

you can  
**Canon**

European Edition

# ECO life

We Focus on the Life Cycle



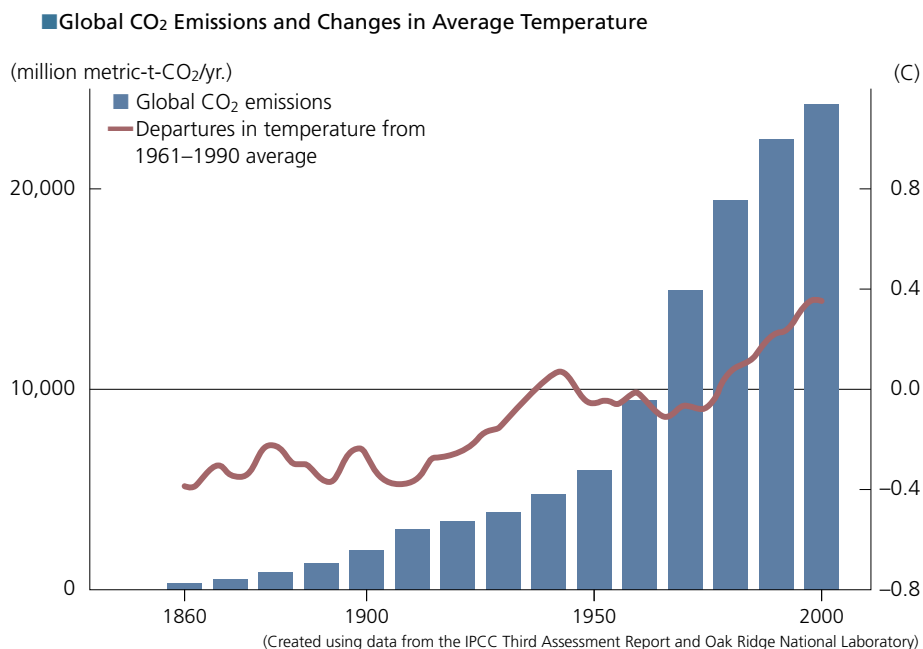


# Global Warming

## Keeping a beautiful Earth.

### Is there something we can do to help?

Modern technologies have brought convenience and comfort into the lives of people all over the world. Yet the growing consumption of energy and resources has led to global warming and a host of other environmental problems. The convenience and comfort people now take for granted cannot be sustained without immediate action to ease the burdens of technology on the environment. There are many ways in which consumers can support the environment and preserve a comfortable standard of living. Similar to the way people pick out the freshest and least expensive organic produce at the supermarket, a person can consciously choose to purchase a more environment-friendly product when deciding between products with the same functions. After all, it's the decisions of individual consumers that drive companies to develop better environmental technologies and lead mankind to find "true comfort."





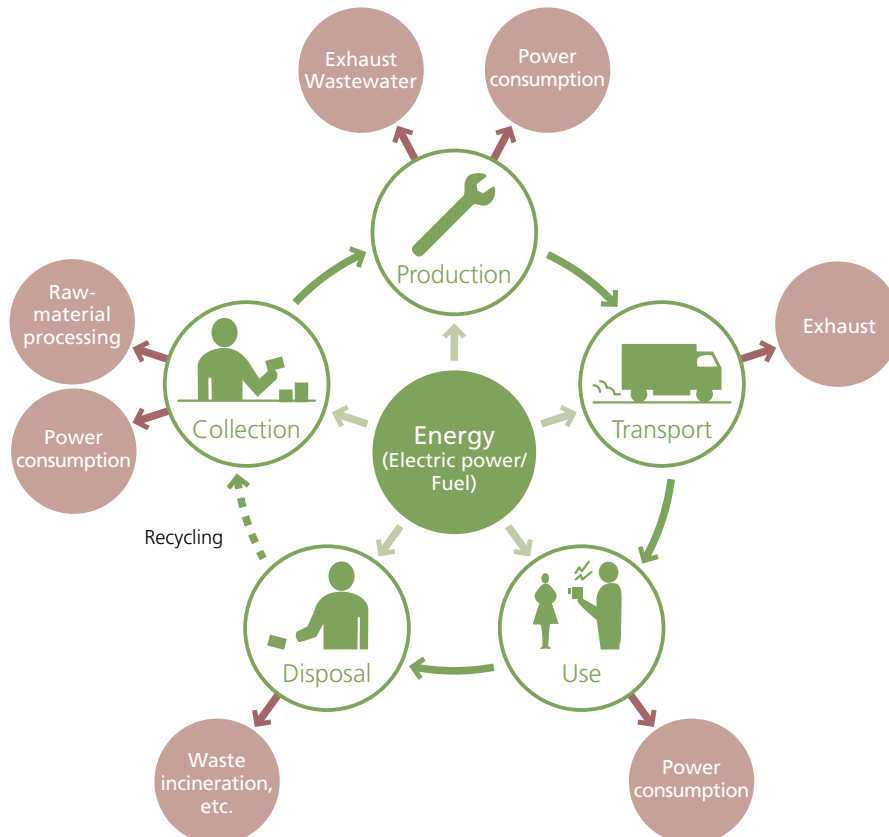
TRM

# Did you know that vegetables emit CO<sub>2</sub>?

When you consider the bigger picture, which is the "life cycle," you come to understand the impact on the environment.

Vegetables. They're a gift from the Earth, created naturally through the process of photosynthesis. If you examine the life cycle of vegetables, however, you find sources of CO<sub>2</sub> emission at almost every stage: the tractors which cultivate the soil; the systems necessary to regulate greenhouse temperatures; the vehicles which transport the produce to stores; the production of vinyl bags and Styrofoam for packaging; the cooling containers and lighting at stores; the use of home refrigeration; and the incineration of leftovers. By considering the whole life cycle we can think of technologies to improve the environment, such as fuel-efficient tractors and effective methods to render raw garbage into fertilizer. By identifying the environmental burdens in the life cycle of a product, we can seek out solutions to ease this impact at every stage. That's showing real concern for the environment.

## Life Cycle of Products and and impact on environment





# Goals for Tomorrow in Numbers

## Canon aims to develop advanced products that will satisfy the need of our responsible customers for the 21<sup>st</sup> century.

Canon has long been examining how product life cycles impact the environment. Our ongoing aim is to make high-performance, functional products while minimizing the use of precious resources and eliminating waste at every stage. We achieved this first with our compact high-performance cameras, copying machines that consume dramatically less energy, and programs for collection and recycling of used toner cartridges. Canon is determined to stay at the forefront of environment conservation efforts. By choosing Canon, consumers can express their concern for the environment, without sacrificing performance or convenience.

## Doubling the environmental efficiency of Canon's business life cycle. The Factor 2 target for 2010.

Canon has set a numerical environmental goal, called Factor 2, which it aims to accomplish by 2010. Simply put, Factor 2 is a comprehensive set of environmental targets representing a doubling of resource efficiency across all of Canon's business groups compared with 2000. These ambitious targets can be achieved through the ongoing creation of new environmental technologies and the strengthening of Canon's environmentally conscious management system.

### Canon's Vision for 2010

#### Overriding Indicator: Factor 2

Factor 2 = Double environmental efficiency compared with 2000

$$\text{Environmental Efficiency} = \frac{\text{Consolidated revenues}}{\text{Life cycle CO}_2 \text{ emissions}^*}$$

\*

All life cycle CO<sub>2</sub> emissions for every product of the Canon Group

# Canon's Measures to Reduce Environmental Burden at Every Stage of the Product Life Cycle

## Product Production Stage

Innovations such as the cell production system and "prototype-less" design help to conserve energy and resources. The development of alternatives to hazardous substances is an ongoing mission at Canon.



## Raw Materials/Parts Production and Procurement Stage

Instead of "gathering" raw materials, we "select" those with the least environmental burden. Canon cooperates with others in the industry in using recycled materials and eliminating hazardous substances.



## Logistics Stage

Canon has made a modal shift from high CO<sub>2</sub>-emission truck transport to rail and ship transport. We are also taking aggressive steps to improve packaging and other aspects of logistics.



## Waste and Recycling Stage

Moving from "throwing out" to "separating." In addition to our cartridges, which are already fully recyclable, we also design our products to be recyclable.



## Product Usage Stage

Environmentally conscious technologies are being built into Canon products to meet our overriding goal of easing environmental burden while increasing performance and usability.



According to an environmental analysis of the life cycles of Canon products, almost three-fourths of the environmental burden is concentrated in the two stages of "product usage" and "raw materials/parts production and procurement." This knowledge is reinforcing our efforts to improve the environmental friendliness of Canon products and to advance environmental initiatives at our plants.

Light and compact products use fewer resources, meeting the ultimate goal of environmental conservation. Even our cameras, with their minimal environmental impact, show care for the environment.



### Production

#### More compact, lighter-weight camera body

Through such measures as high-density circuit design, reduced battery size, and motor miniaturization, Canon has succeeded in making the camera 13% lighter and 25% smaller than the previous model.



Canon has significantly reduced the size of the battery. An energy-efficient design means that when fully charged, the new smaller battery can provide power for the same number of shots as the previous battery did.

Battery for previous camera model (left) and for the EOS 350D



### Production

#### Lead-free lens

Lead may improve the refraction of a lens, but it is also hazardous to the environment. Canon has found lead substitutes that work just as well and now all camera lenses that the company produces are lead-free.



### Transport

#### New shock-absorbent packaging

Canon teamed up with a shock-absorbent materials producer to develop a recyclable type of shock-absorbent packaging made of 70% forest-thinned timber and 30% recycled paper.



### Use

#### Even greater energy efficiency

Through the adoption of such technologies as the faster DIGIC II digital imaging processor and CMOS sensors, Canon has made advances in energy-efficient circuit design.



The high-performance DIGIC II digital imaging processor reproduces natural colors and contributes to energy efficiency.



The Canon-developed CMOS sensor is an imaging device that realizes both high image quality and low energy consumption.

The EOS 350D digital SLR camera

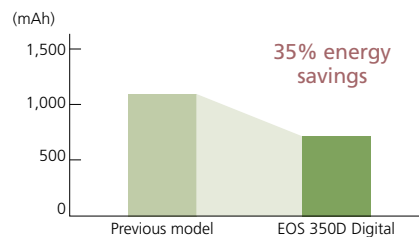


### Selection

#### Compliance with the RoHS Directive\*

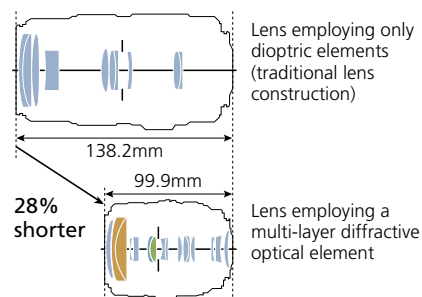
To comply with the EU's RoHS Directive, Canon developed substitute technologies for the six banned substance groups: lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE.

\*The European Union's Restriction of Hazardous Substances in electrical and electronic equipment (RoHS) Directive bans the use of six toxic substance groups as of July 1, 2006. These substances are: lead, mercury, cadmium, hexavalent chromium, and two brominated flame-retardants (PBB, PBDE).



### Canon has even reduced the size of professional-model lenses for EOS cameras.

Achieving the full range of photographic expression requires lenses made up of numerous lens elements, resulting in large-size zoom and telephoto lenses for SLR cameras. Canon solved this problem with technology employed in our Multi-Layer Diffractive Optical Element (DO) lenses, making possible the creation of smaller high-performance camera lenses. The EF70-300mm F4.5-5.6 DO IS USM incorporates a newly developed triple-layered diffractive optical element that enables a total length 28% shorter than comparable lenses using only dioptric elements.



# Inkjet printers that combine beauty and speed

## Canon all-in-one printers also conserve resources with a compact body design and realize exceptional energy-efficiency.



### Selection

#### Recycled materials for power box casings

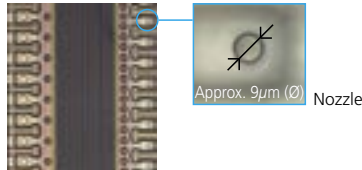
Recycled plastic from paper cassettes used in Canon copying machines is used to make power supply casings.



### Production

#### FINE printhead technology

Facilitating high image quality and fast print speed, FINE printhead technology enables reduced printhead sizes by employing high-precision, high-density nozzles.



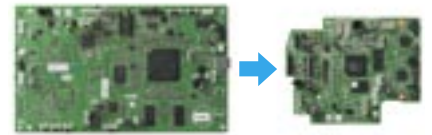
Magnified image of a printhead



### Production

#### Compact and lightweight

By making the scanner portion smaller and lighter, and introducing miniaturization technology for circuit boards and other parts, we succeeded in making products 36% smaller and 23% lighter than previous models.



Main circuit boards of a previous model (left) and the MP500



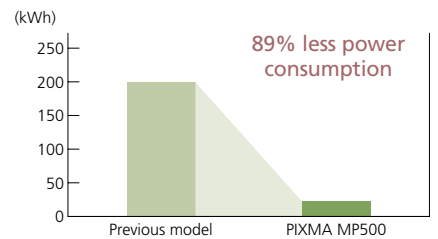
The PIXMA MP500 all-in-one inkjet printer



### Use

#### Reduced power consumption

Canon introduced energy-efficiency technology for all operating modes printing, standby, and power-off. Energy consumption, for use over a five-year period, has been reduced by 89% compared to previous models.



**\* Energy-consumption calculation conditions:**  
Daily consumption based on 16 hours in "power-off" mode, with the remaining 8 hours comprising operating time and time in "standby" mode. Operating time is equal to the amount of time necessary to consecutively print, scan, and copy 5 pages each of color documents, and 5 pages each of monochrome documents. Power consumption = Power consumption per day x Days used per year (20 days x 12 months = 240) x Years used (5).



### Selection

#### Compliance with the RoHS Directive

To comply with the EU's RoHS Directive, Canon developed substitute technologies for the six banned substance groups: lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE.

### Establishing a system for the 100% recycling of collected toner cartridges

With the help of our customers we have globally collected a total of 20,000 tons of used toner cartridges in 2005, from laser beam printers and personal-use copying machines. To promote reuse and recycling, Canon established technologies and processes to recycle 100% of the toner cartridges collected.



A Canon toner cartridge

# Digital MFDs place a high burden on the environment during the usage stage. We succeeded in reducing power consumption in our monochrome digital MFDs by 78%.

## Selection

**Compliance with the RoHS Directive**  
To comply with the EU's RoHS Directive, Canon developed substitute technologies for the six banned substance groups: lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE.

The iR 4570 monochrome office multifunction device (MFD)



## Separation

**Closed recycling of plastics**  
The exterior casings of retired copying machines are recycled into new plastic parts for copying machines in our closed recycling system.



## Use

**Ozone-free operation**  
Canon's proprietary roller charging technology realizes ozone-free operation, contributing to cleaner and more comfortable workplace environments.

## Production

**No tradeoff between size and speed**  
Despite its ultra-compact body design, measuring only 56.5 cm in width, the iR 4570 realizes a high print speed of 45 pages per minute for A4-size documents. The unit's weight has also been reduced by about 20% (in-house comparison).

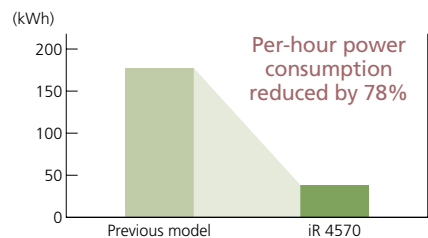
## Transport

**Milk run**  
We have turned around the traditional delivery system by sending our own trucks out on rounds to pick up parts from suppliers (milk run), thus reducing the number of trucks needed for parts transport.



## Use

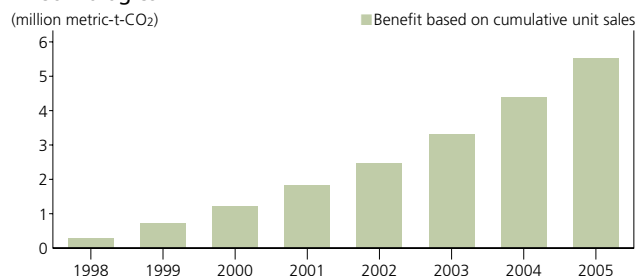
**Standby power consumption of just 1W**  
Canon's fast on-demand fixing technology and an improved copying machine controller have made possible reduced standby power consumption of only 1 Watt.



## CO<sub>2</sub> emissions cut by approximately 5.53 million tons over 8 years using Canon's proprietary energy-saving technologies.

Canon develops its own energy-efficient technologies, such as on-demand fixing and IH fixing, and incorporates them in copying machines, MFDs, laser beam printers, and other products. In the eight-year period between 1998 and 2005, these technologies have contributed to a cumulative reduction in CO<sub>2</sub> emissions of around 5.53 million tons, and have reduced the electrical bills of Canon customers by an estimated 1 billion euros.

## Reduced Environmental Burden from Energy-Efficient Technologies



## Canon's Social and Cultural Support Activities

At Canon, being an Excellent Global Corporation based on the philosophy of *kyosei* living and working together for the common good means fulfilling our social responsibility by supporting a wide variety of social and cultural activities around the world. We also assist in numerous environmental conservation projects.

### Canon Concerto

Canon strives to present our technologies and services in new and interactive ways and organise innovative events in order to achieve this. The Canon Concerto is the latest event in our pan-European portfolio, where business products and solutions are showcased using an 'orchestral' theme to set the scene for our finely tuned technologies.

Products are displayed in separate zones, which reflect different areas of expertise and enable our customers to get a full overview of Canon's business offering. This event is just one in a series designed to get closer to our customers and provide tailored solutions to meet their needs.



Canon Concerto  
Barcelona June 2006.

### WWF Conservation Partner

Canon became the first company to be named a WWF Conservation Partner in 1998. Over the more than seven-year relationship, Canon has supported the WWF's activities through such means as digitizing the organization's valuable photo archive and providing equipment to WWF branches in Europe, the Middle East, and Africa.



WWF-Canon/Michel GUNTHER

### Canon WWF PAN Parks Programme

Last September 23 Canon employees were selected from Europe, Africa, and the Middle East to visit the Fulufjället PAN Park in Sweden as part of a WWF support programme aimed at conserving the park and stimulate cross NSO collaboration, experience 3 Selves in different environment and learn about Canon's commitment to conservation work. The participants need to fulfil tasks that were designed to not only 'make a difference' to the PAN Park but to also help to develop the '3 Selves' (Self Motivation, Self Management and Self Awareness) during the PAN Park activities. Each task required the participants to use some or all of the important business related skills. Following this success the



Canon PAN Park Programme will this year take place in Majella National Park, Italy.

## ISO14001: Canon Europe is Going for Green



Over the last two years Canon has implemented an ISO14001 environmental management system (EMS) in the sales and service organisation across Europe. The ISO-certification, achieved in five countries in 2005 already, expanded to several other European countries in September 2006 and now covers the daily operations of almost 10,000 Canon employees in Europe.

The ISO14001 standard aims to ensure regulatory compliance, pollution prevention and continuous improvement of Canon's environmental perform-

ance. In order to live up to these aims all staff across Europe were trained on Canon's environmental programme. The EMS is a powerful tool to achieve the challenging strategic environmental targets of the 2008 mid-term plan of the Canon Group. This strategic plan can now be transformed into local action plans that actually improve the environmental performance of daily activities.

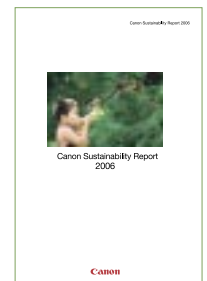
Some of the achieved improvements include:

- Substantial reduction of CO<sub>2</sub>-emissions from the European car fleet by limiting the allowed emissions of 5,000 leased cars to 180 grams CO<sub>2</sub> per km.
- Purchase of green electricity for the Canon Europa headquarters in the Netherlands and several other sites in Europe as from 2007.

## Canon Sustainability Report

Canon undertakes a wide range of compliance, environmental, and other activities to realize its goal of contributing to the sustainable development of society. People from around the world can learn about our initiatives by reading the annual *Canon Sustainability Report*. The report can be viewed on the Canon website at the following URL:

[www.canon.com/environment](http://www.canon.com/environment)  
[www.canon-europe.com/environment](http://www.canon-europe.com/environment)



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