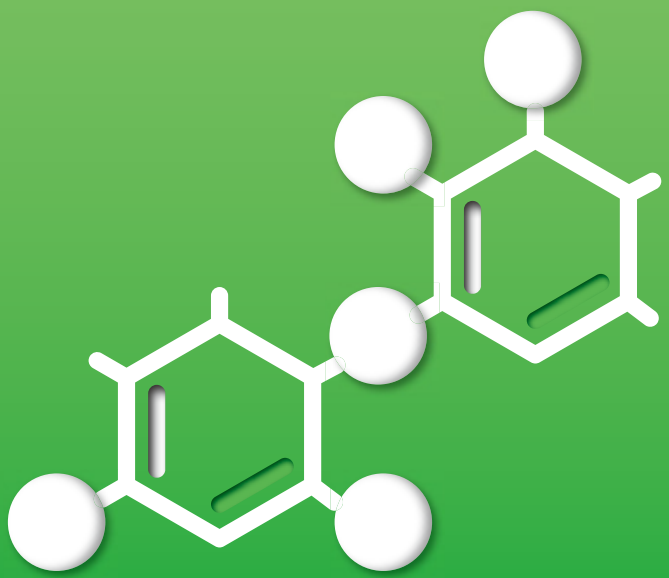
Green Management Activities and Performance

The scope of global data in this section is all operation sites include Korea as well as overseas.



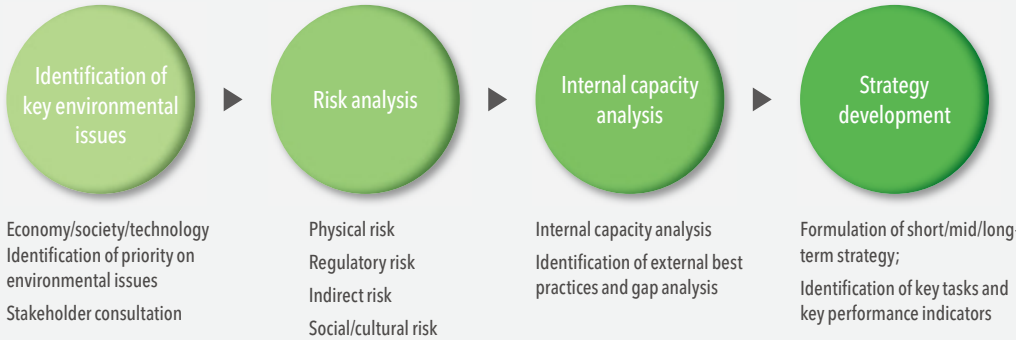
Green Management Framework

Green Management Strategy

Establishing a Green Management Strategy

Samsung Electronics is implementing green management practices for sustainable development by actively analyzing the impact we make on the environment and assessing management risks associated with those impacts. We considered a wide range of our economic, social and environmental impacts and formulated a systematic green management strategy to adapt to changes in the market environment. We conducted materiality tests to assess key risks identified while developing our green management strategy and prioritized them for more effective management. Details on our green management strategy formulation process and priority risk management activities follow.

Strategy Development Process



Key Risks and Management Activities

Type	Key Issues	Management Activities
Physical risks	Rise in price of raw materials and oil	Installation of high energy efficiency facilities Development of energy use reduction policies
	Intensified water shortage	Implementation of water resource management strategies and water-related risk management structure
Regulatory risks	Implementation of national energy/greenhouse gas reduction policies	Operation site GHG reduction activities Energy efficient product development and sales
	Strengthened product-related regulations	Regular monitoring and compliance activities of energy/hazardous materials/recycling-related regulations
Indirect risks	Change in market and industry	Development of Eco-Products and strengthening of green marketing
	Increased competition for eco-technologies	Development and utilization of eco-friendly materials Release of innovative Eco-Products
Social/cultural risks	Changes in consumer preference	Expansion of consumer green marketing Environmental communication with local community residents
	Increased stakeholder demands	Increased stakeholder communication and response to demands Responsive information disclosure

Green Management Vision and Mid-term Goals

Vision and Slogan

Our green management strategy enables us to grow sustainably and invest in the future of both humanity and nature. Samsung Electronics established its green management vision based on our underlying philosophy of helping to build a prosperous society and preserving the environment through business activities that give due respect to people and nature. Our green management activities are reinforced under our slogan of 'PlanetFirst.'

Green Management: Basic Philosophy, Vision, Slogan

Green Management Policies

Samsung Electronics is committed to leading the realization of a sustainable society. Through our green management activities, we are contributing to the prosperity of humanity and the conservation of the natural environment.

Global Green Management System
Establish a top-class global green management system, ensure full compliance of all environment safety and health regulations in all our operation sites and enforce strict internal standards.

Zero-Accident Green Operation Sites
Create recycling-centric production facilities and safe workplaces where wastes are recycled and accident prevention measures are implemented to ensure the health and safety of all employees.

Life Cycle Responsibility for Products and Services
Take full responsibility for ensuring minimum environmental impact and the highest safety in all stages of the product life cycle including purchasing of parts/raw materials, development, manufacturing, transfer, product use and end-of-life.

Preservation of the Global Environment
Take actions to tackle climate change and protect local communities as well as the global environment. Disclose green management policies and achievements to both internal and external stakeholders.

Green Manufacturing Process
Establish manufacturing processes that minimize the release of greenhouse gas emissions and pollutants by employing best-available clean manufacturing technologies that enable efficient resource and energy management.

Mid-term Target: Eco-Management 2013

Eco-Management 2013 outlines our mid-term targets announced in 2009. Lowering greenhouse gas emissions relative to sales by 50% from 2008 levels and designing 100% of Samsung Electronics products as Eco-Products are the two core objectives. To reach the stated goals, we have developed 19 specific actions under the three categories of green operations, green products, and green communication.

We are taking actions to minimize the negative impact on the environment associated with our business activities and disclosing our environmental achievements against mid-term targets to bolster our commitment to green management.

EM2013 Core KPIs and Achievements

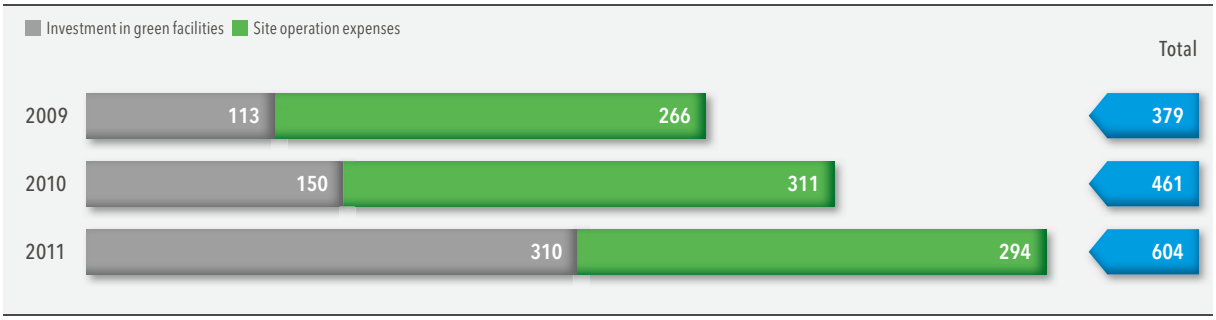
Area	Indicator	2011 Target	2011 Actual	2012 Target	2013 Target
GHG reduction (Korea)	GHG emissions relative to sales (tons CO_2/KRW 100 million)	4.62	4.46	4.21	3.72
	Proportion of Good Eco-Products (%)	96	97	97	100
Eco-Product development ratio	Proportion of Good Eco-Devices (%)	85	85	87	100

Investment in Green Management

Samsung Electronics is making regular investments in green management practicesin two separate categories of investment in green facilities and site operation expenses. In 2011, Samsung Electronics invested KRW 703 billion in green management practices, which is an 86% increase from 2010.

Green Management Investment

(USD million)



- 1 USD=1,164.30 KRW (base year: 31st. Dec. 2011)

Green Investment Detail

Indicator	Details
Investment in green facilities	Investment in air and water quality, waste management and pollution prevention facilities (Extension of air pollution control in semiconductor)
Site operation expenses	Expenses paid to operate pollution prevention and treatment facilities (Power consumption, chemical, labor, accreditation, etc)

Environmental Awards and Achievements

Samsung Electronics has received international recognition for sustainability performance. For example, Samsung Electronics was selected as a sector leader in environmental performance in the Dow Jones Sustainability Index. It was also selected for the Carbon Disclosure Leadership Index for three consecutive years by the Carbon Disclosure Project. Samsung Electronics won 22 awards including ENERGY STAR Partner of the Year by the U.S. EPA. Awards and recognition from external stakeholders indicates the strength of our environmental regulation compliance and stakeholder communication efforts.

2011 Recognition for Excellence in Environmental Management

Name of Award	Given by	Date	Details
Green company assessment	China Europe International Business School (CEBIS)	April	Selected as the greenest company among the top 100 foreign companies in China
Best Global Green Brands Ranking	Interbrand	July	Ranked 25th in the Global 50 Green Brands rankings
Environmental, Social, Governance Assessment	Korea Corporate Governance Service	August	Received A+ grade in environmental management among 800 listed companies
Sustainability Index	*Kyunghyang Daily*	August	Selected as 2nd best environmental performer among the top 100 companies in Korea
Dow Jones Sustainability Index	SAM	September	Named as the most sustainable technology company in the 2011 Dow Jones Sustainability Index Named as top environmental performer in the semiconductor sector
Carbon Disclosure Project	CDP Committee	September	Included in the Carbon Disclosure Leadership Index for three consecutive years
Green Ranking	*Newsweek*	October	Ranked 22nd among Global Top 500 companies Ranked 4th in Tech. Equipment sector
Green Ranking	*Joongang Daily*	December	Ranked 2nd among top 100 companies, Ranked 1st in IT sector

2011 Environmental Awards Received

Region	Name of Award	Given by	Date	Details
Korea	Green Star Certification Award	Korea Management Association	June	Washing machine, refrigerator, Kimchi refrigerator and air conditioner.
	Korea Green Management Award	Ministry of Knowledge Economy/ Ministry of Environment	June	IT solutions division was awarded with a medal for solar powered note PC.
	Energy Winner Award	Consumers Korea	July	10 products were awarded for high energy efficiency including the grand award for smart air conditioner.
	Korea Consumer Well-being Index certification award	Korea Standard Association	August	Samsung Anycall brand ranked 1st in mobile phones
	Green Product of the Year	Green Purchasing Network	October	Solar powered note PC (NT-NC215), low-power monitor (S23A550H)
	CDP Korea 200 Report Launch & Awards	CDP Committee	October	Included in the Carbon Management Industry Leader
	National Green Technology Award	Ministry of Knowledge Economy	November	Low-power mobile semiconductor technology
U.S.	CES Eco-Design Award	U.S. Consumer Electronics Association	January	Washing machine, electric oven, monitor, memory chip, LCD panel, HDD
	Energy Star Award	U.S. Environmental Protection Agency	April	Selected as Partner of the Year
	TreeHugger's Best of Green Awards	TreeHugger	April	Restore (SPH-M570) mobile phone
	Sustainability Leadership Award	International Electronics Recycling Conference & Expo	May	Leadership in Recycling Program
	Green Millennium Awards	Global Green USA's initiatives	June	SPH-M580 Replenish mobile phone
	Outstanding Achievement Award	Buyers Laboratory Inst.	August	Eco-Product award for printers with eco-driver technology
	BGCA Partnership Award	Boys & Girls Clubs of America	September	Recognition for donation of high energy efficiency products
	Mercury Reduction Award	U.S. Environmental Protection Agency	October	Recognition for contribution made in reducing mercury in LED display
	State Electronics Challenge Award for Sustainability	Northeast Recycling Council	October	Recognition for support made in Recycling Association activities
Germany	iF Material Award	International Forum Design Hannover	March	Eco-friendly materials used in note PC (NT-NC10)
UK	*Which* Energy Saver Award	*Which magazine*	September	Energy Efficient LED TV (55D8000)
	Green Apple Award	Green Organization	November	Eco-friendly product award for Eco Bubble Washing Machine
	International Green Award	Green Business Enterprises	November	Eco-friendly innovative product award for Eco Bubble Washing Machine
China	Energy Saving Contribution Award	China Energy Saving Association	May	Received awards for two consecutive years
India	Golden Peacock Award	WEF, IOD	June	Eco Innovation award for eco-friendly note PC 900X3A

Green Management Implementation Structure

Organizational Structure

Samsung Electronics has a structured organization in place for effective implementation of green management. The CS Environmental Center, which reports directly to the CEO, is in charge of mid-term target setting and monitors green management KPIs. It is also responsible for the development of climate change responses, life cycle GHG emissions management and the provision of supplier support. The CS Environment Center is also responsible for overall green management issues including Eco-Design, eliminating hazardous materials in products, and energy efficiency standards regulations.

The Environment, Health and Safety Center is responsible for ensuring the green operations of all production plants through close collaboration with the Environment Health and Safety (EHS) team at each production plant. The center is responsible for analyzing environment and safety risks monitoring changes in global environmental regulations and national policies, and improving Samsung Electronics' EHS practices. Each plant also has an environmental affairs manager and a team of experts to ensure compliance with environmental regulations and the implementation of green management improvement measures.

Corporate Green Management Committee

We are aware of the environmental impact associated with our business activities and the strategic importance of implementing green management practices. This understanding led to the establishment of the Green Management Committee which meets twice a year to confirm green management policies, assess performance and make decisions on the establishment of improvement measures.

Samsung Electronics also has a Climate Change Response Committee in charge of supporting GHG emissions and energy management, as well as an Eco Council in charge of supporting Eco-Product development and green operations at facilities. We also hold regular EHS strategy meetings for reviewing changes to EHS regulations and formulating responses.

Corporate Green Management Consultation Group

Name	Frequency	Details
Green Management Committee	Half-yearly	Headed by CEO. Makes decisions on global green management policies and plans
Eco-Product Council	Half-yearly	Composed of product development team in business divisions. Consults on Eco-Product development strategy
GHG/Energy Executive Council	Half-yearly	Consults on company-wide GHG and energy management strategy
EHS Strategy Council	Quarterly	Consults on corporate EHS strategy

Employee Training

Samsung Electronics offers 32 green management training courses in four categories: basic, legal, job function and overseas. The basic course is designed for all employees and provides an introduction to Samsung's green management policies. The legal courses are designed for EHS affairs managers at production plants and are focused on the prevention of accidents and risk management as required in relevant laws and regulations.

The courses in the job function category are designed for EHS managers at product and plant management levels to enhance their in-depth understanding of EHS affairs. The overseas classes provide staff at overseas plants with information on EHS requirements that must be observed.

Environmental Achievement Management

Achievement Management and Rewards

Samsung Electronics developed a Global EHS System (G-EHS) for integrated management of EHS data. The system played a pivotal role in boosting our green management capacity into a top-tier program in energy and GHG reduction, product environmental regulation compliance, workplace accident reduction goals and achievement monitoring.

We created reward schemes, including the Samsung Green Management Award and the Samsung Electronics Annual Award, to internally promote green management practices. The Samsung Green Management Award is given by the Samsung Corporation to recognize exemplary production plants and suppliers with excellent green management practices. The Samsung Electronics Annual Award is a cash bonus and an extra point in annual reviews given to organizations and employees that made key contributions in green management areas.

Global-EHS System

Environmental Expense Management

Samsung Electronics is managing environmental expenses in an integrated and cost effective manner using the G-EHS. The investment in environmental safeguards at facilities and the operation costs of each production plant is managed by environmental managers at each site. The cost data is then collected by the Environmental Strategy team of the CS center annually for calculation of total expenses spent on environmental management. We are following the Ministry of Environment's guidelines on environmental data collection and report the data to relevant stakeholders, including the Bank of Korea. Environmental costs are budgeted during an annual corporate business planning process and spent accordingly.

Environmental Audit

Samsung Electronics is participating in environmental audits conducted by internal and external experts in order to identify areas of improvement and take appropriate actions. For example, we have been conducting internal audits on all production plants in regards to hazardous materials and energy management. We have implemented an eco-partner policy which mandates regular assessments on the status of suppliers' environmental management and implementation of improvement measures.

We also have an internal mandate on the installation and testing of environmental management equipment at facilities, ISO14001 environmental management certification, and an OHSAS18001 safety and health management system for all existing plants and new plants to be constructed. All plants are subjected to regular audits by third party certification agencies.

Information Disclosure

Samsung Electronics publishes annual sustainability management reports to share information on our environmental management including targets, strategies, GHG emissions data, Eco-Product information, green production plants, and stakeholder communication programs. The information on our green management practices is disclosed on our global web site for easy access by stakeholders.
(http://www.samsung.com/us/aboutsamsung/sustainability/environment/environment.html)

We are actively participating in the Carbon Disclosure Project to share our detailed activities and achievement in our carbon management practices.

Climate Change Response

Climate Change Response Strategy

Risks and Opportunities

Risks and Opportunities Analysis Process Samsung Electronics determines materiality and priority of issues by using five criteria, as listed below, when determining climate change related risks and opportunities.

Criteria of Risk and Opportunity Analysis

Criteria	Details
Significance to stakeholders	Concerns of stakeholders such as customers, evaluators and NGOs.
Industry (competitor) benchmarking	Peers and competitors' reaction to the issue
Significance to the company	Impacts to the company wide policy, strategy, goal and others, as well as direct financial impacts (short/medium/long-term financial impacts)
Readiness	Having reasonable control over the issue or not, and degree of readiness in capital (HR & asset) to deal with related issues
Likelihood	Probability of events and amount of time left (before potential regulation enforcement)

Risk Management Samsung Electronics identified the following climate change risks and response activities for their management.

Risk Management Activities

Category	Type of Risks	Risk Management Activities
Regulatory risks	Emission trading scheme	Developing CDM project within semiconductor manufacturing process
	Emission reporting obligations	Improving transparency on GHG emissions data through third party verification
	Product efficiency regulations and standards	Increasing R&D on energy efficiency improvement on products and receiving energy marks
	Product labeling regulations and standards	Increasing number of eco-label certified products
	Uncertainty on new regulations	Monitoring on global environmental regulations
Physical risks	Change in precipitation and drought	Identification of risks and response manuals on site facilities through regular/special review and 3rd party audit
Other risks	Reputation	Strategic response to Eco-Product exhibition and evaluations
	change in consumer behavior	Developing products using insight from consumer research

Capitalizing on Opportunities Opportunities associated with climate change and its impacts on Samsung's operation as follows.

Opportunity Creation Activities

Category	Opportunities	Opportunity Creation Activities
Regulatory risks	GHG Emissions trading scheme	Development of CDM projects using reductions made at semiconductor production plants and products
	Product efficiency regulations and standards	Introduction of energy mark certified products
	Voluntary agreements	Voluntarily participating in GHG reduction activities
Physical risks	Extreme weather events	Strengthening system air conditioner business
	Air and water pollution	Developing/upgrading of indoor air purifiers, development of water purification technologies
Other risks	Increased consumer demand on low carbon products	Increased number of Eco-Products and related R&D
	Increase of brand value as a low carbon and energy efficient product provider	Strategic participation in Eco-Product exhibitions and climate change related evaluations
	Reduction in operation cost by improving energy efficiency of equipments	Corporate energy cost management

Management Targets and Strategies

Based on the environmental mid-term strategy 'Eco-Management (EM) 2013,' Samsung Electronics manages its climate change mitigation activities through two management systems. Our Eco-Design System (EDS)evaluates GHG emissions from a product's life cycle (from designing to disposal of a product) and our G-EHS manages corporate GHG reduction activities from all facilities around the world. We also have gathered GHG emissions data, including GHG data from employee business travels, logistics, and suppliers, in order to manage Scope 3 GHG emissions.

Climate Change Response Strategy We have created GHG management strategies for all relevant divisions in order to achieve GHG reduction targets in production facilities, product development, and its suppliers.

Climate Change Response Strategy

Category	Details
Incorporation of GHG reduction facilities	Reduction of F-gas emissions from the semiconductor and LCD manufacturing process
Product Energy Efficiency Improvement	Reduction average energy consumption of products by 40% and achieving 0.5W of standby power by 2013, in comparison to 2008 figures.
Implementation of Energy Management System	Implementation of energy management system and establishment of internal energy efficiency certification system subjected to all business sites in Korea
Supplier support	Support for the establishment of global supplier's GHG inventory system by offering training and expertise sharing to global suppliers

International Initiative Membership Status

Initiative
World Semiconductor Council (WSC)
World Business Council for Sustainable Development (WBCSD)
Korea Business Council for Sustainable Development (KBCSD)
Electronic Industry Citizenship Coalition (EICC)

KPI on GHG Emissions Reduction and Achievements

Samsung Electronics designated GHG emissions intensity at Korean plants as its KPI for GHG management, a figure that accounts for 90% of Samsung Electronics' global emissions. The mid-term target is a 50% reduction in GHG emissions intensity by 2013 compared to the 2008 baseline. Samsung Electronics has been meeting annual GHG emissions reductions targets since 2009. We reduced intensity by 40% in 2011 compared to the 2008 baseline and expect to achieve the 2013 target. We have selected GHG reduction during the product use phase as our second KPI to be achieved by manufacturing energy-efficient products. The 2013 mid-term target is to reduce GHG emissions by 85 million tons (accumulated) from 2008 levels. We aim to achieve this through a 40% reduction in average electricity consumption of Samsung Electronics products compared to a 2008 baseline. We are currently on track to achieve this goal, meeting annual targets since 2009.

GHG KPI and Achievements

KPI	Indicator	2009	2010	2011	2013
GHG emissions intensity (production in Korea, tons CO_2/KRW 100 million)	Target	6.85	5.65	4.62	3.72
	Actual	5.83	5.11	4.46	-
	Reduction Ratio (%, 2008 baseline)	22	31	40	50
Cumulative GHG emissions reductions over five years (Global, 10,000 tons)	Target	334	1,169	2,695	8,468
	Actual	444	1,529	3,292	-

- GHG emissions intensity: Total CO_2 emissions[1] ÷ (Sales[Korea] / price index[2])

[1] Total GHG emissions from production plants in Korea, expressed in CO_2-equivalent

[2] Producer price index in Bank of Korea public notice (Base year 2005: PPI=1)

Management Structure

Samsung Electronics' GHG emission management structure is as follows.

GHG Management Committee

Name	Detail	Host	Frequency
Green Management Committee	Discuss and make decisions on corporate-level strategic decisions on climate change response	CEO	Twice a year
Eco-Product Council	Set development goals and implementation strategies on high energy efficiency and low power-consumption products	Head of CS Environmental Center	Twice a year
GHG/Energy Executive Committee	Establishment and implementation of production plant GHG reduction strategy	Head of CS Environmental Center	Twice a year
GHG/Energy Committee	Climate change risks analysis and monitoring	Head of Environmental Strategy team	Five times a year

Scope 1, 2 Emissions Management

Scope 1, 2 Emissions Management Process

Emission Management Structure The operation sites included in the GHG emission management scope are production plants and buildings under direct operational control of Samsung Electronics. Monthly GHG emission data from eight Korean plants and buildings, 30 overseas production plants, and 76 non-production subsidiaries (sales, logistics, and R&D centers) are collected through the environmental management system, G-EHS. The emission data from each site are checked against targets and improvement measures are formulated. The GHG emissions data and reduction achievements against targets are reported to environmental managers at each site, in addition to the corporate environmental affairs management team and top management.

Emission Calculation Method GHG emissions were calculated with management data at each site and the national guidelines of each country as well as international standards including the IPCC Guidelines, ISO 14064 were used as reference for matters not specified in the national guidelines.

GHG Emissions (Scope 1, 2) Samsung Electronics' GHG emissions intensity in 2011 was reduced to 4.46 tons/KRW 100 million. which was 13% lower than 2010 figures. We have taken various measures including the installation of facilities for reducing GHG emissions from indutrial processes, improvement in energy efficiency of production facilities, installation of high efficient facilities and will continue to implement various GHG reduction measures.

GHG Emissions Intensity (tons CO_2/KRW 100 million)

Category	Indicator	2009	2010	2011
Korea	Target	6.85	5.65	4.62
	Actual	5.83	5.11	4.46
Global	Actual	4.35	4.15	3.70

- GHG emission intensity: Total CO_2 emissions[1] ÷ (Sales[Korea] / price index[2])
  - [1] Total GHG emissions from production plants in Korea, expressed in CO_2-equivalent
  - [2] Producer price index in Bank of Korea public notice (Base year 2005: PPI = 1)
- Calculation Method (Global): Global total CO_2 emissions / Global Sales

GHG Emissions

(1,000 tons CO_2)

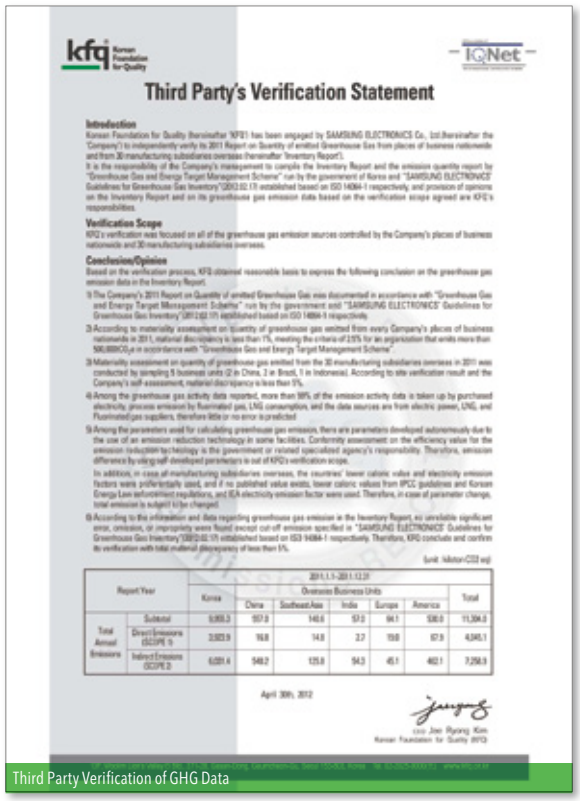
Region	Scope	2009	2010	2011
Korea	Scope 1	3,564	4,057	3,924
	Scope 2	5,008	5,552	6,031
	Total	8,572	9,609	9,955
Global	Scope 1	3,750	4,155	4,045
	Scope 2	5,875	6,500	7,259
	Total	9,625	10,655	11,304

- Adjustment was made to Korean GHG emissions data between 2009 and 2011 as a result of third party verification in June 2011 following guideline in national GHG target management policy.
- Data scope is 100 percent of both Korea and global emissions by Samsung Electronics

GHG Emissions by Type (Global)

(1,000 tons CO_2)

	2009	2010	2011
CO_2	6,340	7,012	8,378
SF_6	2,037	2,397	1,738
PFC_S	912	901	859
N_2O	170	212	220
HFC	164	131	108
CH_4	2	2	2
Total	9,625	10,655	11,304



Third Party's Verification Statement

Introduction

Verification Scope

Conclusion/Opinion

April 30th, 2012

Third Party Verification of GHG Data

Third Party Verification of GHG Data

Our GHG reduction has been verified by a third party agency in compliance with relevant Korean government policy. The Korean Foundation for Quality has recently completed verification of GHG emissions data between 2007 and 2011 of eight operation sites in Korea. We also voluntarily received GHG emission data verification for overseas production plants.

GHG Reduction Activities

Samsung Electronics succeeded in reducing 1.4 million tons of CO_2 in 2011. The reduction of 1.03 million tons was achieved with the installation of PFC, SF_6 emissions reduction facilities. The introduction of high energy-efficiency facilities and the optimization of utilities contributed to a reduction of 28,000 and 188,000 tons of CO_2 respectively. Implementation of a waste heat recovery system resulted in 24,000 tons of CO_2 emissions reduction. A collection of improvement measures also contributed to a reduction of 130,000 tons of CO_2 emissions.

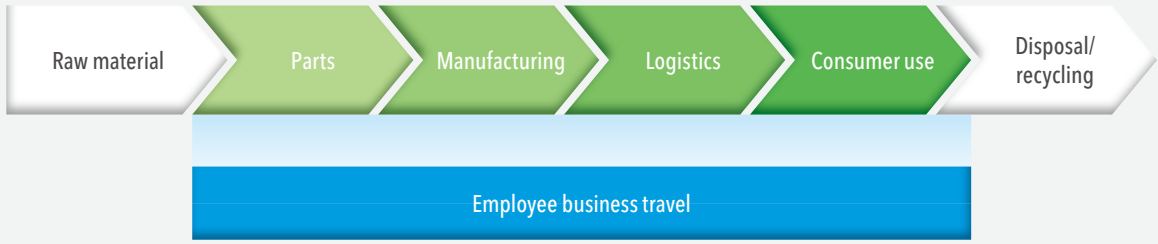
Scope 3 Emissions Management

Scope 3 Emissions Management Process

Samsung Electronics' Scope 3 GHG emissions include GHG emissions associated with suppliers, product use, transport of parts and products and business travel by Korean employees.

Supplier GHG emissions are calculated using the activity data submitted by suppliers. Emissions associated with logistics and business travel are automatically calculated by the G-EHS. GHG emissions associated with product use are estimated using energy consumption information and typical use scenarios for each product. The GHG emissions of product use are correlated to the energy efficiency of products. The GHG emissions data of each scope can be managed by environmental managers in each division, the corporate environmental affairs management team, and top management.

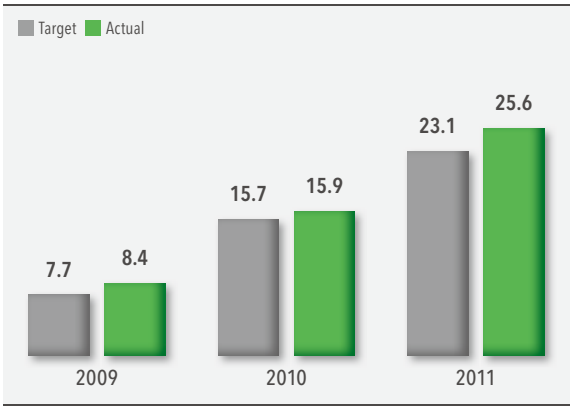
Boundary of Scope 3 Management



Scope 3 GHG emissions are calculated as per related international standards including ISO 14064, IPCC guidelines, WBCSD Scope 3 guidelines and carbon footprint labeling standard of Korea.

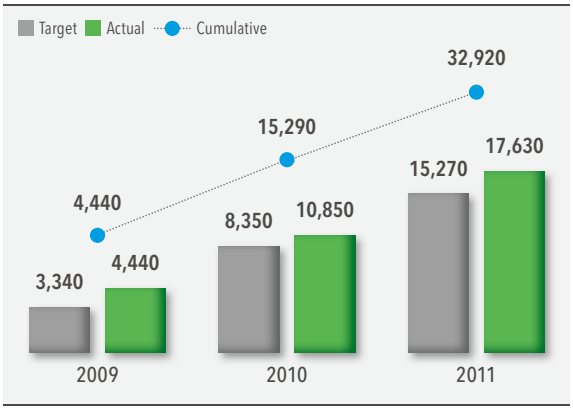
GHG Emissions in Product Use Samsung Electronics defines "GHG Emissions associated with product use" as the amount of GHG emissions caused by electricity consumption of Samsung Electronics products. The emissions associated with product use have not increased despite an increase in the number of products sold due to the increased energy efficiency of newer products. We achieved 17,630 thousand tons of GHG emission reductions in 2011 compared to the 2008 levels.

Improvement Rate of Product Energy Efficiency (%)



- Product Energy efficiency improvement rate = (2008 average power consumption–2011 average power consumption) / (2008 average power consumption) × 100

GHG Emissions Reduction in Product Use (1,000 tons CO_2)



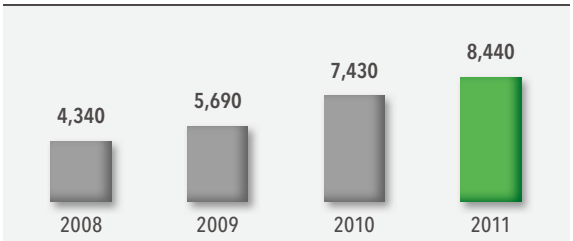
- Target is made by 10% of annual increasing in product sales volume
- Scope: All consumer products sold globally (excluding parts)

GHG Emissions associated with transport of parts and products
Samsung Electronics is monitoring CO_2 emissions associated with transport of materials, parts and products. The emissions have been increasing by 15% per year on average due to the establishment of new overseas production facilities and an increase in overseas production volume. Efforts are being made to reduce product weight and optimize transport routes to achieve reductions in emissions related to transport. A modal shift to lower GHG emissions is also employed to achieve further reduction.

- Modal shift (Change in means of transport): Samsung Electronics is changing air transport to maritime transport and road transport to railroad transport to achieve reductions in GHG emissions.

Emissions Associated with Transport of Parts and Products

(1,000 tons CO_2)

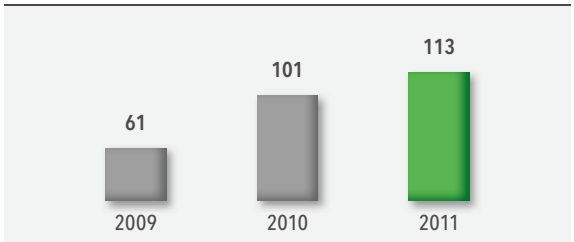


- Calculation formula: Distance (Km) × Weight (Kg) × GHG emission conversion factor by emission sources
- Management scope: transport of products, materials and parts (transport service paid by business partners are also included)
- Management method: Monthly emissions are calculated based on logistic data
- Data scope is 100 percent of global emissions by Samsung Electronics

Business Travel Emissions Samsung Electronics is monitoring GHG emissions associated with business travel. The emissions have increased by more than 10% due to the establishment of new overseas operation sites and an increase in the number of employees. We are making an effort to reduce business travel-related emissions through measures including the encouragement of the use of mass transportation and video-conferencing systems.

GHG Emissions Associated with Business Travel (Korea)

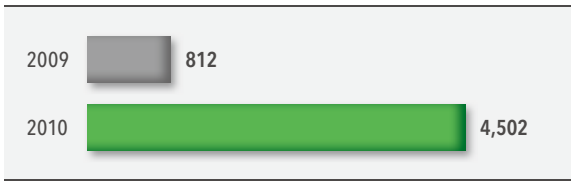
(1,000 tons CO_2)



- Calculation formula
  - Air travel: ∑[Distance(Km) × No. of employees travelled × GHG emissions conversion factor by class]
  - Land transport: ∑[No. of employees travelled × cost (KRW) per travel × distance conversion factor (km/KRW) × emissions conversion factor (ton CO_2/employee·km)]
- Management scope: Based on global business travel data by Korea-based employees
- Management method: Emission data is automatically calculated using the G-EHS system on a monthly basis and G-ERP

Suppliers' GHG Emissions Samsung Electronics manages suppliers' GHG emissions data associated with Samsung Electronics' business; total GHG emissions of a supplier multiplied by the ratio of sales to Samsung Electronics.
Samsung Electronics began monitoring and analysis of GHG emissions from its supplier companies since 2009. We provided training courses to help the suppliers report their GHG emissions.

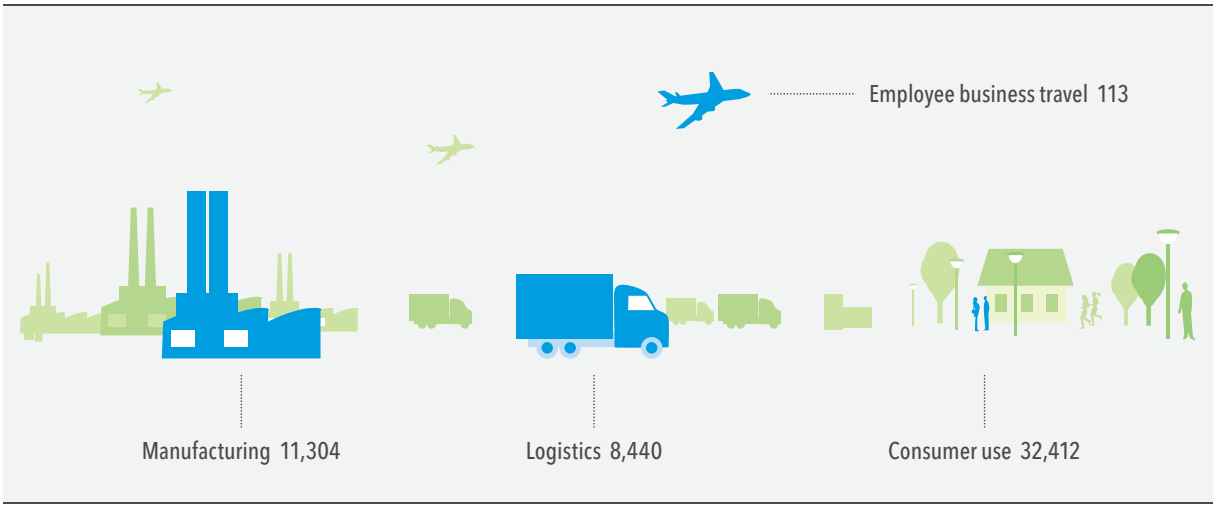
Supplier GHG Emissions (1,000 tons CO_2)



- Compilation of 2011 supplier data has not been completed as of May 2012.
- Scope of 2009 and 2010 supplier emissions data is accountable for 40% and 63% respectively of total purchases by Samsung Electronics. Only Korea-based suppliers participated in the 2009 data collection.

Corporate GHG Emissions Break-down

2011 GHG Emissions Break-down (1,000 tons CO_2)



On-site Energy Management

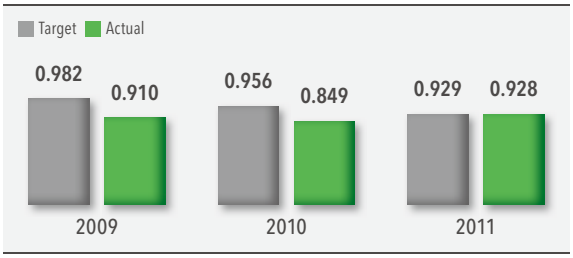
Energy Management Structure in Operation Sites

The CS Environmental Center at Samsung Electronics created climate stratrgy part to manage energy use at operation sites by conducting tasks including the collection of monthly data and the analysis of the cause of changes in emissions. Bi-monthly GHG and energy working group meetings are also held to share success stories and news on energy saving activities.

Energy KPI and Achievements

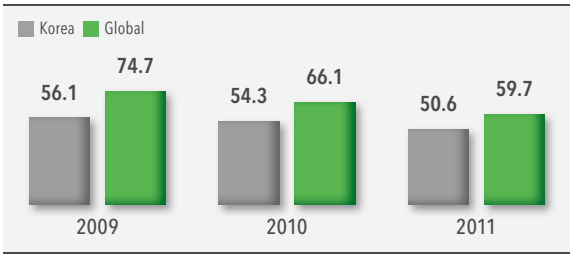
Samsung Electronics has adopted an energy cost rate (%) to assess the financial benefits of energy consumption reduction. The 2013 target is 0.878% with a goal of achieving a 2.5% reduction per year. We have optimized the operations of manufacturing and utility equipment, introduced energy efficient equipment and waste heat recycling facilities to achieve the target. The energy cost rate increased in 2011 compared to 2010, due to an increase in energy consumption and energy price. However, we succeeded in achieving the 2011 target set in 2008.

Energy Cost Rate (Korea) (%)



- Energy cost rate (%) = energy cost in manufacturing site (Korea) / Sales (Korea) × 100

Energy Consumption Intensity (tons CO_2/KRW 100 million)



- Data scope is 100 percent of both Korea and global emissions

Electricity and LNG Consumption

Category	Indicator	2009	2010	2011
Korea	Electricity (Gwh)	10,729	11,894	12,925
	LNG (Mil. Nm^3)	148	170	197
Global	Electricity (Gwh)	12,180	13,435	15,047
	LNG (Mil. Nm^3)	174	197	237

- Data scope is 100 percent of both Korean and global emissions by Samsung Electronics

Energy Saving Activities and Ahievements

Samsung Electronics achieved energy use reductions by 171,000 TOE through optimization of manufacturing and utility equipment, installation of high energy efficiency equipment, and waste heat recovery. It is equivalent to savings of KRW 70 billion in energy cost and reduction of 370,000 tons CO_2.
Need for systematic energy management is increasing with the introduction of new policies such as the GHG/Energy target management system enforced by Korea government in 2011. Responding to the change, we implemented the Energy Management System (EnMS) for analysis of energy use status, management of reduction targets, and promotion of energy saving activities in systematic manner. Implementation of the EnMS and other energy management initiatives enabled five production plants in Gumi, Giheung, Hwasung, Onyang and Tangjung to receive international energy management certification (ISO 50001) in 2011.
We also implemented 'Pre-certification of Energy Efficiency' for all energy using devices, equipment, and raw materials to induce energy efficiency improvement by equipments suppliers and to contribute to energy savings at operation sites. Our ultimate goal is to achieve of GHG emissions reduction and cost reduction at the same time.

Renewable Energy

Renewable Energy Expansion Plan and Activities

Samsung Electronics is developing 1MW of hydro power plant and 1.4MW scale of solar power system in Korea. we are also expanding the investment on solar cell, smart grids and geothermal heating system.
We are investing in the development of photovoltaic cells, smart grid technology, and geothermal heating/cooling systems as a sustainable growth opportunity. For example, we have been participating in the Korean-government led smart grid pilot project on Jeju Island as a smart grids ready home appliance developer.

Renewable Energy Status

Samsung Electronics' QA Lab America and the Austin Semiconductor Production plant are participating in the 'Green Power Partnership' program created by the U.S. Environmental Protection Agency for promotion of renewable energy industry. For example, QA Labs America has replaced 73.7% of it's total electricity consumption with a roof-top photovoltaic system. The Austin semiconductor plant purchased 25.5 GWh of renewable energy electricity as well.

Green Buildings

The Samsung Electronics LED business division formed a partnership with the Samsung Construction Company for the development of an 'Intelligent Green Building Solution'. The objective is to create an energy saving solution which can reduce the energy consumption of a building by 30% with minimal investment. Successful development will significantly contribute to greening of buildings.

Eco-Products

Eco-Product Strategy

Strategy and Targets

Energy efficiency regulations on electronics products are spreading and becoming stricter due to the need to combat climate change. Environmental regulations on electronic products, including chemical and recycling regulations, are spreading from Europe to other regions including Asia as well as America. Market demand for energy efficient Eco-Products is increasing as well.

Samsung Electronics is responding to such demands by governments and consumers by developing Eco-Products in accordance with global environmental labeling requirements and improving the energy efficiency of products. More specifically, we developed an environmental assessment system using criteria including the eco-friendliness of products with the restriction of hazardous materials, energy efficiency, the use of environmentally preferable materials and technologies, in addition to setting annual targets for improvement and an overall Eco-Product development ratio. We are also increasing the number of products certified with global environmental labeling in response to the increasing demand for Eco-Products by consumers and public procurement policies.

We are making a strong effort to improve the energy efficiency of our products by introducing innovative technology, such as a solar-powered note PC. We are also expanding the number of products with carbon footprint and carbon footprint reduction labels in Korea, and Carbon Trust certification in UK.

Eco-Product KPI and Achievements

Achieving a 100% Good Eco-Product development and a 40% improvement in energy efficiency are core performance indicators for Samsung Electronics' mid-term environmental management goals (EM2013). In 2011, the Good Eco-Product and Good Eco-Device rates increased to 97% and 85% respectively, exceeding the 2011 targets. Product energy efficiency was also improved by 25.6% in 2011 when compared to the 2008 level, contributing to a reduction in GHG emissions.

Eco-Product Development (%)

Category	2011 Actual/Target	2012 Target	2013 Target
Good Eco-Product	97/96	97	100
Good Eco-Device	85/80	85	100

Product Energy Efficiency Improvement (%)

2011 Actual/Target	2012 Target	2013 Target
25.6/23.1	30.8	40.0

- Product energy efficiency improvement (%) is the average energy efficiency improvement of eight key products over 2008 baseline.

Eco-Design Process

Life Cycle Assessment and Eco-Design Process

Samsung Electronics first introduced Life Cycle Assessment (LCA) methods in 1995. We are now considering life cycle thinking on the products developed to minimize environmental impact. In 2004, we implemented the 'Eco-Design Assessment Process' and made an environmental impact assessment at the product development stage mandatory. In 2008, we created the 'Eco-Design System (EDS)', which enabled the implementation of an 'Eco-Product Rating Program' for assessing the green attributes of each development project.

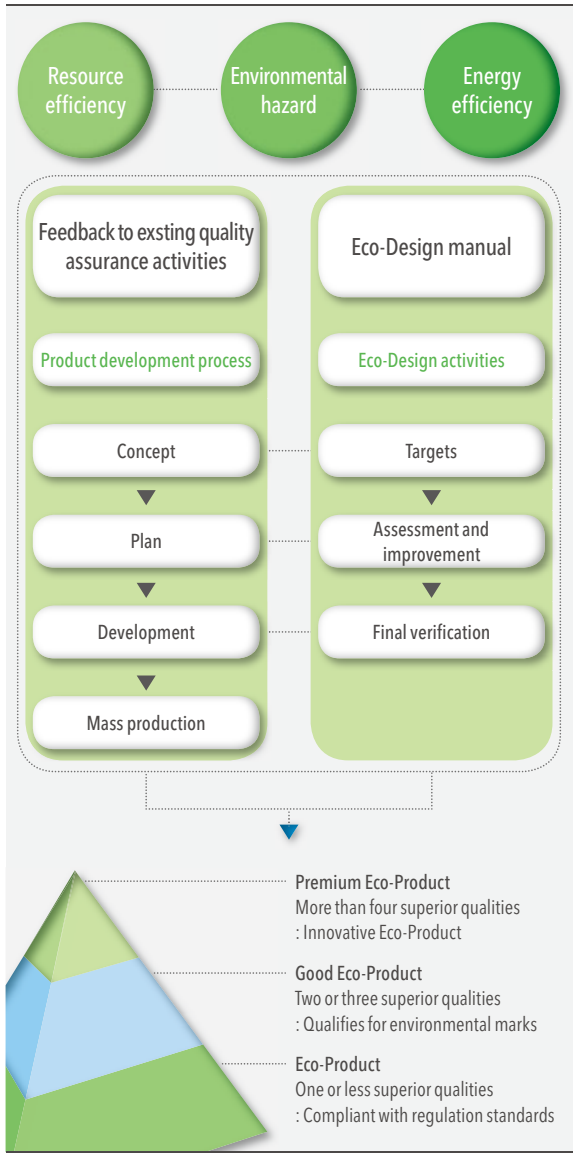
We are also conducting activities to increase the longevity of products to decrease the environmental impact associated with product disposal. For example, the Evolution Kit in our Smart TV enables the installation of new functionalities without changing any hardware. We also made our PCs easily upgradable to lengthen the useful life. We are also increasing the use of recycled materials to improve resource efficiency.

Eco-Product Rating Program

All of our product development projects are subjected to an eco-friendliness evaluation with three ratings including 'Premium Eco', 'Good Eco' and 'Eco' defined in the Eco-Product rating.

The criteria for the Eco-Design assessment consists of more than 40 detailed criteria which fall into three categories of resource efficiency, energy efficiency and environmental impact. We aim to increase the ratio of 'Good Eco-Products' that meet the strict standards required for global environmental labeling.

Eco-Design and Eco-Product Rating Process



Product Energy Efficiency

Compliance with Energy Regulations

Regulations on energy efficiency and standby power consumption are being adopted by an increasing number of governments. New regulations were introduced in South America and Middle East nations while Europe and North America are strengthening existing standards. We are monitoring changes in energy-related regulations in order to devise preemptive responses to cope with the changes.

Product Energy Efficiency Policy and Activities

Samsung Electronics is making an effort to develop products with vastly improved energy efficiency and ultra-low standby power consumption in order to go beyond meeting new energy efficiency regulations. Our mid-term goal is to reduce annual energy consumption of our products by 40% and achieve an accumulated reduction of 84 million tons of CO_2 over a five-year period.

For example, we achieved further reductions in our flagship Eco-Product, LED TVs, by reducing the number of backlight LED lamps by 38% in the 55-inch model and improving power consumption by 20%. One of our refrigerators also won an A+++ rating, the highest energy efficiency rating given in Europe, by employing vacuumed insulators and high-efficiency compressors.

We are also making a sustained effort to reduce standby power consumption. In 2011, we managed to increase the ratio of products with lower than 0.5w standby power consumption to 84% of products. Thanks to the number of improvements made, we were able to reduce annual power consumption associated with product use by 25.6% when compared to the 2008 baseline, which is equivalent to 17.63 million tons of CO_2.

Eco-Product Development Performance

Eco-Product Development and Launch

All business divisions have Eco-Product development and release plans in order to launch products with improved energy and resource efficiency, less hazardous materials, and innovative green technologies. The Eco-Products released in 2011 are as follows.

Eco-Products in 2011

Product	Product Type/ Model No.	Key Environmental Characteristics
	LED TV (UN46D7000)	Power consumption down to 12% Auto off function Mercury-free Edge LED
	Monitor (S23A550)	Eco-motion sensor (auto off) Mercury-free LED 32% improved resource efficiency
	Blu-ray player (BD-D5500)	Power consumption down to 16% Resource efficiency up to 8% Mercury-free LED
	Home theater (HT-D5500)	Power consumption down to 32% Resource efficiency up to 20%
	Printer (ML-5015ND)	Power consumption down to 30% Resource efficiency up to 15% One-touch Eco-button for eco-printing
	Printer (ML-2950ND)	Power consumption down to 28% Low noise (lower than 51dB) Resource efficiency up to 25%

Product	Product Type/ Model No.	Key Environmental Characteristics
	Mobile phone (Rant3)	Solar charging capability Rate of recycled resin 70% Free of BFR/PVC/beryllium/phthalate UL Environment certified
	Washing machine (WR-HH139CQ)	Power consumption down to 26% Washing time reduced to 50% Eco 'Bubble washing' technology
	Refrigerator (RL60GQERS1)	A+++ energy efficiency rating (1st in Europe) Eco refrigerant (R-600a) Use of recycled plastic
	Air conditioner (AF-HD202TSA)	Power consumption down to 32% Size of heat exchanger reduced to 50% Eco refrigerant (R-410A) Resource efficiency up to 33%
	Hoover (VCC88L0H31)	Energy efficiency improved to 4% Environmental HEPA filter
	Memory (DDR3 4Gb)	Power consumption down to 67% (memory product) Power consumption down to 15% (server product) Made without use of Halogen materials Won 2011 CES Eco-innovation award

CES Eco-Design Innovations Award

Samsung Electronics received the CES (Consumer Electronics Show) Eco-Design Innovations Awards in four different product categories in January 2012 which are the most among companies awarded. In CES 2011, the company received for six different product categories and it was the most as well.

Awarded Products and Model

DESIGN & ENGINEERING SHOWCASE HONORS INNOVATIONS INTERNATIONAL CES 2012				
	Solar Note PC NC215	Washing Machine WF457	Microwave SMH2117S	Transparent LCD LTI460AP01

Chemicals Management in Products

Management Policies for Chemicals in Products

Samsung Electronics is strictly managing the use of chemicals in its chain in order to ensure compliance with RoHS and REACH regulations and to enforce the voluntary management of potential chemicals with environmental impacts based on precautionary principles.

We list and manage the chemicals under legal or voluntary management in Standards for Control of Substances concerning Product Environment (0QA-2049). Based on this standard, we conduct regular audits and inspections to prevent the use of restricted chemicals in all the parts and final products for absolute compliance.

Eco-Partner certified suppliers are eligible to do business with Samsung. We are also providing active support for suppliers including regular training on chemical management and updates on relevant regulations to ensure our suppliers stay in compliance with relevant regulations and voluntary bans.

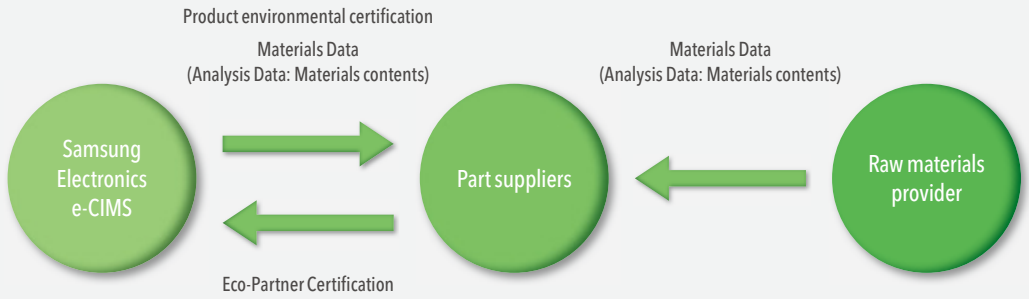
Product Chemical Management in Supply Chain

For effective management of chemicals, we operate Eco-Partner Certification program that qualifies suppliers for chemical management practice. To become an Eco-Partner certified company, suppliers must fulfill two main criteria; (i) compliance with the Samsung Electronics Standards for Control of Substances concerning Product Environment; (ii) demonstration of an adequate environmental management system.

Eco-Partner can renew certification by site audits or self-assessment based on potential risks of their supplied parts and materials. We are also providing active support for suppliers including regular training on chemical management and updates on relevant regulations to ensure our suppliers stay in compliance with relevant regulations and voluntary restrictions.

We established the Environment Chemicals Integrated Management System (e-CIMS) in 2009 for the effective operation of the Eco-Partner Certification program. We are able to assess material composition and chemical contents of final products using materials data and chemical information submitted by suppliers.

Chemical Management Process in Supply Chain



Achievement of Chemical Management in Products

Samsung Electronics phased-out six hazardous substances of concern (Hg, Pb, Cd, Cr^{6+}, PBB, PBDE) in all products to comply with RoHS regulation. We also completed a survey on the use of 73 Substances of Very High Concern (SVHC) by EU REACH, which are list of SVHC announced in December 2011 in EU. We are disclosing information on products using SVHC materials of more than 0.1% of the product mass.

We phased-out Polyvinyl Chloride (PVC) and brominated flame retardants (BFRs) in all mobile phones and MP3 players sold on the market beginning in April, 2010. For note PC, we launched the first PVC-free and BFRs-free in October 2010, and eliminated PVC and BFRs in all 15 note PC models released in 2011. From 2011 we also began to employ PVC-free internal wires in our TVs, monitors and home theater.

We have been managing a world-class environmental analysis lab which is capable of analyzing hazardous materials and volatile organic compounds (VOC). The laboratory received international analysis lab certification from UL, KOLAS, and BAM Germany, while improving credibility of its analysis results. The analysis lab standardized the analysis process for phthalates and 10 types of VOCs. Overall, it has analysis methods for 70 types of chemicals.

Take Back and Recycling

Policy on Take Back and Recycling

Samsung Electronics is committed to reducing electronic waste generated throughout product life cycles and promoting the take back and recycling of electronic products as part of its commitment of product stewardship in accordance with individual producer responsibility (IPR).

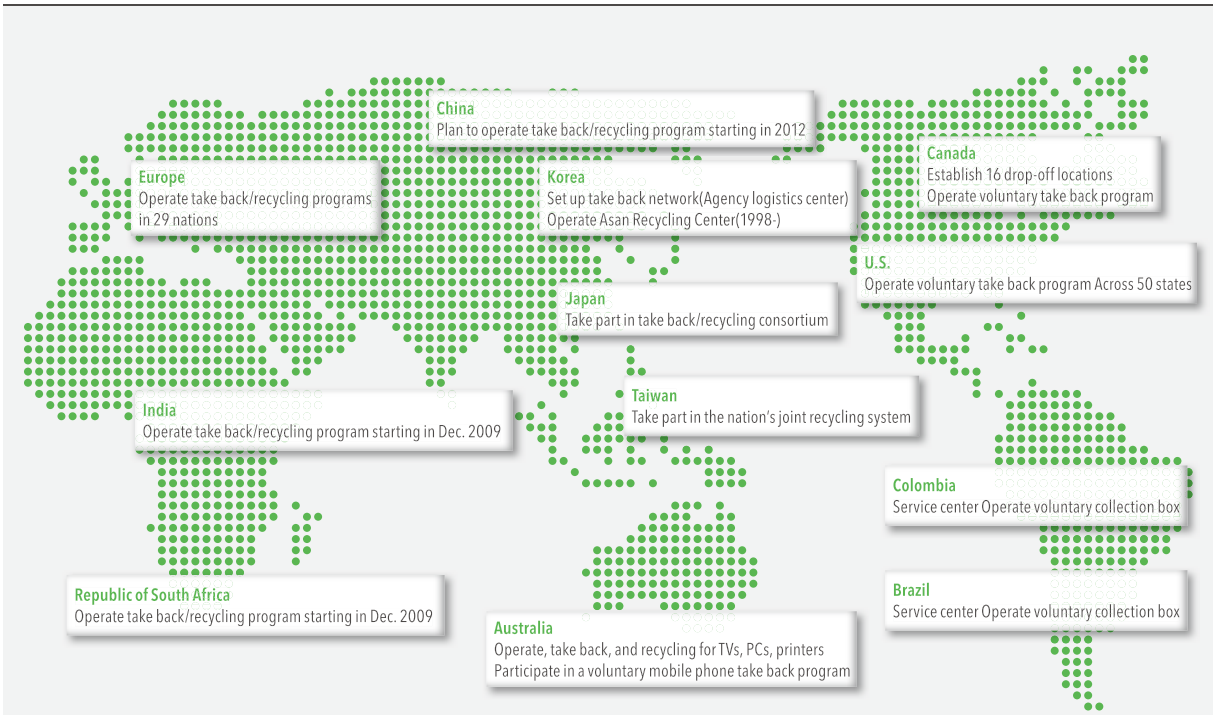
In 1998, Samsung Electronics began the establishment of Korea's first electronics product recycling structure with the Asan Recycling Center. We now have eight recycling centers in Korea with 1,500 sales centers and 21 regional logistics centers serving as collection agencies to transport end-of-life electronics products to recycling facilities for the reuse of resources.

We were the first electronics manufacturers to become an e-Stewards Enterprise within the Basel Action Network (BAN). BAN is a U.S.-based non-profit organization specializing in environmental preservation and human rights protection that developed a responsible recycling certification program named e-Steward. Working with BAN, Samsung is striving to prevent the export and landfill of electronics waste into developing countries.

Global Take Back and Recycling Program

Samsung Electronics is operating take back and recycling programs in 60 countries including the U.S., Canada, Europe, and India.. In North America, we expanded the Samsung Recycling Direct (SRD) drop-off to 1,151 locations in 50 states. We have also set up a voluntary recycling program in India with 235 fixed drop-off locations for small mobile devices and 291 locations for larger consumer electronic products as well as offering recycling information to consumers online. We have established 16 drop-off locations in Canada and plan to set up a recycling system in Australia for the collection and recycling of mobile phones, TV, PCs and printers in May 2012.

Global Take Back and Recycling Performance



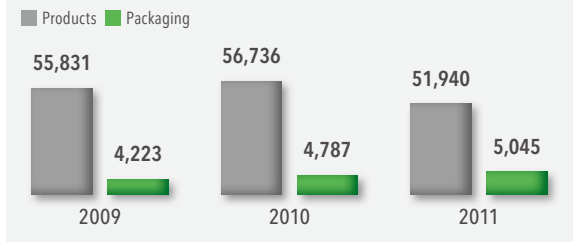
Global Take Back and Recycling Performance

Samsung Electronics is operating take back and recycling programs globally and the collection amount has steadily increased year on year.

Recycling Amount (Global) (tons)

Category	2009	2010	2011
Asia	50,414	59,281	55,176
North America	7,024	23,288	35,516
Europe	187,353	219,948	235,177
Total	244,791	302,517	325,869

Recycling Amount (Korea) (tons)



Recycling Amount by Product Categories (Korea) (tons)

Refrigerator	Washing Machine	Display Products	Others	Total
26,086	9,379	12,105	4,370	51,940

Reutilization of Resources (Korea) (tons)

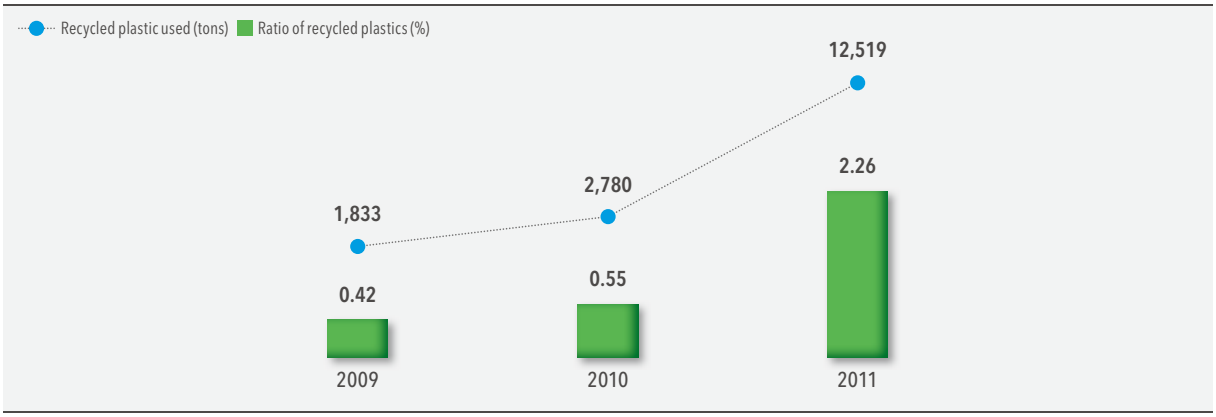
Steel	Non-ferrous Metal	Plastic	Glass	Others	Total
17,557	6,392	11,627	7,371	3,478	46,425

- Total amount of reutilization of resources does not include waste scrapped.

Recycled Plastics

Samsung Electronics has a target to increase the use of recycled plastic by 2.62%. To promote its application in products, we included a criterion of recycled plastic use for Eco-Product rating. In 2011, it was significantly increased to 2.26% by expanding its application into production plants in China, Thailand, India and Mexico.

Amount of Recycled Plastics



- Ratio of Recycled Plastics (%): Proportion of recycled plastic use compared to total plastic resin use

Eco-Product Labeling and Certification

Global Environmental Labeling and Certification

In 2011, Samsung Electronics received total of 2,630 product models for global Eco-Product labeling, which is the highest number in the electronics industry. It was granted from 9 certification bodies globally that promote Eco-Product development and green procurement.

Global Eco-Labeling (no. of models certified)

South Korea	China	U.S.	EU	Germany	Sweden	Northern Europe	Canada	Taiwan	Total
854	549	395	115	68	556	48	40	5	2,630

- Baseline: 31st of Dec. 2011

Carbon Footprint Labeling

Samsung Electronics has been actively participating in the Korean carbon footprint labeling scheme which was launched in 2009 to encourage voluntary GHG emission reduction by product manufacturers.

We are disclosing information on GHG emissions associated with the lifecycle of our products by participating in a carbon footprint labeling scheme. In 2012, Samsung had 32 models certified with labels, which is was the largest number among electronics manufacturers.

In February 2012, we received Korea's first carbon footprint reduction label for an LED TV, a laptop PC and a memory chip product. The carbon footprint reduction label is only given to products that achieved exceptional carbon reductions including meeting a standard set by the Ministry of Environment, or achieving a more than 4.24% reduction against a baseline model.

Our smartphones, the Galaxy SII and Galaxy Note, received Carbon Footprint labels from the U.K. Carbon Trust in March 2012, making them the first mobile phones in the world to be carbon footprint labeled. The carbon footprint is calculated through a detailed assessment on GHG emissions associated with the full lifecycle of the product from manufacturing through use and end-of-life.

The UL SPC Certification

Eight mobile phones received 'Platinum' ratings for Sustainable Product Certification by the U.S.-based and renowned safety testing and certification organization, the Underwriters Laboratories. The UL SPC certification is only given to products that meet high standards on lifecycle criteria including energy efficiency, convenience of extending useful life of products, corporate environmental achievement and more.

The Green Certification (Korea)

Green Certification was operated and managed by KIAT (Korea Institute for Advancement of Technology), an organization affiliated with the Korean Ministry of Knowledge Economy. The certification is given to eco-friendly technologies or projects with energy resource conservation and reductions in GHG emissions. Samsung Electronics received 21 Green Certifications for 20 green technologies and one green project, the highest in the electronics sector.

Green Operation Sites

Operation-Site Environmental Management Structure

Policies and Strategies

Samsung Electronics is conducting a lifecycle environmental impact assessment on our business activities in order to contribute to global ecosystem protection through measures from reductions in GHG emissions to recycling of waste water. We have implemented various systems including a life-cycle pollution control system, environmental risk elimination, and preventive measures in order to minimize environmental impacts and to prevent environmental accidents.

Targets and Assessment of Achievements

The EHS Strategy council is held on a regular basis to make policies on prevention of EHS accidents and the environment and safety risk assessment. The council reviews and analyzes global environmental guidelines, national policies, and makes decisions on relevant corporate policies. It reviews achievements on green management of operation sites and shares the best practices to bring sustained improvement in Samsung Electronics EHS standards. Each operation site has an EHS committee which consists of the top executive in charge of operations and EHS experts for the implementation of decisions made by the council and to resolve related issues. All decisions made by the committee are openly disclosed to all employees. Samsung Electronics holds a "Global EHS/Utility Conference" with EHS and utility management and staffs on a regular basis. The participants share EHS strategies, regulation changes, stakeholder demands, new technologies and best practices to contribute to the overall EHS management at Samsung Electronics.

KPI Target and Performances

Item	Management System Certification Received (%)[1]			Waste (Korea)		Water Resource (Korea)
	ISO 14001	OHSAS18001	ISO 50001	Re-utilization rate (%)	Emissions relative to sales (tons/KRW 100 million)	Water use relative to sales (tons/KRW 100 million)
Achievement in 2011	100	100	13	94	0.43	91
2015 targets	100	100	100	95	10% reduction over previous year[2]	50 tons/KRW 100 million maintain 2009 level[2]
Implementation strategies	Standardize Management System Acquire ISO 14001 certification for new business sites within one year of establishment			Establish resource recycling-based system Reduce amount of waste generated		Secure stable water supply Increase water recycling

[1] Scope: 38 production plants (Korea: 9, Global: 29)

[2] Excluding LCD business division which has become a subsidiary company as of April 2012

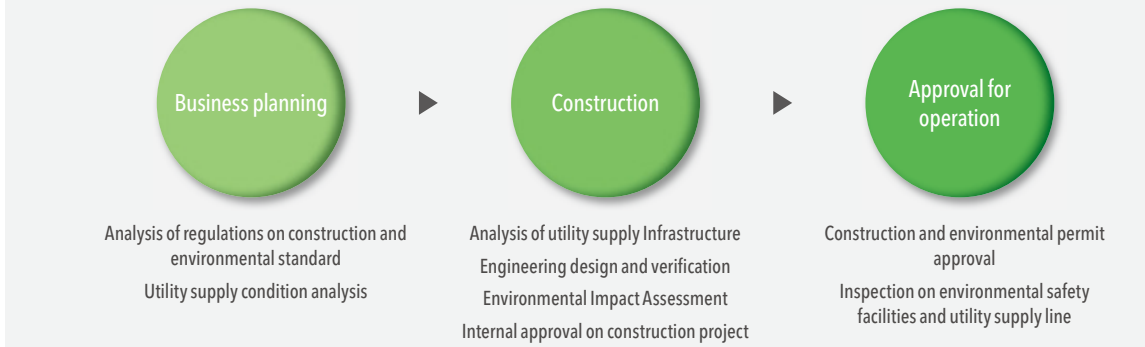
Environment and Safety Risk Assessment

International organizations and NGOs are introducing guidelines on human rights and environmental protection. Countries where Samsung Electronics has production plants are strengthening policies on environmental protection and occupational safety. We are monitoring changes in international policies and regulations to proactively respond. Moreover, we are increasing our efforts to eliminate environmental risks at the source.

Risk Analysis and Response Process

Information Collection	Impact Analysis	Response Activities	Monitoring
Changes in policies & market Changes in internal conditions	Analysis of financial and nonfinancial risks and opportunities	Establishment/implementation of response plan	Performance check and data collection Establishment of rules and processes

Environment and Safety Risk Analysis and Response for Plant Expansion



Environmental Safety Accident Response Structure

Samsung Electronics has an emergency response program which consists of emergency response scenarios and regular training to assess the effectiveness of the emergency response scenarios. For different types of production plants, different emergency response scenarios are prepared including accidental release of pollutants and hazardous chemicals, fires and explosions, in addition to natural disasters.

We are maintaining high-preparedness to respond to any environmental safety accident with corresponding emergency scenarios. We also have emergency response members in place who are prepared to respond in a timely manner to handle the crisis and to ensure a fast recovery. We also have a crisis review process to analyze the cause of an accident and to conduct prevention exercises to ensure that the accident is never repeated. Meanwhile, we are conducting emergency response training on a regular basis with participation of all departments to check the effectiveness of the crisis management structure and to maintain preparedness.

We also conduct monthly fire drills which consist of fire-fighting and rescue exercises as well as an emergency evacuation to ensure the safe evacuation of all employees during emergency situations.

Emergency Preparedness

Environmental Safety Management System Certification

Samsung Electronics established an EHS management structure in all operation sites and earned certifications including ISO 14001 and OHSAS18001. We are maintaining our environmental management structure by receiving continuous assessment or re-assessment. All new production facilities at Samsung Electronics are required to receive ISO 14001 and OHSAS18001 certification.

In 2011, five production plants in Gumi, Giheung, Hwasung, Onyang and Tangjung received international energy management certification (ISO 50001). We plan to receive ISO 50001 certification atall our operation sites by 2015 in order to establish a systematic energy management structure.

EHS Management Certification (Global)

Type	No. of Operation Sites Certified	Certification Rate	2015 (Target)
ISO 14001	38	100%	100%
OHSAS18001	38	100%	100%
ISO 50001	5	13%	100%

Korea

Type	Suwon	Gumi	Gwangju	Giheung	Hwasung	Onyang	Tangjung	Cheonan	Giheung LCD
ISO 14001	1996.10.	1996.11.	1996.10.	1994.11.	2001.11.	1996.09.	2006.12.	1996.09.	1994.11.
	UL	UL	UL	BV	BV	BV	BV	BV	BV
OHSAS18001	2000.11.	2001.10.	2002.10.	1999.12.	2001.11.	1999.12.	2006.11.	2000.05.	1999.12.
	UL	UL	UL	BV	BV	BV	BV	BV	BV
ISO 50001	2012 (expected)	2011.07.	2012 (expected)	2011.11.	2011.11.	2011.11.	2011.12.	2012 (expected)	2012 (expected)
		UL		UL	UL	UL	Energy Management Corporation		
Green company certification	1996.04.	1996.01.	1996.01.	1995.08.	2002.08.	1995.11.	2008.01.	2000.09.	1995.08.

- Correction on certification approval date – Giheung plant received BS 7700 in Nov. 1994 and ISO 14001 in Sep. 1996
- Green Company: A company designated by the Minister of Environment of Korea which has made a great contribution to improving the environment

ISO 50001 Certification of Samsung Electronics Gumi Plant The Gumi plant received ISO 50001 energy management certification in July 2012. The Gumi plant implemented a systematized management structure on energy purchasing, supply, use and reduction which resulted in optimal energy and cost management. The energy management system was integrated into overall plant management along with the existing ISO 14001 environmental management and OHSAS 18001 occupational safety management systems for comprehensive environmental safety management.


CERTIFICATE

DQS GmbH

SAMSUNG ELECTRONICS CO., LTD.

ISO 50001 : 2011

Energy Management System Certification

Global

Name of Subsidiary	ISO 14001	OHSAS18001	Certification Agency
SAMEX	2000.12.	2003.12.	UL
SAS	2001.01.	2007.10.	BSI-QA
SEM-P	2004.11.	2006.06.	UL
SEDA(C)	2009.11.	2009.11.	UL
SEDA-P(M)	2001.02.	2006.03.	BV
SERK	2009.04.	2009.04.	UL
SEH-P	2005.05.	2005.11.	BV
SESK	2003.09.	2003.09.	UL
SELSK	2010.10.	2010.10.	BV
SEPM	2010.12.	2010.12.	UL
SEIN-P	2003.04.	2003.10.	SUCOFINDO
SAVINA-P	2001.12.	2002.12.	UL
SDMA-P	1999.08.	2002.08.	DNV, RvA
SEV	2009.09.	2009.09.	BSI
TSE-P	2001.12.	2003.11.	UL
SEMA	2005.12.	2005.12.	DNV
SEPHIL	2002.09.	2003.10.	SGS
SIEL-P(C)	2008.09.	2008.09.	BV
SIEL-P(N)	2000.06.	2003.08.	AFAQ-EAQA
TSEC	2000.02.	2004.10.	UL
TSOE	2008.02.	2010.02.	CQC
SEHZ	2005.05.	2006.03.	CQC
TSTC	2005.05.	2005.05.	UL
SSKMT	2005.04.	2005.04.	SSCC
SSDP	2004.09.	2004.11.	UL
SESC	2004.02.	2004.02.	CQC
SESL	2004.11.	2004.11.	BV
SESS	2004.05.	2004.05.	BV
SSEC	2003.11.	2005.06.	CQC

Green Purchasing

Samsung Electronics signed up to the voluntary agreement on green purchasing with the Korean Ministry of Environment in 2005 in order to promote purchasing of eco-friendly products and for a sustainable consumer culture. In 2007, we implemented internal Eco-Product priority purchasing policies, environmental manuals and green purchasing rules to further promote the purchase of green products.

The Eco-Product priority purchasing policies require the purchasing department to choose products that are better for the environment including products that received environmental labels, recycled products and highly energy efficient products when purchasing office supplies and raw materials.

Environment Operation Control

Water Resource Management

Water resource management has become a prominent global environment issue along with climate change. Today, an increasing number of regions are suffering from permanent water shortages due to various causes including rapid industrialization, development and climate change. In fact, many experts predict that more than two thirds of humans in countries including China, Australia and India will begin to experience water shortages by 2050.

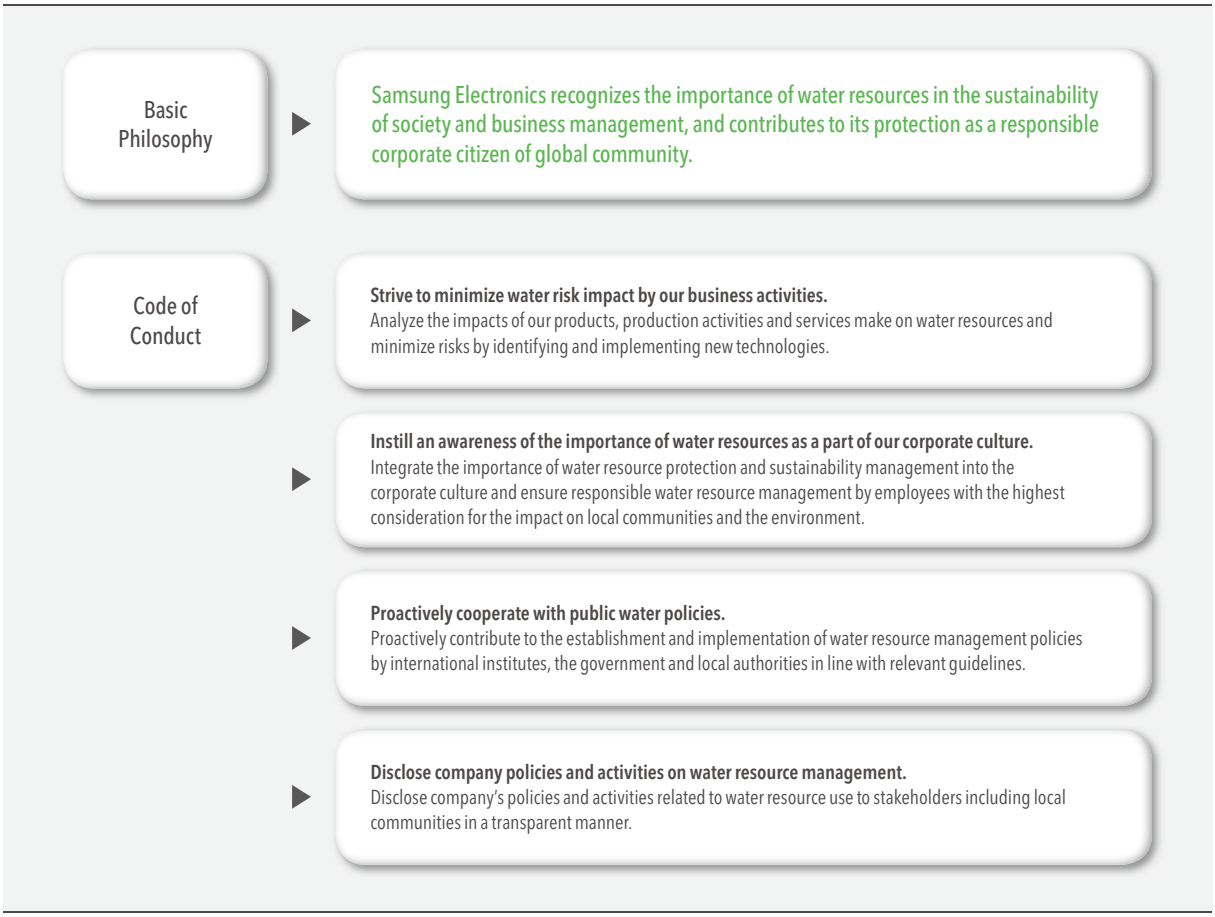
Generally, the semiconductor industry is responsible for a daily consumption of 7,500 to 15,000 tons of ultra pure water, which is equivalent to enough water to sustain a city of 50,000 residents for a day. As a leading semiconductor manufacturer, Samsung takes its responsibility to contribute to the effective management of water resources seriously and has set company-wide water management policies, reduction targets and strategies to secure and maintain sustainable water resources.

Establishing a Water Resource Management Policy

Sustainable water supply and water source preservation has become an important priority among all electronics companies including Samsung Electronics. Responding to growing industry needs, international business organizations for CSR including the EICC and WBCSD have created corporate water resource management guidelines.

Recognizing the growing importance of global water resource management, Samsung Electronics has established water policies with a focus on enhanced stakeholder communication and minimization of management risk.

Samsung Electronics Water Resource Management Policy



Minimizing Water Management Risk

Samsung Electronics set a 3% water use reduction target per production unit by 2015. We then collected water use data to identify plants with the highest water use, established a monitoring structure, identified reduction measures, and implemented cost effective measures to minimize business risks associated with water use and environmental impact.

Semiconductor production is a core business of Samsung Electronics, which is exposed to significant business risks associated with water shortages. Recognizing its risk, we have analyzed water risk and developed redundant water supplies as well as an emergency response system to avoid any negative impact upon business. We also understand water risk as a serious global issue and are expanding monitoring efforts to collect data from our operations and verifying the reliability of efficient water consumption.

Samsung Electronics is establishing a comprehensive water management system which reduces the cost and pressure on water resources by promot-

ing effective use of water. The amount of water used in Korea increased in 2011 due to facility expansion and water use per unit production has also increased in overseas operation sites as 20 plants increased their production capacity and workforce. We plan to implement measures to reduce water use and increase reuse to reduce water use per unit production. The volume of waste water increased by 14% in 2011 compared to 2010. We plan to achieve a 2% reduction in water use per year starting in 2012. For example, we have achieved significant reductions in water use by collecting ultra pure water used for the semiconductor and LCD production process and reusing it. The ultra pure water recycling rate at semiconductor and LCD production plants in 2011 was 51%. The recycling rate decreased compared to 2010 due to the addition of new production lines. We plan to implement additional facilities to further improve water recycling and the supply system.

We are operating on-site sewage treatment and recycling facilities to reduce water use and discharge. Treated water is used for gardening and fire system. The Samsung Electronics plant in India has installed a rainwater collection system and uses the collected rainwater for gardening and cleaning.

Water Withdrawals for Operation Use

Type		Water Withdrawal by Sources (1,000 tons)				Water Use Per Unit Production	2015 Target Per Unit Production
		Industrial Water	Municipal Water	Underground Water	Total	(ton/KRW 100 million)	(ton/KRW 100 million)[1]
Korea	2011	103,562	5,834	205	109,601	91	50
	2010	91,225	5,145	180	96,550[2]	86	
	2009	80,413	5,381	170	85,964	96	
Global	2011	103,562	17,325	780	121,667	74	-
	2010	91,225	13,457	607	105,289	68	
	2009	80,413	14,299	444	95,156	70	

● Water use per unit production: Total water use ÷ Sales (Korea or Global)

[1] Target does not include waste use by LCD division, as it was established as an independent company in April 2012.

[2] The adjustment was made to reflect changes made in management scope with the separation of the LCD division as an independent company.

Water Reuse

Type		Water Reuse		Ultra Pure Water Recycling		
		Reused Amount (1,000 tons)	Reuse Rate (%)	Supply (1,000 tons)	Recovered Amount (1,000 tons)	Recovery Rate (%)
Korea	2011	81,863	74.7	117,321	59,289	50.5
	2010	72,832[1]	75.4	121,170	67,693[1]	55.9
	2009	72,296[1]	84.1	109,300	66,927	61.2
Global	2011	90,068	74.0	128,554	66,676	51.9
	2010	79,012	75.0	127,636	72,812	57.0
	2009	72,570	76.3	113,224	69,166	61.1

[1] Data was adjusted in accordance with a change in calculation method for assessing reuse.

Waste Water Discharge

Type	Discharges	2009	2010	2011
Korea	Discharge (1,000 tons)	78,745	87,639	97,370
	Discharge per unit production (tons/KRW 100 million)	88	78	81
Global	Discharge (1,000 tons)	82,866	91,183	102,906
	Discharge per unit production (tons/KRW 100 million)	61	59	62

● Waste water discharge per unit production: Total waste water discharge ÷ Sales (Korea or Global)

Stakeholder Communication Effort on the Importance of Water Resources

Samsung Electronics has recognized the importance of water resource management and has endeavored to communicate our water resource management policies and the importance of reducing negative environmental impacts. We are openly sharing water quality data on bodies of water in the vicinity of our operation sites, and we are promoting water quality improvement/ecosystem restoration projects in conjunction with students and NGOs in local communities.

First, we have designated every Wednesday as a 'Water Conservation Day' since 1997. We also installed a Digital Information Display which shows water resource management tips and conservation methods to help employees contribute to water conservation. We also reduced the pressure in the water supply line to reduce water use and achieve reductions in operation costs.

Waste Water Discharge and its Impact on Bodies of Water Samsung Electronics processes all of its waste water through processing facilities before discharging the treated water into nearby rivers. Some of the domestic and overseas plants located in industrial parks discharge internally treated waste water into sewage treatment facilities located in the industrial parks for secondary treatment to ensure compliance with relevant legal standards.

We are disclosing information in regards to water quality of waste water discharged from our production facilities so they are informed of our activities. We are also conducting river ecosystem restoration activities with NGOs to ensure good communication with local community members. Additionally, we are working with NGOs and students at nearby schools to conduct environmental clean-up activities for biodiversity protection and environmental conservation.

For example, we have organized environmental cleanup volunteer groups in the U.S. and Hungary. We are collaborating with local governments in Vietnam to plant aquatic plants and for trash clean-up in local rivers. We are also conducting water conservation activities in all our domestic and overseas operation sites.

Destination of Discharges

Suwon	Hwasung	Gumi	Gwangju	Giheung	Onyang	Tangjung	Cheonan
Wonchun river	Wonchun river	Nakdong river	Youngsan river	Osan river	Gokgyo river	Gokgyo river	Cheonan river

- Waste water from the Gumi and Gwangju plant is first processed in the internal treatment system, and then transferred to municipal waste water treatment plants.

Aquatic Ecosystem Preservation and Water Quality Improvement Activities The Onyang production plant conducted an environmental impact study of sewage discharge to nearby rivers in collaboration with a local university. The study was conducted between November 2010 and October 2011 in collaboration with a local University. The team analyzed water quality characteristics of the discharge from operation sites and the water quality of the river where treated water is discharged, while studying the concentration of pollution in different parts of the river. The research results indicated that the water quality of Gokgyo River improved with improved waste water processing efficiency at the Onyang plant. We will continue to monitor the water quality of bodies of water near our production plants and implement pollution prevention activities.

Pollution Management

Samsung Electronics is enforcing an internal environmental standard which is stricter than required by regulations to ensure full compliance. We also set internal management targets to achieve further reduction and are employing most up-to-date environmental technologies in our new plants. We have tele-monitoring systems in our production plants for 24-hour pollution management, with emergency response systems in place for handling abnormal conditions. We also have an internal analysis lab which supports pollution management throughout production processes from its source to point of releases.

Management of Air Pollutants Global air pollutant release data could not be compiled due to differences in air pollution data management methods in some countries. Release of the total amount of air pollutants is increasing due to an increase in production volume and an expansion of production lines. Regardless, we are managing air pollution concentration below legal standards. A separate acidic substance processing method was implemented on new production lines which began operation in 2011 for improved overall pollution treatment efficiency over the integrated treatment methods

employed on old production lines. For example, HF gas processing efficiency at the new facility was improved by 50% compared to conventional facilities. The Suwon plant also succeeded in reducing SO_X emissions by employing new treatment chemicals.

An additional wet-type electric scrubber was installed on the chimneys at semiconductor production plants to reduce emissions of non-toxic particulates. This new technology contributed in a 52% reduction in dust emissions through a relatively small investment.

Emergency generators are installed at semiconductor and LCD production plants to prevent complicated work shut downs as well as costly damage associated with plant shut downs due to black outs. We installed an air pollution reduction unit employing a platinum catalytic converter to minimize the release of air pollutants associated with emergency power generator operation.

All new boilers installed at our operation sites are built with low-NO_X burners with reduced pollution. The low-NO_X burner equipped boilers emit up to 50% less NO_X emissions. For example, the introduction of low NO_X burners in our semiconductor plants reduced annual NO_X emissions by 20 tons. The Suwon operation site introduced a new treatment chemical for use in the on-site incinerator and achieved significant reduction in SO_X emissions.

Air Pollutant Discharge (Korea) (tons)

Type	2009	2010	2011
SO_X	0.024	0.059	0.006
NO_X	192	261	204
Dust	38	40	44
NH_3	8	10	6
HF	10	12	14

Water Pollutant Control Samsung Electronics is employing new technologies and renovating facilities to minimize water pollutants discharge. We are increasing our waste water recycling rate by installing organic waste treatment and water recycling facilities to reduce discharge of water pollutants. Waste water and water pollutants from semiconductor production facilities has been increasing steadily with the increase in production volume, but efficiency improvement made in waste water treatment facilities is keeping the concentration of water pollutants below internal management standards. We also achieved a 30% reduction in water pollutant concentrations by improving the efficiency of waste water processing facilities.

Water Pollutant Discharge (tons)

Type	Parameter	2009	2010	2011
Korea	COD	481	584	755
	BOD	100	110	210
	SS	55	56	91
	F	190	244	345
	Heavy metals	1.7	1.6	21.6[1]
Global	COD	569	685	876
	BOD	100	110	210
	SS	136	130	184
	F	247	274	430
	Heavy metals	3.6	2.2	25.3

● Waste water processed at the Cheonan industrial park waste water treatment plant is excluded

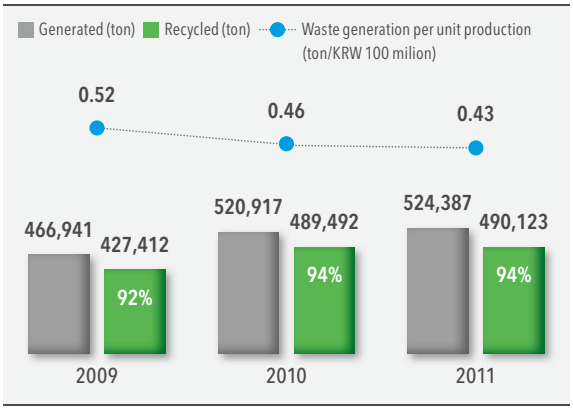
[1] 2011 Amount of total heavy metal release increased due to additional release of new heavy metals associated with changes made in the production process.

Waste Management

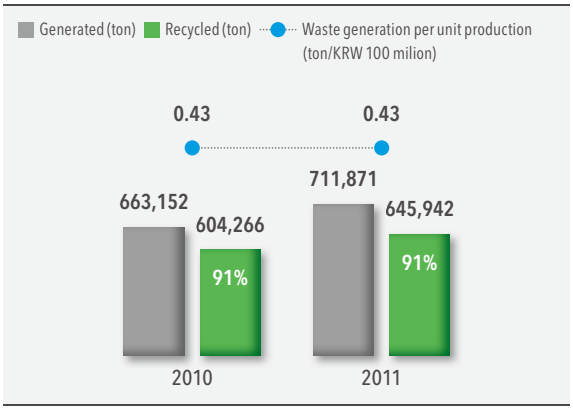
Achieving 100% recycling of all waste is the ultimate goal of Samsung Electronics' waste management policy. Additionally, we are working towards achieving the target by expanding the types of waste recycled. In 2011, we began recycling and utilizing of waste glass, waste plastics, and organic sludge which were incinerated or landfilled in the past. We have set a mid-term target of achieving a 95% waste recycling rate and to establish a recycling-oriented waste management system to achieve minimization in waste generation.

In addition to increasing our recycling rate, Samsung Electronics is striving to reduce waste generation. We have also set an annual waste reduction target of 10% each year until to 2015. In 2011, the volume of waste generated has increased by 7%. However, the volume of waste per unit of production has remained same level to previous years. Increase in production volume and scrap generated from replacement of old production facilities are contributing to an increase in waste generated. However, we are making various efforts including reduction and reuse of packaging for parts and reduction in paper use to achieve an overall reduction in waste generation. Additionally, Samsung Electronics is closely monitoring waste processing companies by making site visits and checking terminal processing of the waste to prevent illegal processing and illegal shipping of waste over national borders.

Waste Generated and Recycling Rate (Korea)



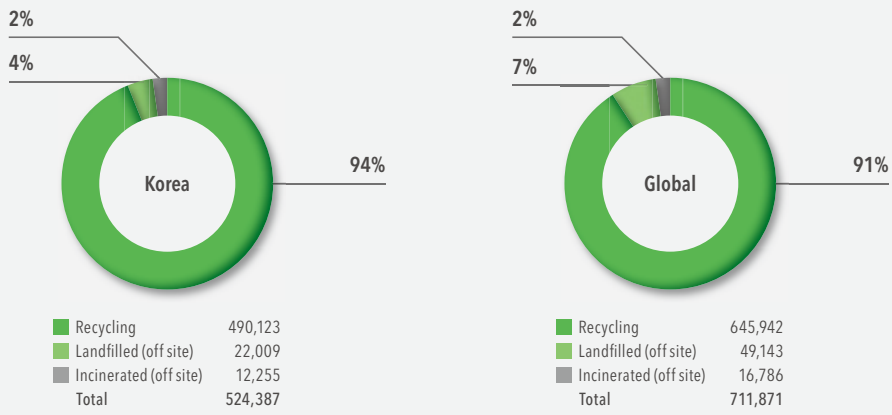
Waste Generated and Recycling Rate (Global)



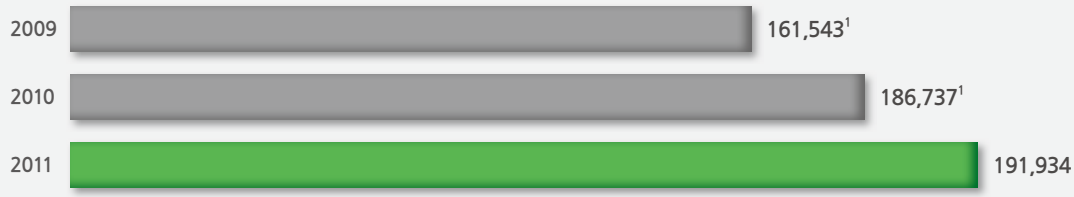
- Waste generation per unit production: Total waste generation ÷ sales (Korea or Global)

Waste Type and Processing Methods

(tons)



Hazardous Waste Generation (Korea) (tons)



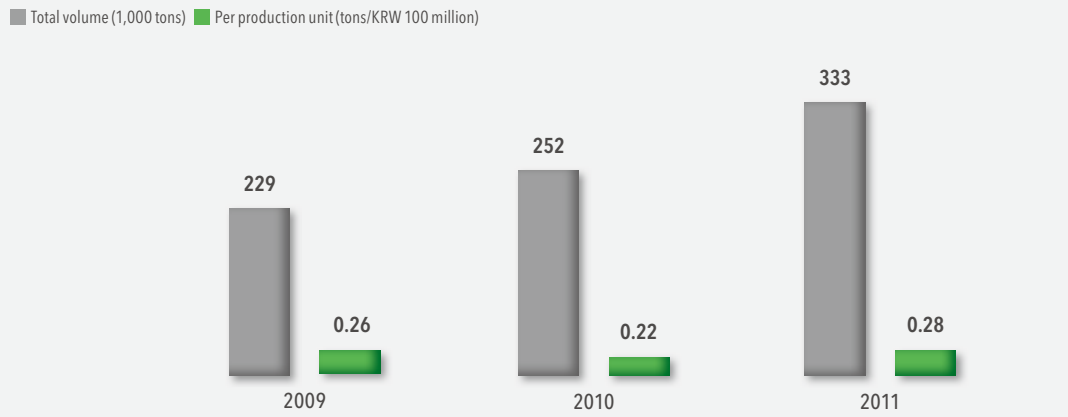
[1] Figures revised due to a change in hazardous waste management standard of a company separated in the same facility

Operation Site Hazardous Materials Management

Samsung Electronics is taking various measures, including implementation of a Hazardous Substance Pre-assessment System, to prevent release of hazardous substances within and outside of Samsung Electronics operation sites. Our computerized hazardous substance management system monitors all processes including purchasing, arrival, use, release and transfer of relevant chemicals to ensure that all hazardous substances are handled appropriately in compliance with relevant rules.

The volume of hazardous material used at Samsung Electronics production is increasing with expanding production volume. However, we plan to reduce the use of hazardous materials relative to sales by 1% each year. We are also conducting regular inspection of storage and facilities where the materials are used and conducting regular training for employees who handle the materials. We have had no accidental hazardous material leakages.

Volume of Hazardous Material Used (Korea)



- Hazardous material used per unit production: Hazardous material used/sales (Korea)

Management of Ozone Depleting Substances

Samsung Electronics continues to reduce the use of ozone depleting substances (ODS) as defined by the Montreal Protocol. The ozone depletion materials used by Samsung are refrigerants in freezers and a fire extinguishing agent in automatic fire control systems. We implemented a refrigerant recovery system to reduce the release of used refrigerants and to increase the recovery ratio by 15%. Old freezers were also retrofitted to reduce the release of ODS. The fire extinguishing agents are also gradually replaced with non-ODS agents to further reduce the use of ODS.

Biodiversity

Biodiversity Conservation: Basic Philosophy and Action Plan

Demand for the protection of biodiversity is increasing since an international agreement on biodiversity protection was signed in 1992. Samsung Electronics is responding to changing demands by raising awareness on the importance of biodiversity. We have created a basic philosophy and action plan on biodiversity protection to promote it in our business activities.

Biodiversity Conservation Policy

Basic Philosophy of Biodiversity Conservation

Samsung Electronics recognizes the benefits of healthy ecosystems and rich biodiversity, and we shall minimize negative impacts on biodiversity and actively promote ecosystem protection activities.

Action Plan on Biodiversity Protection

Value Recognition
All employees shall regard biodiversity conservation activities as an important part of green management.

Assessment and Reduction of impact on Environment
Analyze lifecycle impact of our products on biodiversity and the ecosystem while making an effort to minimize all negative impacts identified.

Biodiversity Conservation Activities
Place a higher priority on environmental management of operation sites with higher biodiversity and implement biodiversity protection activities tailored for each site.

Communication
Maintain good communication with stakeholders including employees, local communities and NGOs, and collaborate with them to make contributions in local biodiversity protection initiatives.

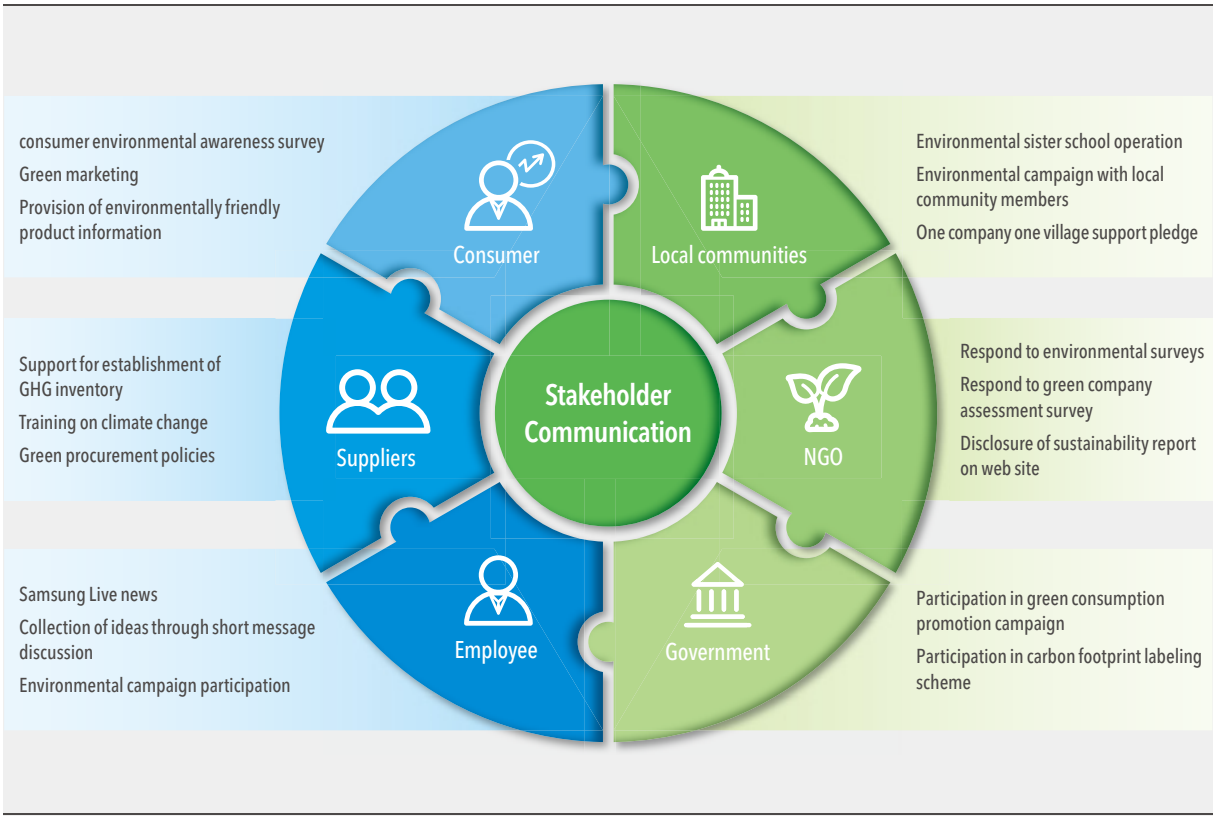
Green Communication

Stakeholder Communication

Stakeholder Communication Programs

Samsung Electronics is actively communicating with various stakeholders in recognition of the importance of stakeholder communication in making sound business decisions. We are listening to the opinions of all types of stakeholders including consumers, suppliers, NGOs, local communities, media and governments while striving to reflect their concerns and ideas in our green management activities.

Key Stakeholders and Communication Channels



Membership and Activities in Associations

Samsung Electronics is increasing membership to various associations for promotion of corporate social responsibility and green management in order to further strengthen its foundation for more responsible business management.

For example, Samsung Electronics joined the World Business Council for Sustainable Development (WBCSD) which pursues the creation a sustainable future for business, society and the environment. It currently has 200 CEOs of global corporations as members. We are participating in the annual meetings and working group council meetings to share Samsung Electronics' green management successes and learn about the green management status of other leading corporations as well as new trends in green business management.

Samsung also became the first company in Korea to join EICC (CSR consultation body for the Electronics Industry). We actively participated in EICC activities including revision of the code of conduct in addition to participating in general meetings. We also participated in the Business Summit (B20) which was held during the 2010 G20 summit. At the B20, Samsung Electronics participated in the Green Growth subgroup meeting and shared our green management achievements in addition to future plans with other industry leaders.

Employee Communication

Employee Environmental Communication

We are using internal communication channels including internal broadcasts and our intranet to share information on environmental affairs and exchange ideas on improvement.

A number of videos were created to encourage employees to live a greener life-style. A polar bear character was created to encourage the promotion of a green life-style in everyday activities. We established a short message discussion forum and environmental columns to discuss environmental issues. Employees can actively contribute Eco-Product ideas and green life-style tips to raise awareness about the environment.


Green Lifestyle Campaign Videos (Office Episode)

Green Lifestyle Campaign Videos (Automobile Episode)

Samsung Electronics Live Discussion

Employee Campaigns

We are conducting environmental volunteer activities and environmental education campaigns for employees.

The volunteer cleanup and environmental education program takes place twice a year at Gwangreung forest which is designated as a biodiversity protection area. In May 2011, Samsung Electronics invited family members of employees to a green away day with programs including a climate change experience center and environmental education classes for children.


Gwangreung Forest Ecosystem Protection Campaign


Climate Change Experience Center


Environmental Education Class

Global Environmental Preservation Activities

Samsung Electronics is conducting a number of programs to contribute to environmental protection around the world.

Korea

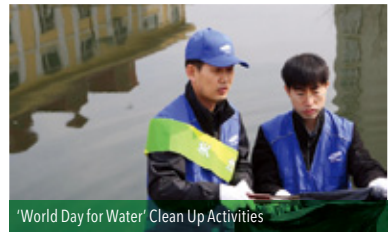

'World Day for Water' Ceremony


'World Day for Water' Ecosystem Preservation Activities

A number of volunteer activities were conducted on March 22, 2012, the 20th World Water Day. For example, 150 employees from the Suwon plant joined members of the Suwon YWCA, the Suwon Environmental Movement Center and the Citizens' Coalition for Economic Justice to remove trash from the Singal water reservoir. The student volunteers at Hwangsang elementary school, a sister organization of Samsung Electronics, conducted waterway tracking and cleanup activities as well. Another volunteer group conducted a water conservation campaign at Guhado eco-park in Hanam Industrial Park and cleaned up a lake located in the park.

Employee volunteer group conducted a collection of activities from installation of a sand collector, removal of non-native species, planting of native sweetbrier plants and trash clean-up to protect the dune ecosystem.

China


'World Day for Water' Clean Up Activities


Green Activities with Local Community

In China, 320 employees participated in trash removal at three lakes and planted trees around the lakes for preservation of the aquatic environment. The volunteers also spent time on raising awareness of the importance of environmental protection and green life-styles.

Central and South America

'Global Action' Day Program


'Global Action' Children Event

Samsung Electronics has been conducting campaigns on a ban of clear-cutting of the Amazon rainforest and other relevant activities. The Samsung Electronics office in Manos, Brazil hosted a 'Global Action' day program on May 14, 2011 with more than 3,000 members of local communities. Samsung Electronics volunteers gave away toys made of recycled industrial waste and taught local children on the importance of recycling.

South East Asia

River Clean-up Activities in Vietnam and Philippines

Indonesia Tree Planting Activities

Samsung Electronics volunteers conducted river clean-up activities in commemoration of World Water Day. In Vietnam, volunteers removed trash and planted aquatic plants along the Cau river in partnership with the local government. In the Philippines, volunteers conducted clean-up activities along the San Cristobal river and planted trees around the plant premises.

The volunteers of Samsung Electronics' Indonesia branch make regular visits to local orphanages to conduct eco-system protection education and to plant trees.

Europe

Slovakia Children Eco-Class

Slovakia Birdhouse Campaign

In Slovakia, we conducted a birdhouse installation project to protect rare bird species living in the vicinity of our operation site. Children from local communities participated both in the construction and installation of birdhouses. The participants were also given lessons on the importance of the ecosystem and environmental protection.

In Hungary, we held an employee environmental protection campaign poster contest and encouraged the use of bicycles for commuting to raise awareness on environmental protection.

Africa

Solar-Powered Internet School

Donation of Solar LED Lantern

Samsung Electronics has created a 100% solar-powered mobile classrooms named the 'Solar-powered Internet School' and supplied them in Africa.

We also began the supply of solar-powered LED lanterns, for areas that do not have access to electricity, in collaboration with the Korea Volunteer Organization. Manufactured using durable Samsung Electronics' parts including LEDs, solar panels, and batteries, the LED lantern is designed to last for more than 10 years without GHG emissions.

We plan to conduct green communication activities using our green IT technologies and provide benefits to 5 million African residents by 2015.