



# Environmental Report

# 2017



# Handing Over the "Baton for the Future" to the Next Generation.

The United States of America's announcement of withdrawal from the Paris Agreement (an international agreement to mitigate global warming) has shocked the world. Since developing and developed countries alike from among 196 countries and regions finally got off to a start with the same goal to mitigate climate change, I cannot help but be concerned with the spread of repercussions due to this move by the US.

However, the Paris Agreement continues to be supported as until today no other country has followed the same path as the US by withdrawing from the agreement. The Japanese government is currently preparing the Long-term Low-carbon Vision, which aims to reduce greenhouse gas emissions by 80% by 2050. In line with this vision presented by the government, the SMK Group will continue to focus on harmonizing corporate growth and environmental conservation as a priority issue.

In recent years, more people are placing value on spiritual wealth and relaxed living than on material wealth. People are shifting over from the idea of owning to the idea sharing. In spite of various background factors, such as prolonged economic recession in developed countries, people are taking a growing interest in waste issues caused by mass consumption which started from the period of high economic growth, frequent abnormal weather, etc.

These reflected values created by a mindset focused on the planet. These changes in values will lead to the development of new technologies and also change the way how business is done.

The SMK Group has vision "Challenge, Creativity, Solutions." established for the Medium-Term Business Strategy 2020. In the field of environmental conservation as well, efforts to develop eco-friendly products and to create environment-focused business markets and businesses are also leading to the development of the company into one which solves problems for customers and society, and to growth as a company that contributes to global environmental conservation.

Surely all of us want to share this beautiful planet with people living in the future. We can change the future by facing and taking actions to each and every social issue and global environment related problem. In essence, I believe that as a solutions company SMK's challenge is to reliably hand over the "baton for the future" to the next generation.

July, 2017

President, Chief Executive Officer  
and Chief Operating Officer

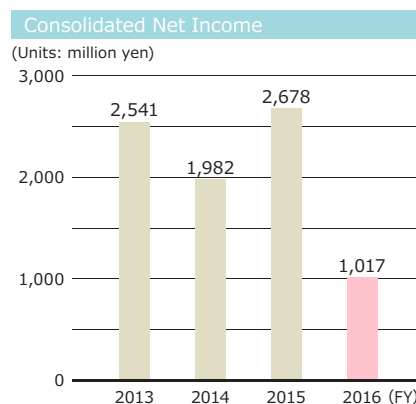
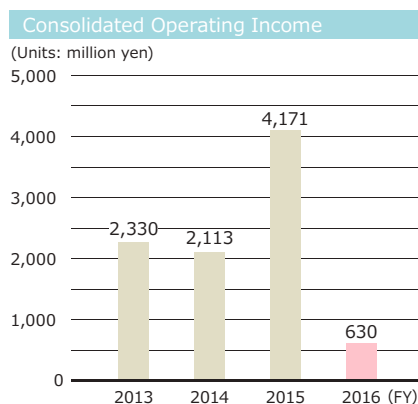
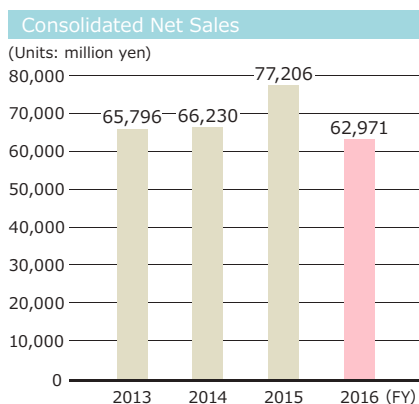
**Yasumitsu Ikeda**

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## Corporate Profile (as of March 31, 2017)

<b>Name</b>	SMK Corporation
<b>Established</b>	April 3, 1925
<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>	6,188 (group-wide)
<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>	High-frequency coaxial connectors / FPC-to-board connectors / Board-to-board connectors / Jacks / Remote controls / Switches / Wireless modules / Camera modules / Resistive touch panels / Capacitive touch panels / Optical touch panels



## About this Report

**Reporting period** FY2016 (April 1, 2016 – March 31, 2017)

**Scope of calculations** SMK Corporation (nine sites in Japan) and consolidated subsidiaries (two in Japan and 18 overseas)

**CO<sub>2</sub> emissions** CO<sub>2</sub> emission factor for domestic sites: Subject to the standards of the Federation of Electric Power Companies of Japan. Emission coefficients for overseas sites: 2005 – 2011: Subject to the standards of the IEA (International Energy Agency), from 2012 : Subject to the standards of the DEFRA (Department for Environment Food & Rural Affairs). In addition, data for past fiscal years was corrected by updating CO<sub>2</sub> emission factor.

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

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

# Environmental Management

## 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

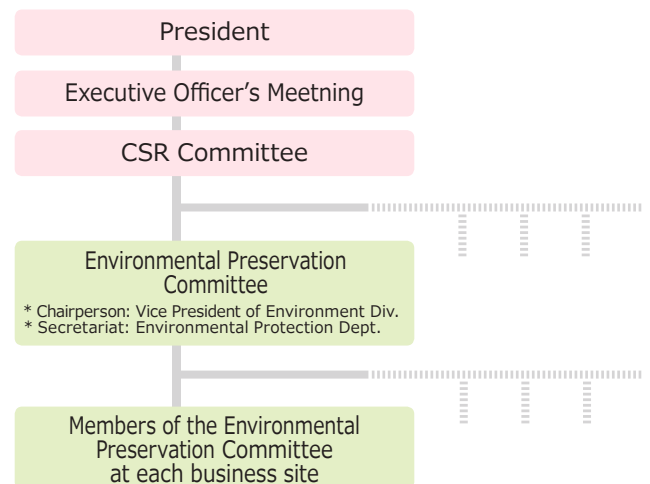
In SMK, the Group policies, targets, and initiatives related to environmental preservation are deliberated upon and determined by the Environmental Preservation Committee, which is chaired by the Vice President of the Environment Division. Major items are subject to deliberation and determination at 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 business partners. Specifically, we request our business partners to pledge not to use any environmental hazardous substances prohibited by SMK, and to put in place ISO 14001-based systems. We visit business partners who have not obtained ISO 14001 certification to check on the status of their environmental preservation activities, and to suggest any necessary improvements.

## Organizational Structure for Environmental Preservation



Chemical leak response training (SMK Philippines )



Environment internal auditor training (Head Office )



Inspection of product waste disposal site (Toyama Works, Japan)

# FY2016 Environmental Preservation Activities

## Preventing Global Warming

CO<sub>2</sub> emissions per unit of production increased mainly due to full-scale operation of newly established production facilities at overseas works that had increased in floor area over the previous fiscal year. Total CO<sub>2</sub> emissions also did not achieve the target with results similar to those of the previous fiscal year.

## Preserving Biodiversity

SMK is collecting information on measures suitable for activities with our business partners.

## Effective Use of Resources

Although promotion of activities aimed at eliminating MUDA (wasteful and/or inefficient areas, actions, materials, etc.) in manufacturing resulted in reaching our total industrial waste discharge target, our industrial waste discharge per unit of

production increased. Landfill waste increased due to an increase in the disposal of garbage of employees, the number of which increased at overseas works, which surpassed expectations.

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

SMK has created a roadmap designed for expanding the number of users of its bill of materials (BOM) information system. In the future, we plan to develop and establish the system based on the roadmap to include parties overseas.

## Strengthening Eco-friendly Design Approach

We established an integration policy aimed at integrating product assessment and our eco-product management system. In FY2017, we will newly establish issue specific promotion working groups in line with the integration policy.

Nature of initiative	FY2016		Self-assessment
	Target	Actual result	
Preventing global warming	CO <sub>2</sub> emissions per unit of production value*1: Estimated increase of 2% relative to FY2015. Target: 0.48 t-CO <sub>2</sub> /million yen	28% increase (0.6 t-CO <sub>2</sub> /million yen)	C
	Total CO <sub>2</sub> emissions: 1% reduction relative to FY2015. Target: 33,386 t- CO <sub>2</sub>	Virtually the same level as in FY2015 (33,646 t- CO <sub>2</sub> )	B
	Review of SMK standards for LCA (including carbon footprint)	Additional review of Scope 3 trial and examination of officially announced companies status and examination of officially announced company business conditions.	C
Preserving biodiversity	Review of activities related to purchasing with preservation of biological diversity in mind	Acquisition of information, Activities under examination	C
Effective use of resources	Industrial waste discharge per unit of production value*2: Same as FY2015 . Target: 0.019 t/million yen	21% increase (0.023 t-CO <sub>2</sub> /million yen)	C
	Total industrial waste discharge amount: Decrease of 1% relative to FY2015. Target: 1,323 t	3% decrease (1,296 t)	A
	Landfill waste amount: Estimated increase of 5% relative to FY2015. Target: 99t	26% increase (118 t)	C
Effective responses for the management of environment-related substances	Efficient administration of the system for register information on material composition to support to comply with EU-REACH regulation	Establishment of roadmap for data management system development	B
Strengthening eco-friendly design	Enhancement of product assessments	Establishment of policy for integration of product assessment and our eco-product management system	B

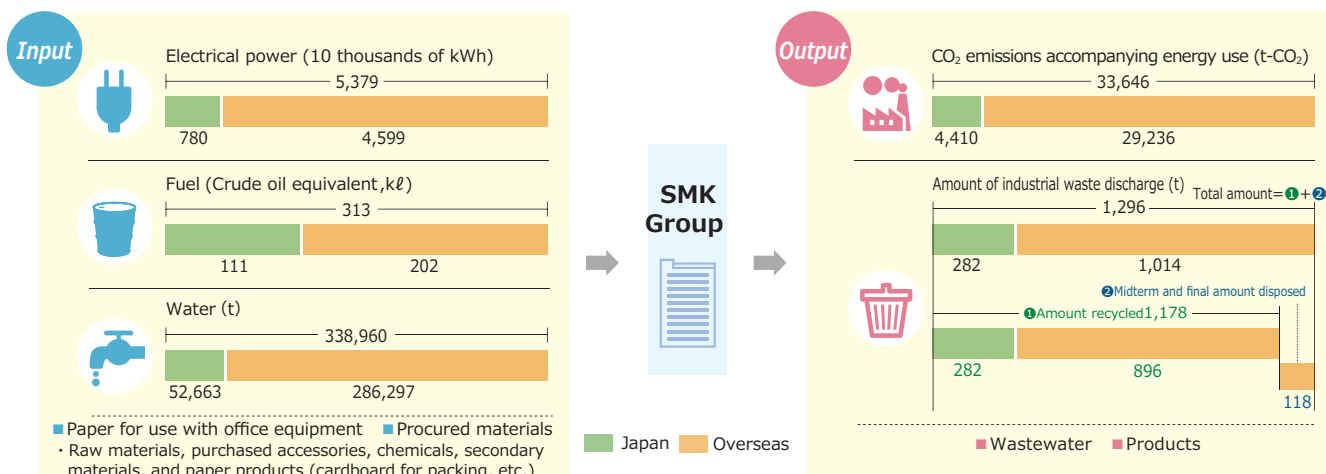
\*1: CO<sub>2</sub> emissions per unit of production value = CO<sub>2</sub> emissions divided by production

\*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 work to track, analyze, and reduce the material balance (environment footprint) of each process throughout the Group, from product design and development to manufacturing and sales.



# Energy and Resource Saving Results

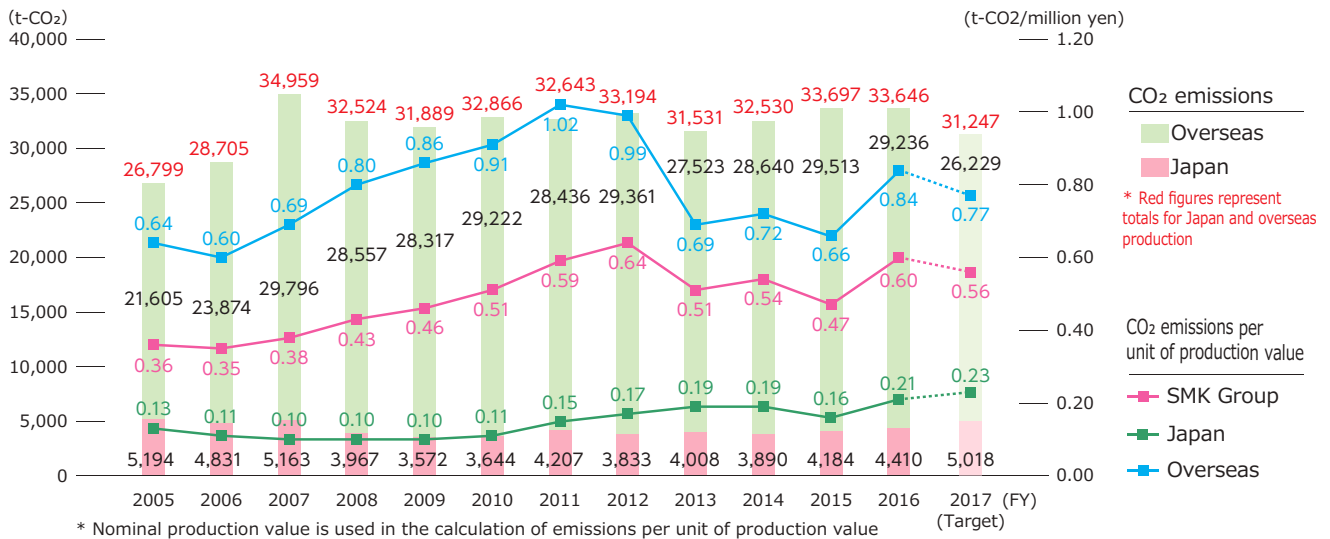
SMK aims to improve efficiency of its energy usage as an important management policy to help prevent global warming. We are also working to reduce the discharge of industrial waste and achieve zero emissions (i.e. zero landfill waste) by using out resources more effectively.

## Energy-Saving Results

SMK increased its CO<sub>2</sub> emissions per unit of production value (128% against the previous fiscal year) and slightly decreased its total CO<sub>2</sub> emissions (100% against the previous fiscal year). The reason for the increase in CO<sub>2</sub> emissions per unit of production value is explained in the section "Environmental Preservation Activities."

	Year on Year	
	Japan	Overall SMK Group
CO <sub>2</sub> emissions per unit of production value (nominal production value)	131%	128%
CO <sub>2</sub> emissions	105%	100%

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



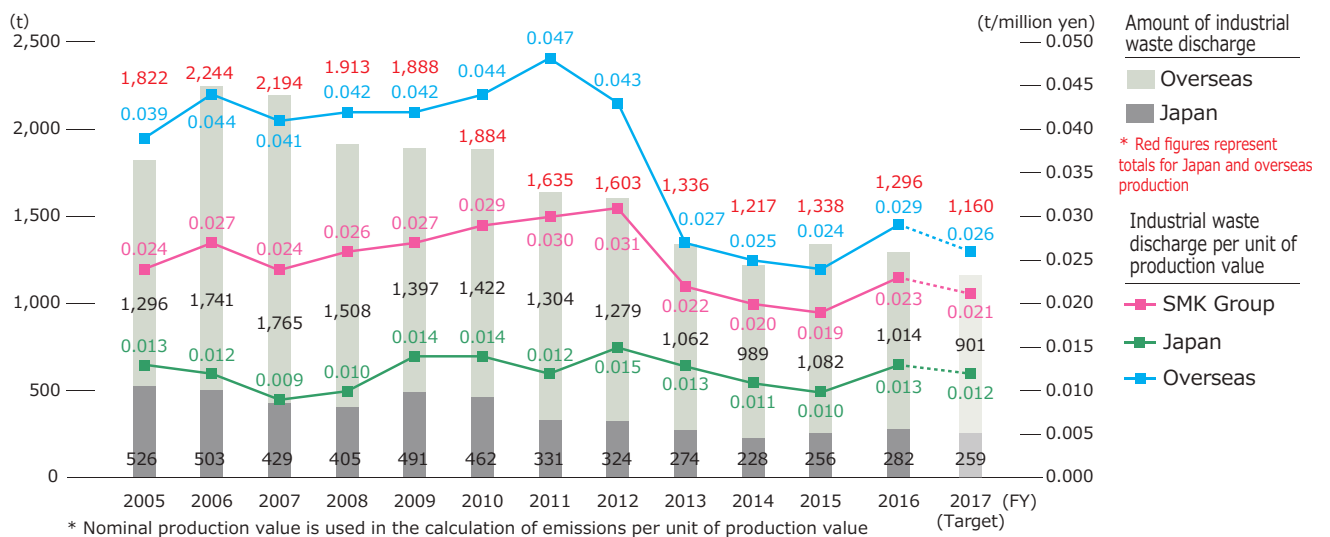
## Resource-saving Results

© Although SMK's increased its industrial waste per unit of production value (121% of the value of the previous fiscal year), the amount of industrial waste discharge decreased (97% of the value of the previous fiscal year).

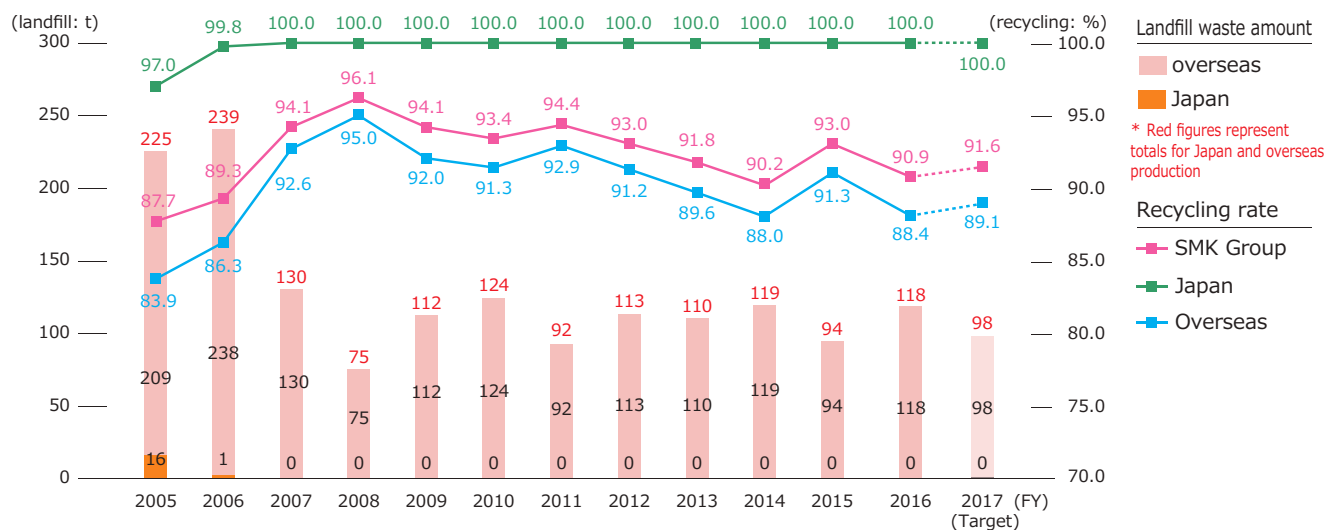
© As explained in the section "Environmental Preservation Activities," landfill waste increased (126% of the value of the previous fiscal year) due to an increase in the disposal of garbage at overseas works.

	Year on Year	
	Japan	Overall SMK Group
Industrial waste discharge per unit of production value (nominal production value)	130%	121%
Overall industrial waste discharge amount	110%	97%
Landfill waste amount	—	126%

## Amount of industrial waste discharge



## Amount of landfill waste and recycling rate



## Environmental Accounting

### Environmental Preservation Costs and Benefits

(Units: million yen)

Category	Major Activities	Environmental Preservation Costs				Economic Benefits		Environmental Preservation Benefits (Quantity)	
		Investments		Expenses		Amount	YoY	Consumption/Output Savings	YoY
		Amount	YoY	Amount	YoY				
Business area costs	Pollution Prevention	0.7	11%	29.1	83%	0	—	Use of Environmentally Hazardous Substances: -37.5t	—
	Global environmental preservation	22.7	57%	54.8	91%	16.8	53%	CO <sub>2</sub> emissions per unit of production value: -0.13 t-CO <sub>2</sub> /million yen	—
	Resource circulation	0	—	40.1	153%	106.9	119%	Landfill waste amount: 24t Industrial waste discharge per unit of production value: -0.0045 t/million yen	—
	Sub-total	23.4	51%	124.0	102%	123.6	102%	—	—
Upstream/Downstream	Green procurement, etc.	0	—	0.3	109%	0	—	—	—
Administration	X-ray fluorescence spectrometer replacement, activities which aim to guarantee eliminating the use of environmentally hazardous substances in products, environmental management promotion, etc.	24.8	98%	193.3	94%	0	—	—	—
R&D	Development of environmentally friendly products, etc.	0	—	17.6	70%	0	—	—	—
Social activities	Initiatives to expand green areas at works, etc.	0	—	7.7	89%	0	—	—	—
Environmental damage	—	0	—	0	—	0	—	—	—
<b>Total</b>	—	<b>48.2</b>	<b>68%</b>	<b>343.0</b>	<b>95%</b>	<b>123.6</b>	<b>102%</b>	—	—

**Environmental preservation costs:** Investments and expenses decreased from the previous fiscal year. Major investments were for the adoption of energy-saving equipment (including LED lighting and renewal air conditioning equipment) at many works of SMK, Environmental hazardous substances.

**Economic Benefits:** Remained unchanged from the previous year. Main economic benefits are profits on sales of energy from a photovoltaic power generation system installed last year and sales revenue of the waste with value.

**Environmental Preservation Benefits (Reduction of waste):** Although environmental improvement activities were promoted, SMK's CO<sub>2</sub> emissions per unit of production value, landfill waste amount, and industrial waste per unit of production value worsened.

### Actual results of Power Generation at photovoltaic power plant

1,320,000 kWh of electricity was produced by photovoltaic power plant owned by SMK and its subsidiaries in fiscal 2016. This reduced CO<sub>2</sub> emissions by 414 tons.

\* CO<sub>2</sub> emission factor used in accordance with Industry Independent Rules of the Japan Photovoltaic Energy Association.



# Environmental Preservation Activity Reports

## Environmental Communication

### Introduction of Environmental Preservation Activities and Hands-on Manufacturing Experience

SMK held the Introduction of Environmental Preservation Activities and Hands-on Manufacturing Experience, which was co-sponsored by the Shinagawa Ward Environmental Information Activities Center. 19 elementary school students from the region as well as their family members participated in the program which taught the children about the importance of environmental preservation as well as the joy of manufacturing.

The introduction of environmental preservation activities portion of the program provided explanation about global warming prevention through reduction of CO<sub>2</sub> emissions, the importance of resources through the concept of 3R (reduce, reuse, and recycle), and manufacturing of products without using hazardous substances. After the explanations, information was presented about the various environmental preservations activities which SMK carries out globally.

The hands-on manufacturing experience portion of the program allowed participants to create electronic handicrafts using eco-friendly and recycled materials. SMK will continue this effort in the future in order to heighten children's interest in enjoyable environmental preservation activities.

Head Office



### Environmental Workshop

SMK Mexico visited a regional kindergarten to hold an environment-related event in which more than 200 children participated.

Children learned about trash separation, energy savings, the importance of water, and similar topics through this hands-on program.

In addition, SMK held a recycling workshop at Environment Expo 2016, which was held by the State Government of Baja California.

SMK  
Electronica  
S.A. de C.V.  
(Mexico)





## Effective Utilization of Resources



SMK  
Electronics  
(Phils.)  
Corporation



### Donation of School Chairs Made from Recycled Wooden Boxes

SMK continues to donate school chairs and drawing books produced in-house from wooden boxes used for packaging and protective paper for glass to suburban elementary schools in the region.

Until now, SMK has been able to provide children with 550 school chairs as well as 550 drawing books.

There are many schools in which children sit on the floor and study due to a lack of school chairs.

SMK hopes to help children so that they can learn very much in a better school environment and draw their dreams.



## Community Clean-up



SMK  
Electronics  
(Malaysia)  
Sdn. Bhd.



Under the slogan "Climb for Green Environment !", participants in the community clean-up activity climbed soaring Broga Hill while collecting trash found on the way. 132 people, comprised of SMK employees and members of their families, participated in the activity. The participants continued along the clean hiking course and finally reached the summit which provided an unbroken view of the tropical rainforest and views of our town, prompting them to think more about the importance of such nature.

# Environmental Preservation Activity Reports

## Community Clean-up

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



47 employees participated in a volunteer-based community clean-up activity in Qifeng Park held in April and June.

A member of a family that the participants met during the cleaning activity said, "They are picking up litter in order to make our city a clean place despite it being a holiday. This means that we shouldn't litter." Seeing that interest in making the city beautiful had spread increased the joy of the activity.

46 SMK employees participated in a community clean-up activity along the city streets in front of Toyama Works. Although the streets normally have very little litter, many dead leaves had accumulated in the gutters and weeds were growing. Participants were able to collect an amount of refuse larger than initially expected.

Toyama Works (Japan)



## Conservation of our nature

SMK Electronics (Phils.) Corporation

### Tree Planting Activity

In cooperation with local city administration, employees of SMK Philippines planted 200 trees in all which included dwarf Poinciana and Burmese rosewood seedlings. Thirty employees from the company participated in the activity.



Hitachi Works (Japan)



### Participation in the "Green Ownership System"

The "Green Owner System" is a forestry system aimed at promoting national forest maintenance by the Forestry Agency. In October 1991, SMK entered an agreement to cover part of the expenses for the development of a forest located in Ibaraki Prefecture, home of our Hitachi Works. Now that 25 years have passed, the seedlings have grown enormously and constitute a rich forest.



# Creation of Environmentally Friendly Products

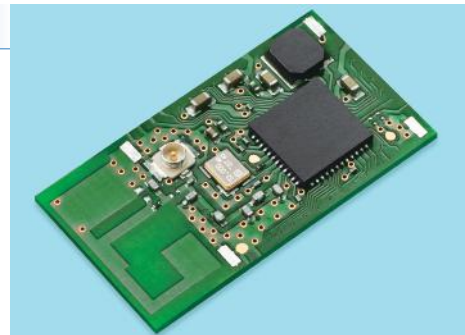
## Micro USB Connectors (Spring Terminal)

New micro USB connectors for use in smart phones, mobile telephones, and similar products. The spring terminals allow the connectors to be directly installed to circuit boards without using solder. RoHS compliant, halogen-free design, using carefully selected materials.



## Miniature Thread-compliant RF Module

SMK has developed a miniature low power RF module with built-in antenna. Since it supports the "Thread" networking protocol, the product is able to provide a high degree of low power performance. Use of this product in "Internet of Things" (IoT) and "Machine to Machine" (M2M) in the home network and industry fields will contribute to energy savings.



## "Wing Touch MM" Capacitive Touch Panel for Large and Curved Surfaces

This capacitive touch panel utilizes a metal mesh sensor with low resistance and excellent conductivity compared to ITO sensors, which are widely found in conventional touch panels.

An eco-friendly touch panel without indium, a rare metal used in ITO sensors, it can be used for screens up to 34 inches for industrial device and digital signage applications and can be attached to curved cover panels.



## SIGFOX Module (WF923)

The SIGFOX module incorporates a power management function to save power. It is used in fields such as acquisition of various sensor data, power consumption monitoring, contributing to energy savings.



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