



ISSUES 02

Response to Climate Change

Business Relevance

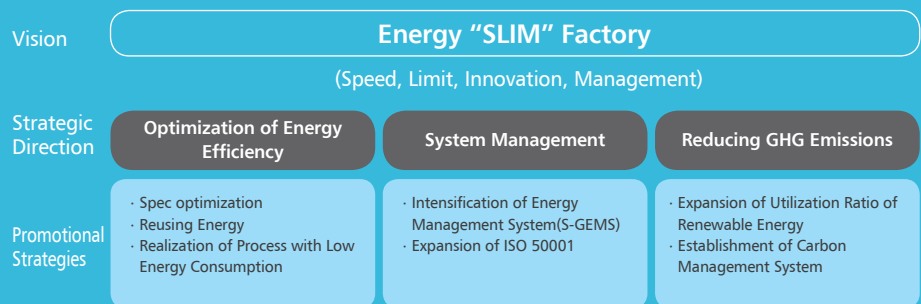
There are ongoing international efforts to reduce side effects following climate change such as resource depletion, water shortage, desertification, food crisis, eco-system abnormality, etc. Following these efforts, as a part of low-carbon policy, carbon regulations, such as tradable permit systems, are being operated worldwide. Furthermore, various stakeholders are requiring companies to provide sustainable eco-friendly policies and eco-management information.

Risk	Opportunity
<ul style="list-style-type: none"> ▶ Occurrence of obligations for reduction of GHG emissions ▶ As a global issue, regulations toward the company are being strengthened following the expansion of GHG management area. ▶ Risks of law violations due to the differentiated low-carbon policy response of each country 	<ul style="list-style-type: none"> ▶ Cost reduction through reduced GHG emissions and energy consumption ▶ Improving the company's image as an eco-friendly company, and utilizing it as an external marketing point

Our Approach

As low-carbon policies grow worldwide, Samsung SDI, as an eco-friendly company, based on changes, innovations, and its slogan to lead in tech innovation and the market, has been proactively conducting activities to manage the risk of climate change and reduce its impact. The company will reduce its GHG emissions through carbon emission optimization, and will firmly establish its image as an eco-friendly company, which corresponds with its business philosophy.

Our Vision



Key Performance Index

KPI	2020 Objectives	2015 Objectives	2015 Performance	Achievement Level
GHG (Greenhouse Gas)	Reduced by more than 30% compared to BAU* (1,099,587tCO ₂ e)	Improved by more than 3% based on unit of emission source compared with last year	Increased by 3% based on unit of KRW compared with last year**	Not achieved
Optimization of Energy Efficiency	Continuous improvements for optimization of energy efficiency	100% LED lighting installation	100% LED lighting installation	Achieved

* GHG BAU reduction goal only applies to the energy business area.

** Total amount has decreased compared to last year but won unit compared to revenue has increased.



Response to Climate Change

Energy Management

Samsung SDI, as an eco-friendly energy company, established its energy management guideline for the entire company, which fits the concept of the business. Also, the company is conducting low carbon/energy management. In 2011, all domestic manufacturing business sites were certified with the energy management system (ISO 50001), and the company created an expansion plan for overseas manufacturing business sites in 2016, which has been continuously under development to date.

Energy Management Organization



Energy Saving Activities

Energy Consulting from External Specialists

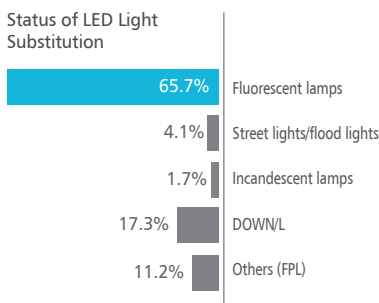
From April to December 2015, the company invited external energy specialists and received energy consultation across all domestic business sites to reduce energy consumption, and devote itself to energy-friendly activities.

Preliminary Evaluation of Energy Impact for New/Additional Facilities

Domestic preliminary evaluations of energy impact system is being expanded and applied to new/additional overseas business sites. In 2016, the preliminary evaluation of the energy impact system is planned to be systematized and reflected in the operation process.

100% Conversion to LED Lights with High Efficiency

For all domestic business sites, the company managed to reach a 100% installation rate of high-efficiency LED lights. Likewise, in a bid to make high-efficiency LED application mandatory, the company is reflecting it in the investment guide for establishment and expansion.



Major Energy Saving Activities in 2015

Major Tasks	Reduced Amount (TJ/year)	Effect (100 million won/year)
Reduction of Fuel Use 136 cases, including utilization of wasted heat from cooling water and collection of water heating system, and waste heat recovery from production lines	73	17.3
Reduction of Electric Power Use 713 cases, including the improvement of dysfunctional ventilation systems and management of non-operating facilities	677	130.5
Total	750	147.8

Energy Saving Plans in the Future

From 2016, SDI plans to establish a management system for innovative reduction of GHG emissions within its entire production process, extending further from the existing activities which used to focus on process energy optimization and energy reduction. For efficient energy management, the company plans to intensify Energy Management System (S-GEMS), an energy management system, which is currently only being operated in a few domestic business sites. The company plans to apply S-GEMS on all business sites from July 2016, and will focus on energy reduction activities for sustainable management.

GHG Emission Management

Activities for Reducing GHG Emissions



GHG Emission Status and Reduction Goals

Samsung SDI, in a bid to solve climate change issues, is promoting the reduction of the company's total GHG emissions. In 2015, Samsung SDI's global business sites emitted 646,292 tCO₂e of GHG, which was 11.6% less compared to the previous year (84,797 tCO₂e reduction).

Emission Trading Scheme

Samsung SDI was selected as a target company for the emission Trading Scheme in 2015. In response, the company revised its company-wide GHG management regulations to reinforce emission source monitoring, and by setting goals by each business site and setting an emissions trading system, the company established its own system for continuous management. Furthermore, Samsung SDI appointed a GHG manager for each business site, and to improve managers' management abilities, the managers participated in GHG/energy-specialized education for human resource fostering, in connection with the National Human Resource Development Consortium. In the future, the company plans to systematically manage the amount of GHG emissions by reinforcing its internal certification process.

Activities Related to Green Energy Use

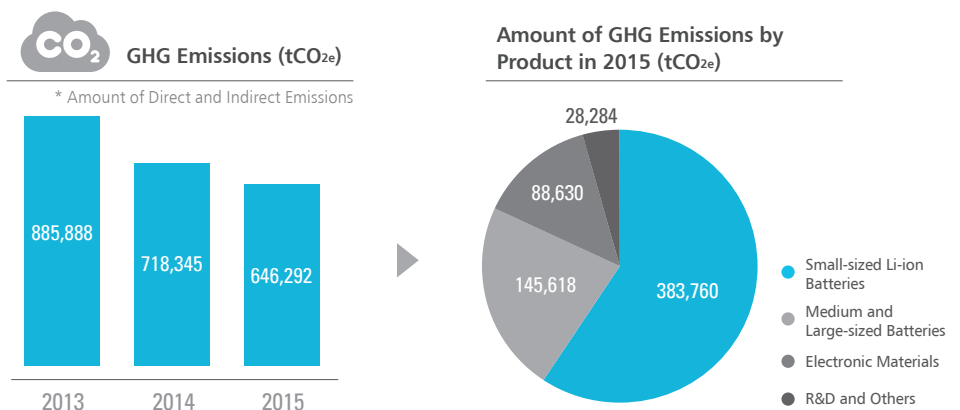
Samsung SDI conducts activities for the reduction of GHG emissions through renewable energy utilization. In case of its Austrian subsidiary, one its best examples of best practices, about 77% of its total energy consumption in 2015 was from renewable energy sources. Samsung SDI is preparing to create a plan for the expansion of renewable energy utilization.

Development of Eco-friendly Packing Materials and Establishment of Recycling Process

Samsung SDI is making efforts to improve the eco-friendliness of packing materials (trays) for batteries. The company acquired an environmental achievement certificate by using bio-plastic for the production of trays and thus reducing the emission of CO₂ from decomposition or incineration. A tray recycling process has been developed in Cheonan, Malaysia, Tianjin, and Vietnam, in collaboration with partner companies that are able to collect existing trays, disposed of after single use, and recycle them. Through this process, 970 tons of carbon emissions were reduced in 2015.

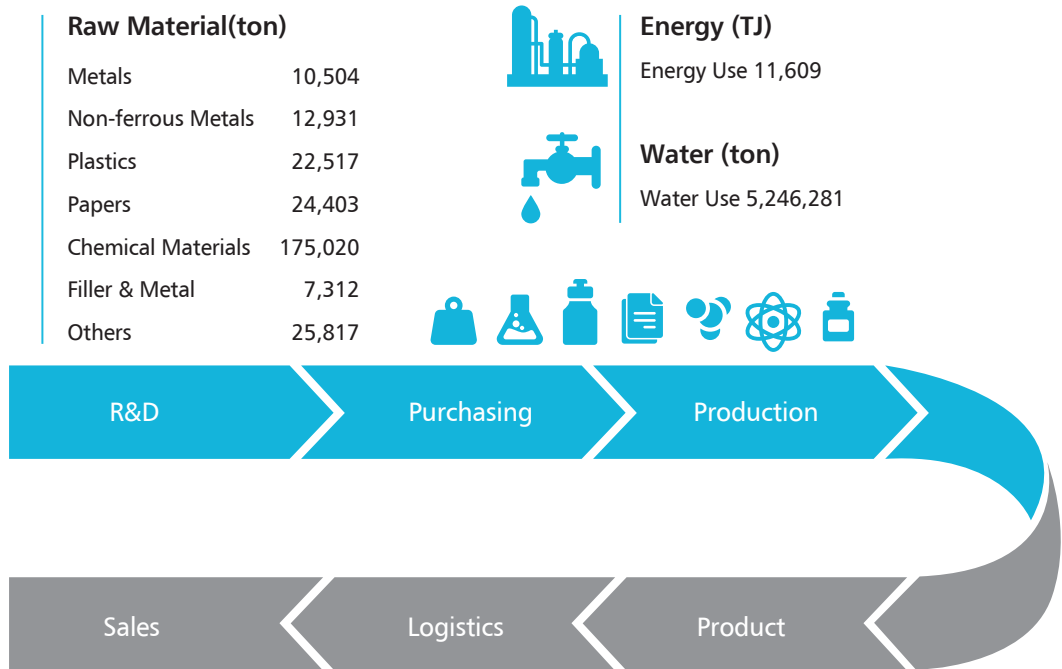
Selected as a Member of the Honors Club for Carbon Information Disclosure

CDP (Carbon Disclosure Project) is a non-profit organization which, under the consignment of financial investment institutions worldwide, requests management information with respect to countermeasures against global environmental issues to major registered companies worldwide. Samsung SDI was selected for the past two consecutive years to join the Carbon Management Honours Club in the IT field by the CDP Korean Committee.



Environmental Value Chain

Samsung SDI, in operating its business, is making efforts to minimize environmental impact from its business operation process by, for example, utilizing resources efficiently during the production and processing phase. By quantitatively calculating the amount of raw materials used in the production stage, including R&D, purchasing, and management, resources are used more efficiently. Through this approach, the company will lower environmental loads. Also, by calculating environmental loads generated from the product delivery and utilization phase, the company will strictly manage contaminant issues and GHG emissions.



Raw Material(ton)

Metals	10,504
Non-ferrous Metals	12,931
Plastics	22,517
Papers	24,403
Chemical Materials	175,020
Filler & Metal	7,312
Others	25,817



Energy (TJ)
Energy Use 11,609



Water (ton)
Water Use 5,246,281



Energy Solutions

Small-sized Li-ion batteries and others
1,079 million units

Electronic Materials

EMC
6,469 tons

Polarizing Films
34,217 thousand m²

GHG(tCO₂e)

Total Amount of GHG	646,292
Direct Emissions	92,964
Indirect Emissions	553,328
Employee Business Trips	2,155
Product Delivery	1,395

Waste(ton)

Waste Emissions	48,138
Amount of Recycled Waste	46,151
Amount of Buried Waste	1,849
Amount of Toxic Material Utilization	21,429

Environmental Efficiency Goals

Category	Unit	2015	2020
Water Consumption	1000 tons / 100 million won	0.11	Improved more than 2 times
Hazardous Chemical Use	tons / 100 million won	0.43	Improved more than 2 times
Waste Emissions	tons / 100 million won	0.97	Improved more than 2 times
Recycling Rate of Waste Products	%	96	Maintained above 95%
Reclamation Rate of Waste Products	%	4	Maintained below 5%

* Figures have been recorded based on 2015 production performance of each business sector

* Specific contents related with environmental efficiency can be found on page 66.