Here, they participated in an art workshop where they created larger-than-life models of butterflies out of willow tree branches and paper.

Photo Courtesy of Green Corridor

Boeing Environmental Philanthropy

Recognizing the interdependence between our business and our communities, we believe that partnering with nonprofits and other key community stakeholders to promote environmental preservation is key to our role as a global corporate citizen.

In fact, the environment is one of Boeing's five strategic community investment areas. Over the last five years alone, as a company we have made cash contributions of nearly \$10 million to support innovative environmental programs across the globe to protect vital natural assets, restore or improve critical habitats and train citizens to protect and preserve the environment.

In 2007, our environmental preservation efforts included grants to:

- Green Corridor in support of its Tree Buddies program, which teaches middle school-aged students environmental awareness through visits to London's Royal Botanic Gardens and other educational activities.
- Bio Trek, part of the Biological Sciences Department of California State Polytechnic University, to help it expand an educational outreach program.
- The Nature Conservancy of Alabama in support of the Whitaker Bridge and Trails Project.
- Bolsa Chica Conservancy, a nonprofit coalition dedicated to protecting the Pacific Coast wetlands, for an educational program for high school and college students.

These nonprofits and the many more like them that we support each year underscore our emphasis on environmental preservation and conservation through community investment.

- » Boeing Environmental Philanthropy
- Boeing-Sponsored Employee Volunteerism

(continued from page 48)

Cascade Land Conservancy

The Cascade Land Conservancy was awarded a \$750,000 grant from The Boeing Company to support the work of The Cascade Agenda in forests, along creeks and streams and in the restoration of forested parks.

The grant, one of the largest strategically invested with an environmental nonprofit by Boeing, comes as the Conservancy moves into the public phase of a \$20 million Cascade Agenda Campaign, designed to implement the goals and strategies of The Agenda. The Cascade Agenda, launched in May 2005, is a 100-year visionary regional program focused on conserving 1.3 million acres of working forests, farmlands and revitalizing cities and towns throughout the region.

“This grant reflects the far-reaching promise of The Cascade Agenda and the proven track record of the Cascade Land Conservancy,” said Mary Armstrong, vice president of Environment, Health and Safety for The Boeing Company. “Boeing is proud to continue its long-standing support for the environment because it helps us maintain the Puget Sound region as an attractive, vibrant and competitive place for our employees to live and work.”

The Conservancy will use the gift as a catalyst to accelerate its work on implementing the goals of The Agenda, which links significant land conservation with the need for housing choices, livable cities and a strong economy.

Boeing Environmental

Philanthropy

» Boeing-Sponsored Employee
Volunteerism

Boeing employees participate in a wetlands clean-up day organized by Boeing at the Bolsa Chica Conservancy in Southern California.

Photo Courtesy of the Bolsa Chica Conservancy

Boeing-Sponsored Employee Volunteerism

Boeing's employees are integral to the company's commitment to environmental improvement, and they are active in company-sponsored volunteer events to which they collectively donate thousands of hours of their own time each year. These activities often leverage relationships with grantees in order to maximize Boeing's impact, such as the annual volunteer event with Florida nonprofit Keep Brevard Beautiful to clean up the "spoil islands" that dot the Indian River Lagoon and Banana River.

In addition, the Employees Community Fund of The Boeing Company, one of the world's largest employee-owned and directed giving programs of its kind, makes grants to environmental nonprofits using contributions from employee members.