

# **The WWF Climate Savers Program: Greenhouse Gas Reduction Strategies at Work**

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## **ABSTRACT**

This study examines innovations in corporate greenhouse gas management strategies that a number of leadership companies have adopted under the World Wildlife Fund's (WWF) Climate Savers Program. In the United States, WWF is a partner with the Center for Energy and Climate Solutions (the Center) in managing Climate Savers, a voluntary partnership program designed to work with businesses to develop and adopt innovative climate and energy solutions, and gain recognition for the efforts made. In Climate Savers, companies measure greenhouse gas (GHG) emissions establish a reduction target and implement a strategy to achieve it, commit to independent verification of the baseline year and performance status every year thereafter; and publicly report their progress. The six businesses that have joined the program are International Business Machines (IBM), Johnson & Johnson, Polaroid Corporation, Nike, Lafarge and The Collins Companies.

## **Introduction: The Program**

WWF invites leading companies to participate in Climate Savers, to establish and implement strategies for reducing greenhouse gas emissions. By working with business to develop replicable models of cost-effective corporate climate mitigation strategies, WWF demonstrates that increasing efficiency and aggressively reducing greenhouse gas emissions benefits the environment and the economy in numerous ways.

The Climate Savers program goals include:

- Producing significant and measurable emissions reductions;
- Demonstrating that a comprehensive greenhouse gas management portfolio is profitable for companies;
- Recognizing corporate environmental leadership and supporting business efforts to implement greenhouse gas management strategies; and
- Ensuring independent verification of emissions reductions through third party verification that is consistent with the guidelines established in the GHG Protocol, a multi-stakeholder accounting and reporting standard (for further details see [www.ghgprotocol.org](http://www.ghgprotocol.org))

WWF hopes to see the efforts and achievements of companies in the program translate into a much broader market transformation. In the near future, WWF expects greenhouse gas management strategies will be a standard part of corporate environmental management systems.

To maintain environmental integrity, WWF accepts no payment for companies to participate in the program. No fee is associated with the performance-based commitments that companies develop for the Climate Savers program. The first six businesses to join

Climate Savers are International Business Machines (IBM), Johnson & Johnson, Polaroid Corporation, Nike, Lafarge, and The Collins Companies.

The Climate Savers team works with each company to help customize a greenhouse gas reduction strategy. Therefore, a slightly different target and timeframe is developed for each company, to maximize the environmental benefit of the target and meet individual business goals. Customized greenhouse gas reduction targets and baselines reflect historic corporate energy performance, existing leadership targets in that sector, and the growth plans for the company. This information and other considerations all feed the development of a future-oriented leadership target. Since Climate Savers works with companies to eliminate CO<sub>2</sub> and other emissions at the source, no carbon sequestration projects are considered as part of the company's commitment.

## **Why Do Companies Join?**

WWF is often asked why companies voluntarily take on such aggressive greenhouse gas reduction targets. While companies all have individual reasons for joining Climate Savers, some reasons may include:

- The cost-effective aspects of a proactive plan, instead of the potential costs of waiting.
- Companies can start reaping the economic rewards of increased efficiency and reduced reliance on fossil fuels now.
- Companies that act soon and state GHG reduction goals get some positive press and recognition while it is still new enough to warrant coverage by the press.
- Many business leaders see the mounting evidence about global warming and feel that this is the most pressing environmental issue on the planet.
- Some companies, regardless of political debates, see it is inevitable that companies will need to develop climate management strategies to remain competitive.

## **What Exactly Have the First Six Companies Committed to Do?**

In addition to reducing greenhouse gas emissions, companies agree to participate in independent verification and help conduct outreach activities that spread best practices to others in the field.

For its Climate Savers commitment, Johnson & Johnson pledged to reduce its greenhouse gas emissions to seven percent below 1990 levels by the year 2010, with an interim goal of four percent below 1990 levels by 2005. The company intends to accomplish this by enhancing its corporate energy best practices, optimizing processes for increased efficiency, re-commissioning buildings, adopting new energy efficient climate mitigation technologies, and utilizing more environmentally friendly sources of energy. The company has been installing a number of on-site solar generation projects in its facilities since the Climate Savers Agreement was signed.

From 1998 to 2004, IBM intends to achieve average annual CO<sub>2</sub> emissions reductions, equivalent to four percent of the emissions from the company's annual fuel and electricity use. The company's commitment builds on a history of strong energy management systems, which can continue to provide opportunities to save money and reduce energy use.

Polaroid Corporation committed to reduce CO<sub>2</sub> emissions, 25 percent below 1994 levels by the year 2010. The company also established an interim target of reducing emissions 20 percent below 1994 levels by the year 2005. Polaroid intends to achieve these reductions by undertaking best-in-class energy management practices; upgrading and replacing compressors, chillers, boilers, hot water systems, lighting systems, motors and other types of equipment; purchasing renewable power; and switching to cleaner sources of fuel for on-site needs.

Nike joined with a commitment to reduce carbon dioxide emissions from Nike-owned facilities and business travel activities 13 percent below 1998 levels by the end of 2005. Nike intends to achieve this goal by pursuing energy conservation projects, purchasing green power and investing in community energy efficiency projects.

In addition, the company will be measuring the emissions of its major subcontracted footwear and apparel manufacturing facilities by year-end 2003, with the ultimate intent to determine a greenhouse gas emissions reduction strategy for these facilities in 2005. The company will also look at the climate impact of other aspects of its supply chain, from packaging systems to mode of transportation, for opportunities to improve logistics efficiency and reduce greenhouse gases. By 2005, Nike will determine how to proceed with a greenhouse gas reduction strategy for logistics.

Nike also will continue its progress to eliminate sulfur hexafluoride (SF<sub>6</sub>) and has committed to complete elimination of SF<sub>6</sub> by June of 2003.

Lafarge, the largest cement manufacturer in the world, made the impressive commitment to reduce greenhouse gas emissions ten percent below 1990 levels by 2010. Some of the areas that Lafarge will explore to reduce its emissions include increasing energy efficiency in manufacturing, buying and employing more renewable energy, and increasing the use of less carbon-intensive cement materials, such as fly ash from coal-fired power plants and slag from the steel industry.

The Collins Companies has been a family-owned business since 1855, and was the first North American forest products company to grow, manufacture, and market FSC (Forest Stewardship Council) certified lumber, particleboard, and specialty plywoods. In its Climate Savers Agreement, the company pledges to reduce their CO<sub>2</sub> emissions 15 percent below its 1999 levels by 2009. In addition, to increasing the company's overall efficiency, Collins is investing in harnessing power from existing steam delivery systems, using backpressure steam turbines to generate electricity. By capturing and using this thermal energy to generate additional electricity, the efficiency of electricity production is significantly enhanced and carbon dioxide emissions may be reduced by as much as 60 percent in comparison with conventional power generation.

All six companies are interested in learning more about emerging technologies and trends that will help them develop and update their long-term reduction approaches to accomplish these commitments in the most cost-effective way possible. Companies joining the program share information and best practices with each other, access current technical updates on specific aspects of corporate emissions reduction strategies and interact with other business leaders about cost-effective decarbonization approaches.

## **Profile of Company Achievements**

Companies are establishing comprehensive management strategies that consider the role and potential value of global warming gases when making investment decisions, electricity and energy use decisions, on-site and cleaner power purchases and movements toward emissions-reducing strategies.

### **The Collins Companies**

- In 2002 The Collins Companies invested more than \$20 million to upgrade its softwood mill in Chester, California. New production began in October, allowing the mill to gain 60% in production efficiency.
- The Fremont sawmill at Lakeview, Oregon made upgrades to a more efficient manufacturing process and installed a new low pressure kiln at the beginning of 2002.
- Collins Products shut down two natural gas boilers in the first quarter of 2002, reducing natural gas usage. The plant is now purchasing an average of 60,000 lbs/hr of steam from the City of Klamath Falls Cogen plant, an efficient steam generation facility, saving 11.2 million CO<sub>2</sub> tons/year.
- In 2002, Collins Products replaced seven constant volume pumps and replaced the existing motor control with programmable logic control inverted drives, saving 10.2 million tons of CO<sub>2</sub> in the next 15 years.
- At Kane Pennsylvania, Collins Hardwood replaced old compressors with newer, more efficient motors to save 5 million tons of CO<sub>2</sub> over the next 15 years
- Collins Products also installed motion sensors on vending machines, saving 46% of normal electrical costs to run a machine and eliminated 10 overhead lights on the particle board production line.
- From 2003-2004 a backpressure turbine will be installed in the Fremont Lakeview mill to generate approximately 638 kWh to save 27 million tons of CO<sub>2</sub> in the next 15 years.
- A small backpressure turbine is being considered for installation in a Kane, Pennsylvania hardwood mill.

### **IBM (International Business Machines)**

- IBM's performance against its Climate Savers Goal: Total estimated CO<sub>2</sub> emissions reduction percentages for 1998, 1999, 2000 and 2001 associated with energy conservation projects, were 4.6%, 4.65%, 4.62% and 6.8%, respectively.
- Energy conservation savings equivalent to 4% annually are being achieved through a variety of best practices:
  - Upgrading IT equipment with more efficient models,
  - Upgrading lighting systems to maximize energy efficiency,
  - Specifying and installing variable frequency drives on electric motors,
  - Utilizing thermal storage and freecooling opportunities,
  - Reducing reheat energy,
  - Rebalancing exhaust systems,

- Specifying and installing energy efficient motors,
- Managing air compressors in an energy efficient mode,
- Optimizing clean-room temperature and humidity settings,
- Integrating fan filter unit technology into clean room design,
- Varying temperature and humidity settings and improving of site load factor.
- Over a 12-year period (1990-2001), IBM reduced total energy use by 31% through conservation efforts alone.
- In 2001, IBM reduced electricity use by 390 million-kilowatt hours and fuel use by 2.2 million gallons of oil. The company avoided an estimated 220,100 tons of CO<sub>2</sub> emissions and saved approximately \$22.7 million.
- One percent of energy consumed at IBM comes from renewable sources.
- Wind energy for IBM Boulder: Xcel Energy delivers 300 megawatt-hours of electricity per year from wind energy resources.
- Solar energy for IBM Switzerland: In 2000, IBM Switzerland installed a photovoltaic system on the roof of its Zurich headquarters building. The installation generates 40-megawatt hours of electricity per year.
- Biomass energy for IBM UK: The IBM UK headquarters building at North Harbour entered a renewable energy contract with Eastern Energy for the supply of 48,000 megawatt hours (100 percent of the building's energy needs) of renewable energy last year. This energy supply is from landfill gas.
- Wind energy for IBM Austin: This Texas location is getting 5.25 million kilowatt-hours of electricity from renewable energy sources.

## **Johnson & Johnson**

- Johnson & Johnson is tracking and publicizing its CO<sub>2</sub> reduction goal worldwide to every level of management. The goal is also being included in the company's annual environmental report.
- A comprehensive set of energy efficiency best practices was developed by the company to cover buildings, equipment, management practices, maintenance practices, and operational practices. Sixty seven percent of the best practices have been completed worldwide.
- The company is participating in the LEED certification program for existing buildings with its world headquarters building serving as a pilot project. A task force has also been developed to create guidelines that will allow the company to obtain LEED certification for all new facilities.
- On-site renewable generation: Installation of 4 solar systems for a total of 1,193 kW at California, New Jersey and Pennsylvania facilities.
- International on-site generation includes a solar hot water system at J&J Brazil providing 20,240 kWh/yr. of hot water and a solar hot water system at Janssen-Cilag, Portugal providing 8,400 kWh/yr. of hot water.
- Purchasing of Renewable Energy:
  - All Texas operations: 15% wind power, 10.6 million kWh/yr.
  - Cordis, Netherlands: 10% wind power, 1.1 million kWh/yr.
  - Centocor, Netherlands: 100% wind power, 12 million kWh/yr.

- An annual energy week is conducted worldwide to improve employee awareness. The theme last year was “You Have the Power to Save Energy for a Brighter Future.” Activities to increase awareness include conferences in different regions and an active energy web site, which includes a renewable site and graphics depicting CO<sub>2</sub> reduction levels.
- The US fleet emissions have been inventoried and the company is in the process of establishing a reduction goal for vehicles.

### **Lafarge**

- Lafarge has put into place a global CO<sub>2</sub> management plan in an effort to make continuous progress towards meeting its reduction commitments.
- Each Lafarge operation regardless of its country or region is developing an action plan.
- Country/ regional managers are evaluated on their performance, with attention given to meeting the action plan objectives contained in the company’s three-year technical plans.
- CO<sub>2</sub> reduction action plans address resource recovery, including the use of alternate fuels and raw materials that lower the carbon intensity of cement manufacturing; the use of cementitious materials to supplement limestone as a raw material, to lower the percentage of clinker in cement products and/or percent of cement in concrete products; and improvement in the energy efficiency of plants to lower fossil fuel and electricity in the cement manufacturing process.
- CO<sub>2</sub> reduction progress will continue to be tracked on an annual and global basis.

### **Polaroid**

- Polaroid installed a 300-ton high-efficiency replacement chiller, which is saving the company 2,000,000 kWh/yr.
- The Scottish operations of the company are identifying and eliminating leaks in compressed air, vacuum and nitrogen systems. The company also installed more efficient nozzles and air knives. This means that compressors and vacuum pumps are running less, creating more efficient cycle times and using less energy. Savings will be significant.
- More energy efficient lighting has been installed throughout the company in the US and Europe. Warehouses and conference rooms have been equipped with intelligent switches, which reduce the time, that lighting is on.
- New construction and renovations are designed using standards for the efficient use of lighting and equipment.
- The Mexico operations of the company replaced diesel and liquid propane with natural gas for generating steam and hot water. This changeover resulted in a significant decrease in costs and CO<sub>2</sub>.
- At Polaroid, the Kaizen approach will be used to implement the energy element of the company's climate management strategy. The company will continuously improve its efforts to integrate energy awareness and conservation into all levels and functions of the company. In particular, Polaroid intends to ensure that users of energy will now

be supporting the energy efficiency and reduction efforts that were once primarily the domain of facilities engineers.

## **Conclusion**

There are cost-effective and practical ways to reduce greenhouse gas emissions at the source, by increasing energy efficiency, investing in renewable energy, considering on-site power generation, and employing other emissions-reducing strategies. Taken now, these actions will help position the company as an innovative environmental leader, prepare the business to be competitive in a carbon constrained global economy, protect the company from price fluctuations of fossil fuels, reduce corporate carbon exposure and risk, provide cost savings due to increased efficiency and help the company to capitalize on the growing market for renewable power.

Once a company has determined that it does want to develop a strategy for reducing its greenhouse gas emissions, it may find the following steps helpful as a roadmap for action:

- Measuring the company's impact on global warming by tracking emissions over time
- Setting a meaningful performance improvement goal with a greenhouse gas reduction target
- Using an internal carbon dollar value in investment decision-making
- Identifying and reducing sources of GHG
- Using more renewable/sustainable fuels/generated electricity
- Sharing and learning new best practices through networking
- Partnering with an organization to gain credibility, ideas, and access to trends
- Obtaining independent verification
- Communicating progress in a transparent manner

Leadership companies have followed these steps in developing corporate greenhouse gas reduction strategies. Companies like Johnson & Johnson, IBM, Lafarge, Dupont, Nike, SC Johnson, and the Collins Companies have all established comprehensive management strategies.