



# Environmental Report

# 2019



### Make changes for New SMK

Japan has entered a new era, "REI-WA" in this year, 2019.

While they are translated in various ways by foreign media, if "REI" and "WA" are taken to signify "order" and "harmony," respectively, the values of "order" and "harmony" also apply to the attitudes toward the global environment facing the world.

The Paris Agreement (an international agreement to mitigate against global warming) calls for all countries and regions to work toward the reduction of greenhouse gases under common rules. The conflicts of interest between developed and developing countries that could not be resolved by the Kyoto Protocol are being overcome with international harmony.

At the G20 Summit held in Japan in June of this year, the realization of a virtuous circle of environment and growth, and measures for marine plastic waste were discussed at the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth, the first meeting of its kind to be held at a G20 Summit.

Now, people around the world are facing global environmental issues and pursuing a sustainable society while trying to harmonize their values with the environment.

We believe that innovative technology and innovation are essential to tackle various global environmental problems. The development of IoT and AI(Artificial Intelligence) technology has revolutionized various fields of society and has great potential for us. In order to connect this to our new business, completely new challenges are being sought without tied to conventional methods.

This is the practice of "Challenge courageously for higher

goals without fear of failure" —one of SMK's action guidelines.

Of course, new challenges are accompanied by difficulties. We do not think it as "unbreakable wall", but rather consider it positively as "a step for creating new values for SMK". And under this belief, we promise to continue to challenge.

On the other hand, corporate social responsibility regarding waste discharge is becoming more and more serious. SMK is working on waste management as a cornerstone of all environmental protection activities. The effective use of resources (promotion of the 3Rs) is a natural responsibility of a company, but we will take more responsibility and work on compliance and maintaining the social order more than ever.

SMK carries out corporate activities under the management strategy vision "Challenge, Creativity, Solutions".

In the field of environmental conservation, SMK also works on developing environmentally conscious products and creating environmental business markets and businesses. And, through these activities, SMK will continue to work hard to grow into a company that contributes to the future in harmony with the global environment and society.

President, Chief Executive Officer  
and Chief Operating Officer

**Yasumitsu Ikeda**

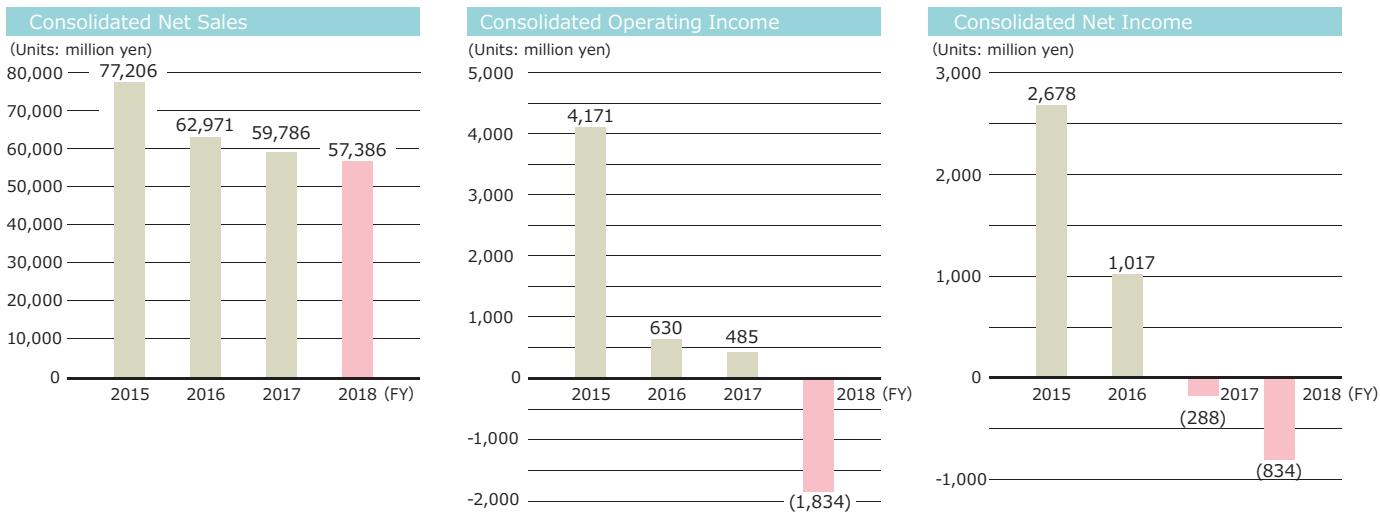
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# Corporate Profile

(as of March 31, 2019)

Name	SMK Corporation
Established	April 3, 1925
Primary Businesses	Manufacturing and sales of electronic components for use in electrical equipment, communications equipment, electronic equipment, industrial machinery, IT equipment and other applications.
Capital	7,996 million yen
Number of Employees	5,828 (in the Group)
Head office	5-5, Togoshi 6-chome, Shinagawa-ku, Tokyo 142-8511, Japan TEL: +81-3-3785-1111 FAX: +81-3-3785-1068 URL: <a href="https://www.smk.co.jp/">https://www.smk.co.jp/</a>
Major Products	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



## About this Report

**Reporting period** FY2018 (April 1, 2018 – March 31, 2019)

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

**CO<sub>2</sub> emissions** Electric CO<sub>2</sub> emission factor for domestic sites: The Electric Power Council for a Low Carbon Society. Electric CO<sub>2</sub> emission factor 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). CO<sub>2</sub> emissions for fuels are subject to the standards found in official announcements by the Ministry of the Environment. 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.

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

# Environmental Management

## SMK Environmental Charter

### 1. Basic Philosophy

The SMK Group pursues environmental conservation 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 Conservation

In SMK, the Group policies, targets, and initiatives related to environmental conservation are deliberated upon and determined by the Environmental conservation 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 Conservation 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

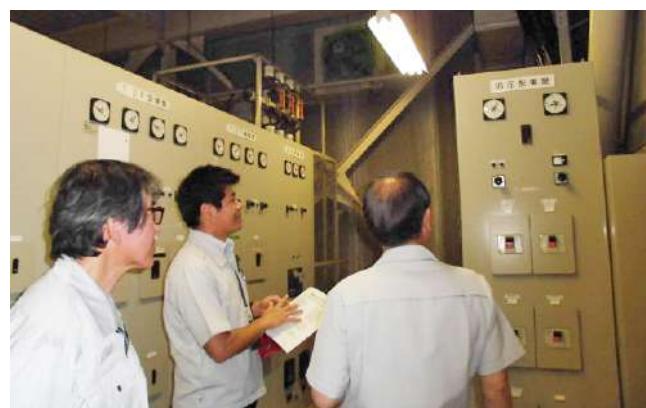
SMK has an ISO 14001-based environmental management system in place in all its production facilities, domestic and overseas. Since fiscal 2007, in addition to individual activities at each site, we have been setting targets and themes to be shared by all members of the SMK Group, reinforcing linkage among our sites, and working to strengthen group-wide systemic arrangements.

SMK's environmental conservation 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 conservation activities, and to suggest any necessary improvements.



Environmental hazardous substances auditor training  
(SMK Electronics (Phils.) Corporation)

### Organizational Structure for Environmental Conservation



Energy saving patrol (Toyama Works, Japan)



Waste disposers inspection  
(Hitachi Works, Japan)



Emergency drill  
(Head Office)

# FY2018 Environmental Conservation Activities

## Preventing Global Warming

The initial plan could not be achieved at some overseas works, because of the electricity consumption increased with the launch of new project products, and CO<sub>2</sub> emissions per unit of output and total CO<sub>2</sub> emissions increased simultaneously.

## Conserving Biodiversity

SMK-J held an environmental learning course for elementary school children in the neighborhood. Through this course, they understood the relationship between environmental conservation and biodiversity and its importance.

## Effective Use of Resources

As a result of promoting waste removal activities called "MUDA-tori activity" in their manufacturing process, they could achieve plans for both the CO<sub>2</sub> emission per unit and

the total CO<sub>2</sub> emissions. However, the amount of landfill disposal increased because local contractor who had previously outsourced waste recycling have withdrawn from the business in Philippines. Recruitment of new recycling contractor is urgently required.

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

Continued registration of new material configuration data, and realized the enhancement of our product chemical substance survey system.

## Strengthening Eco-friendly Design Approach

Changes were made to our management system to integrate product assessment and eco-products.

Nature of initiative	FY2018		Self-assessment
	Target	Actual result	
Preventing global warming	CO <sub>2</sub> emissions per unit of production value*1: Decrease of 100% relative to FY2017. Target: 0.60t-CO <sub>2</sub> /million yen	7% increase (0.64t-CO <sub>2</sub> /million yen)	C
	Total CO <sub>2</sub> emissions: 4% reduction relative to FY2017. Target: 34,048t-CO <sub>2</sub>	5% decrease (34,186t-CO <sub>2</sub> )	C
	Review of SMK standards for LCA (including carbon fingerprint)	Additional review of Scope 3 trial and examination of officially announced companies' status and examination of officially announced business conditions.	C
Preserving biodiversity	Creating awareness regarding preservation of biodiversity	Held environmental learning courses at domestic and overseas sites	A
Effective use of resources	Industrial waste discharge per unit of production value*2: 4% reduction relative to FY2017. Estimated: 0.026t/million yen	4% increase (0.024t-CO <sub>2</sub> /million yen)	A
	Total industrial waste discharge amount: Decrease of 10% relative to FY2017. Estimated: 1,488t	4% increase (1,291t)	A
	Landfill waste amount: Decrease of 3% relative to FY2017. Target: 95t	71% decrease (168t)	C
Effective responses for the management of environment-related substances	Register BOM information and efficient administration of the system to support EU-REACH directives	Establishment of cross-departmental working group to promote increased efficiency	B
Strengthening eco-friendly design	Enhancement of product assessments	Establishment of integration evaluation standards for product assessment and eco-products	A

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

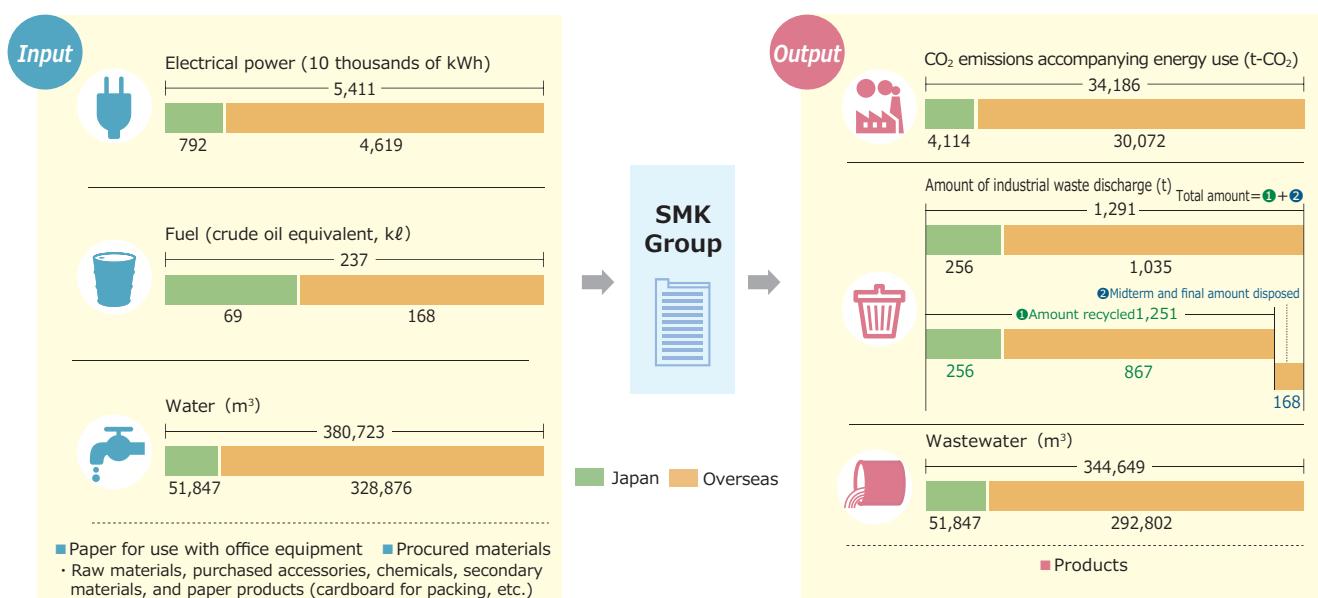
\*2: Industrial waste discharge per unit of production value = industrial waste discharge divided by production value

Self-assessment : A : attained B : insufficiently attained

C : not attained

## Material Balance

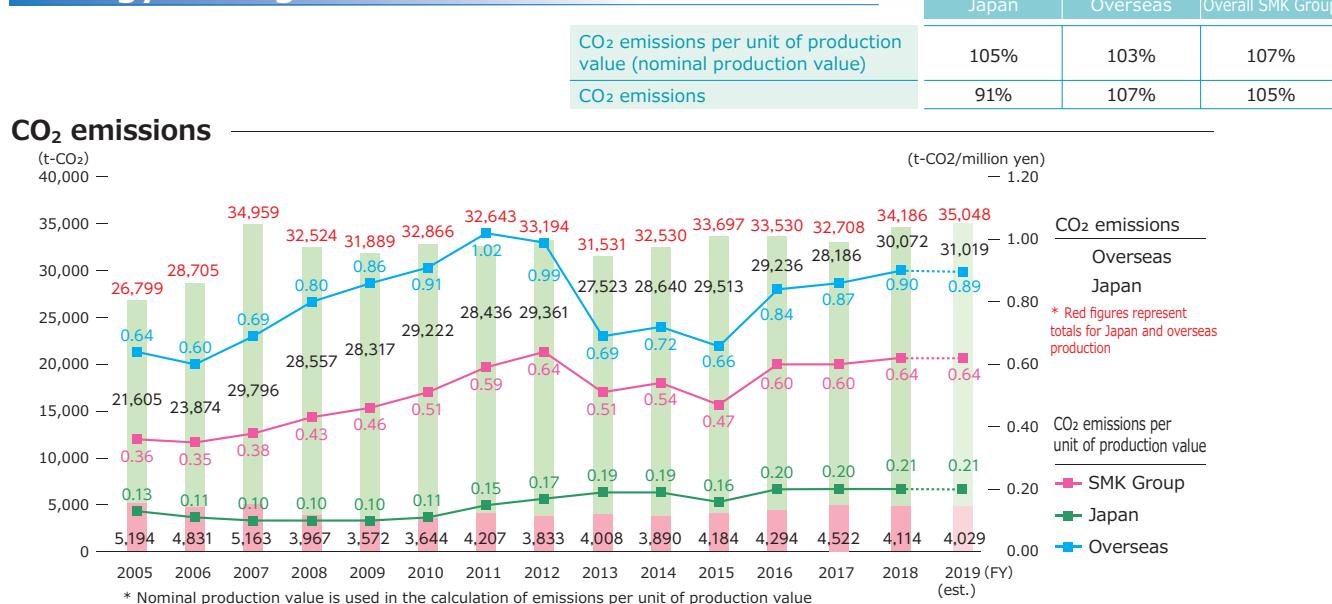
At SMK, we work to track, analyze, and reduce the material balance (environment footprint) of each process throughout the Group, from product design and development to manufacturing and sales.



# 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 our resources more effectively.

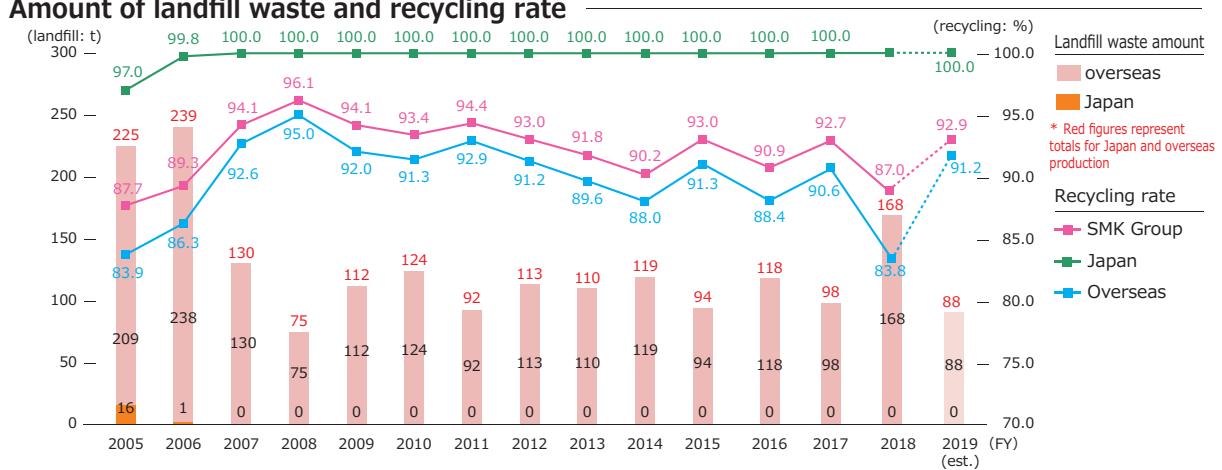
## Energy-Saving Results



## Resource-saving Results



## Amount of landfill waste and recycling rate



# Environmental Accounting

## Environmental Conservation Costs and Benefits

(Units: million yen)

Category	Major Activities	Environmental Preservation Costs				Economic Benefits		Environmental Preservation Benefits (Quantity)		
		Investments		Expenses						
		Amount	YoY	Amount	YoY	Amount	YoY	Consumption/Output Savings	YoY	
Pollution Prevention	Operation and maintenance, etc. of facilities used to prevent pollution	70.9	1,837%	33.1	118%	0	—	Use of Environmentally Hazardous Substances: -6.1 t	122%	
Global environmental preservation	Adoption of energy-saving equipment, efficient operation of air conditioning and other such equipment as well as related maintenance, inspection, etc.	17.2	92%	46.2	97%	25.5	117%	CO <sub>2</sub> emissions per unit of production value: -0.039 t-CO <sub>2</sub> /million yen	650%	
Resource circulation	Appropriate processing and recycling promotion, etc. of industrial waste discharge	0	—	27.8	103%	170.5	115%	Landfill waste amount: 70t Industrial waste discharge per unit of production value: -0.006 t/million yen	—	
Sub-total	—	88.1	391%	107.1	105%	195.9	116%	—	—	
Upstream/Downstream	Green procurement, etc.	0	—	0.4	57%	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.	0	—	176.8	90%	0	—	—	—	
R&D	Development of environmentally friendly products, etc	0	—	18.3	115%	0	—	—	—	
Social activities	Initiatives to expand green areas in local communities and at works, etc.	0	—	7.1	29%	0	—	—	—	
Environmental damage	—	0	—	0	—	0	—	—	—	
Total	—	88.1	167%	309.7	91%	195.9	116%	—	—	

**Environmental conservation costs:** Compared to the previous fiscal year, in FY2018 investments for environmental conservation increased significantly and expenses decreased.

The reason for the increase in investment amount is the introduction of a smoke exhaust system at some overseas works, based on the strengthening of local laws.

**Economic Benefits:** Economic benefits for FY2018 increased from the previous fiscal year. This was the result of an increase in sales revenue of waste with value at overseas works, the effect of reuse of production equipment, and the effect of the sale of electric power generated by photovoltaic power generation systems.

**Environmental Conservation Benefits (Reduction of waste):** As for environmental conservation benefits, although industrial waste discharge per unit of production value decreased as a result of its environmental improvement activities, but the CO<sub>2</sub> emissions per unit of production value , the amount of landfill waste and the amount of generated environmental hazardous substances all worsened.

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

Photovoltaic power systems owned by SMK and subsidiaries generated 1.26 million kWh of electricity in FY2018. The CO<sub>2</sub> reduction effect was 400 t-CO<sub>2</sub>.

▼ Gunma Prefecture



▼

Ibaraki Prefecture



▼ Philippines Factory



# Environmental Conservation Activity Reports

## Effective Utilization of Resources



### Donation of school chairs made from used wooden pallets

We have been donating school chairs produced within our company from used wooden pallets to local elementary schools. In 2018, we visited two elementary schools and donated 50 school chairs as well as three sets of waste bins and dustpans made from empty cans to each school.

The school chairs had a table attached on the right side normally, but we were concerned that it might be difficult for left-handed students to sit in this position for long periods of time while writing, leading to back problems.

So, this time we also produced eight chairs with the table attached on the left side.



SMK  
Electronics  
(Phils.)  
Corporation



### Donation of used fluorescent lights

As we progressed with the shift to LED lighting at our factories in the Philippines, we had many fluorescent lights left over that could still be used. So, in June 2018 we donated 50 used fluorescent lights to a local primary school through a project run by elementary school students' parents and guardians aiming to establish an improved learning environment for their children.

Prior to this, the elementary school classrooms and hallways were dimly-lit spaces lacking sufficient lighting. We were able to assist in giving these children a better school life.

### Donation of Waste Material

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

In August 2018, jointly with the Shinagawa Ward Environmental Information Activity Center, we held Introduction of Environmental Conservation Activities and Hands-on Manufacturing Experience.

This program, which is held every summer, teaches children the importance of environmental conservation and the fun of hands-on manufacturing. This time, 20 local primary school children and their families participated.

Head Office



## Environmental Communication

### Factory tour

In August 2018, we conducted a factory tour for the families of our employees, and 20 children participated. We gave them a guided tour of our environmentally friendly manufacturing site and introduced our environmental conservation activities.

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



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

### Environmental EXPO 2018

In October 2018, the Environmental EXPO 2018 was hosted by the government of Baja California, with over 15,000 people in participants. Twenty-five SMK Mexico employees participated and gave a presentation and workshop about reducing plastic waste.



### SMK Summer Camp

In July 2018 we held a summer camp for families of employees, with 60 children participating. During this fun program of events, we conducted time to consider the importance of the global environment.



# Environmental Conservation Activity Reports

## Cleanup activities

### Flower Planting Activity (Shinagawa Ward, Tokyo, Japan)

As a member of the Shinagawa CSR Promotion Association, SMK participated in the Shinagawa Hanakaido flower planting project.

A project managed by an NPO, Shinagawa Hanakaido nurtures rape blossoms and Mexican asters which grow along a 2 kilometer stretch of the Katsushima Canal dyke, which makes the area rich in nature and contributes to the creation of a society which is in harmony with nature.

Head Office



## Cleanup activities

SMK Group is actively engaged in community cleanup activities.

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



SMK America Group



SMK Electronics (Europe)



Toyama Works (Japan)



Hitachi Works (Japan)



## Water conservation

SMK group companies recognize as "Water also one of our important resources", and are promoting activities such as regular inspections of water leaks in water supply facilities, reuse of factory drainage, and educational activities for water conservation. At the same time, we share the beneficial activities of each works within the group and raise the level of our activity.

### Start in-plant production of drinking water

In order to provide safe drinking water for our employees, we have introduced equipment for purifying tap water and treating it with UV light. The water we produce in this way has been certified as hygienic for public consumption, and we carry out water quality inspections regularly.

SMK Electronics (Phils.) Corporation



# Creation of Environmentally Friendly Products

## Micro USB Connectors (Spring Terminal)

This is a micro USB connector for use in smart phones, mobile telephones, and similar products.

This connector uses a structure with springs that press against the circuit board to make contact, thus eliminating the need for solder.



## Mini One Dome Switch

This is a switch for wearable devices with a "spring contact system" that can be mounted without using solder.

By making it possible to mount the switch closer to the PWB (15% distance reduction compared to our conventional model), we succeeded in making the set thinner and more robust.

Because it can be mounted without using solder, this product contributes to environmental conservation.



## CapBeat Touch-MM Cu Mesh Senser Capacitive Touch Panel with Force Feedback

This is a copper mesh capacitive touch panel with force feedback that enables smartphone-like nimble operation even for large display sizes.

In addition to realizing force feedback during input, a feature for which there is strong market demand, this product is an environmentally friendly product because it uses a copper mesh sensor instead of the ITO (indium tin oxide—indium being a rare metal) that is generally used in touch screen sensors.

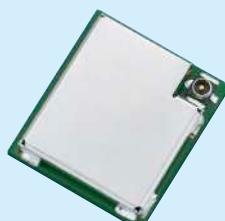


## LR01 Series LoRaWAN® RF Module

This is a LoRaWANR certified module. LoRaWan is one of the wireless communication standards called Low Power Wide Area (LPWA).

Similarly to Sigfox, it can cover wide area communication with low power consumption, and also features environmentally friendly design and material selection, such as chromium-free material for the shield case.

LoRaWAN® read mark is registered trademark owned by LoRa Alliance™. and any use of mark by SMK Corporation is under license.



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