

Environmental Report 2010

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

## Understanding global dynamics and responding to social needs

Currently the Japanese economy is showing signs of recovery in domestic demand. However, the global credit crunch and falling stock prices occasioned by the debt crisis in Europe has left the yen's value unusually high, meaning that the business environment for an exportoriented company remains extremely challenging. But in any circumstance, it is crucial to stay focused on the goal while maintaining a broader perspective.

At SMK, we view environmental preservation as an important management objective, toward which the entire company works together to achieve. Environmentalism means honing our awareness as good "corporate citizens", as well as strengthening our business foundation to eliminate all waste and loss. In order to attain this, we will continue to pursue Zero Defect through "All Quality Aspects on the Job". The loss from a single defect has ramifications far beyond business profit loss: it is the manifestation of a ripple effect passing through procurement, manufacturing, distribution, and retailing, where precious natural resources are wasted.

SMK provides thorough environmental education for each and every employee in our global network, as we work towards becoming a "low-carbon and recycling society", a task facing all humankind.

We also develop many components used in the most advanced ecological equipments. By considering material as well as disposal at the stage of design, we have made efforts to efficiently save energy and natural resources.

Through our environmental preservation activities, we seek to stay in tune with the dynamism around the world and continue to seize new opportunities to flexibly and steadily evolve as a company that embraces change.

This report summarizes our efforts and achievements over the past year. I welcome and look forward to hearing all your questions and comments.



August 2010

Tetsuya Nakamura President and Chief Operating Officer

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Creation of Environmentally Friendly Products

## **About This Report**

**Reporting period** FY2009 (April 1, 2009 - March 31, 2010) Scope of calculations

| Toyama Works and Toyama Technology Center |
|---|
| Hitachi Works                             |
| Ibaraki Works                             |
| Yamato Works                              |
| Subsidiaries in Japan                     |
| Toyama Showa Co., Ltd.                    |
| Showa Denshi Co., Ltd.                    |
| lbaraki SMK Co., Ltd.                     |
|   |

| Overseas Sites                               | SMK Electronics (Phils.) Corporation |
|--|--------------------------------------|
| ASIA   | EUROPE                               |
| SMK High-Tech Taiwan Trading Co., Ltd.       | SMK Europe N.V.                      |
| SMK Electronics (H.K.)Ltd.                   | SMK (U.K.) Ltd.                      |
| SMK Trading (H.K.)Ltd.                       | SMK Hungary Kft.                     |
| SMK Dongguan Gaobu Factory                   | NORTH AMERICA                        |
| SMK Electronics (Shenzhen) Co., Ltd.         | SMK Electronics Corporation U.S.A.   |
| SMK Electronics Trading (Shanghai) Co., Ltd. | SMK Manufacturing Inc.               |
| SMK Electronics Singapore Pte. Ltd.          | SMK Electronica S.A. de C.V.         |
| SMK Electronics (Malaysia) Sdn. Bhd.         |                                      |

#### 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: +81-3-3785-2904

## Message from Vice President of Environment Div.

## Creating a low-carbon society: our vision for the future of the planet

At the COP15 meeting held in Denmark in December 2009, there was a general understanding that we must not allow the planet's temperature to rise by 2°C, and therefore came to an agreement that the volume of greenhouse gases being emitted globally must be greatly reduced. Following this agreement, Japan and other major countries have set goals to reduce greenhouse gas emissions, which is a significant step towards realizing a low-carbon society.

At SMK, we view global warming as the most serious issue in our environmental preservation activities, and we are expanding our activities globally. More specifically, each works is bringing forward their plans to replace their air conditioner and lighting to a more energy efficient one. When putting new manufacturing or office equipment into service, we are looking not only at cost and performance, but we also are obliged to perform an environmental impact assessment to ensure that our plant investments save energy and have low environmental impact. We are carrying out environmental education for all our employees, and calling upon their families in efforts to prevent global warming.

In addition, we make product assessments early on in product development, and are focused on providing

products with lower environmental impact. We also have plans to introduce a scheme of Life Cycle Assessments (LCA), and are looking for other ways to alleviate environmental impact by reviewing the whole process from procuring materials and parts to delivery to the customer.

The company also has a greater focus on developing components for environmental markets, such as photovoltaics and other renewable energy facilities, electric vehicles, and more. By developing environmentally friendly products, we hope to make contribution in many ways to an evolving society heading towards the future.

August 2010



Yoshio Sakurai Vice President of Environment Div.

## Corporate Profile (as of March 31, 2010)

Name Established Registered Primary **Businesses** 

Capital

Number of

SMK Corporation April 1925 January 15, 1929

Manufacturing and sales of electronic components for use in electrical equipment, communications equipment, electronic equipment, industrial machinery, IT equipment and other applications.

7,996 million yen 12,906 (in the Group)

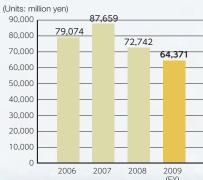
**Employees** Head office 5-5, Togoshi 6-chome, Shinagawa-ku, Tokyo 142-8511, Japan

TEL: +81-3-3785-1111 FAX: +81-3-3785-1878 URL: http://www.smk.co.jp/ Major **Products** 

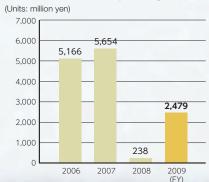
Control panel units / Electret condenser microphones / Earphone-microphone assemblies / Camera modules / AC adaptors / Cradles / Antennas / Crimp connectors / FPC and FFC connectors / Board-to-board connectors / RF coaxial connectors / Interface connectors / Card connectors / Power connectors / Jacks and pin jacks / DC power supply plugs and jacks / Fuse holders / Connectors for photovoltaic modules / Resistance sensitive touch panels / Optical touch panels / Capacitive touch panels / Bluetooth modules

Switches / Remote control units / Keyboards /

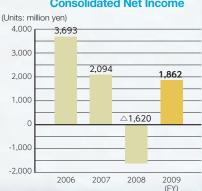
#### **Consolidated Net Sales**



#### **Consolidated Operating Income**



#### **Consolidated Net Income**



## **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 save 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.

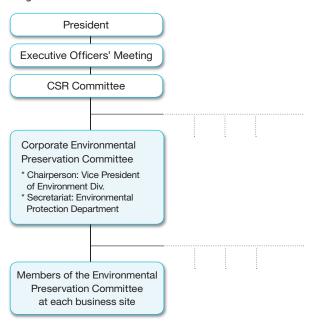
Our environmental preservation activities are by no means confined to within the Group; in 2004, we released the SMK Green Procurement Guidelines and widened the circle of such activities to include our suppliers. In particular, we asked our suppliers to promise to halt the use of environmentally hazardous substances we have prohibited and to construct setups based on ISO 14001. Since fiscal 2009, we have began making visits to suppliers which have not yet been certified under ISO 14001 to determine the state of their environmental preservation activities and to offer advice for improvement.

## **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. The cumulative number of SMK employees who had passed the test and been certified reached 35 in 2009. These employees are directing and driving the environmental preservation activities at each workplace.

#### Organizational Structure for Environmental Preservation



Environmental education at SMK Dongguan Gaobu Factory



In-House training of internal auditors (Head Office)

## **Environmental Preservation Activities**

SMK sets targets for environmental preservation activities for all members of the Group, including overseas sites, and promotes programs for improvement aimed at reaching these targets. The table below presents the actual results of the major activities in fiscal 2009 and targets for this fiscal year.

#### Reduction of CO<sub>2</sub> Emissions

We managed to decrease the total CO<sub>2</sub> emissions by replacing facilities with more energy efficient ones and the reorganization of some production works, but nevertheless failed to attain the reduction target by a thin margin. Due to the influence of a decline in the production volume caused by the decline in consumption during a global recession that started in the second half two years ago means that CO<sub>2</sub> emissions per unit of production value increased, even with the reduction benefits mentioned above.

#### Reduction of Waste

We have strived to reduce the overall industrial waste discharge amount through the improvement of production processes. However, we failed to reach our target to decrease industrial waste discharge per unit of production value due to the decommissioning of equipments and facilities during the reorganization of production works as mentioned above. The amount of landfill waste increased beyond expectations. The reason for this was an increase in touch panel production which resulted in an increase of hard-to-recycle sludge and glass scrap at an overseas productions works.

#### Control of Environmentally Hazardous Substances Contained in Products

We have built an in-house system to manage basic information on purchased parts and materials (data on constituents etc.). During fiscal 2010, we plan to store and utilize all our data on constituents in the system and will adapt it with EU REACH Regulation.

### Strengthening of Environmentally Friendly Design

We have held trial implementations of the Life Cycle Assessments (LCA) to standard connectors; we plan to continue these trials to increase the accuracy of our Life Cycle Assessments.

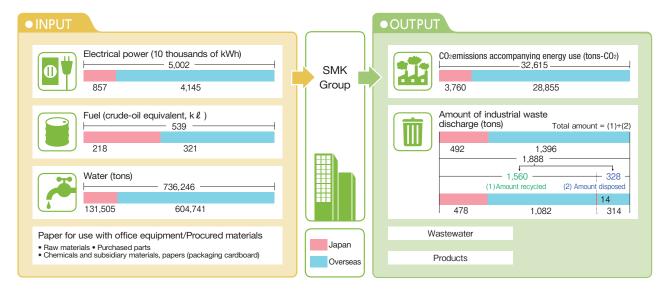
Self-assessment A: attained B: insufficiently-attained C: not attained

| Tools items   | Toward for EV 0010   | FY2009   |  |            |
|---|--|--|--|------------|
| Task items Target for FY 2010   |  | Target   | Achievement  | assessment |
| Decrease of CO <sub>2</sub>   | CO <sub>2</sub> emissions per unit of production value*1:<br>11% decrease from FY2009 Target: 0.42 tons-CO <sub>2</sub> /million yen | Same level as FY2008<br>Target: 0.44 tons-CO <sub>2</sub> /million yen   | 7% increase<br>0.47 tons-CO <sub>2</sub> /million yen                    | С          |
| emissions   | Total CO <sub>2</sub> emissions: 3% reduction relative to FY2009 Target: 31,477 tons - CO <sub>2</sub>                               | 1% reduction relative to FY2008<br>Target: 32,301 tons - CO <sub>2</sub> | 1% reduction<br>32,615 tons-CO <sub>2</sub> /million yen                 | В          |
|   | Industrial waste discharge per unit of production value*2: 10% reduction relative to FY2009 Target: 0.0247 tons/million yen          | 1% reduction relative to FY2008<br>Target: 0.0254 tons/million yen       | 7% increase<br>0.0275 tons-CO <sub>2</sub> /million yen                  | С          |
| Decrease of waste   | Total industrial waste discharge amount:<br>3% reduction relative to FY2009 Target: 1,833 tons                                       | 2% reduction relative to FY2008<br>Target: 1,880 tons                    | 1% reduction<br>1,888 tons   | В          |
|   | Landfill waste amount: 7% increase relative to FY2009<br>Target: 121 tons  | 18% increase relative to FY2008<br>Target: 90 tons                       | 49% increase<br>113 tons   | С          |
| Control of environmentally hazardous substances contained in products  Bring online system to manage information on constituent materials, a system to respond to the EU REACH Regulation |  | Establishment of a system to respond to the EU REACH Regulation          | Establishment of a system to manage information on constituent materials | В          |
| Strengthening of environ-<br>mentally friendly design   | Continue trial Life Cycle Assessments  | Trial Life Cycle Assessment  | Trial Life Cycle Assessments on connectors                               | В          |

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

## **Material Balance**

At SMK, we are committed to reducing through grasping and analyzing the material balance of the environmental footprint of each process group, including product design and development production and sales.



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

## **Environmental Accounting**

SMK quantitatively assesses its environmental preservation activities by grasping the costs of environmental preservation and the resultant benefits through environmental accounting.

### **Environmental Preservation Costs and Benefits**

(Units: million yen)

| Category Major Activities |                                   | Environmental Preservation Costs   |             |     | Economic Benefits |      | Environmental Preservation Benefits |      |  |     |
|---------------------------|-----------------------------------|--|-------------|-----|-------------------|------|-------------------------------------|------|--|-----|
|                           |                                   | Major Activities   | Investments |     | Expenses          |      | Accrued                             |      | (Quantity)   |     |
|                           |                                   |  | Amount      | YoY | Amount            | YoY  | Amount                              | YoY  | Consumption/Output Savings   | YoY |
|                           | Pollution prevention              | Operation and maintenance of facilities used to prevent pollution  | 0.8         | 30% | 20.6              | 74%  | 0                                   |      | Use of Environmentally<br>Hazardous Substances:<br>9.5tons   | 98% |
| Business area costs       | Global environmental preservation | Efficient operation and maintenance of equipment, such as air-conditioners, daily efforts to save energy, etc. | 17.8        | 82% | 42.4              | 102% | 27.4                                | 193% | CO <sub>2</sub> emissions per unit of production value: -0.04 tons-CO <sub>2</sub> /million yen                      | _   |
| area costs                | Resource circulation              | Appropriate processing and recycling promotion of industrial waste discharge                                   | 0           | _   | 32.0              | 83%  | 241.7                               | 128% | Landfill waste amount: -37.0 tons Industrial waste discharge per unit of production value: -0.002 tons / million yen |     |
|                           | Sub-total                         |  | 18.5        | 76% | 95.0              | 88%  | 269.1                               | 132% |  |     |
| Up                        | stream/downstream                 | Green procurement  | 0           | _   | 4.8               | 425% | 0                                   | _    |  |     |
|                           | Administration                    | Elimination of environmentally hazardous substances / Education and operation of environmental management      | 0.4         | 32% | 168.5             | 91%  | 0                                   | _    |  |     |
|                           | R&D                               | Development of environmentally friendly products   | 0           | _   | 38.8              | 72%  | 0                                   | _    |  |     |
|                           | Social activity                   | Initiatives to expand green areas at works   | 0           | _   | 8.5               | 99%  | 0                                   | _    |  |     |
|                           | Environmental remediation         |  | 0           | _   | 0                 | _    | 0                                   | _    |  |     |
|                           | Total                             |  | 18.9        | 74% | 315.6             | 89%  | 269.1                               | 132% |  |     |

#### Environmental Preservation Costs

The environmental preservation costs in fiscal 2009 consisted of 19 million yen for capital investments (8 million yen for Japan and 11 million yen for overseas sites) and 316 million yen for expenses (235 million yen for Japan and 81 million yen for overseas sites), both of which have declined from fiscal 2008 level. 

Major topics

- The major factors behind the decrease in investments and expenses were due to highly selective investments to maximize the benefits of environmental preservation in response to the recession last term, along with increases in efficiency from ongoing reviews of business content.
- Most of the investments went into air conditioning systems, lighting, and other equipment with the latest models for the purpose of reducing the amount of used electrical energy.

### Economic Benefits

In fiscal 2009, economic benefits increased to 269 million yen (133 million yen from Japan, 136 million yen from overseas sites) from fiscal 2008 level.

#### Major topics

- The total economic benefits increased because the results in the previous fiscal year were outstripped by the effects of the reduction in utility costs due to installation of energy saving facilities, and curtailment of new investments in production equipments and tools by reusing idle resources.
- The profit on sale of waste, which occupies a particularly large part of the overall economic benefits, declined along with the reduction in the amount of industrial waste discharge per se.

#### Environmental Preservation Benefits

Figures for environmental preservation benefits, apart from environmentally hazardous substances, increased for reasons explained in the Summary of Environmental Preservation Activities.

- Increases in emissions per unit of production value, CO₂ rose 0.04 tons-CO₂ per million yen; waste products also rose 0.002 tons per million yen.
- The landfill waste amount increased by 37 tons. One task for the future is to introduce disposal contractors with recycling capacities equivalent to Japan to overseas production equipments.

#### **Accounting Procedure**

- 1. SMK's environmental accounting practices adhere to the Environmental Accounting Guidelines 2005 published by Japanese Ministry of the Environment.
- 2. 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.
- 3. 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.
- 4. Economic benefits accrued are clearly demonstrable and do not include speculative benefits.
- 5. For the environmentally hazardous substances in the category of environmental preservation benefits, the totalization 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).

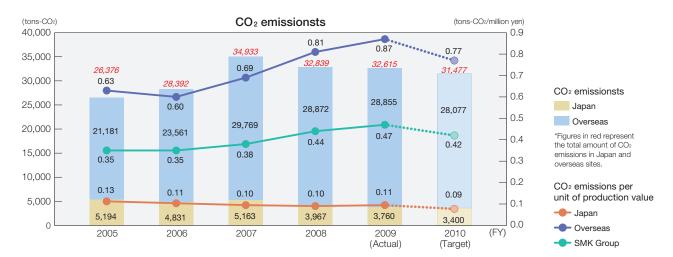
## **Energy and Resource Saving Results**

At SMK, we have posted prevention of global warming as a major business challenge and are strengthening and promoting our energy saving activities. To make more effective use of resources, the company is striving to reduce industrial waste discharge amount and to achieve "zero emissions" (reduction of landfill waste amount to zero).

## **Energy Saving Results**

|  | Year on Year |                   |  |  |  |
|--|--------------|-------------------|--|--|--|
|  | Japan        | Overall SMK Group |  |  |  |
| CO <sub>2</sub> emissions per unit of production value | 110%         | 107%              |  |  |  |
| CO <sub>2</sub> emissions                              | 95%          | 99%               |  |  |  |

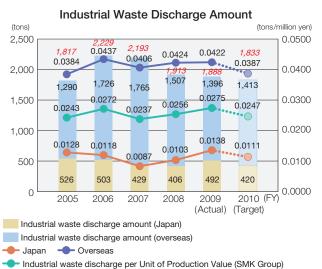
- © Since SMK's baseline year of 2005, we have moved more and more material processing (pressing, molding, etc) in-house to increase production efficiency, and this transition underlies the annual increases in CO<sub>2</sub> emissions. Excluding the effects of that change, our CO<sub>2</sub> emissions per unit of production value have declined, and our emissions in absolute terms have stayed roughly flat, so this can be viewed as a positive trend.
- O In fiscal 2009, emission levels increased (107 percent of fiscal 2008 level) per unit of production value, but the absolute amount dipped (99 percent of the same year level), as noted in the Summary of Environmental Preservation Activities.



## Resource Saving Results

|   | Year on Year |                   |  |  |  |  |
|---|--------------|-------------------|--|--|--|--|
|   | Japan        | Overall SMK Group |  |  |  |  |
| Industrial waste<br>discharge per unit of<br>production value | 134%         | 107%              |  |  |  |  |
| Overall industrial waste discharge amount                     | 121%         | 99%               |  |  |  |  |
| Recycling amount  | 121%         | 97%               |  |  |  |  |
| Landfill waste amount   | _            | 149%              |  |  |  |  |

- © Industrial waste output was even with the previous year (1% lower). Industrial waste discharge per unit of production value increased (up 7%), but was much improved when excluding disused manufacturing facilities from consideration, for the reasons explained in the Summary of Environmental Preservation Activities.
- SMK maintained its goal of zero landfill waste within Japan, but landfill waste from its overseas operations increased, resulting in a 49% increase for the SMK Group as a whole.





#### Landfill Waste Amount and Recycling Rate 100.0 (recycling: %) (tons) 99.9 100.0 100.0 100.0 300 100.0 96.9 100.0 96.0 95.2 94 1 95.0 250 92.1 238 210 89.3 200 90.0 91.5 87.6 150 85.0 86.2 121 113 83.8 129 121 100 113 80.0 76 50 75.0 0 0 0 70.0 0 2010 (FY) 2005 2006 2007 2009 (Actual) (Target) Landfill waste amount (Japan) Landfill waste amount (overseas) Japan Overseas Recycling Rate (SMK Group)

<sup>\*</sup>Figures in red represent the total amount of industrial waste in Japan and overseas sites.

## **Energy and Resource Saving Activities**

## Toyama Group

Toyama Works\*, Hokuriku Sales Office\*, Toyama Showa Co., Ltd.\*, Showa Denshi Co., Ltd.\* \*ISO 14001 certified sites

#### Energy Conservation Patrol

The Toyama Group, including on-premise affiliate companies, conducted an "Energy Conservation Patrol" in June, the environment month, in order to utilize energy efficiently. Inspections were made on major energy-using equipment, such as air compressors and air distribution systems, the idling status of production equipment and workplace lighting.

As a result some equipment was powered down and some air leaks were repaired after review of current use. Based on guidelines that were created after measuring the lighting intensity at every workstation, approximately 100 fluorescent tubes were removed from works to ensure that energy is utilized efficiently.



Checking the status of production equipment

These measures produced the following results:

#### 1. Powering down unused equipment:

Electricity costs reduced by 265,000 yen/year CO<sub>2</sub> emissions reduced by 8.64 tons-CO<sub>2</sub>/year

#### 2. Reduction of fluorescent tubes:

Electricity costs reduced by 48,780 yen/year CO<sub>2</sub> emissions reduced by 1.5 tons/year

The Toyama Group will continue implementing Energy Conservation Patrols and other energy saving activities as well.



Measuring light intensity

## Hitachi-Ibaraki Group

Hitachi Works\*, Ibaraki Works\*, Ibaraki Sales Office.\*, and Ibaraki SMK Co., Ltd.\* \*ISO 14001 certified sites

### Investing in energy-saving equipment

Hitachi Works has been actively deploying energy saving equipment with key targets to prevent global warming and reduce CO<sub>2</sub> emissions, as part of its environmental preservation activities. In fiscal 2009, the factory invested in an array of energy saving equipment, such as upgraded transformers and installed inverter compressors, along with power-generating water taps, high-output fluorescent lights,

and presence-detecting fluorescent lights.

These measures reduced the amount of energy used, with an estimated reduction in CO<sub>2</sub> emissions by 50 tons-CO<sub>2</sub> emissions per year.

Twenty trees were also planted on the premises, along with flowerbeds with ten types of plants, to preserve CO<sub>2</sub>-absorbing resources.



Energy-saving transformer



Inverter compressor

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

Because of the large volume of production equipment at SMK Mexico, energy saving measures have always been an issue, and in fiscal 2009 as before, the company undertook a variety of environmental friendly activities. Employee suggestions led to reduced power consumption and CO<sub>2</sub> emissions in the molding department.

With 26 molding machines at present, which give off considerable heat when running, power was being used wastefully because of high room temperatures, resulting in unnecessary CO<sub>2</sub> emissions. Thirteen of the machines were fitted with insulating material over their screw cylinders, an improvement that curtailed radiant heat. This maintained a high temperature inside the screw cylinder while dropping the temperature inside the plant, thus reducing the power needed for air conditioning. The net power savings was more than 25% with this improvement in the working environment.

During fiscal 2010, the remaining thirteen machines will





Insulated screw cylinder

Insulating material

also be fitted with insulation, and once this is done, the annual power savings should reach approximately 180,000 kWh, reducing  $CO_2$  emissions by 93.7 tons- $CO_2$ . SMK Mexico will continue looking for ways to make its production processes more efficient.

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

At SMK Philippines, our slogan is "the environmentally minded factory" and we've made investments in various equipments and undertaken many improvement activities.

In fiscal 2009, we improved the etching methods we use in our production processes to reduce chemical use. This production process uses chemicals to etch glass and some films, but a rapid increase in orders received created an urgent need for lower chemical use and productivity improvement from the limited equipment available, which led to a number of solution ideas coming from the workshop implemented for evaluation purposes.

One of these was to increase the production capacity of the etching equipment, which would increase productivity while halving the chemicals used. This appeared to be technically difficult, but with the cooperation of staff from the production engineering, manufacturing and quality-control

departments, the fine-tuning of both chemicals and conveyor speed were achieved.

This raised productivity to an astonishing 222% and lowered chemical use (iron (III) chloride, hydrochloric acid, potassium hydroxide) by 55%, and reduced CO<sub>2</sub> emissions by 3.03 tons-CO<sub>2</sub> per year.

The entire works is focused on making the factory even friendlier to the environment, and is going to gather ideas from the employees to improve the workplace.



Etching machine

### SMK Dongguan Gaobu Factory

SMK Dongguan Gaobu Factory has established an Environmental Preservation Projects Committee to promote environmental preservation acitivites; it holds monthly meetings that cover every aspect of the plant's operations, looking for ways to reduce utility bills and waste output.

As part of the factory's environmental efforts, Factory



No.1 switched from 40W DC fluorescent lighting to energy saving lighting in fiscal 2009, reducing power consumption and CO<sub>2</sub> emissions as a result. With China joining the shift towards reduced energy consumption,

energy saving T5 fluorescent lighting has become more widely available. SMK Dongguan Gaobu Factory took that opportunity to test T5 lighting from several companies, and proceeded to swap out its lights with the most efficient 21W T5 fluorescent lights. The results of this change are significant:

- No. of tubes replaced: 8,247 (from 40W to 21W)
- Power consumption: down 446 kWh per year
- Electricity costs: down HK\$4.89 million per year
- Reduction in CO<sub>2</sub> emissions: down 351.4 tons per year

The factory plans to extend this project to replace the lighting in its warehouses and other areas with energy saving alternatives. The factory is also looking into LED lighting as a way to save more energy.

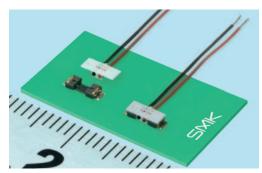
## **Creation of Environmentally Friendly Products**

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.



#### RF Coaxial Connectors with Switch: TS-9 Series

These coaxial connectors work with mobile wireless communications equipment, including the advanced wireless standard WiMAX. It covers a broad usable frequency range of DC to 4 GHz, and delivers a good high frequency performance with compatibility. They have excellent mechanical characteristics, with durability to withstand 5,000 mating cycles. They are designed with materials that are RoHS Directive and halogen-free compliant.



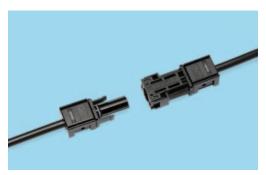
# 2-pin (poles) Insulation Displacement Wire to Board Connectors: ID-02 Series

This wire to board connector has the industry's lowest profile: 0.9 mm. The contact system comprises 2-point contact design resistant to vibration and dropping impact for high level contact reliability. Connection of microphone or speaker cables featuring a smaller footprint contributes to smaller overall handset design. They are designed with materials that are RoHS Directive and halogen-free compliant.



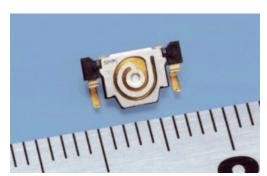
#### ● Φ 3.5mm Mini Jacks (Spring Terminal)

These are used as the headphone jacks in mobile phones and portable audio players. With a width of 5mm and switched with 4-poles, these are compact and occupy a small mounted surface area. The spring terminals allow these to be pushed to the PWB without using solders. They are designed with materials that are RoHS Directive and halogenfree compliant.



### Connector for Photovoltaic Modules

These connectors link photovoltaic modules with cables. The original multi-point contact structure assures and 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. We are also developing various other components for use in eco devices such as LEDs, and thereby contributing to reduction of CO2 emissions and energy savings.



#### Dome Switches

These are used as the pushbuttons often found on the sides of mobile phones and portable audio players. These use "spring contact" mounts that connect to the circuit board using spring pressure, resulting in good shock resistance and improved durability for the set. It is solder-free, helping to reduce materials use and increasing recyclability. They are designed with materials that are RoHS Directive and halogen-free compliant.



#### 1. Remote Controls for Air Conditioners

SMK's remotes are included with air-conditioning units designed with the environment and energy efficiency in mind. These products allow the overall product to be made lighter and reduce parts counts; they are also designed with a focus on reduced power usage to contribute to the environment.

### 2. Remote Controls using Quatro Pulse

This product has a slim, 45-mm wide design (10% slimmer than its predecessor at SMK), contributing to a reduction in materials and resource use. This product is installed with SMK's "Quatro Pulse" and the IR protocol developed for PCs, allowing it to operate on only about 1/3 the power of existing remotes.

#### 3. New Ecological-Design Remote Control

This remote control employs new technologies: it uses no battery or outside power source, and in place of petroleum-based plastics uses a corn-based material (a polylactic acid plastic).



#### Touch Panels

In addition to its use in SMK's car-navigation system for environmentally friendly hybrid cars, this touch panel uses a new etching process that reduces its environmental footprint with a new approach to materials; design improvements allow it to operate on less power.

Moreover, the implementation of improvements in the production process such as automation helps reduce waste materials.



#### Wireless Modules

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.



#### PLC Modules

This 14M bps PLC (power line communications) module allows the existing electrical wiring in any home or building to do double-duty as a communications channel, reducing resource use.



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