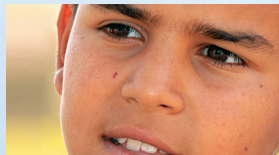




for a living planet



The Climate Savers Programme

**How corporations
can save the climate**

Innovative Solutions for a Living Planet

The Climate Savers Programme is a collaboration between some of the world's leading corporations and WWF to show leadership in reducing emissions and heading off catastrophic climate change.

The corporations whose commitments and achievements are highlighted in this information package have found that their efforts to reduce their climate impacts have had positive impacts on their efficiencies, their reputations and their overall business environment.

Many of the actions they have taken show real innovation, and in a few short years some of the companies have surprised even themselves with the positive results they have been able to achieve.

WWF commends the example these corporations are setting to their shareholders, their employees, their customers and the industrial sectors and communities they operate in.



Climate Savers – Business Partners

Innovative Solutions for a Living Planet

Shareholders, customers and the media want to know whether companies are facing up to the reality of climate change risk. Are they preparing for the future with their own climate change policy and a CO₂ reduction plan?

Business has a vital role in implementing technologies that reduce CO₂ emissions. Making increasingly better use of resources in manufacturing processes and creating better-performing products with ever-lower energy demands is becoming part of normal business practice as the cost of CO₂ emissions rise.

WWF is working with cutting-edge companies keen to turn necessity into a business advantage.

We believe there are enormous opportunities for businesses to improve their standing and their bottom line through actions that cut CO₂ emissions. We argue that the actions companies need to take to reduce CO₂ emissions are entirely compatible with their aim of improving shareholder and stakeholder value.

At the Climate Savers Conference in February 2007 companies and WWF showed that they are on course to eliminate at least ten million tons of CO₂ emissions annually by 2010. If an additional 1,300 large companies join them, current emission reduction targets set out in the Kyoto Protocol could be achieved. "Fighting climate change can provide business opportunities and spur innovation and jobs in all parts of the world," says Hans Verolme, Director of WWF's Global Climate Change Programme.

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Climate Savers Statement

A statement released at the conference confirmed that solutions to climate change exist: "As members of the WWF Climate Savers Programme we have gained significant experience in past years and learned that we can reduce the climate change footprint of our companies and remain viable as businesses at the same time."

1 What is the aim of Climate Savers?

Climate Savers is a business initiative organized by WWF to mobilise companies to cut carbon dioxide (CO₂) emissions. We've dubbed Climate Savers "innovative solutions for a living planet".

2 What exactly are Climate Savers?

Climate Savers are cutting-edge partnerships between WWF and businesses aimed at delivering new and additional reductions in CO₂ emissions. They provide attractive solutions to climate change. The target agreed with WWF must be demonstrably more ambitious than previously planned or communicated by the company. It should place the company at the forefront of emissions reductions in its particular sector.

It is the content of the agreement and not the company itself that is the Climate Saver. This is primarily because WWF is not auditing a company's entire operations. Climate Savers agreements involve specific actions by a company that are agreed with WWF, leading to measurable reductions in greenhouse gas emissions.

3 How are the agreements monitored and verified?

A Climate Savers agreement involves negotiations between WWF, the company concerned and independent technical experts. The resulting agreement is tailored to the circumstances and operating sector of the company but places the company ahead of its competitors in terms of reducing climate changing gases. Outside experts monitor and verify compliance with the agreement.

4 Aren't these agreements an insignificant impression on overall CO₂ emissions?

Alongside the actual reductions in emissions, WWF believes the quality and innovative nature of the agreements will catalyse wider change within the business community. Climate Savers demonstrate that economic growth and absolute greenhouse gas reductions can go hand in hand.

5 What kinds of activities is WWF considering for Climate Savers agreements?

Climate Savers agreements could involve targets in one or more of the following categories:

- Energy efficiency of products
- Energy efficiency in processes or facilities
- Energy-saving products
- Transport efficiency
- Fuel switching to natural gas or increased use of co-generation
- Conversion to renewable energy (supply, use, marketing)
- Develop and implement carbon risk analysis tools for business decisions.



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Catalyst

A WWF Climate Saver partner
since September 2005

Major paper producer cuts greenhouse gas emissions by 70 percent

What Catalyst has promised as a Climate Saver

- By 2010, to achieve a sustained 70% reduction in greenhouse gas emissions over 1990 levels

The Catalyst achievement

- Catalyst is well ahead of its promises, which were achieved by 2005 and are being maintained in an intense period of industry restructuring and transformation. Provisional 2006 figures show emissions at 70% below 1990 levels.
- In 2006, CO₂ intensity per tonne of paper was 175 kg/tonne of paper compared to 574 kg/tonne in 1990, a reduction of 69%.

Catalyst achieves one of the largest corporate reductions in emissions

Catalyst is a leading producer of mechanical printing papers used in directories, catalogues, magazines, ad inserts and daily newspapers throughout the US and worldwide. By reducing its energy use, switching from fossil fuels to biomass and improving the energy efficiency of equipment, Catalyst has reduced greenhouse gas emissions by 70% compared to 1990 levels, one of the most significant percentage reductions achieved by a corporation. This reduction is equal to eliminating more than 1 million tonnes of greenhouse gases annually. Cutting fossil fuel use by 46% in the period 2002–2005, the equivalent of 690,000 barrels of oil, helped Catalyst avoid \$13 million dollars in added costs. Catalyst expects to have saved more than \$5 million dollars by cutting electricity use by 2% in 2006. Employees identified dozens of simple ideas to save energy. One mill calculated that fixing an air leak in a quarter-inch pipe would save \$6,000/year in wasted energy while a one-inch air hose left running costs the mill \$54,000/year. It doesn't

“For a company focused on efficiency, combating climate change is natural – by making smart choices about fuel use we reduce greenhouse gas emissions, improve air quality and reduce operating costs.”

Determined to do better
Catalyst Paper Corporation 2005

take long for small steps to add up to a big benefit for the environment and the business.

Catalyst, now beginning the process of integrating the ISO 14064 (carbon accounting standard) into its existing ISO 14000 system, estimates that overall about two thirds of its emissions reductions have come from switching to less carbon intensive fuels with a further 20% coming from fuel efficiency initiatives.

The beauty of biomass

Biomass has obvious appeal to a company using forest products and creative use of wood waste as a fuel has been a major ingredient in Catalyst's remarkable emissions reduction success.

Catalyst uses biomass fuel in boilers equipped with emissions-control equipment to generate most of the steam and some of the electricity needed to manufacture its paper and pulp products. Doing so has helped the company:

- Reduce absolute greenhouse gas emissions by the equivalent of removing 250,000 cars from the road
- Generate about 63% of the energy the company uses – in 2005, burning biomass produced 65 megawatts of power on average
- Gain eco-logo certification, from Environment Canada, of 51 megawatts of power boiler, biomass-generated steam electricity

Company aims to be a catalyst for change

- As well as remarkably reducing its own emissions, Catalyst Paper has been a leading voice for effective government action on climate change in its home country of Canada. The company joined with other Canadian corporate leaders calling on the Federal government to act on its commitments under the Kyoto protocol. According to the company, there is consensus that good environmental stewardship is supported by good policy making.



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A WWF Climate Saver partner
since February 2008

IT powerhouse presents creative spectrum of emissions reductions

What HP has promised as a Climate Saver

- To reduce life cycle emissions from HP operations and from the use of its products by 6 million tonnes (Mt) below 2005 levels by 2010.
- To aim for a more than 15% absolute reduction in energy consumption in its operations over 2005 levels, in the face of strong growth, and a more than 25% reduction in the energy used by its products.

The HP achievement

- HP has been an IT sector pioneer and leader in product recycling, and expects to repeat its 1987-2007 achievement of one billion pounds (450 million kg) of recycled products again in the 2007-2010 period. Each billion pounds of recycled electronics products represents more than 900,000 tonnes of avoided greenhouse gas emissions.
- HP had reached a 19.2% reduction from 2005 levels in the energy consumption of its operations and products combined by the end of October 2007. Based on early progress HP has set its combined operations and products goal for Climate Savers at a 25% reduction from 2005 levels by 2010, and is working toward defining new bolder goals beyond 2010.

“HP believes IT can help mitigate climate change by both greatly improving the energy efficiency of all sectors of the economy, and enabling economic growth in the developing world with much lower carbon dependency.”

Pat Tiernan, HP Vice-President
of Social and Environmental Responsibility

Balancing footprint and potential

In relative terms, the carbon impact of the IT sector is relatively small compared to many other sectors combining manufacturing and service delivery. On the other hand, the use of IT products and services can increase efficiencies and provide less carbon intensive alternatives for other sectors of the economy. As a major IT enterprise straddling many IT fields from volume production for retail to providing high level solutions to business, HP is conscious of the wide scope of its influence and its potential in reducing emissions. In addition

to the 6 Mt CO₂ reductions in its own operations and products, HP estimates it will enable its customers to reduce their emissions by a further 3 Mt over 2005-2010 through paper saving print management technology, emissions avoidance through equipment recycling, and virtual collaboration video-conferencing solutions.

Offering low carbon solutions to customers

Lower carbon solutions pioneered within HP for the benefit of its own operations are being offered to customers to benefit their operations. An example is the HP program to consolidate its eighty three data centres worldwide into six new generation data centres with highly energy efficient servers and cooling technology. HP Customers can benefit from both the lessons of HP's programme and the Dynamic Smart Cooling system which cuts data centre cooling requirements 25-40% through real time temperature monitoring and control.

More efficient products, more efficient technologies

■ HP describes itself as “aggressive” in its pursuit of product energy efficiency, with an overall goal of reducing the energy consumption and customer associated CO₂ emissions of high volume products by 25% below 2005 levels by 2010. HP personal computers are already leading the industry in the Gold and Silver categories of the US Electronic Product Environmental Assessment Tool (EPEATM), the company is also heavily investing in research and development “to take energy efficiency to the next level beyond 2010”.

Saving paper, saving energy

■ HP found that its own deployment of duplex (both sides of paper) printing by default saved it 750 tonnes of paper per year. The deployment of industry leading print fleet management technology across its enterprise customer base is expected to save 685,000 tonnes of paper over 5 years relative to standard technologies, saving more than 1.9 million tonnes of carbon emissions in the five years to 2010. HP is also assuming a prominent role in deploying print on demand solutions to the publishing sector, with considerable potential energy and emissions savings from avoided paper waste from unsold book returns.

Lowering the impact of logistics

■ Like other manufacturers, HP faces both costs and opportunities in reducing the carbon impact of its logistics operations. HP is addressing these through shifts to less energy intensive product shipping (from air to ocean and road to rail) and reducing packaging size



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A WWF Climate Saver partner
since 2000

Diverse programs cut company and customer emissions

IBM Climate Saver Commitment

- As one of the original members of the Climate Savers program, IBM made a commitment in 2000 to achieve annual average reductions in greenhouse gas (GHG) emissions over the time period of 1998 to 2004 equivalent to 4% of emissions associated with actual energy use.
- From 1990 to 2005, IBM's Energy Conservation Program has reduced or avoided CO₂ emissions equivalent to 40% of its total CO₂ emissions in 1990. IBM is extending this achievement to further reduce CO₂ Emissions associated with its total energy use 12% by 2012 against a 2005 base year.

“Energy conservation is a major component of IBM’s climate protection program because the release of CO₂ by utility companies that power our facilities represents the greatest potential climate impact from our operations.”

Collaboration that matters
2006 IBM Corporate Responsibility Report

The IBM achievement

- IBM met its initial Climate Savers commitment, avoiding GHG emissions associated with the company’s annual energy use by an average of 5.7% from 1998 to 2004, and generating energy cost savings of \$115 million.
- IBM’s achievements in reducing GHG emissions associated with its operations have resulted in the receipt of the USEPA Climate Protection Award in 1998 and 2006 – making the company the only two time corporate winner and a US EPA/DOE Green Power Leadership Award in 2006.

Innovating for Emissions Reductions

Consistent with its objective to be the “innovator’s innovator”, IBM has a long record of energy conservation and GHG emission reduction programs which have transformed its own operations and opened up avenues of savings for its customers. IBM has undertaken major initiatives in operational energy efficiency, renewable energy, commuter and fleet leasing programs, and initiatives in their products and services to enable their customers and society to be more energy efficient.

IBM continues to extend the reach and capability of its energy conservation program, commissioning a real time metering and monitoring system at over 20 large locations which identified over 100 projects with savings of \$1.3 million

and 18,000 MWh in 2005 and 2006. Detailed engineering reviews of energy using operations have been performed over the past 3 years on over 2.6 million square feet of building space saving 17,000 MWh of energy.

IBM expects its procurement of renewable energy in 2006, either through direct purchases or purchases of renewable energy certificates, will equal approximately 6% of its 2006 global electrical energy usage. IBM was in the top 15 of US Green Power Purchasers in 2006.

Saving energy and reducing emissions for IBM customers

IBM is delivering increased performance per watt with each new generation of equipment it sells through improved processor capability, rack designs, power supply efficiency (in many cases to over 90% conversion efficiency), virtualization capabilities, and energy management software such as

its PowerExecutive™ power management software. The company's "Cool Blue" initiative helps customers run more efficient data centers through more energy efficient IT equipment and by extracting more work (improved utilization) from each piece of equipment. Consolidation of computer applications through the use of virtualization and installation of new, energy efficient equipment can reduce energy costs 20-40%, with attendant savings in space and personnel.

IBM services and IT applications are enabling energy conservation. Our consulting and research teams have engaged in projects with businesses and public agencies which improve business processes and save energy. A traffic management system trial in Stockholm, using RFID and image recognition technology to generate time of day tolling reduced rush hour traffic by 100,000 vehicles, reduced congestion by 25% and encouraged 40,000 people to

use mass transit during the first month of a seven month trial. Work with the steel industry improved production scheduling, die designs and inventory planning reducing slab wastage by 40 to 50% with attendant energy savings.

A leader in reducing commuting emissions

■ IBM has been a leader in dealing with the key issue of employment related transport emissions, running one of the largest global corporate work-at-home and mobile employee programs with participation of nearly one-third of the global workforce. Many IBM locations also support the use of public transit and car pooling and provide shuttle services or loan vehicles in "commuter choice" programs. In the US, these programs conserved over 5 million gallons of fuel in 2006 (avoiding 69,000 tons of CO₂ emissions).

A rigorous approach to reporting

■ IBM has long been a strong proponent of public disclosure of emissions data, participating in the US Dept of Energy 1605B reporting since 1995, and in the USEPA Climate Leaders and the Chicago Climate Exchange. When assessing its energy conservation results, IBM only recognizes those projects which actually reduce or avoid the consumption of energy in its operations; not reductions resulting from downsizings and actions motivated by cost avoidance, such as fuel switching and off-peak load shifting. All IBM emissions data is subject to independent audits.



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Third largest US Corporate purchaser of Clean Energy

What Johnson & Johnson has promised as a Climate Saver

- By 2010, to reduce greenhouse gas emissions from all facilities worldwide to 7% below 1990 levels
- To reduce vehicle fleet emissions by 30% per mile driven over 2003 levels

The Johnson & Johnson achievement

- To significantly exceed its goal five years early, reducing emissions to 11.5% below 1990 levels by 2005, during a period when sales increased by over 350%
- Johnson & Johnson is a corporate champion of renewable energy, with innovative projects worldwide.

Climate Friendly Energy Policy

Johnson & Johnson's emissions reduction achievement has been driven by its commitment of all its operational units to Energy Policy which stresses energy efficiency improvements, on-site electricity co-generation, on-site renewable energy generation, purchases of renewable electricity and carbon trading and sequestration.

This has meant that Johnson & Johnson is currently the second largest corporate user of on-site solar photovoltaic energy in the United States, in addition to being one of the largest corporate purchasers of wind power in the country in 2005. Green power accounted for 30% of the company's total US energy use in 2005 and included windpower, on-site solar, low-impact hydro and renewable energy certificates. In Europe, almost half of the company's electricity comes from renewable supplies.

Through its 10-stage energy best practices model, Johnson & Johnson is reaping more than \$30 million in annualized energy efficiency savings from projects completed in the past decade.

**“We are responsible
to the communities
in which we work
and to the world
community as well”**

Johnson & Johnson credo

The next phase – reducing mobile emissions

In 2005, Johnson & Johnson estimated its vehicle fleet of around 35,000 vehicles produced about 250,000 tonnes of CO₂ emissions. The company has planned on-going action to better estimate and report mobile emissions and has committed itself to a 30% reduction in fleet vehicle emissions per mile driven, from 2003 levels of emissions. Lifting the number of hybrid and alternative fuel vehicles is one element of the plan to tackle mobile emissions, along with training for employees on avoiding wasteful driving practices. In 2005, Johnson & Johnson had 300 hybrid vehicles, planned to order another 300 in 2006 and an additional 1000 in 2007.

Innovators in on-site power generation

■ At the Alza Pharmaceutical facility in Mountain View, California, methane gas collected from a local landfill is used to fire a 3-megawatt co-generation system, avoiding 7000 tonnes of CO₂ annually. Other unique projects include the use of wood-chips as a carbon-neutral fuel for a boiler at Cilag AG in Schaffhausen, Switzerland, and a geothermal heating and cooling system at a facility in France. Johnson & Johnson also pioneered the use of on-site rooftop wind turbines at the Kirkton campus of Johnson & Johnson Medical Limited in Livingston, Scotland.

State of the art solar

■ The Johnson & Johnson Consumer Companies Inc facility at Skillman, New Jersey operates the largest, highest output ground mounted solar photovoltaic generating facility in the eastern United States. The secret to its efficiency is a solar tracking system, estimated to improve the performance of the 505 kilowatt facility by 20% over fixed solar arrays.



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A WWF Climate Saver partner
since November 2001

World's leader in building materials breaks the mould

What Lafarge has promised as a Climate Saver

- By 2010, to reduce its absolute gross emissions in industrialized countries to 10% below 1990 levels
- By 2010, to reduce worldwide net emissions per tonne of cement to 20% below 1990 levels

The Lafarge achievement

- By 2005, Lafarge had reduced absolute gross emissions in industrialized countries to 8.3% below 1990 levels
- By 2005, Lafarge had cut worldwide net emissions per tonne of cement to 12.7% below 1990 levels
- In an industry sector responsible for significant emissions, Lafarge is providing leadership through its own example and in its active involvement in sector wide initiatives. Further, as a major supplier of building materials, Lafarge is seeking to promote better emissions performance in building construction and operation.

Waste into fuel, waste into cement

Cement production overall currently accounts for about five percent of human-sourced greenhouse gas emissions. About half the emissions of cement making come from the process of decarbonating limestone and 40% are from associated fuel consumption.

Lafarge's strategy to reduce its CO₂ emissions focuses today on four main levers:

- Improving energy efficiency by modernizing plants and processes
- Using alternative raw materials in the production of cement
- Using alternative fuels, particularly biomass
- Using additives (slag, fly ash, limestone, pozzolans, etc.) in cement production.

In 2005, Lafarge devoted 14% of its research and development expenditure to research into new ways of achieving reductions in its CO₂ emissions.

“In the long run, we believe that all necessary action should be taken to cap the global average temperature increase to a maximum of 2°C. Since 2001, Lafarge has made a voluntary commitment to reduce the CO₂ emissions generated by the worldwide scope of its operations. With this ambitious policy, the Group intends to preserve its lead while continuing to drive the entire sector forward in this direction”

Lafarge Sustainability Report 2005

Setting an example

Lafarge is an undoubted sector leader in highlighting climate change issues and committing itself to emission reductions of about twice the levels prescribed for industrialized countries under the Kyoto protocol. However it is also extending its interest and influence on the issue beyond its own sector to the possibility of helping reduce emissions in the area where its products are put to use. Studies indicate that buildings account for 40% (of the world's human-caused CO₂ emissions) throughout their active lives. The company has accordingly committed itself to working with architects, developers, government and research institutions and the construction industry to improve the energy efficiency of buildings. Lafarge supports and participates in the European Emissions Trading Scheme and has a number of completed and prospective Clean Development Mechanism projects in developing countries. Lafarge's pioneer commitment in 2000 to reduce its CO₂ emissions has been followed by other leading cement companies.

Wind powered cement production in Morocco

■ Lafarge's Tetouan cement plant is 50% powered by an adjacent 12 turbine wind farm, registered in September 2005 as the first CDM project for Morocco and France. The wind farm, designed in association with local communities to keep open corridors used by migratory birds, reduces the cement plant's emissions by 30,000 tonnes per year.

Biomass powered cement production in Malaysia

■ The Rawang and Kanthan cement plants in Malaysia source 5% of their thermal energy needs from the combustion of palm kernel shells, a waste product from the local palm oil industry. This initiative, recognized as a CDM project in 2006, produces annual savings in CO₂ emissions of 60,000 tonnes.



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A WWF Climate Saver partner
since October 2001

Running against Global Warming

What Nike has promised as a Climate Saver

To reduce CO₂ emissions from business travel and Nike-owned and operated facilities (over 20K sqft) and services to 13% below 1998 levels by the end of 2005.

- Create baselines for Nike's major subcontracted footwear and clothing manufacturing facilities by the end of 2003 and determine an emissions reduction strategy for these facilities during 2005.
- Examine Nike's supply chain for opportunities to reduce greenhouse gas emissions from supply chain activities and determine by 2005 a greenhouse gas reduction strategy for logistics.
- Remove greenhouse gas emissions from its products.

The Nike achievement

- Emissions targets for Nike-owned facilities achieved through conservation despite significant growth in facility footprint. Reductions achieved through green power buys and offsets purchased for business travel.
- Emissions calculated for significant contracted manufacturing and logistics areas and programs for emissions reductions being developed for areas of greatest impact.
- Greenhouse gases no longer used in products.

Reducing Nike emissions

For its own baselines, leading global footwear and sports equipment company Nike chose 1998 as the earliest year for which sufficiently detailed and verified information on emissions existed. Energy efficiency projects have now lowered the company's total facility emissions below 1998 levels while facilities grew by approximately 6%. In addition, Nike purchased green power equivalent to approximately 20% of all electricity that is used in its major owned and operated facilities worldwide. Nike's European distribution center installed six wind turbines, with the capacity to power the center (approximately two million square feet) in partnership with its local power supplier. Nike also offset the majority of its business travel CO₂ emissions through partnerships with air carriers, rental car companies,

“Going forward, we also see that energy efficiency measures can help reduce our costs. In a world where fossil fuels become increasingly expensive, a transition to more green energy sources could put us ahead of the predicted cost curve. Reaching future targets, once they are formalized, may enable us to see revenue generated from carbon trading and promote legal compliance with regulations emerging in different parts of the world.”

Sarah Severn, Director, CR Horizons

government energy departments and the CO₂ retail market. Moving forward the company intends to purchase increased amounts of green power. By the end of 2006 the green power buy is estimated to have increased to over 35% of major owned and operated facilities.

Nike takes a broad view of its climate responsibilities

Nike joined Climate Savers in 2001 with a commitment to not only reduce its own emissions but to also attend to the emissions of its suppliers and logistic operations. As is not uncommon, these outside emissions dwarf those of Nike itself and a large part of the early phase of Nike's action on climate has been in quantifying the impact so that meaningful targets and quantifiable reduction plans could be established. Even though these emissions are outside the widely accepted boundaries

of a company's footprint, Nike recognizes the need to address those emissions.

Nike has now completed its goal of measuring the greenhouse gas emissions from its contracted manufacturing and shipping operations, but still has more work to do in order ultimately to reduce those emissions. The company is concentrating its efforts in the areas of greatest impact, in contracted footwear manufacturing and product transportation. Nike's global logistics staff created a CO₂ model that calculates the emissions for every leg of all international shipments of Nike product, and the company is

working with a number of partners to identify ways of reducing emissions from sea freight. In 2007 the company will establish an emissions model for out bound shipments from warehouse to customer, initially in the US region.

Cushioning without greenhouse impacts

■ Nike athletic shoes have been cushioned with pressurized gas since 1978 but in 1992 the company learned that the sulphur hexafluoride (SF₆) used was a greenhouse gas. Considerable research and expenditure led to development of encapsulation technologies that enabled climate neutral nitrogen gas to give comparable performance

in its shoes. Nike discontinued using SF₆ in June 2003 and all GHG in its products by mid-2006. For the few high performance applications, perfluoropropane (PFP, or C₃F₈) which has only half the climate impact of SF₆ was used until June 2006, when all applications were replaced with nitrogen based technologies.



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Mobility leader to reduce own and consumers' emissions

What Nokia has promised

- To substantially increase the energy efficiency of chargers by reducing the average no-load consumption by 50% within three years and reminding consumers to unplug chargers when not in use.
- By 2012, to have achieved further energy savings in Nokia sites between 2007 and 2012 of 6% compared to 2006 levels.
- To use green electricity for 25% of total Nokia electricity consumption for the period 2007-2009 and aim at increasing it to 50% in year 2010.

“As the world’s largest mobile company we have a responsibility to look at how we can play our part in tackling climate change. This is not about grand gestures but everyday things that when multiplied by the scale of our operations, or the 900 million people using Nokia devices globally, can have a major impact. It also makes good business sense, helping us find new ways to be more efficient and innovative.”

The Nokia achievement

- From 2003 to 2006 energy saving projects in Nokia facilities in Europe, the Americas, and China reduced the company's overall global energy consumption by 3.5%.
- Over the last nine years Nokia has reduced the average no-load energy used by its chargers by over 50% and its best-in-class charger needs just one tenth of the power used by the most common chargers.

Nokia’s long commitment to sustainability

Nokia, a world leader in mobile communications, has stayed ahead of the curve in understanding and assuming responsibility for its impacts and those of its products. As climate change has become a significant issue in the world, Nokia has taken an extended view which includes its own operations, its suppliers and consumer use of its products in determining its contribution to emissions and in crafting the best response.

Consumer behavior and mobile phone energy use

Generally speaking, the energy and emissions associated with the production of information and communications technology equipment are dwarfed by the energy and emissions associated with their use. Applying the tools of life cycle analysis to mobile phones, Nokia found that up to 60% of the lifetime energy consumption of a mobile phone could be wasted energy from consumers leaving phone chargers plugged in when they were not in use.

Tackling the largest single source of emissions associated with Nokia and its products therefore required a dual strategy of reducing the no-load consumption of mobile phone chargers and persuading consumers to unplug chargers not in use.

Nokia is committed to reducing the no-load consumption of the average mobile phone charger by 50% by 2010. Nokia was the first mobile manufacturer to add the reminders about unplugging the chargers in the devices in 2007 and will add the reminders across its product range by the end of 2008.

Saving energy and using green energy in Nokia facilities

■ Nokia commenced energy savings projects at its facilities in Europe in 2003 and elsewhere including China in 2005. By 2006, these initiatives produced cumulative savings of 27,000 MWh or about 3.5% of global energy consumption. Nokia is planning for further 6% savings compared to its 2006 energy consumption by 2012.

Nokia also has an ambitious plan for increasing the proportion of green electricity used to a level of 50% in 2010.

Reducing transport and logistics emissions

■ Nokia has an extensive plan of reducing transport and logistics emissions, largely by substituting air travel by increased use of technology. Similarly, a planned 20% reduction in travel is to be achieved with enhancements to Nokia's already considerable virtual meeting and conferencing capabilities. Air travel that can't be avoided is to be offset with Gold Standard offset credits.

Seeking synergies in the supply chain

■ Nokia is also looking up and down its supply chains and logistics operations and will be working with key global suppliers and logistics providers to have energy efficiency and CO₂ emission reduction targets similar to Nokia's in place by 2009.



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Global pharmaceutical company aims to cut emissions by 10 percent

What Novo Nordisk has promised as a Climate Saver

- An absolute 10% reduction in CO₂ emissions by 2014 compared to 2004.

The Novo Nordisk achievement

- Achieving recognition for prioritizing action on climate change and for its ambitious reduction targets in the face of expected strong business growth.

Pharmacy firm's commitment will reduce emissions by nearly 70 percent

Novo Nordisk, the global pharmaceutical company known for its leadership in diabetes care, has made a commitment to reduce its CO₂ emissions by 10% below 2004 levels by 2014. In the absence of emission reduction programs, Novo Nordisk's emissions would increase by approximately 67% during this period, largely as a result of the requirements of the diabetes pandemic. The reductions – described within the company as “stretch targets” will be achieved through a mix of energy efficiency and renewable energy projects carried out at Novo Nordisk operations globally.

In 2005, Novo Nordisk was recognized by the Carbon Disclosure Project (CDP), a group of leading institutional investors, as “Best in Class” in the Healthcare sector for its approach to addressing the challenge of climate change. In its “Climate Leadership Index”, the CDP recognized Novo Nordisk as one of 60 leading global corporations that are actively addressing the societal and business implications of climate change.

The selection of Novo Nordisk in the index is based on the company's reporting of greenhouse gas emissions and an independent assessment of Novo Nordisk's strategic response to the risks and opportunities of a carbon constrained environment, as well as the quality and effectiveness of programs put in place to reduce overall greenhouse gas emissions.

“Climate change presents significant business risks in the long-term. Novo Nordisk believes that decisive action is an obligation and also an opportunity to be better prepared for a carbon-constrained future, with reduced vulnerability to fluctuations in energy prices.”

Novo Nordisk Annual Report 2006

Environmental design from the bottom up

New Novo Nordisk facilities start considering their environmental impacts in the planning stage, with a case in point being a new purification plant for insulin production in Kalundborg, Denmark. The environmental coordinators at the site engaged with the designers of the plant right from the conceptual phase of the project and this led to the integration of a number of environmental considerations in the design of the buildings and processes.

Major savings in emissions resulted from improvements in ethanol regeneration and re-assessment of ethanol needs at the plant. As a result the plant achieves steam savings of about 4,275 tons over business-as-usual projections, with associated CO₂ emissions savings of approximately 1,000 tons.

The integration of environmental design at Kalundborg is estimated to have reduced electricity consumption by eight percent, produced buildings that are nearly self sufficient in area heating requirements, reduced steam consumption by 21% and reduced CO₂ emissions by 23%.

Total financial savings resulting from the timely environmental interventions during the design phase of the purification plant is estimated to be 400,000 Euro annually. Due to these interventions, investment costs associated with clean steam have been saved totalling approximately 536,000 Euro.



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CO₂ Emissions down 50 percent from 1994 to 2004

What Polaroid has promised as a Climate Saver

- To reduce CO₂ emissions to 20% below 1994 levels by 2005 and to 25% below 1994 levels by 2010.

The Polaroid achievement

- By 2004, CO₂ emissions were nearly 50% lower than the 1994 baseline emissions.

Twice the planned emissions cut in half the projected time

When Polaroid joined Climate Savers in 2000 it committed to reduce CO₂ emissions by 25% below 1994 levels by the year 2010. In 2004, combined (direct and indirect) emissions of carbon dioxide were down 14% from the prior year, nearly 50% lower than 1994 baseline emissions. While difficult trading conditions no doubt had some bearing on the result, it also very much relates to Polaroid initiatives in upgrading and replacing compressors, chillers, boilers, hot water systems, lighting systems and motors; purchasing green power; and switching to cleaner forms of fuel for on-site operations. Warehouses and conference rooms are equipped with intelligent switches, which reduce the time that lighting is on. Polaroid's Facilities organization now requires each employee to identify energy-saving projects as part of their performance evaluation. In one example, the company partnered with the local utility to share the cost and benefits of replacing a very large air compressor. Energy savings from the project, which translate directly to reduced emissions, provided a 267% return. Through the efforts of the Facilities organization, company-wide energy consumption is down 5% from 2003 to 2006.

Plugging the leaks

One area where Polaroid has exploited often overlooked opportunities to reduce energy consumption and reduce emissions is in leakages of compressed gases. Under the Chemical Operations' Compressed Air Project state of the art instrumentation was used to identify 394 leakage points. Savings from ending the leakages were minimally \$35,000–\$50,000 and the payback on investment in simple terms was 267%.

“As a member of the WWF Climate Savers program, Polaroid agreed to reduce carbon dioxide levels 20% by 2005, and 25% by 2010, as compared to base year levels. We have already exceeded our goal for 2010, which was 204,120 tonnes.”

Polaroid Report on the Environment 2004



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Major delivery company accelerates emission reductions

What Sagawa Express has promised as a Climate Saver

- By 2012, to reduce CO₂ emissions to 6% below 2002 levels.

The Sagawa Express achievement

- More than halfway to the target in the three years to the end of 2005 in the face of strong growth, with a reduction of 11,387 tons of CO₂.

The benefits of not idling on emissions reductions

Sagawa Express is a major delivery and logistics company based in Japan with extensive and expanding operations throughout Asia. In 2003, Sagawa became the first company to join Climate Savers from the transport sector pledging to reduce CO₂ emissions by 6% below 2002 levels by 2012.

This was partly to be achieved through the introduction of 7,000 Compressed-Natural-Gas (CNG) vehicles by 2012. The company is well on its way with the introduction of CNG vehicles, with the numbers of such vehicles more than doubling in the three years to nearly 2700 in 2005. Meanwhile more than 1650 diesel vehicles were taken off the road.

To support the switch to CNG, Sagawa constructed six natural gas stations for fueling vehicles with CNG by 2005 and introduced solar generation systems in several stations to reduce emissions from compressing the natural gas.

Sagawa also encourages its drivers to stop idling and instead turn their vehicles off when delivering packages. The reduced idling time has resulted in saving 10 million liters of fuel every year, enough to fill 560 tank lorries. This saves Sagawa approximately \$7,4 million (about 900 million yen) each year in reduced fuel costs at a time when oil prices have been on the rise.

Sagawa has been asked to advise the Japanese government on climate policy in the transportation sector.

“The addressing of environmental concerns represents an issue that affects all of humankind. Actions should be taken independently and proactively while acknowledging the need to address such concerns is an essential condition underlying the existence and activities of companies... In order to prevent global warming and air pollution attributed to exhaust gases, we seek to promote greater transport efficiencies, the adoption of low-emission vehicles, and the practice of eco-driving and make continuous improvements in efforts to conserve the environment.”

Eco-safe driving

Sagawa's Eco-safe driving programs are reducing emissions, promoting safety and reducing company costs from fuel use, maintenance and road incidents. A list of the most important habits, including gently depressing the accelerator and early upshifting, refraining from idling when stopped, and avoiding sudden braking is distributed to the employees and reinforced by posters. Safety recorders have been introduced to monitor drivers under certain circumstances.

Changing the fuel mix

■ Sagawa's Climate Saver programs are rapidly changing its fuel mix, with consumption of natural gas rising from 7483 km³ to 9656 km³ between 2004 and 2005, while propane gas consumption rose from 588,863 kg to 921,512 kg. Gasoline use rose only slightly and electricity use was almost static. Diesel use declined by 1,6 million litres between 2004-2005 with diesel related emissions down 11%.

Taking cargo off the road

■ As well as making its road-based transport more efficient and reducing emissions, Sagawa is also taking freight off the road altogether to far more efficient rail and shipping. In 2004 the company launched its Super Rail Cargo service between Tokyo and Osaka, which in 2005 carried more than 16,000 truckloads of freight on this major route. Overall, shifts to trains and ferries avoided 81,021 truck shipments in 2005, for a saving of 75,363 tonnes of CO₂ emissions.

Service centres avoid the emissions of searching for parking

■ The humble handtrolley has made a comeback at Sagawa service centres in large urban areas where parking is at a premium. The company found that deliveries and collections this way were more efficient than with delivery vehicles that were often using fuel to no productive purpose while caught in traffic jams or searching for parking places.



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Electronics leader tackling own and products' carbon impact

What Sony has promised as a Climate Saver

- By 2010, cutting absolute CO₂ emissions to 7% below 2000 levels
- Sony will work to further increase the energy efficiency and reduce the lifetime carbon impacts of its products.

The Sony achievement

- Significant reductions in energy consumption over most product categories.
- Giving public support to the view that the world must stay below the danger threshold of a two degree warming of global average temperature from pre-industrial times.

Sony looks to product impact

In an agreement concluded in July 2006, the international electronics company has committed to cutting its absolute CO₂ emissions by 7% by 2010, set against 2000 emissions of 2,183,765 tons. But the most far reaching impact of the agreement is likely to be continuing Sony Group action to reduce the life cycle carbon impact of its products. For 2005, emissions from product use were calculated to be about five times the total Sony Group emissions for the year.

Up to 2005, Sony had achieved targeted power consumption reductions of 30% for 70% of its product categories and significantly reduced standby and AC adaptor power consumption. These were among the measures and market trends which helped Sony reduce the CO₂ impact of its products by about seven percent between 2004 and 2005. The most dramatic improvements often occur as models are updated, with a 35% reduction in life-cycle CO₂ emissions between two models of PlayStation®2.

Sony will also develop consumer outreach strategies to encourage more environmentally responsible use of its products.

“Sony is committed to reducing energy consumption and emissions of greenhouse gases generated by business activities throughout the life cycle of Sony products and services.”

Sony CSR Report 2006

Improving Sony's energy efficiency and renewable energy performance

Sony Group intends to increase energy efficiency in all its production facilities, and to switch fuel from oil to renewable energy sources and to natural gas. Sony will also replace some strong greenhouse gases used in specific production systems with more climate-friendly options. In the year to 2005, Sony more than doubled its CO₂ renewable energy offsets to over 15,000 tonnes by using energy provided from renewable sources, either self-produced or through the purchase of green energy certificates.

The downward pressure on emissions has also been assisted through Sony's resource efficiency initiatives, with the company achieving a reduction target of 20% in resource inputs for 90% of its product categories in 2005.

Reducing logistics and non-CO₂ greenhouse emissions

■ Recognising that some chemicals used in electronics production are much more potent greenhouse gases than CO₂, Sony Group has been working to reduce emissions from these sources. A 22 percent reduction in emissions from greenhouse gases other than CO₂ had been achieved by 2005 over the base year of 2000.

Sony Supply Chain Solutions, the Group's logistics subsidiary, is also working to reduce transport related emissions through optimizing transport methods and improving loading efficiency. In Japan, modal shifts away from road to rail and sea transport reduced emissions by 2670 tons in 2005. Improvements in packaging volumes of up to 40% and re-useable shipping containers are also reducing logistics related emissions.

New Tokyo headquarters building slice eight percent from emissions

■ Sony's new office building in Tokyo, designed with energy efficiency and reduced emissions in mind, is producing an 8% reduction in CO₂ emissions through such initiatives as a lighting system that adjusts automatically in accordance with the amount of natural light available, air conditioning system that automatically adjusts the intake quantity of fresh air and high-efficiency heating and cooling. The building also uses exhaust heat from an adjacent water reclamation centre as an energy source.



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A WWF Climate Saver partner
since November 2001

Forest products business poised to save millions

What The Collins Companies promised as a Climate Saver

- By 2009, to reduce their CO₂ emissions to 15% below 1999 levels.
- Use environmentally friendly and energy efficient materials in all new company buildings.

The Collins Companies achievement

- To have exceeded their pledge five years early with CO₂ emissions down to 16.5% below 1999 levels by the start of 2005.
- Additional energy efficiency measures under the Climate Savers agreement produce significant savings for the company.

“Mahatma Gandhi said it best, ‘If you want change, you must be the change’. No excuses or apologies, no blaming governments or bureaucracies. Change is manifested by one person at a time, one choice at a time. It happens because we are willing to embrace a vision that is larger than our own self-interests.”

Sustainable timber links to lower emissions

The first privately-owned timber company in the US to be environmentally certified by the Forest Stewardship Council (FSC), The Collins Companies committed to reducing their carbon dioxide emissions by 15% below 1999 levels by 2009 but reached this target well ahead of schedule with a 16.5% reduction by the beginning of 2005.

As a provision of its Climate Savers agreement, the company’s new and existing buildings now use environmentally friendly and energy efficient materials. Collins anticipates saving \$5 million by increasing its energy efficiency. Numerous projects and changes have contributed to its CO₂ reductions, including the purchase of resins and paints in a more concentrated formula, which reduces the number of truck trips needed to transport the goods. Motion and light sensors have replaced lights switches in many locations. In addition, a number of electrical motors have been replaced with fewer, more efficient motors, which reduce the amount of electricity used. At one facility, computerized controls were added to the biomass co-generation plant, significantly reducing emissions.

In addition, FSC-certified CollinsWood products are featured in a number of Leadership in Environmental and Energy Design (LEED) projects in the US such as the OHSU Center for Health & Healing (LEED – New Construction pending Platinum or Gold), Jean Vollum Natural Capital Center (LEED – Existing Building Gold) and the Hillsdale Library (LEED – New Construction Gold), as well as a number of green building projects worldwide such as the Nike European Headquarters, the Gap Inc. headquarters building and the new United Airlines Terminal at the San Francisco International Airport.

Power generation offsets help fund power generation in sawmill

■ Earlier in its energy efficiency and emissions reduction program, The Collins Companies devoted considerable attention to capturing the heat discharged from electricity production plants. They estimated that utilizing the unused heat through co-generation increased the overall efficiency of power generation, reducing emissions by as much as 60% in comparison to conventional power generation.

In a neat example of circular synergies, carbon offsets from Oregon electrical power plants have helped fund energy efficiency at The Collins Companies' Fremont Sawmill site at Lakeview. As a partner with state, private and community organizations in Oregon Solutions, in 2008, The Collins Companies will shut down their existing wood fueled boiler and begin buying electricity and steam from a new biomass powered electrical co-generation plant. The co-gen plant will use forest thinnings and sawmill wood waste fuel. All of Fremont Sawmill's lumber dry kilns have been recently rebuilt using low pressure steam technology, paving the way for efficient use of the co-gen operation's steam. By using the forest thinnings, which are a significant fuel and risk factor for forest fires, it is also anticipated the initiative will help limit and prevent the major emissions events associated with forest fires.

Energy efficient new buildings

■ Under the Climate Savers agreement, all new and existing buildings of The Collins Companies will utilize environmentally friendly and energy efficient materials. With manufacturing facilities, the savings can be significant. In the expansion of the company's facility in Chester, California, paving and redesigning the log yard produced substantial fuel savings, as did fuel handling improvements at the power station. These improvements alone eliminated the burning of over 27,000 gallons of diesel a year, with comparable savings in emissions. In addition, the new mill produces 50% more lumber as the old mill, but uses the same amount of electricity as the old mill. Elsewhere, significant savings in fuel use and emissions have come from minimizing the transport of woodchips.



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Bringing Energy Efficiency and Renewable Energy to Food and Beverage Packaging

What Tetra Pak has promised as a Climate Saver

- By 2010, to reduce its absolute CO₂ emissions to 10% below 2005 levels.

The Tetra Pak achievement

- In the three years to 2005, Tetra Pak achieved a 10% improvement in energy efficiency. For the carton packaging plants using 76% of the energy the improvement was 14%.
- In 2006, Tetra Pak factories in the Netherlands, Germany and Denmark started to use green power. Renewable Energy Certificates for 2007 and beyond were contracted for factories in the USA and France, chosen with the advice of WWF.

**“We believe in responsible
industry leadership,
creating profitable growth
in harmony with
environmental sustainability
and good Corporate
Citizenship”**

The Tetra Pak Corporate Mission

“Protecting what’s good” to include a stable climate

Operating in more than 165 markets with over 20,000 employees, Tetra Pak is a world leader in the manufacturing and marketing of food processing, packaging and distribution systems. Tetra Pak describes its mission in making food safe and available everywhere as “protecting what’s good.” More and more explicitly this has also come to be symbolic of Tetra Pak’s continuing efforts to reduce its environmental impacts.

A global leader in the sustainable packaging movement, Tetra Pak is committed to reducing its impact on climate change. Starting in 2006, Tetra Pak began to increase its use of green power from renewable energy sources. Green power will be the main tool for reaching the goal of 10% reduction of CO₂ emissions in 2010. Continued energy efficiency improvement will also make a significant contribution to the goal.



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Joined WWF as a
Climate Saver partner
in January 2008

Arctic travel company takes responsibility

What Spitsbergen has promised as a Climate Saver

- By 2012, to reduce its own emissions and indirect purchased power related (Scope 2) emissions to 7% below 2005 levels – in the face of an anticipated business growth of 4-5% annually.
- By the end of 2010, to offset all remaining emissions including those relating to the air travel of guests and the transport of goods to the Arctic Archipelago, with Gold Standard certified carbon credits.

“Spitsbergen Travel picks up the challenge of carrying out sustainable educational tourism in one of the best protected wilderness areas in the world. The company aims at educating each and every guest to become ambassadors for preserving our natural environment.”

Jan S Sivertsen, Managing Director

The Spitsbergen achievement

- In 2005 Spitsbergen Travel began phasing out two-stroke engine snowmobiles in favor of more efficient four-stroke models.
- Restricting workshop door openings to two times per day has reduced heating fuel use by 10,000 liters per year.
- A March 2007 energy audit covering hotels, guest facilities and the office has identified energy savings and efficiency measures that are expected to save app. 130,000kw/h a year.
- Offering less energy intensive travel products: dog sledding, trekking, skiing and kayaking.

Cutting emissions in a hostile environment

Spitsbergen Travel, a major tourism operator in the Arctic centered on the Norwegian island of Svalbard, is co-operating with WWF on the challenges of becoming carbon neutral in an extreme and relatively remote location. Such circumstances make business activities more energy intensive, while reducing the available options to reduce emissions. For instance, a study on the feasibility of biogas generation from waste on Svalbard found that heating the generators would consume more energy than could be produced. In addition, a much



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Working to a carbon free Svalbard

■ As one of the largest enterprises on Svalbard, Spitsbergen Travel is supporting the Spitsbergen local government and research institutions plans to produce one of the world's first totally CO₂ emission free societies by 2025, a significant challenge for an area reliant on a coal-fuelled electricity generation.



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JANUARY 2008



Bringing CO₂ savings to National and State Parks in the US

What Xanterra has promised as a Climate Saver

- To bring absolute greenhouse gas emissions to 10% below 2000 levels by 2015.

The Xanterra achievement

- Emissions reduced to 4.75% below 2000 levels by the end of 2004.

Climate saving pioneer of the hospitality industry

Operating lodges, restaurants, and other concessions at 18 national and state parks in the United States, Xanterra Parks & Resorts has become increasingly conscious of its impacts on the environment. In consequence, the company commenced a determined shift towards greater sustainability in its operations in 2000 and joined WWF Climate Savers in September 2004. At that time the company was nearly half way to its 2015 emissions reductions goal.

Increasing energy efficiency has played a key role in reducing the carbon intensity of Xanterra's operations. Its strategic conservation programs, energy control systems in rooms and facilities, and efficiency upgrades including 29,000 lighting retrofits resulted in five consecutive years of declines in electricity use.

Xanterra is one of only a few hospitality companies to construct buildings that have achieved the US Green Building Council's LEED green building rating system certification (one at Yellowstone and a LEED Silver rating at Crater Lake National Park).

“Xanterra has created what may be the tourism industry’s first environmental performance metrics, which we call Ecometrix. The company’s Ecometrix are defined using annual totals of resource consumption as well as total resources used, normalized for revenue or per room night (resources divided by total annual rooms occupied). The Ecometrix focus on those areas that are most significant and measurable to a high level of accuracy..”

Fuel switching its way to lower emissions

In 2006, Xanterra used 6,011,723 kilowatt hours of renewable wind, solar, or geothermal energy, totaling more than 7% of total energy use at its operations nationwide. This prevents 2,300 tons of carbon dioxide from being emitted. Wind power provides 50% of Xanterra's electricity at Crater Lake and Zion, and a third at Mount Rushmore. In addition to boosting its renewable energy use, Xanterra is reducing emissions through fuel switching (from heating fuel oil and electricity to propane and natural gas). To 2004, total heating fuel oil usage decreased 14.3%, and usage per dollar of revenue decreased 12.1%.

Going green at Zion Lodge

■ Xanterra's Zion Lodge in Utah is now 50% powered by renewable wind power and a 15,000 watt photovoltaic solar array generating a further 21,000 kWh per year has been installed on site. Ninety percent of all lighting has been retrofitted with energy-efficient compact fluorescent lamps, saving 70% in electricity relative to incandescent lamps and all computer and equipment purchases are EPA Energy Star approved.

At Zion, Xanterra has also replaced a diesel-fired boiler and with energy efficient "on-demand" propane equipment, reducing emissions, saving money, and preventing the potential for a fuel spill. The lodge has also acquired several electric vehicles, retrofitted two existing vehicles to use propane gas and has purchased three hybrid electric vehicles and three 40mpg compact vehicles where formerly large trucks were used.

Reducing the emissions of a diverse vehicle fleet

■ Xanterra has designated its own company-wide CAFE standard of 35 miles per gallon for all road-going company vehicles purchased, but its emissions reductions is complicated by a diverse vehicle fleet that includes snowmobiles, snowcoaches, tractors and boats. Since 2000 however, Xanterra has shifted from more polluting two stroke engined boats and snowmobiles to cleaner four-stroke engines, reducing noise and emissions and increasing efficiency by 65%. Alternative fuels like E10, a blend of 10% ethanol, are being used to power snowmobiles and snowcoaches.

Xanterra is now pursuing on-site waste grease conversion to biodiesel at three locations and using that fuel to power company vehicles. This eliminates a waste stream, reduces greenhouse gas emissions, and reduces diesel fuel usage.



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