Microsoft on the Topic: Environmental Sustainability

Overview

At Microsoft, we believe in the potential of software and technology innovation to help people and businesses around the world improve the environment. Our goal is to reduce the impact of our operations and products, and to be a leader in environmental responsibility. We are committed to developing software, hardware, solutions, and services that can help customers and partners address increasingly complex environmental challenges. Microsoft is working with leading organizations around the globe to help increase the value that our technologies can bring to environmental issues.

Key Issues and Solutions

The Microsoft Environmental Principles, which we adopted formally in 2006, guide our long-term goals and define our ongoing commitment to protect the environment, conserve natural resources, and safeguard the health and safety of our employees, our customers, and the many countries and local communities where we do business. For more information about the Microsoft Environmental Principles, see http://www.microsoft.com/about/corporatecitizenship/citizenship/businesspractices/environmentalprinciples.mspx

Microsoft also requires all vendors and suppliers to abide by applicable environmental laws and to follow environmental practices that reflect both the letter and the spirit of those laws. Our vendor contracts restrict the use of certain toxic or harmful materials and often require vendors to use recycled or recyclable content in Microsoft products and packaging.

Corporate Environmental Practices

Microsoft is committed to ongoing evaluation and improvement of our business practices to minimize our direct and indirect impact on the environment. A few examples include:

- **Data Center Operations**: We are working to create energy efficient data centers. We use sustainable building practices and renewable resources whenever possible, and future data centers are being designed under the LEED Green Building Rating System. Our site in Dublin, Ireland, opening in 2009, will be cooled with outside air for 30 percent to 50 percent greater efficiency than similar facilities of comparable scale. We also have published best practices to share with industry the expertise we have gained.
- **Transportation and Commuting**: Microsoft has created and funds its own transport system called the Microsoft Connector Service—a series of busses which eliminate approximately 30,000 miles of travel per day. Our intra-campus shuttle service contains approximately 50 hybrid vehicles. Microsoft also offers free public transportation passes to its employees and vendors, subsidizes vanpools, assists in carpool formation, and promotes bike/walk commuting. For more information, see: http://www.microsoft.com/presspass/press/2007/sep07/09-06RegionalExpressBusPR.mspx
- **Using Renewable Power**: Microsoft's Mountain View, California campus generates 480 kilowatts from 2,288 solar panels covering more than 31,000 square feet of rooftop, and offsets 6 percent of its annual total energy consumption. Microsoft UK purchases 100 percent renewable electricity at the main office in Thames Valley Park. Our data center facility in Quincy, Washington uses 100 percent renewable hydropower from the Columbia River Basin. In San Antonio, Texas, our data center will leverage the city's environmental recycled water program and uses wind power as its primary energy source.
- **Efficient Building Design**: Newer Microsoft-owned buildings are designed to LEED standards and consume more than 20 percent less energy than traditional buildings. At Microsoft's new campus in Hyderabad, India, double-glazed windows and sunshades reduce reliance on air conditioning, lights turn off

automatically, and a reservoir recycles rainwater to irrigate the 48-acre campus and run energy-efficient, water-cooled AC units.

- **Reducing Waste**: Microsoft began composting food waste from cafés, kitchenettes and conference rooms at its Redmond campus in July 2008. Changes included switching tableware, food containers and flatware to more eco-friendly compostable products; converting all cafés' fryer oil to biodiesel; and implementing new waste management with more recycling options. It is estimated that 285,000 pounds of food per year will be composted at the Redmond campus.
- **Driving Increased Transparency:** Microsoft voluntarily measures its carbon footprint and provides annual reports on its greenhouse gas emissions to the Carbon Disclosure Project (CDP). We were proud to be included in the CDP's 2007 Climate Disclosure Leadership Index.
- **Beyond Compliance**: Microsoft is committed to adopting leadership practices in pollution prevention and eco-efficiency, and to sharing best practices with others.

Technology Leadership and Innovation

Microsoft's products help business, government and individuals conserve resources and address environmental challenges.

Reducing the energy required to run software

- **Windows Vista** features significant innovations to reduce computer energy consumption, including the ability to automatically scale the performance of the platform processor up or down, according to demand. It's estimated that simply by placing PCs in sleep mode, an organization could:
  - Reduce greenhouse gasses by half a ton annually for each computer;
  - Reduce greenhouse emissions by the equivalent of one car for each 10 computers;
  - Reduce costs by $70,770 for every 1,000 computers.[1]
- **Windows Server 2008** offers virtualization and power management settings that optimize energy efficiency.
  - Tests reveal that Windows Server 2008 achieved power savings of up to 10 percent over Windows Server 2003 at comparable levels of throughput.
  - Hyper-V makes it possible to consolidate servers onto a much smaller number of physical machines, significantly reducing power consumption without sacrificing performance.
- **Setting bold goals for the industry:** Microsoft, along with World Wildlife Fund, Intel, HP and others, is committed to reducing the IT industry's annual carbon footprint by more than 50 million tons within the next three years. We have collectively made this statement through the Climate Savers Computing Initiative, an organization for which Microsoft serves on the board.

Potential of software to monitor and address global environmental issues

- **Using technology to reduce travel:** Microsoft Unified Communications (UC) solutions streamline communications and collaboration, reducing the need for business travel and commuting. Enterprise telephony (VoIP) and the integration of telephony and e-mail infrastructures with unified messaging, enables customers to collaborate across an integrated platform of e-mail, voicemail, calendaring, instant messaging, and conferencing. Microsoft Research done in conjunction with Forrester Research shows UC can reduce travel by 10 percent, and as much as 30 percent when widely deployed across an organization.
- **Driving changes in transportation:** Microsoft has recently released Clearflow to 70 US cities. Based on sophisticated algorithms developed by Microsoft Research (MSR), Clearflow enables drivers to find routes based on the least traffic, thereby significantly reducing travel time and pollution.
- **Using software to drive scientific knowledge:** Microsoft Research scientists are working on ways to leverage technology innovation for environmental applications. Efforts include:
  - Working to cut energy use in data centers and deploying sensors that can find energy "leaks" in homes and offices.

[1] "Windows Vista Energy Conservation," Microsoft Corporation, October 2006.

  - Developing novel computational tools and methods to predict and mitigate rapid changes in Earth's life support systems
  - Providing financial grants to external researchers and collaborating on specific environmental projects, including $500,000 in grants in 2008 to support research to increase the energy efficiency of computing.
- **Visualizing the impact of climate change and environmental issues:** Microsoft Virtual Earth allows organizations to visualize data to gain better insight into global trends and patterns. The U.S. Environmental Protection Agency and the European Environmental Agency are relying on Microsoft Virtual Earth to share environmental information with citizens, scientists, and policymakers.
- **Helping customers manage their carbon footprint:** Microsoft Dynamics' Environmental Sustainability Dashboard for Microsoft Dynamics AX will allow small-to-medium-sized businesses to better measure and manage their carbon footprint from greenhouse gas emissions.
- **Educating customers:** Through MSN Green, Microsoft provides consumers with a one-stop resource for the latest environmental news and tools that enable them to take action on the environment.
- **Eliminating the use of harmful substances:** In accordance with the precautionary principle, Microsoft prohibits the use of many harmful substances in its hardware manufacturing, plans to phase out (as safe and feasible) phthalates and brominated flame retardants (BFR) by the end of 2010, has removed PVC from product packaging, and has reduced the use of plastic clamshells by 70 percent.

Global Partnerships

Microsoft actively partners with leading organizations to drive global action on environmental sustainability. Some examples include:

- **Clinton Foundation**: Microsoft and the Clinton Foundation are working to create a software plus services application to enable cities around the globe to measure, track and improve their greenhouse gas emissions. The tool will enable cities to collaborate and share best practices on the most effective ways to reduce greenhouse gases.
- **Climate Savers Computing Initiative**: Microsoft is a board member of this industry coalition, which is seeking to reduce global CO2 emissions from the operation of computers by 54 million tons annually (the equivalent of taking 11 million cars off the road).
- **European Environmental Agency**: Microsoft is helping the EEA to inform Europeans in real time about changes to environmental conditions—and empowering citizens to play their part in data gathering.
- **Green Grid**: Microsoft is a board member of this global consortium of ICT companies dedicated to advancing energy efficiency in data centers and business computing ecosystems.
- **Equipment Refurbishers**: Through our Microsoft Authorized Refurbisher (MAR) programs and others such as Digital Pipeline (DP), Microsoft provides low-cost licenses for Microsoft software to help equipment refurbishers extend the useful life of more than 500,000 computers per year.

Additional Information:

- For more information about environmental sustainability at Microsoft, see *Microsoft Environment* at http://www.microsoft.com/environment and *Microsoft Corporate Citizenship* at http://www.microsoft.com/about/corporatecitizenship/citizenship/businesspractices/environmentalimpact.mspx
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