

Helping everyone print 'greener'



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# Greener business printing is the only way to grow

## **Our philosophy and strategies for a greener future**

Today, you would probably have to be living on a different planet not to accept the need for a concerted effort to help prevent climate change. Our strategies for a greener future come from the very heart of our business, and are designed to express the value we place on the environment and the safety, health and quality of life of the people with whom we share it. Samsung Electronics believes that to survive and enjoy continued prosperity both environmentally and as members of the business community. It is essential that we contribute positively to the health of the planet and to the human societies we inhabit. Our solution is simple; we have created a totally 'green' culture for our entire print business:

## **Green management**

Samsung recognizes that environmental awareness is central to sustainable corporate development. Our management team have created an advanced environment, health and safety system designed to cultivate the development of greener print products, processes and workplaces to positively influence local communities.

## **Green products**

It is no longer enough just to think simply in terms of reduced energy consumption when considering environmental impact. Using our own Life Cycle Assessment (LCA) and specialised eco-design system, Samsung considers the entire process from raw material extraction and printer usage, through to end-of-life disposal to create more environmentally friendly products.

## **Green processes**

Samsung investigates every stage of the production process, striving to develop greener, more eco-friendly technologies and facilities. We ensure that every opportunity to minimise environmental impact is explored, from better management of hazardous substances to maximizing energy efficiency.

## **Green workplaces**

We are totally committed to safe, pollution-free, environmentally aware workplaces. From fire-prevention and health and safety training, to ongoing pollution monitoring and prevention, we do everything in our power to ensure our people and our customers enjoy greener, hazard-free workplaces.



# A leading eco-friendly company

Samsung has gained world wide recognition as one of the leading companies taking responsibility in preserving the environment.

## Our Energy Saving and green product Awards

- 2008 Standby power efficient corporation, by the Consumers Korea
- 2008 National Environment Management Award, Samsung printer and printer MFP, by Ministry of Environment Republic of Korea
- 2008 "Energy Winner Award" CLP-310 series, CLX-3170 series standby power efficient, by the Consumers Korea
- 2007 "Energy Winner Award", excellent standby power efficient products, by the Consumers Korea
- 2007 "Energy Winner Award", excellent corporation for green product of standby power efficient, by the Consumers Korea
- 2008 Korea Green Management Excellence Awards, best environmentally-friendly corporations
- 2007 Korea Green Management Excellence Awards, No.1 Green products for Color laser MFP
- 2006 Korea Green Management Excellence Awards, No.1 Green products for Toner cartridges



# From the cradle to the cradle

## A continuous, environmentally aware printer life cycle

We watch over our products every step of the way

We know that customers worldwide are increasingly concerned about the environmental impact of their business activities. Samsung is continuously improving its products and services to help customers in their efforts to fight climate change. From energy efficient design, to user-friendly products and recycling, we take responsibility for every step of the journey.

### Suppliers site

Samsung works with manufacturer of raw materials and parts who has been through the Eco partner program. Samsung help suppliers manage hazardous substances in parts and raw materials and to help our business partners set up environmental management systems.

## Design & Produce

### Operational Site

Our Eco Design System enables us to develop more environmentally friendly products. Additionally, we always conduct a LCA (Life Cycle Assessment) to analyze the environmental weak points of the product during the design stage for the development of a more eco friendly printer.

## Recycle: End of life

### Collecting and recycling program

Samsung have implemented take back program in many countries with increased total amount of collecting and recycling of materials.

Our virtuous cycle of sustainable 'green' production

## Distribution

### Transportation

Smaller and lighter products enable us to transport increasing numbers of products per pallet, reducing the environmental impact of transport-related CO<sub>2</sub> emissions.

## Customer usage

### Resource conservation

Compact and light weight products use fewer resources.

### Energy efficiency

Samsung aims for high energy efficiency when customers use our products. Our aim is to reduce any negative effect on our environment.

### NO-NOIS™ technology

We always put customers peace of mind first when they are using our products e.g. our "NO-NOIS™" technology guarantees reduced noise levels.

### Reliable and efficient products

We aim to reduce paper waste and extend cartridge use with reliable products that prolong product lifetime and save IT rollover costs.

# The eco-benefits of Samsung design and production

The environmentally aware processes behind our products

Samsung is committed to providing safe products that contribute to the creation of safe workplaces and the health and well-being of workforces.

## Achieving safe, eco-conscious quality

### Samsung Eco-partner program

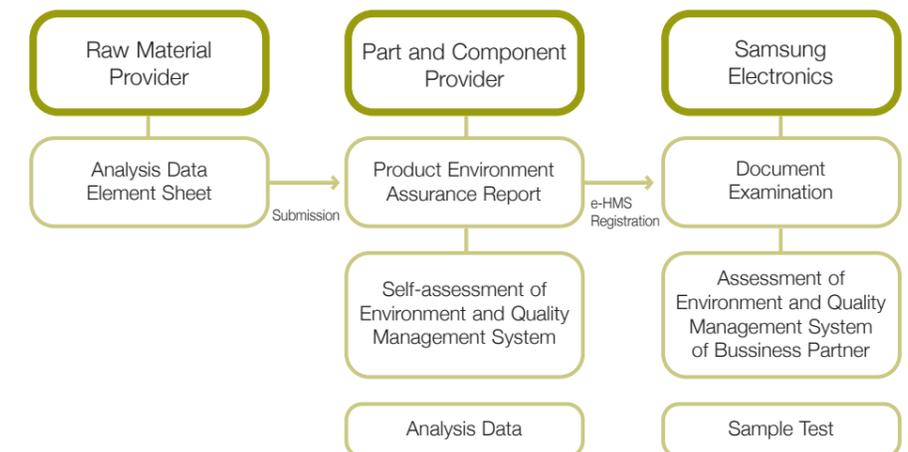
Samsung launched its Eco-partner program in 2004 to help our partners set up environmental management system that would assist in the management of hazardous substances in parts and raw materials.

We offer examination services as well as training and guidance to our eco-partners, who can gain certification to demonstrate that they have adequate procedures and systems in place to control raw materials and parts.

### The eco-benefit to our customers

Our Eco-partner program reassures our customers that the parts and raw materials that go into our market-leading products conform to strict environmental quality management systems.

#### Eco-Partner Certification Process



## Reducing environmental impact

### Samsung Life Cycle Assessment (LCA)

We first introduced Life Cycle Assessment (LCA) into the design process for our laser printers in 1999. LCA enables us to consider the environmental impact of the product at every stage of development, usage, transport and eventual recycling.

#### **The eco-benefit to our customers**

*Our Life Cycle Assessment (LCA) reassures our customers that we have planned an environmentally conscious journey for our printers from the very first stage in the design process to the end of its life.*

## Evaluating and improving eco-friendliness

### Samsung Eco Design System (EDS)

We created the Eco Design System (EDS) in 2004 to efficiently evaluate and improve our products' environmental quality. Under the system, targets for each category are set from the initial product development stage. They are followed up by evaluations that enable corrections to be made as necessary. As well as raising the environmental quality of a product, the Eco Design System reveals the environmental features of a product to stakeholders in an easy to follow format. The system is linked to our quality certification system, meaning that environmental factors are an integral part of product quality activities.

#### **The eco-benefit to our customers**

*Our customers can confidently use our products with the reassurance that every aspect of their Samsung printer's design has been assessed and evaluated for its eco-friendliness.*



## Creating healthy, safe working environments

### Global standard

Samsung's commitment to achieving the appropriate internationally recognized standards sends a clear, unequivocal message to our customers and stakeholders; we strive to abide by our eco-friendly manufacturing processes, every step of the way.

We addressed all of the key issues of quality, the environment and Health and Safety in developing our comprehensive environment and safety management System.

### ISO 9001

#### **The globally recognized standard for quality management.**

By implementing our quality management system (ISO 9001) we have improved efficiency and productivity, resulting in less waste and improved quality and service for our customers.

### ISO 14001

#### **Monitoring and minimising our effect on the environment.**

In achieving ISO 14001, we have adopted a systematic method of monitoring the eco-effects of our business activities on the environment. We have learned how to use energy more efficiently and discovered how to minimise waste and dispose of it more effectively.

### OHSAS 18001

#### **Occupational Health and Safety Management System.**

We have voluntarily adopted the OHSAS 18001 standard, which has helped us to structure an effective Occupational Health and Safety Management System (OHSAS 18001).

#### **The eco-benefit to our customers**

*In achieving the internationally recognized standards of ISO 9001, 14001 and 18001, Samsung demonstrates total commitment to quality, environmental awareness and Health and Safety in all of the manufacturing processes behind our eco-friendly printer products.*

# The eco-benefits of Samsung printers

Our environmentally conscious products are more friendly to the ecosystem

We strive to develop compact and light weight products that not only use minimal resources but also deliver high performance with user-friendly features. We are committed to ensuring that any chemicals we do use are used carefully and with consideration for our customers and the environment.

## Improving energy efficiency

### Voluntary energy mark label of our products

- From the beginning of the product planning stage, we seek to comply with relevant energy efficiency standards including US Energy Star, China Energy Mark and Korea Energy Mark.
- Samsung Electronics has been actively striving to acquire voluntary energy-saving marks from programs such as the US Energy Star and domestic e-Standby. In addition to high ratings in various energy-efficiency rating systems, Samsung Electronics has been actively striving to acquire voluntary energy saving marks from programs such as the US Energy Star and domestic e-Standby. We aim to improve energy efficiency and reduce the effects of product use on the environment, and in particular, combat the problem of global warming.

	Energy Star	China Energy Mark	Korea Energy Mark
MFP	100%	100%	100%
Printer	100%	100%	100%
Total	100%	100%	100%



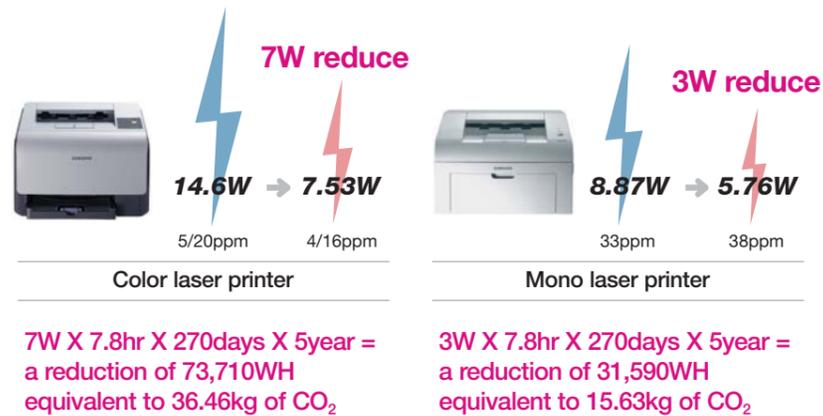
\* From 2007, all models received Energy Star, China Energy Mark and Korea Energy Mark

### The eco-benefit to our customers

Our customers have the reassurance of knowing that their Samsung products are helping them to reduce their carbon footprint. At the same time they will know that these products are helping to cut down their energy consumption and reduce their energy costs.

## Energy saving 'sleep mode'

- Samsung Electronics introduced 'e-standby' mode for its laser printers in 2006.
- 'e-standby' mode optimizes energy consumption by reducing energy need to less than 8wh for color laser printers and 3wh for mono laser printers.



### The eco-benefit to our customers

Our customers have a simple method of cutting their energy consumption and saving money whenever their Samsung printer is not actually in use.

## Conserving valuable resources

- By focusing on weight and size from the development stage, we are able to develop smaller and lighter products such as the famous "World's Smallest Color Laser Printer" – the CLP-300 – with a reduced product weight of 58% and package weight of 23%.
- All of our products comply with EU WEEE Directive 2003 that aims to reduce the waste arising from electrical and electronic equipment. By always endeavouring to use plastic parts in our products, Samsung is able to work to ISO 11469/ISO 1043 standards.
- And finally, by reusing resources, 15% of the plastic parts created during the manufacturing process are recycled. There are 3,500 parts assembled in a laser printer alone.

### The eco-benefit to our customers

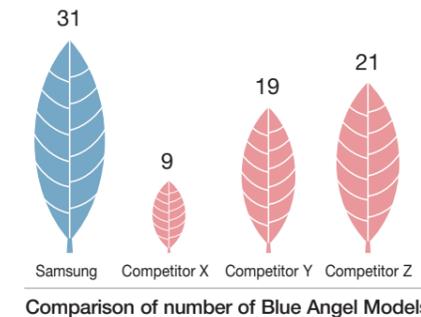
By achieving the above goal, Samsung is able to design easy-to-recycle products as well and increasing resource efficiency, which helps our customers comply with their own corporate social responsibility commitments.

## Eliminating Hazardous substances

### Eco-Labeling of our products



It is important for our customers to be able to instantly recognize our 'green' products. Samsung Printers have acquired the greatest number of Blue Angel Certifications – the first and most well known eco-label worldwide



source : www.blauer-engel.de (October, 2008)



We have also achieved Korea Eco-label and China Eco-label certifications confirming that our products meet their resources and pollution prevention standards.

### Meeting global regulations on the elimination of hazardous substances

With environmental issues as a top priority, Samsung Electronics Printing Division voluntarily carries out all manufacturing processing of consumables in a safe and eco-friendly manner, in accordance with international certification standards. To help safeguard our customers and the environment, Samsung printer supplies comply with RoHs regulations concerning the restriction of the use of certain hazardous substances in electrical and electronic equipment.

### Constructing laboratories for analysing environmental impact



In 2005, Samsung Electronics constructed three world-class laboratories featuring 16 different types of analysis equipment (23 in total) to analyse substances, which may pose a risk to the environment and the human body. The equipment can analyse inorganic and organic substances and volatile organic compounds (VOCs).

### The eco-benefit to our customers

These measures ensure that our customers and their people will not be subjected to hazardous substances when using our products and that hazardous substances will not be released into the environment when disposing of them.

## The eco-benefits of Recycling

To reduce the number of waste toner cartridges buried in landfills or incinerated by offering environmentally-friendly cartridge retrieval, recycling and disposal programs and facilities.



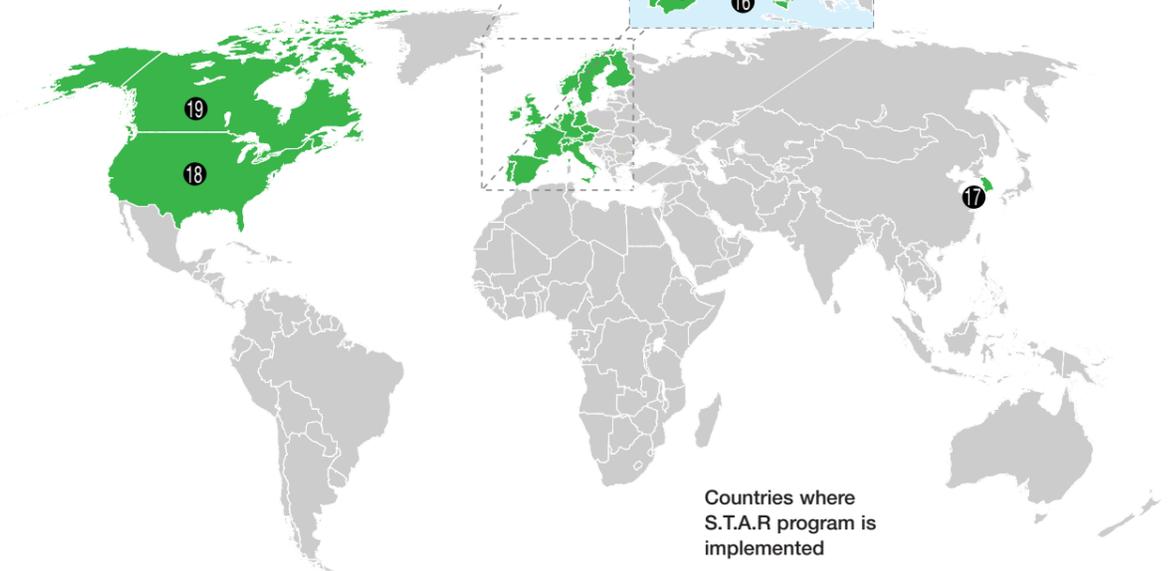
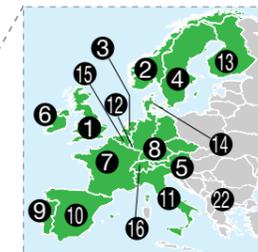
## Recycling means taking back responsibility for what we create

### Our S.T.A.R. Program

The Company first launched the Samsung Take back and Recycling Program (S.T.A.R) in 2004 to retrieve used toner cartridges in Korea. In March 2006, it was introduced to 16 European countries and then the USA and Canada in 2007. The S.T.A.R. program is completely voluntary and offered free of charge. It is already in operation for B2B and B2C products, and it is planned in the future to include bulk collections from businesses, and to expand the program in Asia.

Samsung take back responsibility for disposal and recycling from their customers. All toner cartridges collected by Samsung Electronics Printing Division go through 100% material recycle process.

- |               |               |                |
|---------------|---------------|----------------|
| 1 UK          | 8 Germany     | 15 Belgium     |
| 2 Norway      | 9 Portugal    | 16 Switzerland |
| 3 Netherlands | 10 Spain      | 17 Korea       |
| 4 Sweden      | 11 Italy      | 18 USA         |
| 5 Austria     | 12 Luxembourg | 19 Canada      |
| 6 Ireland     | 13 Finland    |                |
| 7 France      | 14 Denmark    |                |



Countries where S.T.A.R program is implemented

## Construction of toner cartridge recycling facilities



For the first time in Korea, Samsung Electronics constructed a material recycle type facility for spent toner cartridges at its Asan Recycling Centre. Every year, the facility recycles 500,000 units of waste toner cartridges in an environmentally-friendly manner. The Company also installed facilities to collect and contain dust to prevent pollution of the worksite and external scattering of waste toner powder to improve the work environment and ensure the safety of employees.

### The eco-benefit to our customers

The collected and recycled cartridges equal 663,503 kg of recycled materials\*. These recycled cartridges greatly reduce global warming carbon dioxide gas. This is equivalent to reducing carbon dioxide gas 994 ton and growing 320,725 trees.



× **320,725**  
Planting Trees

Plastic 1 kg = Carbon 80% – Carbon content in plastic (38.6%) x 44 / 12 (12 : carbon weight, carbon 12 = CO<sub>2</sub> 44)

1 large pine cone tree absorbs 3.1kg of CO<sub>2</sub> per year. source : Korea Forest Research Institute  
\*The above result is accumulated from 2004 in Korea and from 2006 in Europe as of Sep. 2008

## Environmental performance indicators

This is a summary of partial performance data from Samsung's green report. All results are for 2007, unless otherwise noted.

### Products

- Hazardous substances
  - Samsung has won the most number of Blue Angel certified products total 29 models.
  - Comply with RoHS regulations restricting the use of certain hazardous substances and phase out the use of PVC and brominated flame retardant.
- Energy efficiency
  - Launch "e-standby" mode for laser printers and optimise consumption energy less than 8Wh for color laser printers and 3Wh for mono laser printers.
  - From 2007, all Samsung printers are certified with Korea Energy mark, China Energy mark and US Energy Star, and Germany Blue Angel.
- Materials
  - By develop smaller and lighter products, eliminating 58% product weight and 23% package weight reduction.

### Reuse and recycling

- Increase recyclables product parts rate to 78% from the design stage by 2008.
- Recycle 663,503 kg of recycled materials by collecting and recycling cartridges by 2008.
- Reducing 751 ton carbon dioxide gas by collecting and recycling cartridges.

### Supply chain management

- Eco partners who is the suppliers of Samsung, has environmental management system to manage hazardous substances in part and raw materials and to help our business partner.

### Global standard

- Comply with ISO 9001, OHSAS 18001, ISO 14001 for environmental, health and safety facilities.

## How you can reduce your carbon footprint and become more 'green'

- Step 1: Replace old products with ENERGY STAR products**  
ENERGY STAR products are more energy efficient by reducing energy consumption during printing and using power save during idle time.
- Step 2: Consider a Multifunctional Printer**  
These products which allow customers to print, copy, scan and fax, save on energy consumption each year (vs. 2 single function devices) by combining the functions of multiple products into one single device.
- Step 3: Increase recycling efforts**  
By participating in a return and recycling program  
Do not throw away empty cartridges.  
Samsung provides customers with prepaid postage to participate S.T.A.R. (Samsung Take back And Recycling program) at [www.samsung.com/printer/star/](http://www.samsung.com/printer/star/).
- Step 4: Reduce waste paper and environmental impact**  
Print both sides of prints and copies.  
Most of Samsung Printers have Duplex printer as a built-in function.
- Step 5: Purchase eco friendly products**  
Most Samsung printers are certified by world renowned green certification.