# **Energy and the Environment: Reducing Consumption and Waste**

At Raytheon, stewardship starts in the workplace but extends far beyond. We show respect for our external environment by eliminating pollution and waste, minimizing the use of water and other natural resources, maximizing reuse and recycling and working steadily to reduce our carbon footprint. We work regularly with customers, suppliers, partners, industry and government leaders, academic researchers and neighbors to devise and implement solutions that work for the business and protect the world around us. We strive to integrate energy efficiency and environmentally friendly behavior into the daily practice of every Raytheon business.

In 2007, we pursued a variety of infrastructure and process improvements to fulfill these responsibilities. Among them were innovations in information technology and environmental education and a new requirement that energy metrics be incorporated into all future building proposals. Our progress led to local, regional and national recognition, including the 2007 ENERGY STAR® Partner of the Year Award from the U.S. Department of Energy and the U.S. Environmental Protection Agency. We also ranked #1 among aerospace and defense companies on *Corporate Responsibility Officer* magazine's list of the "100 Best Corporate Citizens."

#### MAKING MANUFACTURING LEAN AND GREEN

Economy of production and good stewardship go together in lean manufacturing practices, which minimize waste, cost and energy consumption. One measure of Raytheon's success as a lean manufacturer is that since 2004, we have been honored eight times with the Shingo Prize, one of the premier manufacturing recognition programs in North America. In 2007, Raytheon received two Shingo

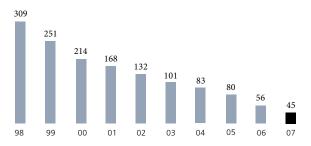
awards: Missile Systems' Louisville, Ky., facility received a national Shingo Prize for Excellence in Manufacturing, and Integrated Defense Systems' Seapower Capability Center in Portsmouth, R.I., received a Northeast Shingo Gold Prize for Excellence in Manufacturing.

In addition to efficiency gains, we also rigorously pursue ways to eliminate the use of potentially harmful chemicals in our products and manufacturing processes. In 2007, Raytheon teams held internal summits on lean manufacturing and energy. Insights from these summits have resulted in improved measures to eliminate materials restricted or prohibited by European Union standards. Raytheon also continues to invest in alloys and processes to implement greener manufacturing methods. By using powder coatings to provide corrosion resistance instead of traditional wet coatings, we have avoided the production of volatile organic compounds and hazardous waste.

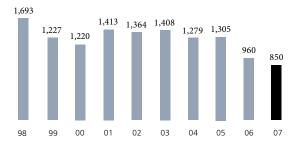
#### **POLLUTION PREVENTION AND WASTE REDUCTION**

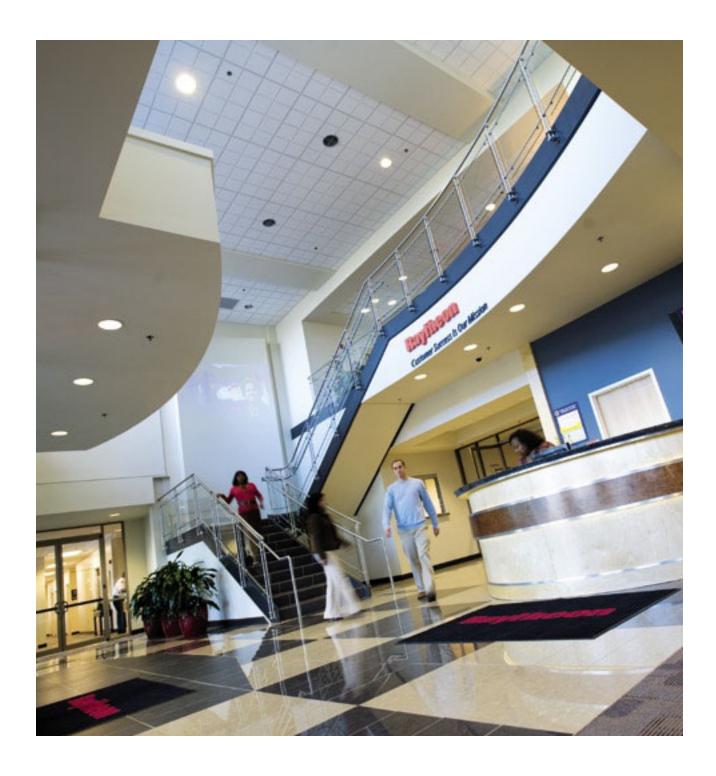
In our companywide effort to prevent pollution and preserve natural resources, we continue to work toward zero waste generation and the recycling or reuse of waste we cannot eliminate. Since 1998, Raytheon has reduced hazardous waste by 85 percent per billion dollars of revenue. In 2007 alone, we reduced hazardous waste by 20 percent to 45 tons per billion dollars revenue. We generated approximately 1,200 tons of hazardous waste, of which 82 percent was recycled, blended into fuels, treated or incinerated.

#### Tons of Hazardous Waste Generated / \$B Revenue



#### Tons of Solid Waste Generated / \$B Revenue





Raytheon's Warfighter Protection Center in Huntsville, Ala., has lived up to its environmental promise — and then some. The 143,000 square-foot facility became a symbol of earth-friendly design when it achieved a Silver rating from the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) program. This is the first building in Alabama to receive this rating. Equally important, after a year of use, employees have discovered that it's also a great place to work, with innovative workspaces and state-of-theart systems that provide a welcome break from traditional "cubicle-farm" layouts. As a result, while saving energy every day, it's unleashing new energy on the part of the people inside.

Since 1998, Raytheon has reduced its solid waste per billion dollars of revenue by 50 percent, with an 11 percent reduction last year. In 2007, we generated approximately 19,550 tons of solid waste and recycled 58 percent, or 11,300 tons. By recycling that waste rather than placing it in landfills, we saved approximately 30,000 metric tons of carbon dioxide equivalent greenhouse gas (GHG) emissions (using the Environmental Protection Agency's "Waste Reduction Model").

We continually seek ways to reduce waste. For example, we are currently working with dining centers at our major locations to develop waste reduction and recycling plans. We have partnered with our dining center supplier to implement organic waste recycling programs at several New England locations. We intend to expand this partnership across the company.

Waste metrics are collected monthly and reported quarterly to our Board of Directors.

#### **ENVIRONMENTAL, HEALTH AND SAFETY AUDITS**

Raytheon's robust internal Environmental, Health and Safety (EHS) audit program performs an average of 25 audits per year to assess compliance with governmental and company EHS requirements. Major operating locations are typically audited every three to five years. Sites are assessed based on five established protocols: EHS Management Systems, Asset Protection, Industrial Hygiene, Environmental and Safety. Locations are prioritized for audits based upon risk and the complexity of their operations. A corporate staff member leads each audit team, which includes members from multiple operating locations. Audit results are reported up through the business presidents and to the CEO.

#### **ENVIRONMENTAL SUSTAINABILITY PROJECTS**

To encourage environmental sustainability activities throughout the company, we established a companywide goal to perform over 160 environmental sustainability projects during 2008. Information regarding the projects will be collected monthly and reported quarterly to senior management and our Board of Directors. There are many types of sustainability projects, including: procurement of green products (recycled paper, eco-friendly cleaning supplies, computers, etc.), reducing the use of GHG chemicals, improving fuel efficiency and increasing the use of alternative fuels.

#### **ENVIRONMENTALLY RESPONSIBLE RESTORATION**

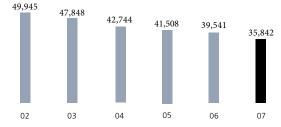
Raytheon invests significant resources in the responsible cleanup of past environmental contamination. An established remediation leadership team of company professionals continually evaluates remediation technologies to limit the risks to human health and the environment and to reduce program costs. Raytheon is involved in 45 active remediation sites, with a future combined cost estimate of \$149 million (present value of \$99 million before recovery). The 45 sites include 25 former and ten current operating locations, as well as ten third-party landfill or recycling locations. Eight of the 45 sites are classified as Federal Superfund sites, one is a former operating location and seven are third-party landfill or recycling operations.

#### **CLIMATE AND GREENHOUSE GAS EMISSIONS**

Climate change and the role of GHG emissions are important environmental, economic and social issues that have gained worldwide attention. Raytheon has been tracking its GHG emissions since 2002 and has

#### Metric Tons of Greenhouse Gas Emissions / \$B Revenue\*





taken actions to reduce them. In 2002, Raytheon joined the U.S. EPA's Climate Leaders program as a charter member. Climate Leaders is a voluntary industry/government initiative that requires participating companies to set long-term GHG reduction goals and develop comprehensive GHG inventories based on standards developed by the World Resources Institute and the World Business Council for Sustainable Development. Raytheon set an aggressive goal to reduce GHG emissions by 33 percent from 2002 to 2009, normalized by revenue. By the end of 2007, we achieved a 28 percent reduction toward this goal. Since 2002, we have avoided cumulatively over 140,000 metric tons of carbon dioxide equivalent GHG emissions.

Raytheon owns or leases approximately 200 facilities in the United States. Of those, ten generate over 60 percent of total company GHG emissions. More than 90 percent of Raytheon's GHG emissions are attributable to its energy consumption, primarily from purchasing electricity from third-party power plants, and the burning of natural gas to heat buildings. Raytheon has had a vigorous energy conservation program since the 1970s and continues to accelerate its efforts.

## ENERGY CONSERVATION FOR A COMPETITIVE ADVANTAGE

Raytheon's enterprise-wide *Energy Conservation* for a Competitive Advantage program achieved higher levels of participation and exceeded all goals established in 2007. We curbed electricity consumption by approximately 10 percent adjusted for business growth, saving approximately \$9 million or enough electricity to power some 10,000 homes for a year. Since 2002, Raytheon has reduced overall energy consumption 11.7 percent while revenues have risen 45 percent. Highlights in 2007 included:



- > Developing a new Energy Citizen program and qualifying 1,400 people
- > Increasing our Energy Champion network to 1,500 members
- > Applying Six Sigma focus to energy challenges through our Enterprise Energy Team



Raytheon Space and Airborne Systems' Energy Team celebrates Earth Day in El Segundo, Calif.

- > Engaging 300 of our largest suppliers and vendors in energy conservation programs
- > Encouraging suppliers to become ENERGY STAR and Climate Leaders partners
- > Working with internal organizations to design, develop and manufacture more energy-efficient processes and products
- > Winning an Energy Efficiency Award in California's fifth annual Flex Your Power Awards and a U.S. EPA New England Environmental Merit Award

Through our Energy Champion training, we encourage employees to embrace an energy conservation culture and become change agents both at work and at home. Energy Champions continually seek out energy reduction opportunities, implement concepts that work, share their enthusiasm and challenge others to be equally proactive.

### ENERGYCONSERVATIONSUMMIT 2007

Raytheon Chairman and CEO William H. Swanson gave the opening remarks at the company's Energy Conservation Summit 2007. The summit profiled each business's programs and progress in energy management and highlighted additional opportunities in the areas of supplier engagement, energy procurement, green buildings and facility upgrades, renewable energy applications and employee engagement.