

# Environmental Report 2012

# Becoming a Value-creating Company that reconciles Sustainability with Growth.

An unprecedented disaster and a global credit shortage have had a profound impact on the business environment.

However, to me, these circumstances also sound a clarion call urging us to create new value. We are presented with an opportunity to reassess our direction as people, as a manufacturer, and as a corporate citizen, towards the realization of a safer and happier future.

SMK's business is predicated on environmental sustainability. Uppermost in our minds is a focus on our responsibility to go on offering products that provide solutions to a variety of issues, first and foremost issues of resources and energy. And in addition to this, we also recognize that it is precisely within this focus on contributing to the preservation of the global environment that new business opportunities for SMK lie.

We will direct further energy towards the creation of products that will reduce our environmental burden and promote recycling, for example in the areas of natural (renewable) energy, energy conservation, such as HEMS (home energy management system), and low-carbon products, as exemplified by hybrid cars.

We will also continue, and intensify, our efforts to eliminate loss from all of our processes ("Muda, Mura, Muri" initiatives).

For instance, our Corporate Environmental Preservation Committee, of which the top management of all our domestic and overseas production facilities are members, functions in each of our workplaces to monitor our level of achievement of targets for the reduction of CO<sub>2</sub> and waste products, and plays a significant role in our efforts to control any waste of energy or resources in our business activities.

President and  
Chief Operating Officer

**Yasumitsu Ikeda**



SMK has received a high ranking in a survey of environmental management conducted by the Nikkei Inc., and I take no little pride in the fact that this is an outcome of our consistent efforts and of changes in our attitude towards our tasks.

However, we are still on our way. I remain aware that the crucial period in the challenge we have presented ourselves to create new value lies ahead of us.

With these thoughts in mind, I present the SMK Environment Report 2012 to all our stakeholders.

Have no doubt that you can expect even greater things from SMK in the future.

June 2012

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## About This Report

### Reporting period

FY2011 (April 1, 2011 - March 31, 2012)

### Scope of calculations

#### Sites in Japan

- Head Office (Togoshi) Gate City Office (Osaki)
- Osaka Branch
- Nagoya Branch
- Kanagawa Sales Office
- Ibaraki Sales Office
- Hokuriku Sales Office
- Fukuoka Sales Office
- Toyama Works and Toyama Technology Center
- Hitachi Works
- Ibaraki Works
- Yamato Works

#### Subsidiaries in Japan

- Toyama Showa Co., Ltd.
- Showa Denshi Co., Ltd.
- Ibaraki SMK Co., Ltd.

#### Overseas Sites

##### ASIA

- SMK High-Tech Taiwan Trading Co., Ltd.
- SMK Electronics (H.K.) Ltd.
- SMK Trading (H.K.) Ltd.
- SMK Electronics (Dongguan) Co., Ltd.
- SMK Electronics (Shenzhen) Co., Ltd.
- SMK Electronics Trading (Shanghai) Co., Ltd.
- SMK Electronics Singapore Pte. Ltd.
- SMK Electronics (Malaysia) Sdn. Bhd.
- SMK Electronics (Phils.) Corporation

##### EUROPE

- SMK Europe N.V.
- SMK (U.K.) Ltd.
- SMK Hungary Kft.

##### NORTH AMERICA

- SMK Electronics Corporation U.S.A.
- SMK Manufacturing, Inc.
- SMK Electronica S.A. de C.V.

### CO<sub>2</sub> emissions

Conversion coefficients are subject to the standards of the Federation of Electric Power Companies of Japan for domestic sites, and the GHG Protocol for overseas sites.

### Access to corporate information

Our website discloses data profiling our company, IR information, product descriptions, and past environmental reports.

<http://www.smk.co.jp/>

Contact : Environmental Protection Department, SMK Corporation  
TEL : +81-3-3785-5058 FAX : +81-3-3785-0517

Message from Vice President of Environment Div.

# Reaching Higher to Open the Door to A New Era of Eco-friendly Technology

Energy conservation, the reduction of CO<sub>2</sub> emissions, the reduction of waste and harmful substances, further advances in environmentally friendly and miniaturized technology... At SMK, we push ourselves to respond to these environmental goals both more broadly and at a higher level.

"More broadly" encompasses efforts in a broad range of areas, including manufacture, use, transportation, and marketing.

"At a higher level" refers to the ambitious targets that we set ourselves.

For instance, we set ourselves the target of reducing our peak power usage in summer 2011 by 25% against figures for the previous year. We actually achieved a reduction of 28%. This will not be a one-off achievement; the expertise in energy conservation that we attained in doing so will be extended to the SMK global network.

I believe that the eco market will develop rapidly, propelled by a new awareness of energy conservation following the earthquake and tsunami disaster. Against this background, as a company that has attained a level of technological capacity enabling it to respond on all fronts, including conservation of energy and resources, the realization of increased efficiency, and environmentally friendly design, SMK will fulfill its responsibility as a corporate citizen through the provision of eco-conscious products.

It is well known that the miniaturization of electronic parts advances as an inevitable consequence of the needs of customers and the market. It is standard procedure to reduce size in order to ultimately reduce resource and energy use. But this is not enough for SMK. It goes without saying that we seek to reduce waste and energy use in our manufacturing processes, but more than this, we also strive to create products

Vice President of Environment Div.

**Yoshiyuki Kaku**



with consideration of their entire life cycle. The standardization of the life cycle assessments (evaluations of environmental impact) that make this possible was established as a target in our Mid-term Plan, and we are working to render our environmental burden visible in this way.

It was agreed at COP17, held in 2011, that the term of the Kyoto Protocol should be extended, and that Japan would not face new obligations for reductions from 2013. There has been no change, however, in the fact that we will go on working towards voluntary emissions reductions under the leadership of the government.

Naturally, SMK views contributing to the fight against global warming as an important agenda, and we will continue to make global efforts in this area. In doing so, we will always bear in mind our responsibility to make the scope of our activities broader and the level of our targets higher.

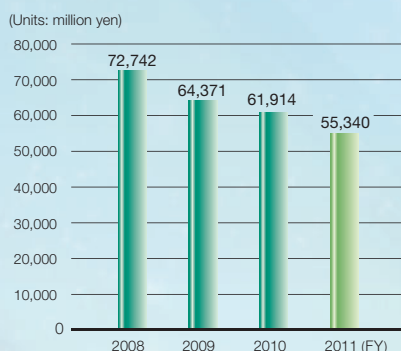
June 2012

## Corporate Profile (as of March 31, 2012)

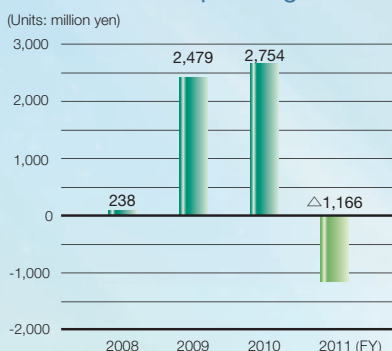
<b>Name</b>	SMK Corporation
<b>Established</b>	April 1925
<b>Registered</b>	January 15, 1929
<b>Primary Businesses</b>	Manufacturing and sales of electronic components for use in electrical equipment, communications equipment, electronic equipment, industrial machinery, IT equipment and other applications.
<b>Capital</b>	7,996 million yen
<b>Number of Employees</b>	11,311 (in the Group)
<b>Head office</b>	5-5, Togoshi 6-chome, Shinagawa-ku, Tokyo 142-8511, Japan TEL: +81-3-3785-1111 FAX: +81-3-3785-1878 URL: <a href="http://www.smk.co.jp/">http://www.smk.co.jp/</a>

<b>Major Products</b>	Switches / Remote control units / Keyboards / Control panel units / Electret condenser microphones / Earphone-microphone assemblies / Camera modules / AC adaptors / Antennas / Crimp connectors / FPC and FFC connectors / Board-to-board connectors / RF coaxial connectors / Interface connectors / Card connectors / Power connectors / Jacks and pin jacks / DC power supply plugs and jacks / Fuse holders / Connectors for photovoltaic modules / LED connectors / Resistance sensitive touch panels / Optical touch panels / Capacitive touch panels / Bluetooth modules
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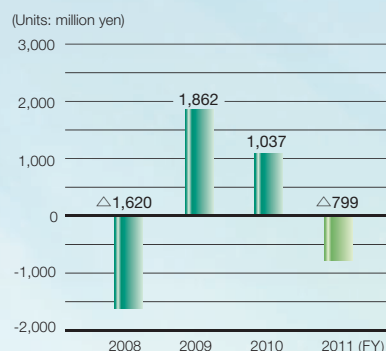
### Consolidated Net Sales



### Consolidated Operating Income



### Consolidated Net Income





## SMK Environmental Charter

### 1. Basic Philosophy

The SMK Group pursues environmental preservation as well as economic development, by integrating its current technological strengths and creating advanced technology. As a good corporate citizen, every one of us will contribute to the promotion of sustainable global development.

### 2. Action Guidelines

- (1) Develop environmentally friendly products
- (2) Reduce waste by using everything to its fullest extent
- (3) Preserve natural resources and saving of energy
- (4) Encourage 3R (reduce, reuse and recycle)
- (5) Realize waste-free procurement and manufacturing

### Organization to Promote Environmental Preservation

In SMK, the Group policies, targets, and initiatives related to environmental preservation are deliberated upon and determined by the Corporate Environmental Preservation Committee, which is chaired by the Vice President of the Environment Division. Major items are subject to deliberation and determination at the Executive Officer's Meeting. Upon determination, they are deployed at all Japan and overseas works. At each business site, the local Environmental Preservation Committee decides local policies, targets, and initiatives in accordance with the Group policies, targets, and initiatives taking locally specific issues into consideration and puts them into practice.

### Environmental Management Systems

SMK's environmental management systems are in accordance with ISO 14001, the international standard for EMS.

We have obtained ISO 14001 certification for all of our Japan sites and overseas works. Since fiscal 2007, in addition to individual activities at each site, we have been setting targets and themes to be shared by all members of the SMK Group, reinforcing linkage among our sites, and working to strengthen group-wide systemic arrangements.

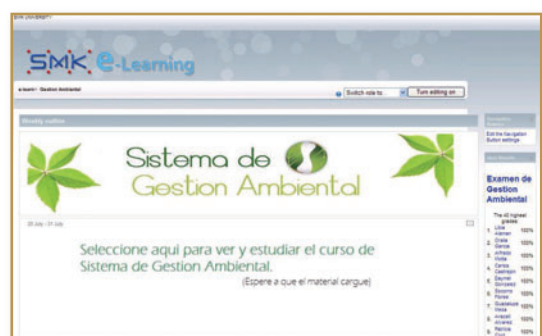
SMK's environmental preservation activities are not limited to our Group. The Green Procurement Guidelines that we published in 2004 also make demands on our suppliers. Specifically, we request our suppliers to pledge not to use any environmentally hazardous substances prohibited by SMK, and to put in place ISO 14001-based systems. We visit suppliers who have not obtained ISO 14001 certification to check on the status of their environmental preservation activities, and to suggest any necessary improvements.

### Environmental Education

SMK implements environmental education by levels of employees throughout the Group, and as a part of the professional education curriculums. In addition, each business site makes its own annual education plans.

We also encourage our employees to take the Certification Test for Environmental Specialists (also known as the Eco Test) administered by the Tokyo Chamber of Commerce and Industry. Every year since the first test in 2006, we have gathered candidates, purchased textbooks, and provided assistance with the burden of exam fees. As of 2011, a total of 57 of our employees had passed the test, and they are helping to guide and advance environmental preservation activities at each workplace.

### Organizational Structure for Environmental Preservation



Environmental e-learning at SMK Mexico



In-House training of internal auditors (Head Office)

# Environmental Preservation Activities

All of SMK's Japan and overseas sites have formulated targets for environmental preservation activities, and are pushing ahead with realization of improvements.

The table below presents the actual results of SMK's major activities in fiscal 2011, as well as targets for this fiscal year.

## Preventing Global Warming

In the area of CO<sub>2</sub> emissions, we have worked towards improvements such as the replacement of air conditioning systems with energy-saving models and the reexamination of equipment operating conditions. However, there was an increase in our CO<sub>2</sub> emissions per unit of production value as a result of factors including the full operation of clean rooms for the production of touch panels, the floor space for which increased last fiscal year, and increased emissions from the use of generators due to a higher than expected volume of power outages at works in China, and our total CO<sub>2</sub> emissions somewhat reduced from last fiscal year. Future initiatives include the introduction of energy management systems and life cycle assessments (LCA).

## Preserving Biodiversity

We have requested the cooperation of our suppliers in roundtable discussions to ensure that biological diversity is preserved throughout the entirety of our supply chain. We are also examining revisions to our Green Procurement Guidelines, and intend to release the revised edition in fiscal 2012.

## Effective Use of Resources

We achieved a significant reduction in our total amount of

industrial waste discharge and the amount of landfill waste by improvements stemming from waste reduction activities conducted in relation to our production processes. Figures for industrial waste discharge per unit of production were the same as fiscal 2010.

## Effective Responses for the Management of Environment-related Substances

We have completed the reexamination of our company management system in relation to the revision of the EU RoHS Directive (exempted items), and have made the necessary responses.

With regard to the EU REACH regulations, we are aiming towards the introduction of a more sophisticated management system, and have commenced the introduction of appropriate software.

## Advancement of Environmentally Friendly Design

In fiscal 2011, we revised the detail procedures to evaluate the presence of environmentally hazardous substances. We will proceed to enhance the level of our evaluations in the areas of energy and resource conservation in future.

Nature of initiative	FY2011		Self-assessment
	Target	Achievement	
Preventing global warming	CO <sub>2</sub> emissions per unit of production value*1: 11% reduction relative to FY2010 Target: 0.45 t-CO <sub>2</sub> /million yen	12% increase 0.56 t-CO <sub>2</sub> /million yen	C
	Total CO <sub>2</sub> emissions: 9% reduction relative to FY2010 Target: 29,375 t-CO <sub>2</sub>	4% decrease 30,973 t-CO <sub>2</sub>	C
	Review and introduction of energy management systems	Study of ISO 50001 system	A
	Review of SMK standards for LCA (including carbon footprint)	Obtaining and analyzing information on industry trends	C
Preserving biodiversity	Review of activities related to purchasing with preservation of biological diversity in mind	Requesting cooperation of suppliers Examining revisions to the Green Procurement Guidelines	B
Effective use of resources	Industrial waste discharge per unit of production value*2: 20% reduction relative to FY2010 Target: 0.0235 t/million yen	1% increase 0.0296 t-CO <sub>2</sub> /million yen	C
	Total industrial waste discharge amount: 18% reduction relative to FY2010 Target: 1,550 t	13% decrease 1,636 t	B
	Landfill waste amount: 70% increase relative to FY2010 Target: 213 t	26% decrease 92 t	A
Effective responses for the management of environment-related substances	Bring online system to manage information on constituent materials, a system to respond to the EU REACH Regulation	Completion of revision of internal management system and implementation of responses	A
		Review and introduction of software towards the realization of a more sophisticated management system	C
Advancement of environmentally friendly design	Enhancement of product assessments	Partial revision and enhancement of details of assessments	A

\*1: CO<sub>2</sub> emissions per unit of production value = CO<sub>2</sub> emissions divided by production value

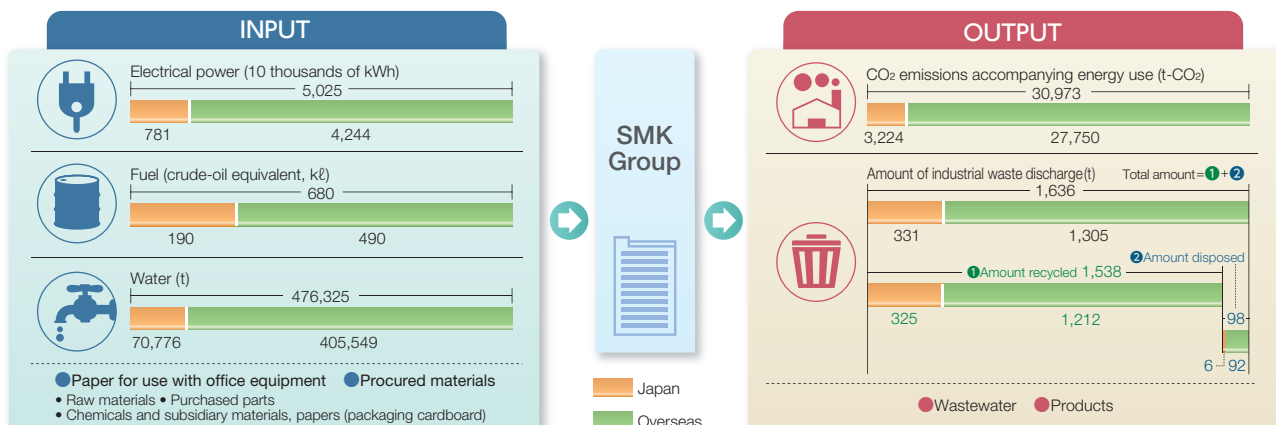
\*2: Industrial waste discharge per unit of production value = industrial waste discharge divided by production value

Self-assessment

A: attained B: insufficiently-attained C: not attained

# Material Balance

At SMK, we are attempting to analyze and understand the material balance (environmental footprint) for each of our processes, from product design and development to manufacture and sales, and to realize highly efficient business activities.



SMK positions responses to global warming as an important management agenda, and is implementing and constantly enhancing initiatives to conserve energy.

We are also working to reduce industrial waste discharge amount and to realize zero emissions (zero landfill waste), in an attempt to use our resources more efficiently.

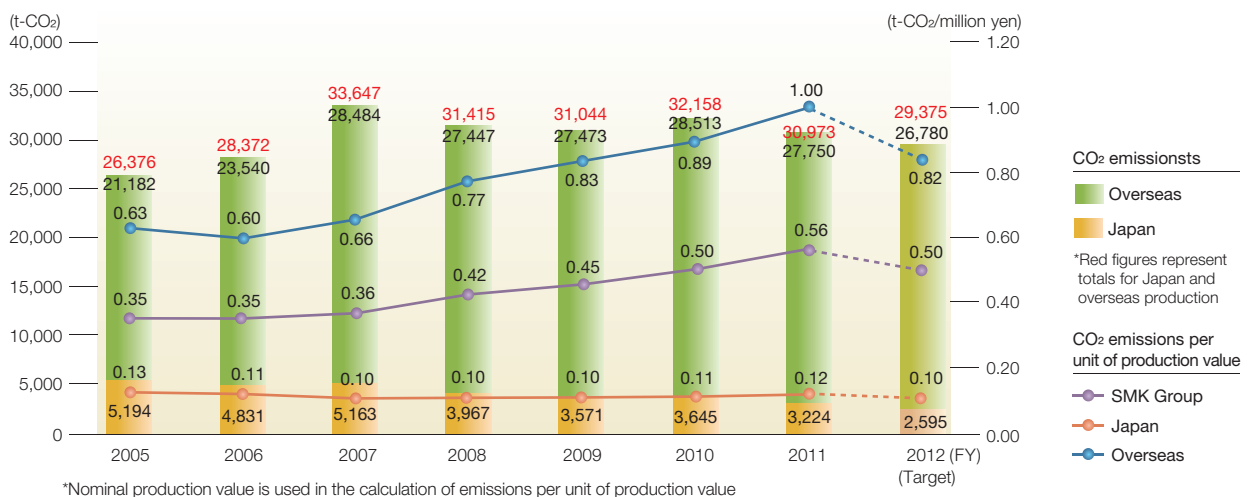
## Energy-Saving Results

◎SMK recorded an increase in CO<sub>2</sub> emissions per production when viewed in terms of unit of nominal production value (112% against the previous fiscal year), while the amount of CO<sub>2</sub> emissions recorded a slight decrease (96% against the previous fiscal year) for fiscal 2011, as indicated under the heading Environmental Preservation Activities. (See page 4)

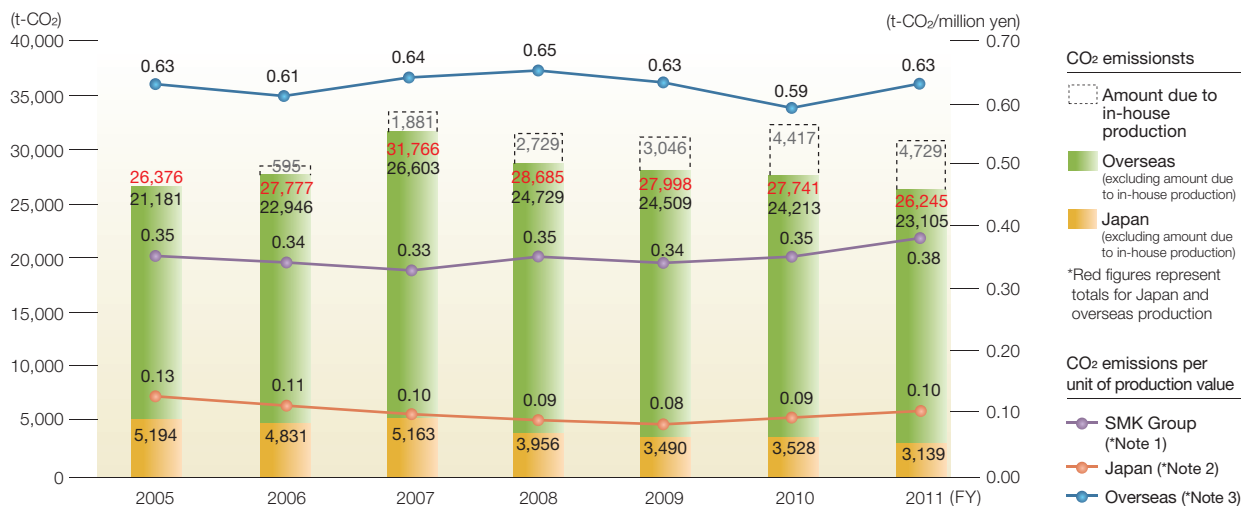
	Year on Year	
	Japan	Overall SMK Group
CO <sub>2</sub> emissions per unit of production value (nominal production value)	104%	112%
CO <sub>2</sub> emissions	88%	96%

◎We have been working to progressively increase our level of in-house processing of parts (molding, stamping, etc.) rather than outsourcing since our base year (FY2005) towards the achievement of greater efficiency through integrated manufacturing. If we analyze trends in our total CO<sub>2</sub> emissions (trends in substantive CO<sub>2</sub> emissions) except the amount of increase due to this in-house processing by unit of actual production value (calculated with the effect of commodity prices and exchange rate change minimized), levels are almost equivalent to those for our base year. When we take into consideration the fact that we have expanded our production of touch panels, which requires the use of energy-intensive clean rooms, we can actually point to an improvement in our emissions trends. (See graphs below)

## Trends in CO<sub>2</sub> emissions and CO<sub>2</sub> emissions per unit of nominal production value



## Ref: Trends in CO<sub>2</sub> emissions and CO<sub>2</sub> emissions per unit of actual production value



## Resource-saving Results

Industrial waste discharge per unit of production value was almost the same as the previous year (101%), while the amount of industrial waste discharge decreased by 13%.

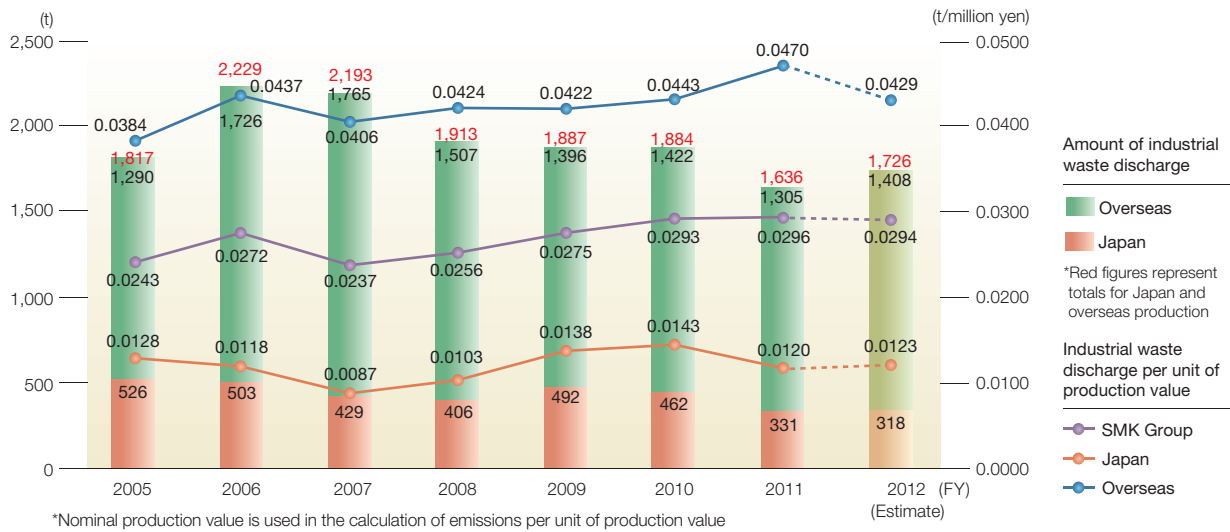
	Year on Year	
	Japan	Overall SMK Group
Industrial waste discharge per unit of production value (nominal production value)	86%	101%
Overall industrial waste discharge amount	72%	87%
Recycling amount	71%	96%
Landfill waste amount	—	74%

The main reason for this is curbing waste by improvements of manufacturing processes, as discussed in "Environmental Preservation Activities" on page 4.

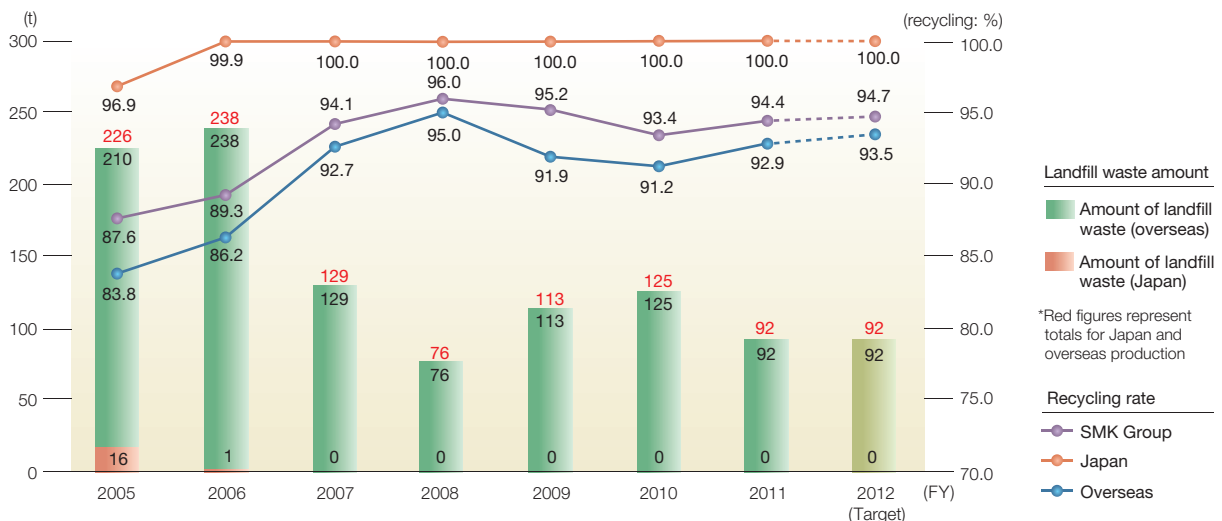
We project an increase in the amount of industrial waste discharge in FY2012 as a result of increased production, and we intend to push ahead with further efforts to realize improvements.

As a result of these activities, SMK has also achieved a significant reduction in our volume of landfill waste (74% against the previous fiscal year), especially the quantity of glass slag (a difficult material to recycle) from overseas operations decreased. We will continue to make improvements in future, looking towards becoming a zero emissions company.

## Amount of industrial waste discharge



## Amount of landfill waste and recycling rate



## Environmental Preservation Costs and Benefits

(Units: million yen)

Category	Major Activities	Environmental Preservation Costs				Economic Benefits Accrued		Environmental Preservation Benefits (Quantity)		
		Investments		Expenses		Amount	YoY	Consumption/Output Savings	YoY	
		Amount	YoY	Amount	YoY					
Business area costs	Pollution prevention	19.2	1,360%	22.8	116%	0	—	Use of Environmentally Hazardous Substances: 11.7 t	113%	
	Global environmental preservation	29.5	207%	42.6	100%	9.7	277%	CO <sub>2</sub> emissions per unit of production value: -0.06 t-CO <sub>2</sub> /million yen	—	
	Resource circulation	0	—	27.3	119%	95.6	62%	Landfill waste amount: -32.7 t Industrial waste discharge per unit of production value: -0.0004 t /million yen	—	
	Sub-total	—	—	48.7	311%	92.7	109%	105.3	67%	—
Upstream/downstream	Green procurement	0	—	1.1	147%	0	—	—	—	—
Administration	Elimination of environmentally hazardous substances / Environmental management education, activities for the achievement of certification, etc.	0	—	172.9	103%	0	—	—	—	—
R&D	Development of environmentally friendly products	0	—	50.0	111%	0	—	—	—	—
Social activity	Initiatives to expand green areas at works	0	—	7.4	110%	0	—	—	—	—
Environmental remediation	—	0	—	0	—	0	—	—	—	—
<b>Total</b>	—	48.7	311%	324.1	106%	105.3	67%	—	—	—

### Environmental Preservation Costs

Our environmental preservation costs in fiscal 2011 increased against the previous fiscal year, in terms of both investments and expenses.

Investment costs increased due to the installation of equipment to enable wastewater reuse as a measure to reduce the environmental impact of one of our production works in China. Expenses increased due to an increase in costs associated with response to regulations concerning environmentally hazardous substances, such as the revised EU-RoHS Directive.

### Economic Benefits

Economic benefits for fiscal 2011 declined against benefits for the previous fiscal year.

The main reasons for this are that we produced less waste able to be sold and a reduced amount of tools and equipment was available for reuse, with a consequent reduction in the economic benefit of reuse.

### Environmental Preservation Benefits

With regard to environmental preservation benefits, our landfill waste amount declined, but we recorded increases in the other three categories.

The reasons for CO<sub>2</sub> and industrial waste-related increases are explained in "Environmental Preservation Activities." In the case of environmentally hazardous substances, the increase was due to our increased production of touch panels, which involves numerous processes that use chemical substances.

### Accounting Procedure

- SMK's environmental accounting practices adhere to the Environmental Accounting Guidelines 2005 published by Japanese Ministry of the Environment.
- Figures are based on data on capital investments and other expenses (including depreciation cost) required for the environmental preservation activities, as well as data on the benefits accrued from them in terms of money and quantity, from all Japan and overseas sites of the SMK Group.
- Data for environmental preservation benefits indicated a decrease in amount compared with the previous fiscal year. A year-on-year comparison is not presented for data without any reduction or comparable results with the previous fiscal year.
- Economic benefits accrued are clearly demonstrable and do not include speculative benefits.
- For environmentally hazardous substances in the category of environmental preservation benefits, aggregated subjects were the substances regulated under the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (Pollutant Release and Transfer Register, or PRTR Law).

## Energy Conservation during Summer

In response to the electricity shortage over summer resulting from the effects of the Great East Japan Earthquake, the Japanese government applied a power use limit of 15% below the figure for peak use for the previous summer to all large power users contracted for 500kW or more. SMK was not subject to this restriction, but we set ourselves an even higher target than the government directive – a reduction of 25% against peak use for the previous summer – and put a variety of power-saving measures into effect. As a result of our efforts, this target was achieved by all our sites that purchase power from the Tokyo Electric Power Company, with a reduction of 28.1% against peak power use for the previous summer. In addition, we reduced our cumulative power use between June and September by 27.6% against the same period last year, representing a 172 t reduction in CO<sub>2</sub> emissions. We intend to make use of the expertise gained from this initiative at other domestic and overseas workplaces, making changes to our approach to enable us to use less power throughout the Group in future.

Main New Energy-saving Measures adopted in Summer 2011

- Adjustment of Lighting (Replacement of incandescent globes with LED globes, provision of LED desk lights to employees, introduction of presence sensors, reduction of number of globes)
- Changes to Group workplace attendance system (Partial introduction of system of Saturday work, with Sunday and Monday as holidays)
- Timed start-up of air conditioners and limitation of output
- Upgrading of large servers, etc. to the latest compact models
- Restrictions on operation of vending machines... Etc.

28.1% reduction against peak use for the previous summer

27.6% reduction in cumulative power use between June and September (Against cumulative power use between June and September in the previous year)





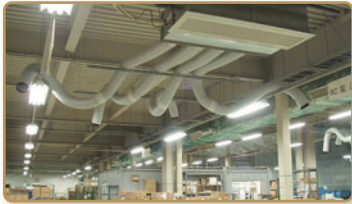
## Toyama Group (Toyama Works, Hokuriku Sales Office, Toyama Showa Co., Ltd., Showa Denshi Co., Ltd.)

The Toyama Works has introduced energy-saving inverter-type spot air conditioners.

Up to the present, two large air conditioning units have been used to cool the entire factory floor, but the company has now eliminated waste by employing six spot air conditioners in the areas in which they are needed.

The introduction of the new air conditioners will reduce electricity use by 47,635 kWh per year (approximately 500,000 yen per year), A fuel oil use by 9,958 ℓ per year (approximately 650,000 yen), and CO<sub>2</sub> emissions by 44.8t per year.

The company will continue to carefully analyze the present status of operations when upgrading equipment, pushing forward its activities to enhance energy conservation.

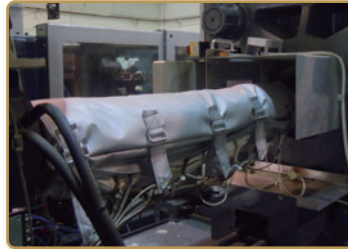


Inverter-type spot air conditioner

## SMK Electronics(Malaysia) Sdn. Bhd. (SMK Malaysia)

SMK Malaysia fitted heat retention covers to the cylinders of all 23 of its molding machines. The use of these covers maintains the cylinders at a high temperature, increasing thermal efficiency. This initiative has reduced power consumption by 9%, and is expected to reduce CO<sub>2</sub> emissions by 77.6 t per year.

In addition, the effect in controlling the radiation of heat from the cylinders during operation prevents increases in the temperature of the workplace, improving cooling efficiency.



Molding machine cylinder with heat retention cover

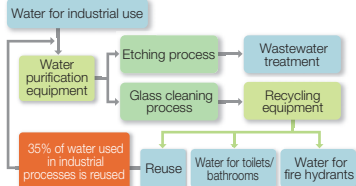
## SMK Electronics (Phils.) Corporation (SMK Philippines)

SMK Philippines has revised its system for the reuse of wastewater from the touch panel production process.

Up to the present, only the wastewater from some glass cleaning machines has been reused, being used as water for toilets and fire hydrants and employed in the factory.

The company reexamined the types of glass cleaning machines, in August 2011, from which wastewater could be reused enabling approximately 35% of the water consumed in the production process to be reused. The volume of water saved by reuse will reduce the company's water consumption by 12,100 kℓ per year.

This is equivalent to the emissions from approximately 1,200 10-t trucks.



Efforts to reuse resources and reduce CO<sub>2</sub> emissions will continue in future, with the company seeking to realize a zero emissions workplace.

## SMK Electronics (Shenzhen) Co., Ltd. (SMK Shenzhen)

SMK Shenzhen (China) has introduced equipment to improve the power factor of the power sources supplying electricity to its factory. A poor power factor results in reactive power consumption, and this excess power consumption has a negative impact on both electricity fees and CO<sub>2</sub> emissions.

The introduction of this equipment has increased the power factor (COS $\phi$ ) from 0.85 to 0.98, representing an improvement of approximately 25% in power consumption, and a reduction of 6.9 t per year in CO<sub>2</sub> emissions.



Equipment to increase power factor

## SMK Electronics (Dongguan) Co., Ltd. (SMK Dongguan)

### [ Introduction of Equipment for Reuse of Plating Wastewater ]

The SMK Dongguan (China) introduced equipment using reverse osmosis membranes to enable wastewater from plating to be reused, and commenced test operation from December 2011. This initiative required an investment of 1.26 million RMB, but will make it possible to reuse 18 m<sup>3</sup> of the 30 m<sup>3</sup> of water used per day in the company's electroplating facility, reducing water use by 4,500 m<sup>3</sup> per year (10,305 RMB per year).

The introduction of this equipment has enabled the company to make a contribution to the wastewater reuse policy being advanced by the Chinese government.

The company intends to continue working in future to realize environmentally friendly production processes.



Equipment for reuse of electroplating wastewater

### [ Factory Visit Events ]

In fiscal 2011, we held two factory visit events for employees' families.

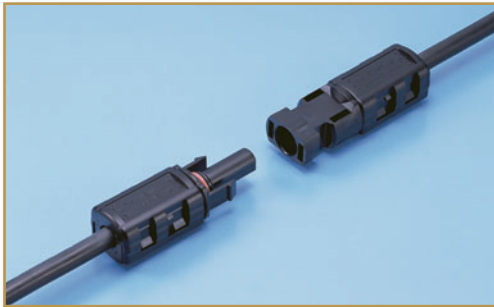
Following a lively welcoming ceremony and a tour of the factory, visitors were introduced to our environmental improvement activities and offered brief lessons on climate change and the recycling of resources. Participating children greatly enjoyed the events, which allowed them to get to know the place where their father or mother works in addition to learning many new facts.

The development of our company and our ongoing environmental preservation activities are not the result of our employees' efforts in isolation; the understanding and support of their families is also essential.



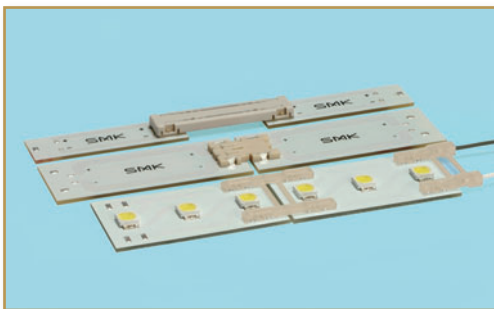
Commemorative photograph of factory visit event

SMK has introduced an environmental management system based on ISO 14001, the international standard, at all of our Japan sites and overseas works. Throughout the entire cycle from material use to disposal of waste, SMK makes thorough reviews from the standpoint of environmental preservation and is promoting development and design premised on the 3Rs of Reduce, Reuse, and Recycle.



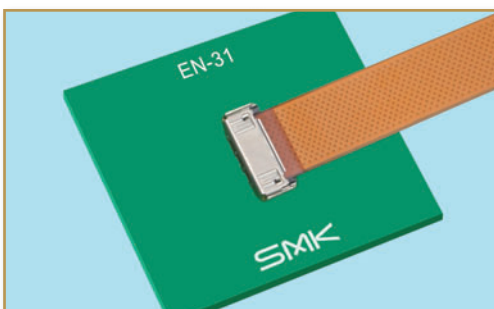
### Connector for Photovoltaic Modules

These connectors link photovoltaic modules with cables. The original multi-point contact structure assures an excellent contact performance. The original water-tightness structure (top and bottom cover system) facilitates cable waterproofing with easy operation without tools. The connectors have UL and TÜV certifications. Available in a wide variety of configurations, such as splitters.



### Connectors for LED Lighting: LT Series

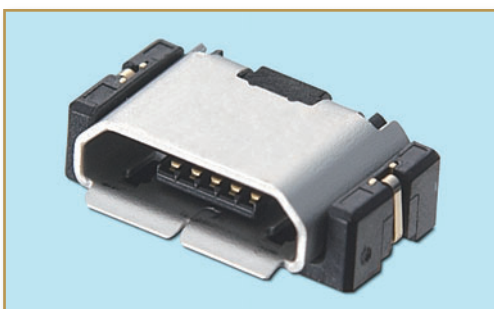
Connectors for LED lighting, a type of illumination that offers an energy-saving benefit. The lineup includes a total of five types of connector, for base lights, line lights, and LED bulb. The connectors conform to IEC standards and the stipulations of the Electrical Appliances and Material Safety Law, and their design takes safety and heat resistance into consideration by ensuring sufficient creepage distance and air clearance.



### FPC connectors for High-Speed Transmission: EN-31 Series

0.3-mm pitch FPC connectors compatible with products such as digital home electronic equipment and IT devices in which signal transmission speeds are increasing.

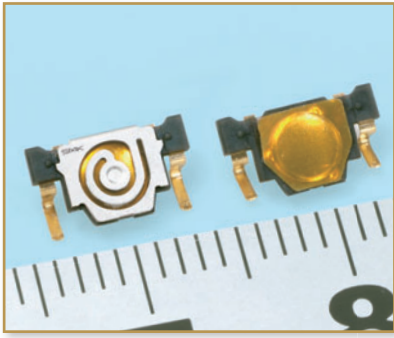
The connectors are compatible with the MIPI / D-PHY standard for high-speed interfaces, and are ideally suited to realizing high-speed transmission in mobile devices. The product design and the material selection take RoHS Directive and halogen-free into account.



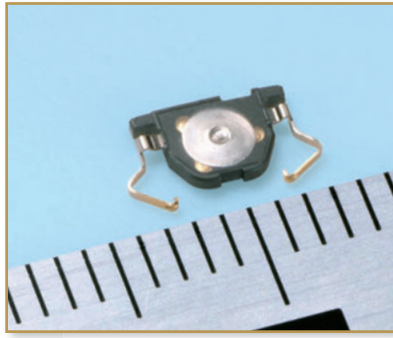
### Micro USB Connectors (Spring Contact Terminal)

Micro USB connectors for use in smart phones, mobile telephones, etc.

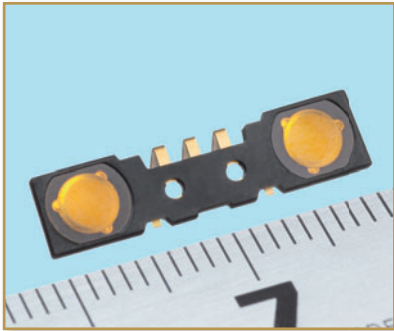
The spring terminals allow these to be pushed to the PWB without using solders. The product design and the material selection take RoHS Directive and halogen-free into account.



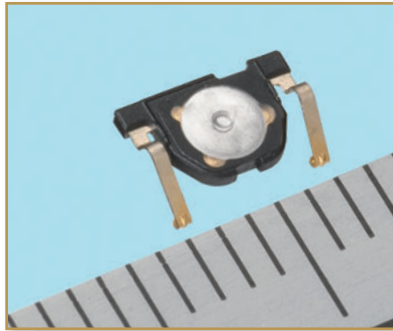
(1)1-dome switch



(2)Mini 1-dome switch



(3)Double-dome switch



(4)Mid-mount mini 1-dome switch



## Dome Switch Series

- (1)1-dome switch
- (2)Mini 1-dome switch
- (3)Double-dome switch
- (4)Mid-mount mini 1-dome switch

Switches that are widely used in smart phones and other mobile devices.

The use of "spring-contact" terminals enables the switches to be mounted without using solders, making these environmentally friendly products.

The switches are inserted in the side of the set case, and the connection is made by pressing the terminal against the PWB.

With a full line-up available, including miniature, double-dome and mid-mount types, these switches can be expected to find a wide variety of applications in future.



## AC Adapter

A 50W/20W-compatible AC adapter that conforms to international safety and EMC regulations and features a unique quasi-resonant circuit configuration for low-noise and low-loss operation.

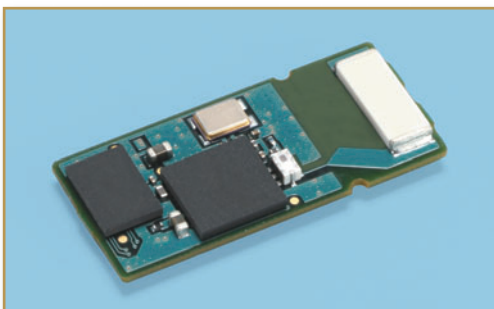
In addition, a unique start-up circuit design ensures a stable power supply when used with motor drives and other devices requiring high current at start-up.

The adapter also conforms to energy efficiency regulations that have come into effect in the U.S., Canada, Australia, the EU and other areas as environmental preservation measures.



## Touch Panels

We are proceeding with the development of touch panels selecting transparent conductive films using carbon nano-tubes, organic conductive polymers and other materials to replace indium tin oxide (ITO). If it is possible to apply these films, we will be able to reduce the quantity of ITO, which contains the rare metal indium, used in our products. Because these substitute films display greater durability than indium films, they will contribute to the miniaturization of products, for example by enabling design that reduces the frame size.



## Wireless Module

In addition to low power operation thanks to sophisticated power management functions in this wireless module, the development of the Bluetooth® serial-port adapter allows wired connections to become wireless, reducing resource use.



# SMK Corporation

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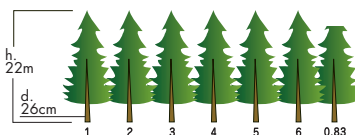
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**reducing CO<sub>2</sub> emissions by 95.24kg.**



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95.24kg is same as quantity of CO<sub>2</sub> which a 6.83 cedar of 50 years old (h.=22m/d.=26cm) absorbs for one year.

(source:forestry report 1997, Forestry Agency of Japan)