

# CSR Report 2017

Maximizing energy conversion  
efficiency for the benefit of  
humanity and society.

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## Reporting period

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This report focuses on the results of activities in FY2016 (from April 1, 2016 to March 31, 2017).

## Organizations covered in this report

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I Shindengen Electric Manufacturing Co., Ltd., Shindengen Group

## Reference Guidelines

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- ISO 26000 - 2010
- Environmental Reporting Guidelines 2012, Ministry of the Environment of Japan
- Environmental Accounting Guidelines 2005, Ministry of the Environment of Japan

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## Top Message

### Management Philosophy

Together with society, our customers, and our employees

- Our activities shall lead to the betterment of society
- Our passion for quality shall foster customer trust
- Our employees shall have opportunities to be engaged at all levels

### Mission Statement

Maximizing energy conversion efficiency for the benefit of humanity and society.

Brand Logo



### Our Promise

Listen closely, look ahead, and create a future of value

I am honored to present the 2017 “Shindengen Group CSR Report”.

Our group strives to realize our Mission Statement, and integrates Corporate Social Responsibility (CSR) into strategic management through our Management Philosophy.

We reinvigorated the Shindengen Group brand on July 1, 2017. Our new logo conveys our values: utilizing energy efficiently, being considerate of the natural environment, and better serving our customers and society.

Our Group has established a Medium-Term Business Plan (extending to FY2018) and a long-term vision (FY2021). The long-term vision is “focused on developing electronic components business leveraging semiconductors and striving for achieving a profitable business model”, and the medium-term management policy is “focused on developing technological superior products, increasing speed and expanding sales overseas”. To achieve these goals, we are focused on establishing business alliances and the Electric Vehicle (EV) market.

The following is essential for Shindengen’s CSR strategic management: addressing, from a value chain perspective, the local and global social issues including the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development adopted by world leaders; considering society’s long-term expectations of us; maintaining the trust of customers,

investors and other stakeholders; engaging with local communities through sustainable development activities; and making our employees and their families proud to be a member of our Group.

Thank you for your interest in the “Shindengen Group CSR Report (2017)”. We welcome and appreciate any comments or questions you may have, so that we may improve future editions.



Yoshinori Suzuki, President



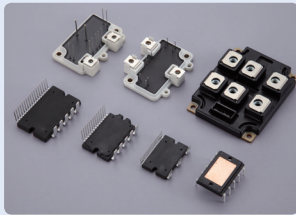

## Company Outline

Trade Name: Shindengen Electric Manufacturing Co., Ltd.  
 Established: August 16, 1949  
 Capital: ¥17,823 million  
 Consolidated Sales: ¥92,688 million  
 (As of March 31, 2017)

Consolidated Employees: As of March 31, 2017

<b>Independent</b>	4,689
<b>Consolidated</b>	1,138
<b>Domestic consolidated subsidiaries</b>	1,098
<b>Overseas consolidated subsidiaries</b>	2,453

## Outline of Business Operations

Division	Products	Markets
<b>Power Device</b>	<ul style="list-style-type: none"> <li>• Bridge diodes</li> <li>• High-speed rectifier diodes</li> <li>• Thyristors</li> <li>• SIDACs</li> <li>• Power MOSFETs</li> <li>• Power ICs</li> <li>• Power modules</li> </ul>	 <ul style="list-style-type: none"> <li>• Mobility (four-wheel vehicles)</li> <li>• Industrial machinery market (factories)</li> <li>• Home electronics (air conditioners, lighting, etc.)</li> </ul>
<b>Car Electronics</b>	<ul style="list-style-type: none"> <li>• Motorcycle products</li> <li>• Electric motorcycle products</li> <li>• Universal engine control units</li> <li>• Four-wheel EV/HEV/PHEV/FCV* products</li> </ul>	 <ul style="list-style-type: none"> <li>• Mobility (motorcycles, four-wheel vehicles)</li> <li>• Generators</li> </ul>
<b>Next Generation Energy</b>	<ul style="list-style-type: none"> <li>• Rectifiers for communication stations</li> <li>• Rectifiers for mobile device base stations</li> <li>• Inverters for communication stations</li> <li>• Monitoring units</li> <li>• EV/PHEV chargers (quick and regular-use)</li> <li>• Power conditioners for photovoltaic generation</li> <li>• Smart energy management systems</li> </ul>	 <ul style="list-style-type: none"> <li>• Information/communication (mobile device base stations, data centers and communication stations)</li> <li>• Next generation energy (photovoltaic generation and energy storage, EV/PHEV chargers)</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>• Rotary solenoids</li> <li>• Push pull solenoids</li> <li>• Tubular solenoids</li> <li>• Proportional solenoids</li> </ul>	 <p>Automobiles, hydraulic equipment, construction machinery, embroidering machinery, and other FA devices</p>

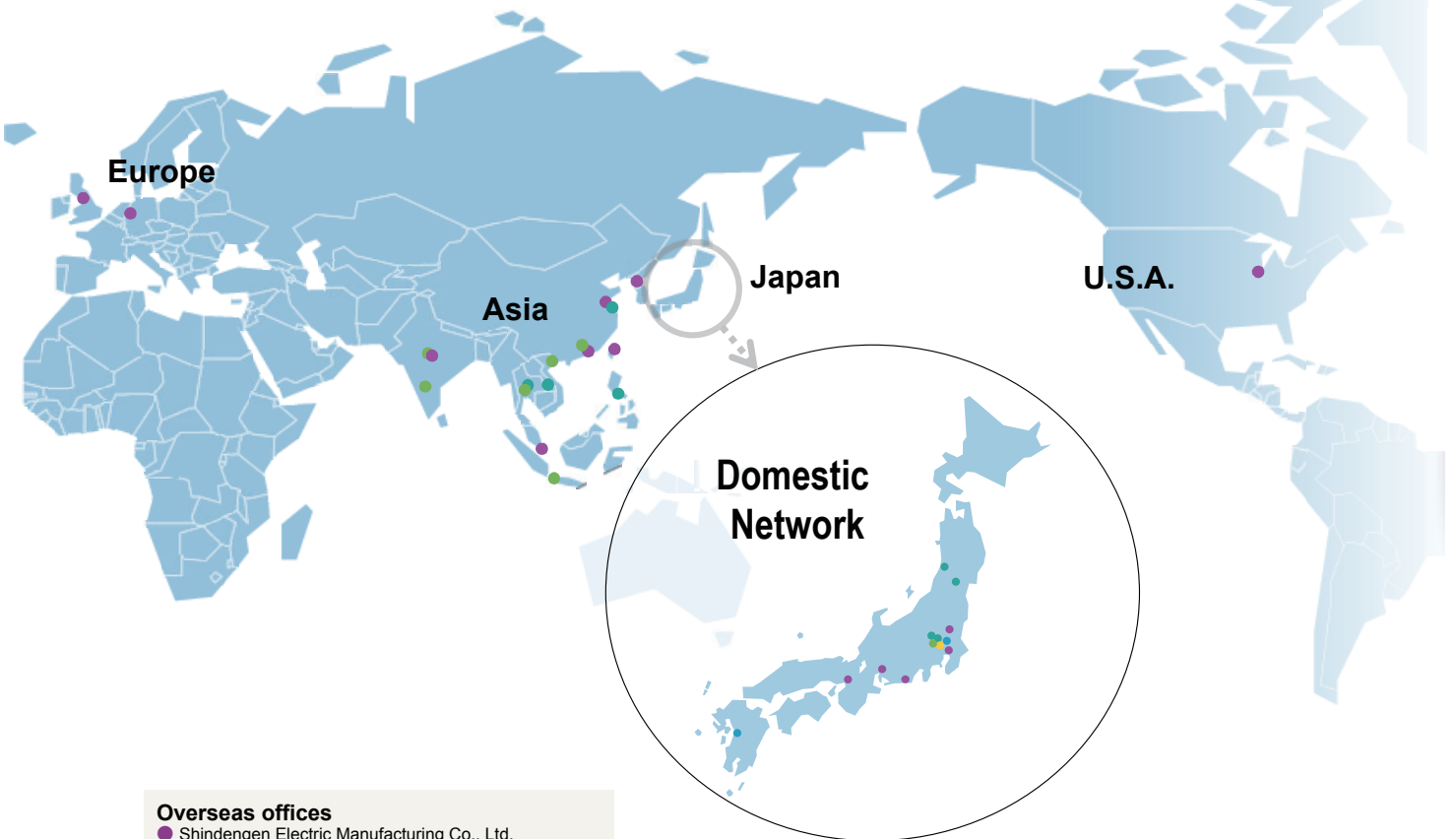




# Global Network

## Overseas Network

- Sales
- Manufacturing
- Manufacturing and Sales
- Research and Development
- Services



### Overseas offices

- Shindengen Electric Manufacturing Co., Ltd.
  - SEOUL OFFICE
  - BANGKOK REGIONAL OFFICE

### Affiliated Companies (Overseas)

- LUMPHUN SHINDENGEN CO., LTD.
- SHINDENGEN PHILIPPINES CORP.
- SHINDENGEN INDIA PTE LTD.
  - Head Office
  - Gurgaon Office
- PT.SHINDENGEN INDONESIA
- SHINDENGEN VIETNAM CO., LTD.
- GUANGZHOU SHINDENGEN ELECTRONIC CO., LTD.
- SHINDENGEN (THAILAND) CO., LTD.
- SHINDENGEN AMERICA, INC.
- SHINDENGEN (H.K.) CO., LTD.
  - Head Office
  - Taiwan Representative Office
- SHINDENGEN UK LTD.
  - Head Office
  - German Branch
- SHINDENGEN SINGAPORE PTE LTD.
- SHINDENGEN (SHANGHAI) ELECTRIC CO., LTD.
- SHINDENGEN LAO CO., LTD.
- NAPINO AUTO & ELECTRONICS LTD.
  - Manesar Plant

### Japan offices

- Shindengen Electric Manufacturing Co., Ltd.
  - Head Office
  - Osaka Branch
  - Nagoya Branch
  - Hamamatsu Office
  - Utsunomiya Office
  - Hanno Factory

### Affiliated Companies (Japan)

- Akita Shindengen Co., Ltd.
  - Head Office, Ohura Factory
  - Asuka Factory
- Higashine Shindengen Co., Ltd.
  - Head Office
  - Hanno Logistic
  - Chiba Logistic
- Okabe Shindengen Co., Ltd.
- Shindengen Three E Co., Ltd.
- Shindengen Kumamoto Technoresearch Co., Ltd.
- Shindengen Enterprise Co., Ltd.
- Shindengen Mechatronics Co., Ltd.



## Business Fields

Power Innovation Moving into New Territory

### Industrial Machinery Market

#### Factories

Power Supplies for Factory  
Automation Devices,  
Power Supplies for Robots

### Environmental/New Energy Market

#### Homes (Gas Co-generation)

Gas Co-generation  
System ECUs

#### Photovoltaic Generation/ Storage

Power Conditioners  
Monitoring System

#### LED Lighting

### Mobility Market

#### Automobiles

DC/DC Converters for EV/HEV/PHEV/FCV,  
ECU, ECU Power Semiconductors,  
Quick Chargers, Chargers and Onboard  
Battery Chargers for EV/PHEV

#### Motorcycles

REGs/RECTs, CDIs  
Idle Reduction ECUs  
Winker Relays

## Information/Communications Market

### Mobile Phone Base Stations

Rectifiers for Communication Stations, Inverters for Communication Stations, AC/DC Converters,

### Data Centers, Communication Stations

Rectifiers for Communication Stations, Inverters for Communication Stations, Monitoring Units

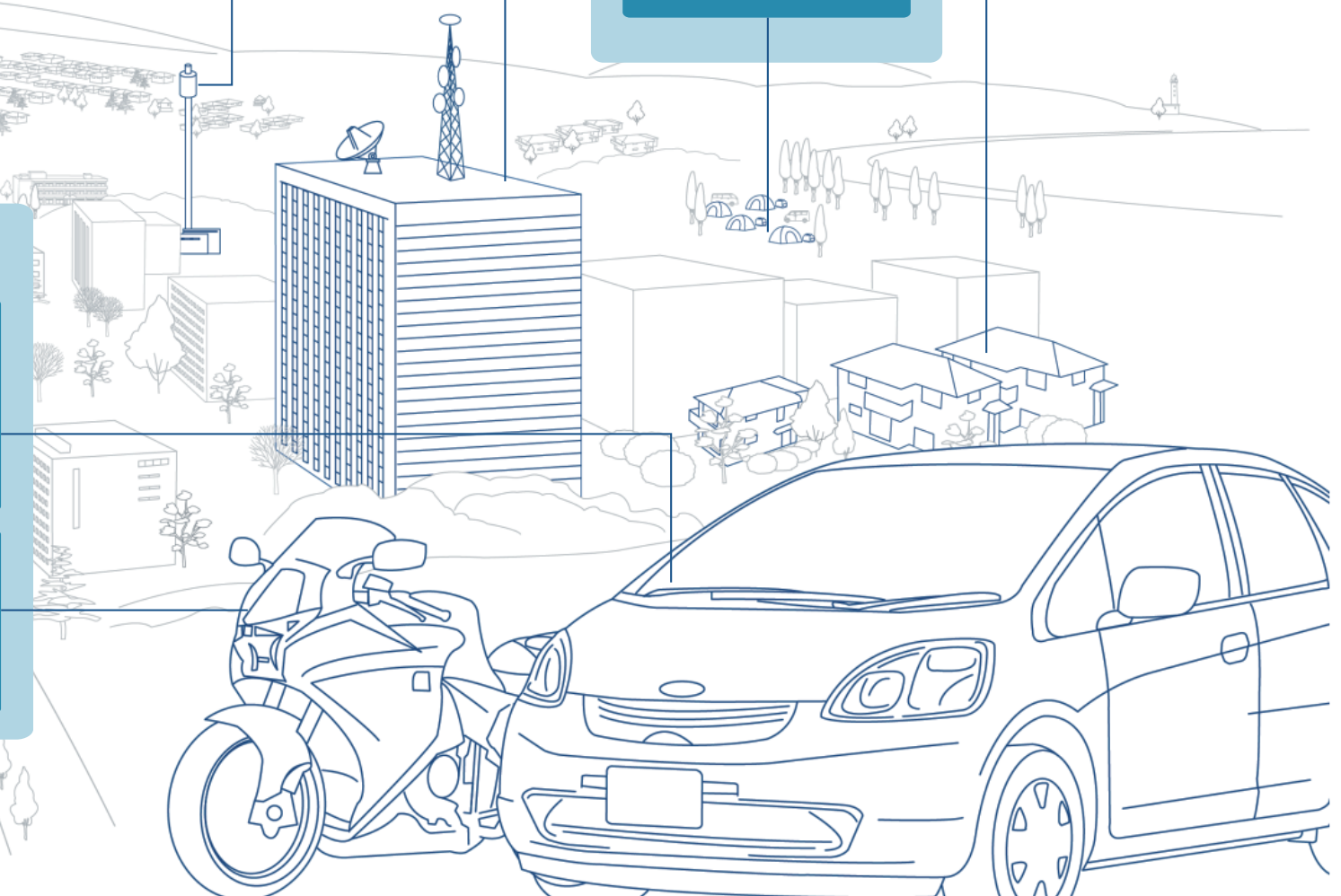
## Home Electronics Market

### Homes (Home Electronics)

## Power Generator Market

### Generators

Sine Wave Inverters,  
DC/AC Inverter,  
ECU



## Technology & Development Center

Technology & Development Center

### A Message from the Head of Center

The Shindengen Group's corporate mission is "Maximizing energy conversion efficiency for the benefit of humanity and society" and as such, we are committed to transferring our new technology to key business fields to better serve our society.



General Manager of Next Generation Energy Division Group Officer

Masahiro Sasaki

### Promoting Environmentally Friendly Product Development

#### Creating core technologies ahead of market changes

In the semiconductor device field, Shindengen is promoting the development of new technology in order to lower associated losses, allow operation in higher temperatures, and to integrate the functioning of multiple parts.

In the power electronics field, we are promoting research and development to increase conversion efficiency, reduced related noise, and provide high-density mounting.

We are passionate about working towards meeting these challenges and developing new technologies that cater to the market demands in a timely manner.

### A Mid-term Growth Strategy Considering Social Requirements

#### Creating core technologies pursuing the limits of energy conversion efficiency

- Development of advanced low loss devices as per the requirements of mobility markets
- Development of advanced element technologies for next generation low loss power devices
- Development of advanced bonding technologies for reliable use in high temperature operations
- Development of high efficiency power circuit technologies for application in next generation low loss devices
- Development of ICs for lighting purposes so as to move towards a society with reduced energy consumption

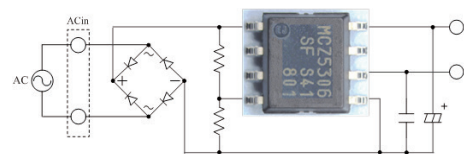
### Creating Environmentally Friendly Products Based on the Growth Strategy

#### New product creation with a conceptual breakthrough

##### [Phase Controlling High Efficiency Dropper, MCZ5360SF enables;]

- Reducing numbers of stand-by power parts to one third,
  - MCZ5360SF requires no choke or anti-noise parts, which allows more resource saving than IPD does.
- Improving efficiency of AC direct-in to be five times higher, and
  - MCZ5360SF with high-accuracy phase control demonstrates higher efficiency (energy saving) than existing droppers
- Application in key fields
  - MCZ5360SF can be applied to key fields including stand-by power for LED lighting and home electric appliances.

#### Primary environmentally friendly products from the Technology & Development Center



LED Driver IC [MV series]  
Package SOP8J

### Primary manufacturers

Domestic – Hanno factory

## Electronic Device Division

Electronic Device Div. Group

### A Message from the Head of Division

**Technical “A” dvantage, Quality “A” dvantage, and Cost “A” dvantage**  
**We aim to achieve three advantages under our slogan of “Win Triple A.” We are working hard to set up a full-scale business operation so that we can establish ourselves as a notable power semiconductor manufacturer that contributes towards improving global energy efficiency.**



General Manager of Electronic Device Division Group Senior Officer

**Tomoaki Nishi**

### Introduction

#### Power supplies to bring power semiconductors to life

- Our portfolio of diode-related products, which are used in the automotive industry, is of the finest quality, and as a result, has the largest market share of similar products in the world.
- Our portfolio of power MOSFETs and ICs are highly efficient and possess a power-saving feature.
- Our portfolio of power module products combines the features of a multitude of semiconductor devices, rendering the assembling process simple. This is achieved by providing efficient heat dissipation, downsizing, and high integrability with other modules.



#### Product Introduction

### A Mid-term Growth Strategy Considering Social Requirements

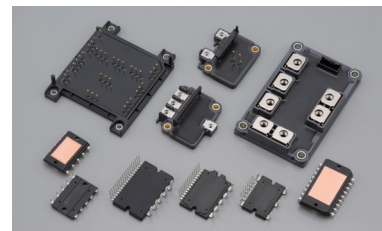
Increasing social environmental awareness has made inverter motor drives and electronic controls more popular in the car electronics and industrial machinery markets. Additionally, there has been a rapid growth in the demand for downsizing and for drive and control parts that are highly efficient. Our divisional group is passionate about contributing to the global society with our new and improved efficient energy conversion process. We have added new features to our already renowned lineup of power semiconductors such as lowering of associated loss, downsizing, and a higher capacity to withstand high pressures and large currents. Additionally, we hope to drive new demand with the creation of our original and unique modularization and mounting technologies.

We are also committed to integrating semiconductor and circuit technologies by increased cooperation with our Car Electronics and Next Generation Energy divisions, thereby promoting the development of advanced devices with features and mounting shapes suitable for use in various sophisticated and highly efficient applications.

### Creation of Environmentally Friendly Products Based on a Growth Strategy

- We commit to expanding our high quality and highly efficient products for use in the mobility and industrial machinery markets where sophisticated computerization techniques are being used.
- We commit to promoting the development of eco-friendly devices, such as renewable energy equipment and power storage units, aimed at the fledgling energy market.
- We commit to offering small high-performance energy-saving devices such as lighting and home electrical appliances for domestic use.
- We commit to promoting and furthering our research and development for devices used in medical equipment and nursing-care robots to ensure better lives in our aging society.

#### Primary environmentally friendly products from the Electronic Devices Division



Power Module

### Primary manufacturers

Domestic – Akita Shindengen Co., Ltd. Higashine Shindengen Co., Ltd.  
Overseas - Lumphun Shindengen Co., Ltd (Thailand). Shindengen Philippines Corp.

## Car Electronics Division

Car Electronics Div. Group

### A Message from the Head of Division

Seeking high conversion efficiency and long-term reliability in the mobility field.

The company employs the latest technology, contributing to environmental preservation and society by providing customers with products of high conversion efficiency and high reliability.



General Manager of Car Electronics Division Group Senior Officer

Seiji Niizeki

### Introduction

#### Combining core technologies focused on the environmental business for a leap into the future

- A major international share of motorcycle components (e.g. regulators, rectifiers)
- DC/DC converters for high efficiency and high reliability motor vehicle FCVs, PHEVs, and HEVs
- 6.6kW on-board charger with the world's highest power density (company investigation, as of April 1 2014)

#### Product Introduction



### A Mid-term Growth Strategy Considering Social Requirements

Strengthening development of low-loss technology using electronic control, and energy recovery technology, and commercialization of products, as a means to reduce environmental impact. The majority were achieved with electronic control. Future introduction of electronics to the mobility field using the company's semiconductor, circuit, magnetic body, software, and mounting technologies in product commercialization, and focusing on continuous expansion.

### Creation of Environmentally Friendly Products Based on a Growth Strategy

#### Motorcycle electronics

- Regulators using low-loss devices and control technology
- System for headlight LEDs
- Development and commercialization of ECUs (Electronic Control Units)

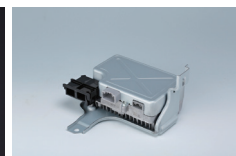
#### Motor vehicle electronics

- High-efficiency, high reliability, light weight vehicle power systems
- Development and commercialization of ECUs (Electronic Control Units)

#### Primary environmentally friendly products from the Car Electronics Division



HEV applications DC/DC converters TW-60



Non-isolated bidirectional buck-boost converter TW-58

### Primary manufacturers

Domestic - Okabe Shindengen Co. Ltd

Overseas - PT. Shindengen Indonesia, Guangzhou Shindengen Co., Ltd. (China)  
Shindengen (Thailand) Co., Ltd. Shindengen Vietnam Co., Ltd.  
Shindengen India Private Ltd. Napino Auto & Electronics Ltd. (India)



## Next Generation Energy Division

Next Generation Energy Div. Group

### A Message from the Head of Division

We offer a variety of new products including power devices and monitoring units, crafted using years of experience and expertise in designing power conversion technologies, aimed at the efficient conversion and usage of energy.

Given the current need to diversify our sources of energy, we are passionate about making our society more sustainable and are committed to facilitating rapid access to new eco-friendly technologies, and the development and subsequent application of advanced technologies to our existing devices so as to limit their environmental impacts.

### Introduction

#### Rapid Response to New Requirements

- Isolated power conditioners for high conversion-efficiency solar power generation
- High quality and high performance charging stations for Electric Vehicles (EV)
- Smart Energy Management System for power storage systems

#### Product Introduction



General Manager of Next Generation Energy Division Group  
Senior Officer

**Makoto Shiraha**

### A Mid-term Growth Strategy Considering Social Requirements

We commit to the continuous development of highly efficient energy creation, storage, and saving devices based on our advanced power conversion technologies.

- We are promoting the development of power conversion devices and power conditioner units that utilize renewable energy such as that obtained from solar power. We are committed to making a continued effort to reducing environmental impact from our systems and products.
- We commit to contributing to the expansion of the charging infrastructure required by next-generation vehicles if we are to achieve our goal of living in a low-carbon society.
- We are promoting the development of power conversion devices that alter the charging and discharging cycles of batteries so as to ensure stable electrical supply and energy saving.
- We commit to the development of high-voltage DC power supply devices with highly efficient electrical conversion ratio to contribute to reducing the electrical consumption in data centers and telecommunications buildings.

### Creation of Environmentally Friendly Products Based on a Growth Strategy

#### [Energy Creation]

- Power conditioners for the generation of renewable energy including photovoltaic generation
- Monitoring systems for power conditioners

#### [Energy Storage]

- Smart Energy Management System for power storage systems
- Power conditioners for batteries

#### [Energy Saving]

- Rectifiers for high-voltage DC supply devices (HV-DC)

### Primary manufacturers

Domestic - Shindengen Three E Co., Ltd.

#### Primary environmentally friendly products from the Next Generation Energy Division



Power conditioners



HV-DC



EV Rapid chargers





## Shindengen Group Guidelines for Action

Staying true to its management philosophy of “together with society, together with our customers, and together with our employees,” Shindengen Electric Manufacturing Co., Ltd. has made it a corporate mission to maximize energy conversion efficiency for the benefit of humanity and society.

Based on our management philosophy and corporate mission, we, the employees of Shindengen Electric Manufacturing Co., Ltd. and Shindengen group companies, act in compliance with the following Guidelines for Action in order to further contribute to society:

### Compliance with legislation and other regulations

#### 1 Compliance with legislation and regulations

We act to honestly comply with relevant legislation and company regulations and rules, etc.

#### 2 Fair competition and transactions

We conduct business transactions through fair, just, and free competition.

Above all, in our daily business activities, we observe the Japanese Antimonopoly Act and Subcontract Act, as well as the U.S. Antitrust Act, EU Competition Act, and antimonopoly laws of other countries, while also strictly complying with the following items of our company group:

- i) We do not exchange the following information with other companies in the same business: information on product prices, production amounts, manufacturing capabilities, selection of customers, and other conditions of competition. Nor do we make arrangements regarding such matters (for example, price fixing, market allocation, bid rigging, and order adjustments).
- ii) We do not participate in meetings of organizations and companies in the same business where we may be requested to exchange such information or make such arrangements. We act in accordance with established company rules, etc. when having contact with our competitors.
- iii) We do not commit acts that may hinder fair competition toward distributors and dealers, including restricting resale prices and abusing privileged position.
- iv) We act honestly toward all our business partners and carry out fair and appropriate transactions.

#### 3 Preventing conflicts of interests

We do not act against the interest of our company to promote our own or third parties' interests.

#### 4 Prohibiting bribery and excessive entertainment and gifts

- i) We comply with the rules of different countries that prohibit giving bribes to government officials of Japan and other countries. In addition, we also comply with the rules of different countries that prohibit bribery between private companies and between individuals.  
We do not offer, propose, or promise to give bribes (money, goods, entertainment, gifts, or other interests) not only to government officials of Japan or other countries but also to private citizens for the purpose of gaining or maintaining preferential treatment in business. We do not allow those who act on our behalf, including dealers and consultants, to be involved in such acts.
- ii) We do not provide or receive economic benefits exceeding the range of sound business customs and social conventions, including gifts and meals, when entertaining or being entertained by customers or exchanging gifts with them. Nor do we receive personal economic benefits from them.

#### 5 Preventing confidential information disclosure

We keep confidential information under strict control and never disclose it to other parties.

#### 6 Prohibiting insider trading

We do not conduct insider trading or stock trading that may be suspected of being insider trading.

## 2 A healthy workplace environment

### 1 A safe workplace environment

We create a workplace environment that provides safety and job satisfaction to employees.

### 2 Prohibiting harassment

We do not allow sexual harassment or workplace bullying in any form.

### 3 Attention to health

We pay attention to healthy lifestyles, including eating healthy meals, getting enough sleep, taking sufficient rest, and living fulfilling lives every day.

## 3 Our relationship with society

### 1 Customer satisfaction

We provide products and services that meet customers' needs, bring them satisfaction, and gain their trust.

### 2 Contribution to society

We proactively contribute to society as members of local communities.

### 3 Environmental protection

We strive to develop, produce, and sell products that contribute to protecting the global environment.

### 4 Attitude toward anti-social groups

We stand firm in our resolve to fight against anti-social groups and organizations that threaten public order and safety and have no relationship with such groups.

In the event of a violation of these Guidelines for Action, business executives themselves work to resolve problems, to identify their causes, and to prevent recurrence. We also publicly disclose information promptly and appropriately both inside and outside the company.

Revised on April 1, 2016

Yoshinori Suzuki  
President  
Shindengen Electric Manufacturing Co., Ltd.

Shindengen recognizes that for communities to grow sustainably and develop for the future, companies must recognize the role they play in social responsibility and accountability. We are committed to improving the lives of our people and the world we live in, through initiatives targeting important issues including climate change, and social health and welfare.

## Management

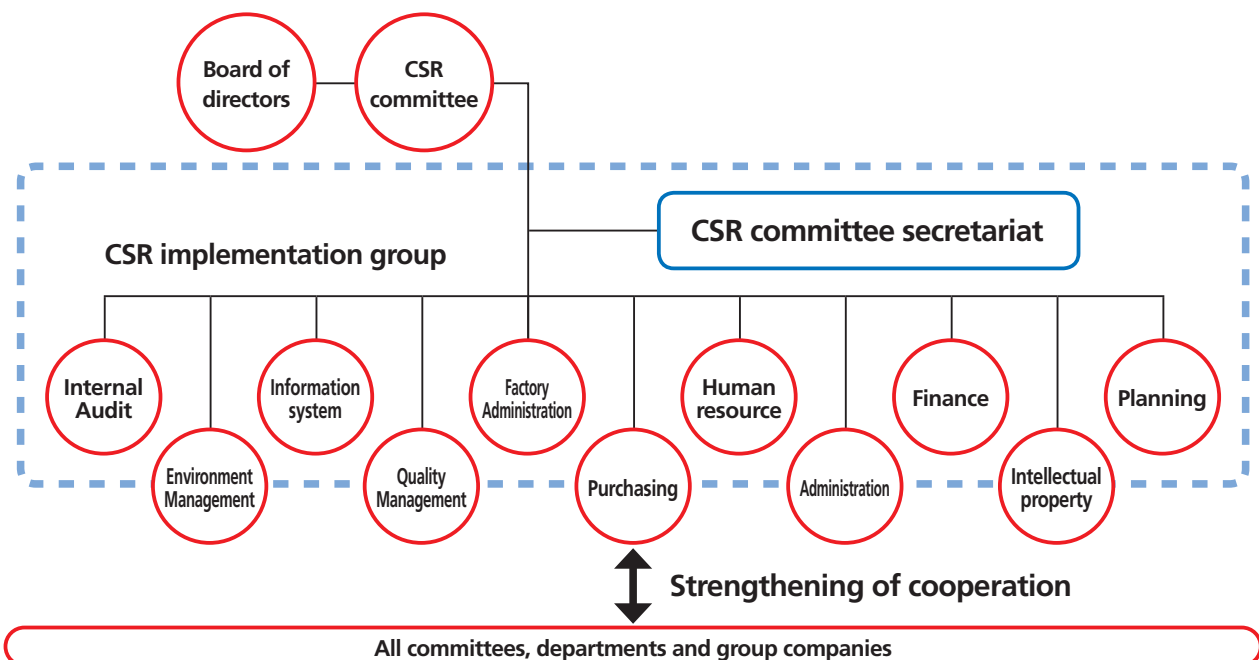
Shindengen's management policy is "To Grow in Harmony with Society, Customers and Employees". Our Corporate Mission is to "Maximizing Energy Conversion Efficiency for the Benefit of Humanity and Society." We aim to contribute to the realization of a low-carbon society by developing products that focus not only on energy conversion efficiency, but also that consider their environmental impact.

With passion and purpose, we work hand-in-hand to empower our people and the communities in which we operate, and in doing so, strive to generate long-term value for our stakeholders. Shindengen aims to continually improve existing Governance and Management structures, in order to respond swiftly and appropriately to changes in its dynamic business environment.

Management Philosophy
<p>Together we succeed We pursue company growth that benefits society, our customers and our employees</p> <ul style="list-style-type: none"> <li>• Our activities shall lead to the betterment of society</li> <li>• Our passion for quality shall foster customer's trust</li> <li>• Our employees shall have opportunities for physical and emotional enrichment</li> </ul>
Corporate Mission
<p>Maximizing energy conversion efficiency for the benefit of humanity and society</p>

CSR Management Philosophy
<p>In order for the Shindengen Group to contribute to the advancement of society and prosperity of mankind, we strive to be a "good corporate citizen" on the world stage where employees can be proud to work, that is trusted by our customers and shareholders, respected by society, and in harmony with the earth's environment, by the entire staff energetically building the company.</p>
Long-Term Vision for 2021
<p>Accelerating into the advanced power component field and forging a high-gain business model.</p>
Numerical Targets
<p>Net sales ¥150billion, Operating income margin 10.0%, ROE 10.0%</p>

## CSR implementation system





## Corresponding with the Corporate Governance Code

Effective governance structures ensure honesty and furthers the confidence of our shareholders and other stakeholders. At Shindengen we are continually striving to improve the effectiveness, efficiency and transparency with which we operate. Facilitating appropriate dialogue with all stakeholders (customers, shareholders, investors, suppliers, employees, government, administrative agencies and local communities) is essential.

A Compliance Committee was established in FY2015 to manage compliance risk along with establish a Corporate Governance Code (below).



## Corporate Governance

### Guiding Principles

Based on the Shindengen Group Action Guidelines, the procurement department of the Shindengen Group strives to establish mutually beneficial relationships with our customers based on long-term trust, and a superior procurement service. Quality, cost, delivery time, and stability of supply are paramount to this. With regard to cost competitiveness, we ensure our procurement operations are handled fairly and equitably for our customers regardless of their business size or nationality. We also abide by the applicable laws, regulations, and social norms (environment, human rights, labor, health, safety, ethics, etc.) to fulfill our corporate social responsibilities such as conservation of the environment, and mutual understanding and trust with customers.

## Shindengen Group Materials Procurement Policy

### 1 Compliance with laws, regulations, and social norms

#### 1 Compliance with laws and regulations

We observe the applicable laws, regulations, and social norms (human rights, labor, safety, health, environment, etc.) of each country and region.

#### 2 Fair and equitable business activities

Regardless of business size or nationality, we ensure our procurement operations are handled in a fair and equitable manner with all customers. Quality, cost, delivery time, and reliability of supply are all considered.

### 2 Green procurement

As part of our global environmental conservation activities, we strive for green procurement. This involves the procurement of materials with smaller environmental impacts taking into consideration energy conservation, materials usage, chemical management, and the impact on biological diversity.

### 3 Establishment of partnerships

We strive to establish mutually beneficial relationship with our customers based on long-term trust and offering superior products and services.

### 4 Quality, delivery period, and stable supply

#### 1 Securing high quality

To assure and continually improve the quality of our products, we request suppliers establish quality management systems and undergo third-party quality certification in conformity with the ISO9000 (family of) standards.

#### 2 Securing delivery period and establishing a stable supply system

To best meet our customers' demands of stable supply under changing conditions, we request our suppliers to secure the delivery period and establish stable material and/or service supply systems.

#### 3 Continuing supply in instances of disasters or emergencies

In instances of disasters or emergencies such as earthquakes and floods, we request our suppliers to share supply chain information that may impact the procurement process for our customers. Additionally, we encourage our suppliers even under normal circumstances to engage in their own risk management activities, to minimize any disruption during times of disasters or emergencies.



Procurement policy explanation meeting

**5 Support for local procurement**  
We support local procurement and local production.

**6 Requests of our customers**

**1 Compliance with laws and social norms**

We request our customers to fulfill their corporate social responsibility and to observe the applicable laws, regulations, and social norms (human rights, labor, health, safety, environment, etc.) of each country and region.

**2 Sound business activities**

We request our customers to promote sound and fair business activities to build long-term mutual cooperation and trust.

**3 VA/VE activities**

We request our customers to provide suggestions and propose new materials or cost improvement activities through their VAVE activities.

**4 Shortening the procurement period**

We request our customers to be capable of adapting quickly and flexibly to changes in the market.



## SDGs and Shindengen's Corporate Activities

In September 2015, the United Nations adopted 2030 Agenda of the "Sustainable Development Goals (SDGs)". At Shindengen we share the necessity of solving 17 goals through our corporate activities. In accordance with ISO 26000's 'Seven Core Areas' Shindengen have aligned our activities to achieve the SDGs. These are summarized below.

### 17 Sustainable Development Goals



### SDGs aligned to Shindengen Group's CSR activities

#### Organizational Governance (12-14P)



#### Human rights (15P)



#### Labor Practices (16-18P)



#### Environment (19-25P)



#### Fair Business Practices (26-29P)



#### Consumer issues (30P)



#### Community participation and community development (31-33P)



At Shindengen Group we respect international human rights in the countries that we, and our partners operate in. Sustainable globalization requires respect for social issues, and the rights of our own employees. We are actively committed to promoting human rights and being an employer of choice.

## Human Rights for the Supply Chain

### Conflict Minerals – Our Stance

Shindengen is committed to not supporting the free-flow trade of conflict minerals. Shindengen actively monitors its supply

chain to ensure it, and its suppliers are not engaged in the conflict mineral trade, or other activities that conflict with the protection of human rights.

### Shindengen Group's initiative for conflict minerals

Conflict minerals are gold, tantalum, tin and tungsten mined in the Democratic Republic of the Congo and adjoining countries that are used to fund armed groups and rebel organizations which are involved in human rights problems and the destruction of the environment.

In the final rule of Article 1502 of the "Dodd-Frank Wall Street Reform and Consumer Protection Act" (Dodd-Frank act), which was passed and announced on 22 August 2012 by the U.S. Securities and Exchange Commission, it states that all public companies in the US must submit a report to the Securities and Exchange Commission certifying whether or not "conflict minerals" are contained in their products.

As Shindengen Electric Manufacturing is not a company that has to submit a report to the US Securities and Exchange Commission, there is no obligation to submit any such report about the usage of conflict minerals.

However, the Shindengen Group is taking a humanitarian stance, and actively making it clear as to whether or not conflict minerals are included in our products and working towards the elimination of conflict minerals.

## Human Rights for the Employees

### Labor Union Relations

Shindengen and the Group (domestic) actively ensure there is a forum available for discussion between Labor Unions, Shindengen employees and Management. We strive to provide our employees with a positive, safe workplace, through regularly holding meetings with labor management councils, in efforts to achieve mutually beneficial results. Shindengen has signed a collective agreement with the Labor Union to guarantee the rights of all members.

### Employee Consultation

The Shindengen Group (domestic) has established a consultation window where employees and their families can receive specialist counselor advice for daily anxiety, stress and other troubles. Mental health education workshops are also provided to all employees. Since FY2016, annual stress checks (under the Occupational Health and Safety Act) have been performed and reported to the Labor Standards Inspection Office to identify, manage and ultimately reduce the risk of mental health problems of our employees.

### Zero Tolerance for Sexual and Power Harassment

The Shindengen Group has a zero-tolerance policy towards sexual harassment and/or power harassment. Group Action Guidelines are in place to effectively manage any instances of such harassment.

### Human Rights Awareness Initiatives

The Shindengen Group is committed to raising awareness and respect for human rights through CSR training courses. In FY2015, CSR education covered introductions of CSR activities by showing case examples of employment, tax payment, and volunteer. Likewise, CSR awareness raising of poverty, labor exploitation, LGBT by showing respects toward international standards (ILO core labor standards). In FY2016, CSR education covered the human rights topic of UN's SDGs. We are committed to actively sharing human rights information through CSR workshops, the intranet and company newsletters.



CSR Education Activities



At Shindengen Group, we recognize that our employees are at the core of what we do. Our Group Action Guidelines and internal standards are built around respect for international human rights and labor condition laws and regulations. Provision of a “safe workplace”, “free of harassment” and “awareness of health”, where employees are supported at all stages of their career, is of the utmost importance to us. Establishing a workplace culture that cares for our employees’ wellbeing is especially crucial, in light of increasing globalization coupled with declining birthrate and aging population.



## Human Resources Development

### Career Support

#### Education and Training

At Shindengen, we support our employees with the proper education and training at all stages of their career. New employees, third year employees, qualification, and specific tailored (financial, marketing) training is always available.

The Group’s domestic companies have also developed self-assessment application systems, and implemented feedback interviews for all employees applying for promotion. We also introduced the expert career system corresponding to the value diversity. By doing so, we aim to foster a culture that promotes learning and supports our employees career development.

#### Nurturing Global Human Resources

Preparing our employees for the increasingly globalized environment in which we operate, is crucial to the Group’s future success. English training and the TOEIC incentive system are provided to employees to improve English proficiency. For those assigned to work abroad, external teachers with overseas experience are invited to provide trainings on climate, economics, living standards (safety, environment etc.) and culture. For language training, educational support programs are available either in Japan or overseas.

### Providing Training to Human Resources to Support Expansion of Global Operations

To succeed in a globalized environment and to meet the increasing expectations of society, Shindengen has expanded its global operations including product design, production, sales and others mainly into Asian countries. We are striving to establish a profitable business structure supported by talented human resources, and always on alert for opportunities for expansion into new markets (mobility, new energy, and healthcare markets specifically).



English education



## Promotion of Diversity

### Childcare and Work-Life Balance

Shindengen and some Shindengen Group companies in Japan offer various types of leave including hospital, maternity, and pregnancy miscarriage, as well as time for child care and health management which includes reduction of working hours, flexible commuting times and extension of break times. Continual expansion of leave programs for childcare and nursing are underway.

Shindengen’s Hanno factory and Okabe Shindengen support Saitama Prefecture’s “Saitama Womanomics Project” and offer a true equal employment environment for female employees. As a result of their efforts to provide a better working environment for women and childcare programs they received the gold certificate-“Company with a Diversified Working Environment” from the local government.



# Labor Practices

## Long-Term Leave System

Shindengen provides employees with the opportunity to take a long-term career break based on their length of career. The purpose is to refresh themselves, create a lively office, and educate successors.

## Women in the Workplace

On March 31st 2016, Shindengen notified the Ministry of Health, Labor and Welfare, of its action plan regarding the Act on Women's Promotion. Since the entire female employee ratio is low at Shindengen, there are relatively less number of departments and/or positions where female employees are working in. Shindengen is focused on workforce gender diversity and providing women with opportunities to lead. Gender equality is fundamental to our ability to make progress and for our business to more broadly move beyond the need for target-setting to an environment where true gender equality is achieved.

Current initiatives include:

- Increasing the ratio of hiring female graduates to 30%;
- Providing equal opportunity to female employees in a wide range of departments and occupations; and
- Further promotion of work-life balance programs.

Shindengen Group companies are also preparing "Research and analysis of female employees' status and issues in the workplace", "Development and Notification of action plans" and "Information disclosure".

## Diversity Seminars

In March 2017, Shindengen held a diversity seminar where external diversity experts spoke on topics including "subconscious gender bias" and the "gender communication gap between management and female employees". Around 100 employees attended, and Shindengen recognizes the importance of continuing to promote gender equality and reforming existing work practices to provide women with equal opportunity at work.



Diversity Seminar

## Annual Statistics for Maternity and Childcare Leave

	Fiscal Year 2014	Fiscal Year 2015	Fiscal Year 2016
Number of people obtaining maternity leave	5	8	5
Number of people obtaining childcare leave	8	9	5
(Within) Number of men obtaining childcare leave	0	1	0
Reinstatement rate following childcare leave (%)	100	100	100

## Actively Working by Gaining Various Knowledge

Shindengen fully supports employees seeking further education whether this be within the company, or externally. We recognize that knowledge and experience of different fields, provides individuals with a unique perspective that can be used to solve problems within the workplace. Mr.



Kazuhiro Yaeda of Shindengen's New Energy Business Division's (2nd Design Division) successfully passed the Electrical and Electronic Division 'Engineer' Test (2016). Having worked and studied in parallel, his upstanding efforts are to be commended.

Passed the Engineer Test

## Equal Employment: Disabilities and Ageing Employees

Shindengen Group is committed to being an employer of equal opportunity. We strive to provide opportunities to people with disabilities, as well as people approaching the retirement age. An example of this, is the 'second career system' which is committed to re-hiring retirees of 60 years of age and extending their career up to 65 years old.

## Foreign Nationals

At Shindengen we realize in an increasingly globalized business world, it is essential to harness the strengths offered by individuals from a variety of backgrounds and cultures. We respect different values, cultures and experiences (regardless of nationality, race and gender) and appreciate in doing so, we can grow as a business that has a positive contribution on society and our employees.

## Annual Statistics for Number of Foreign Workers

	Fiscal Year 2014	Fiscal Year 2015	Fiscal Year 2016
Number of foreign workers	19	21	23
Number of foreign workers at management level	5	6	6
(Within) Number of foreign workers at or above director level	2	0	0
Consolidated number of foreign workers	3,038	2,567	2,453



## Health and safety

### Health and Safety Management

#### Structure of Promoting Health and Safety

Shindengen Group is committed to promoting health and safety throughout the entire Group. In October 6th 2016, Akita Shindengen received the “Akita Labor Standards Association Chairperson Award”, as recognition for its upstanding health and safety management.



“Akita Labor Standards Association Chairperson’s Award” (Akita Shindengen)

#### Traffic Safety Activity

Shindengen has established the ‘Traffic Leadership Committee’ to manage the prevention of traffic accidents during everyday operations, whilst commuting, and whilst our employees are on business trips incorporating local opinions.



Traffic Safety Management (Shindengen Three E Shindengen Indonesia)

### Activities on Disaster Prevention and Response

The Great East Japan Earthquake (2011) and Thailand Floods are recent reminders of the importance of having a disaster-response plan in place. Shindengen Group’s Business Continuity Plan (BCP) ensures risks are managed appropriately at the time of a large-scale disaster. The Business Continuity Management (BCM) Committee has strengthened disaster-response and business-continuity measures to protect employees and the business.

Overseas contacts including Lamphun Shindengen and Shindengen Thailand periodically, monthly or yearly, hold disaster prevention drills tailored to the characteristics of each country. Lamphun Shindengen employee participates in the local seminars on disaster prevention drills to promote awareness among the employees.



Disaster-Prevention Training of Shindengen Group (Lamphun Shindengen, Shindengen Thailand)



## Various Programs on Health Management

### Activities on Promotion of Health Management

At Shindengen, as part of promoting work-life balance, we provide activities for employees to help their mind and body healthy. On the foundation day of March 10th 2017, Lamphun Shindengen held an in-house sports event to raise awareness about healthy lifestyles. It was a beautiful hot sunny day, and employees enjoyed participating in the various events the day had to offer, whilst learning about the importance of managing one’s health.



Sports Day – (Lumphun Shindengen)

At Shindengen, we recognize that part of being a good corporate citizen is respecting the natural environment in which we operate. In 1992, Shindengen established the Shindengen Global Environmental Charter, to guide the Group's approach towards managing its environmental impacts. With such guidance we aim to develop environmentally conscious products that provide greater benefit to society, with a lower environmental impact. Additionally, the Paris Agreement (21st Conference of Parties to the United Nations Framework Convention on Climate Change) and the United Nations' Sustainable Development Goals provide further guidance when consciously managing our environmental footprint and climate change.



## Environmental Policies

### 1 Basic Policies

Our Policies guide our actions, with the aim of operating harmoniously with the environment and providing customers, shareholders, local communities and employees with our commitment towards a sustainable future.

### 2 Corporate mission

At Shindengen Electric Manufacturing Co., Ltd., we have established the corporate mission: "Maximizing energy conversion efficiency for the benefit of humanity and society." We, the employees at Shindengen Electric Manufacturing Co., Ltd., and the Group companies, shall act in accordance with the following environmental policy, striving toward making an even bigger social contribution based on the corporate mission statement.

### 3 Basic policy

In order for the Shindengen Group to protect the rich natural environment into the future considering biodiversity and aim for a society that can continue to develop, we will increase our activities related to the following items and endeavor to reduce our environmental impact.

- 1 Observe all laws and regulations as well as the related requirements.
- 2 Endeavor to conserve energy in our business activities, and reduce the carbon dioxide emissions.
- 3 By developing and designing energy-saving products, reduce the amount of energy consumed when the products are used.
- 4 Work to understand the environmental burden created by our products and product manufacturing.
- 5 Work to save resources in our manufacturing processes and products.
- 6 Thoroughly control the chemical substances used in our manufacturing processes and the chemical substances included in the products.
- 7 Promote green procurement.
- 8 Reduce waste, and promote recycling and zero emission.

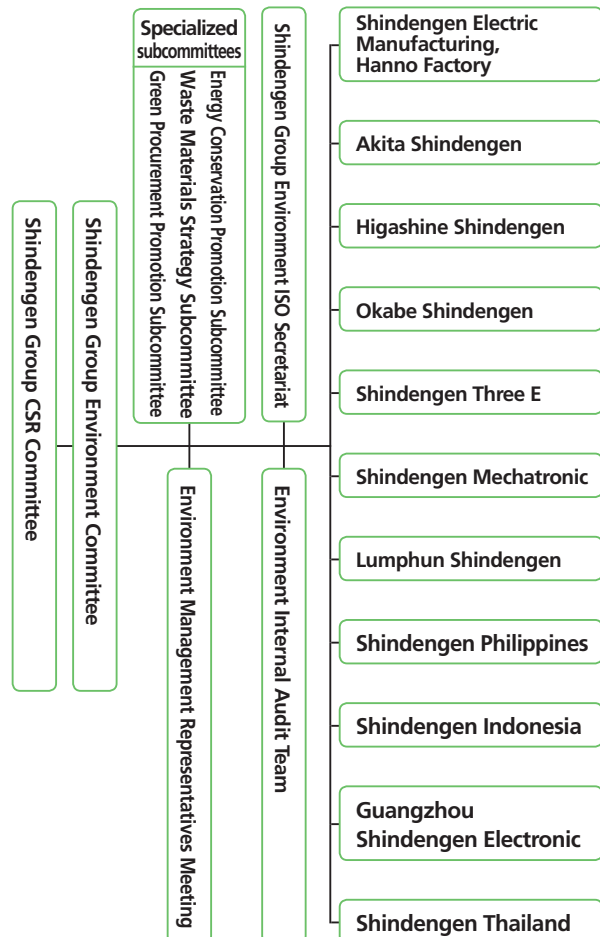


## Environmental management

Shindengen received ISO 14001 certification in 1999, and has taken actions to significantly strengthen the positive environmental activities of the Group. Additionally, Domestic Group Integrated Certification was received in February, 2004.

At present, three committees have been established which are committed to reducing the environmental impacts of the group: the Energy Conservation Committee; the Waste Management Committee; and the Chemical Substance Management Committee.

## Shindengen Group's Environmental Conservation System



At Shindengen, we set environmental goals based on our environmental policies, and have implemented initiatives that both reduce our environmental footprint and create business opportunities for the future.

## Environmental Objectives and Targets

### Environmental Objectives and Targets with Key Results (FY 2016)

Objective	Target	Result
1. Greater Energy Conservation <ul style="list-style-type: none"> <li>Improve energy consumption efficiency by 1% (average) annually until 2030</li> </ul>	[1] Compared with the FY 2012 base year, improve energy consumption efficiency by 3.94%. [2] Reduce energy consumption by 139 kiloliters from the estimated energy consumption of 23,734 kiloliters.	[1] Achieved (Improvement of 23.09% since conservation actions implemented) [2] Achieved (Reduction of 141 kiloliters)
2. Zero Emissions, Reduce Waste <ul style="list-style-type: none"> <li>Maintain zero emission levels</li> <li>Reduce risks associated with waste disposal</li> </ul>	[1] Maintain the rate of landfill waste rate lower than 1% of total waste. [2] Maintain the rate of recycling higher than 99% of total waste. [3] Confirmation of waste contractors' official registration.	[1] Achieved (0.02%) [2] Achieved (99.61%) [3] No issues identified. (25 waste contractors inspected).
3. Greater Chemical Substance Management <ul style="list-style-type: none"> <li>Appropriate management of information related to chemicals</li> </ul>	[1] Implement appropriate information management practices for chemicals used in business activities [2] Distribute the latest regulatory information on chemicals, and promote appropriate handling.	[1] Achieved. (Updated list of chemicals and established centralized information management on chemical components). [2] Achieved. (Confirmed compliance with laws including the Examination and Regulation of Manufacturing; the Act on Preventing Environmental Pollution of Mercury; the RoHS directive; and the REACH regulation.)

### Environmental Objectives and Targets (FY 2017)

Objective	Target
1. Greater Energy Conservation <ul style="list-style-type: none"> <li>Improve energy consumption efficiency by 1% (average) annually until 2030</li> </ul>	[1] Compared with the FY2012 base year, improve energy consumption efficiency by more than 4.90%.
2. Zero Emissions, Reduce Waste <ul style="list-style-type: none"> <li>Maintain zero emission levels</li> <li>Reduce risks associated with waste disposal</li> </ul>	[1] Maintain the rate of landfill waste lower than 0.5% of total waste. [2] Confirmation of waste contractors' official registration.
3. Greater Chemical Substance Management <ul style="list-style-type: none"> <li>Appropriate management of information related to chemicals</li> </ul>	[1] Establish a chemical consumption identification system [2] Establish a management system for the added restricted substances from the RoHS directive.

Notes: These objectives and targets are only applicable to the domestic entities of the Shindengen Group.

Internal environmental system and compliance audits are conducted at least annually across the Shindengen Group domestic companies. The environmental ISO secretariat is focused on ensuring the Group's environmental policies, manuals and standards are applied consistently across the Group. Responsibilities include circulating the Plan-Do-Check-Act (PCDA), maintaining compliance with laws and regulations, managing pollution prevention agreements, and engaging appropriately in any industry body negotiations.

From December 13th, 2016 to December 16th, 2016, a periodic ISO 14001: 2004 review was conducted, and confirmed Shindengen's (domestic) environmental management systems to be robust and effective.

At the overseas ISO certified companies of Shindengen, internal audit is conducted based on their audit plan and schedule.

At Shindengen, we are committed to increasing environmental awareness amongst our employees. In FY2017, all new starters attended training to learn about Shindengen's environmental activities. Training is not limited to new-starters, with all employees regularly undergoing general environmental awareness update training. Such training is aimed at not only increasing environmental awareness generally, but also focused on developing a workplace culture that recognizes what it means to be an environmentally conscious corporate citizen.





## Reducing our Environmental Footprint

Shindengen Group is committed to reducing their environment footprint. Managing activities that contribute to global warming, proper use and disposal of chemicals, safe waste disposal and water-use reduction, as well as protecting the biodiversity of the environment in which we operate, are all ways in which we are reducing our environmental footprint. Following is the introduction of FY2016 main activities including practical cases and education of people involved.

### Air Pollution Control and Climate Change Mitigation Measures

Domestically by FY 2016, EV / PHEV chargers were installed in the parking lots of Shindengen's major production plants to encourage wider adoption of clean energy transport.

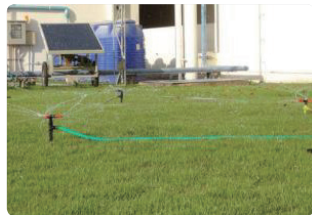


Electric Car Chargers

### Climate Change Mitigation Measures

Shindengen Group has installed solar panel LED exterior grooves and LED lights, and is constantly investing in environmentally friendly factory equipment.

In 2016, Thailand experienced a serious water shortage after a below average rainfall in the rainy season. Shindengen-Thailand, has installed rainwater tanks (daily use only, not drinking water) to alleviate pressures arising from any future water shortages.



Utilizing Rainwater

### Supply Chain CO<sub>2</sub> Emissions Management

Shindengen conducted a Life Cycle Assessment (LCA) (LCA: refers to "Guidelines for Life Cycle Assessment of Electronic Components" of the Japan Electronics and Information Technology Industries Association) for its "High Voltage DC Power Supply (HVDC) System" in order to assess its CO<sub>2</sub> emissions and identify areas for future improvement. Scope 3 (categories 1.4.5.7 and 9) was applied.

### Fostering Environmental Experts

The Eco Test is a test that a wide variety of industries and occupations are employing as an "Introductory Guide to Environmental Education". Ms. Yumi Handa of Shindengen's Environmental Management Division successfully passed the Eco Test on July 24th 2016. "I was interested in learning more about the work our Environmental Management Department performs at Shindengen, and how we could better manage our environmental footprint. I started studying in the summer of 2015, and learning the course's content (such as environmental laws, technical terms, and environmental issues) was a big challenge. My colleagues taught me and I thoroughly enjoyed learning about environmental problems (chemical waste, waste, energy conservation, global warming) as well as current initiatives such as the Paris Agreement. I look forward to implementing what I have learnt in the classroom, in the workplace at Shindengen." – Ms. Yumi Handa. Additionally, she should be commended for balancing work and study while she was pregnant at that time. She is currently on child care leaves and enjoying raising her recently born child.



Challenge Against Eco Test

## LCA & Scope 3 for High-voltage DC power supply (HVDC) Systems

LCA (Life Cycle Assessment)	
Evaluation target	CO <sub>2</sub> emissions (per vehicle)
Energy (electric, hydroelectric)	0.2t - CO <sub>2</sub>

Scope of evaluation: Shindengen Three E Co., Ltd. factories

- [1] Implement inventory analysis
- [2] Evaluate effects of CO<sub>2</sub> emissions

Scope 3	
Category	CO <sub>2</sub> emissions (per vehicle)
1 Purchased goods and services	1.1t - CO <sub>2</sub>
4 Transport and delivery (upstream)	0.65t - CO <sub>2</sub>
5 Waste products from operations	1.9t - CO <sub>2</sub>
7 Staff commuting	16.6t - CO <sub>2</sub>
9 Transport and delivery (downstream)	39.0t - CO <sub>2</sub>

Trial calculations conducted for part of 15 categories of Scope 3.

- [1] Calculations using primary data
- [2] Calculations using estimated values and secondary data



## Approach to Biodiversity


Shindengen is committed to preserving the biodiversity in the regions in which it operates. Shindengen's Hanno Factory is a member of the Hanno Citizen's Congress, and participated in the "Tenranzan Yatsu-no-sato zukuri Project". This project focused on revitalizing the natural environment, improving rice fields, and protecting birds and small animals in the local area. On December 18th, 2015, the Ministry for the Environment announced "Tenranzan and

Tonosu-yama" as one of 500 important Sato Mountain sites requiring biodiversity preservation.



Tenranzan Yatsu-no-sato zukuri Project

Shindengen Group's conservation actions are summarized in the following report:

Aichi Targets		Shindengen Group Activities	
Target 1 Developing public awareness	Evaluation of biodiversity and recognition of activities.	Promotion of activities considering biodiversity included in environmental measures from 2011  Preparation of an educational DVD providing an outline of biodiversity, business activities, and education, from 2012.	<ul style="list-style-type: none"> <li>Dissemination through websites and in-house journals.</li> </ul>
Target 4 Sustainable production and consumption	All related personnel implement planning for sustained production and consumption.		<ul style="list-style-type: none"> <li>Improvements in efficiency of product exchange.</li> <li>Reduction in amount of waste products for final disposal.</li> <li>3R activities etc.</li> </ul>
Target 5 Halting habitat destruction	Reduce loss of natural habitats (including forests) by at least half, and clearly reduce deterioration and segmentation.		<ul style="list-style-type: none"> <li>Greening management of factories for biodiversity.</li> </ul>
Target 8 Controlling pollution by chemical substances	Control chemical substances, fertilizers, and agricultural chemicals to non-toxic levels.		<ul style="list-style-type: none"> <li>Appropriate use and management of chemical substances in business activities and product design.</li> </ul>
Target 9 Imported species	Control or eradicate invasive imported species.		<ul style="list-style-type: none"> <li>Use of native and local species in factory greening.</li> </ul>
Target 11 Preservation of protected areas	Preserve at least 17% in land areas and 10% in shipping.		 <ul style="list-style-type: none"> <li>Contributions to the Sainokuni Greening Fund.</li> <li>Coastal cleanup activities etc.</li> </ul>
Target 14 Ecosystem services	Recovery and preservation of ecosystems bringing the blessings of nature.		<ul style="list-style-type: none"> <li>Establishment of biodiversity areas within factories, and provision of areas for rest and relaxation.</li> </ul>
Target 19 Improvements in, and awareness of, knowledge and technology	Improve related knowledge and science and technology.		<ul style="list-style-type: none"> <li>Active participation in the activities of the four electrical machinery and electronics groups, and acquisition of the latest information on biodiversity.</li> </ul>



## Chemical Management

Shindengen Group is committed to appropriately managing chemicals that are employed in the manufacturing process, and contained within its products. This commitment is guided by our Environmental Policy. The Chemical Substance Management Committee (consist of

Shindengen Hanno Factory employees, and the domestic Group companies) regularly share the latest domestic and international laws and regulations, related to REACH, EU RoHS directives, phthalate ester restrictions, green procurement, and non-fluorocarbon equipment to group companies.



## Environmental Risk Management

At Shindengen, we have been conducting field surveys of soil and groundwater contamination since FY1997, for companies within the Group that employed trichloroethylene in the cleaning process of semiconductor manufacturing. In February 2012, the remediation of the Shindengen Three E site was completed, and further remedial measures are underway at five more sites including Shindengen Hanno factory. Progress is regularly reported to the relevant administrative authorities.

PCB wastes owned by the Shindengen Group as well as wastes

containing trace amounts of PCBs are managed according to the "Special Measures Law on Proper Disposal of PCB Waste". In FY2016, processing and disposal of the wastes containing trace amounts of PCBs stored at Shindengen site was safely completed. Going forward, local and national government waste disposal facilities will be utilized.

In FY2016, there were no violations of environmental laws or regulations within the Shindengen Group.

### PRTR Report

(Unit : t)

Name of Substance	No.	CAS No.	Amount handled FY 2015	Amount handled FY 2016	Emissions				Amount transferred		Consumption	Amount removed	Amount recycled
					Atmospheric	Public water-way	Soil	Landfill deposit	Sewage	Waste material			
n-Alkylbenzenesulfonic acid and its salts (alkyl C=10-14)	30	27176-87-0	—	15.9	1.2	0.0	0.0	0.0	0.0	14.7	0.0	0.0	0.0
Antimony and its compounds	31	—	42.9	17.3	0.0	0.0	0.0	0.0	0.0	7.0	10.3	0.0	0.0
Ethylbenzene	53	100-41-4	5.5	17.8	2.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	12.7
Ethylenediamine	59	107-15-3	1.2	1.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Xylene	80	1330-20-7	31.8	47.2	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.9
Cumene	83	98-82-8	1.0	1.2	0.2	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Tetrahydro methyl phthalic anhydride	265	11070-44-3	37.9	14.2	0.0	0.0	0.0	0.0	0.0	1.9	12.3	0.0	0.0
1,2,4-trimethylbenzene	296	95-63-6	24.1	32.6	0.8	0.0	0.0	0.0	0.0	25.0	0.0	0.0	6.4
1,3,5-trimethylbenzene	297	108-67-8	22.3	7.1	0.3	0.0	0.0	0.0	0.0	5.1	0.0	0.0	1.7
Naphthalene	302	91-20-3	—	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Lead	304	7439-92-1	14.1	15.7	0.0	0.0	0.0	0.0	0.0	5.8	9.7	0.0	0.2
Hydrazine	333	302-01-2	2.1	2.3	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.8
Pyrocatechol	343	120-80-9	1.8	2.3	0.2	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0
Phenol	349	108-95-2	3.2	3.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4
Hydrogen fluoride	374	—	56.0	62.1	0.3	1.8	0.0	0.0	0.0	41.0	0.0	0.0	19.0
1-Bromopropane	384	106-94-5	11.5	17.1	8.7	0.0	0.0	0.0	0.0	0.5	0.0	0.0	7.9
Methylnaphthalene	438	1321-94-4	28.5	31.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
<b>Total</b>			<b>283.9</b>	<b>290.0</b>	<b>18.2</b>	<b>2.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>107.2</b>	<b>32.3</b>	<b>0.0</b>	<b>100.1</b>

\* This table lists all substances for which the Domestic Shindengen Group as a whole handles 1 t or more annually.

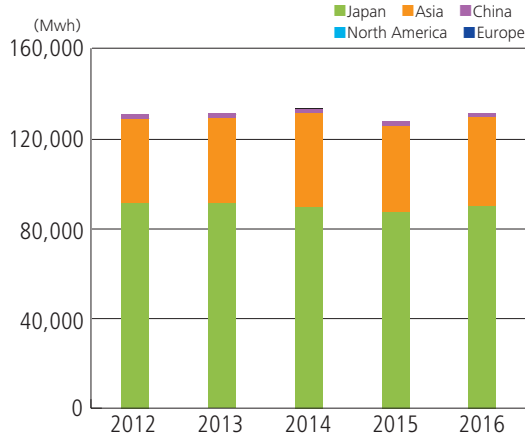
\* The amounts handled have been rounded off to the nearest tenth, and therefore the amount handled does not always match the sum of emissions and amount transferred.



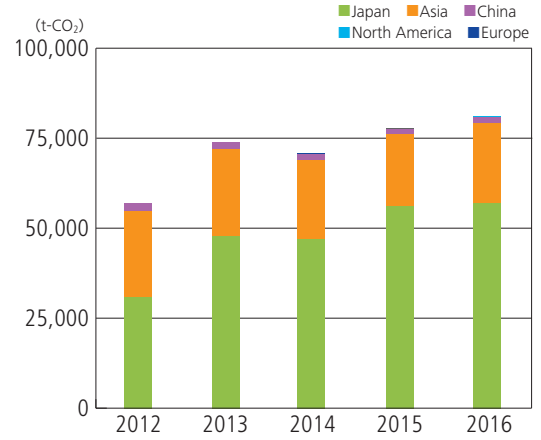
## Trends in primary environmental loads associated with manufacturing activities

### Energy

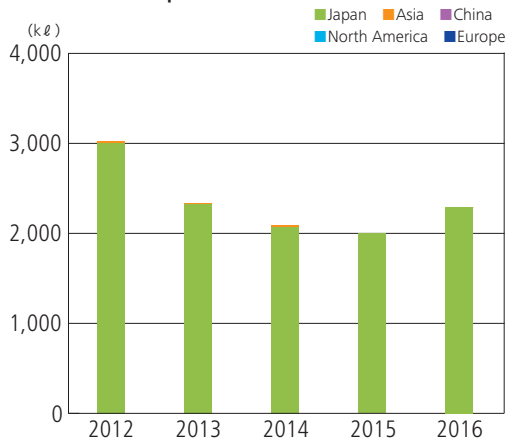
#### Electric Power Consumption



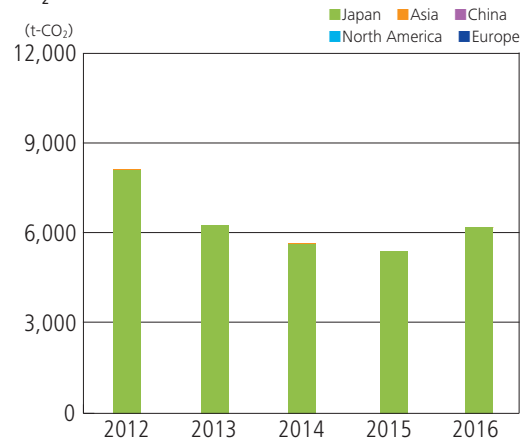
#### CO<sub>2</sub> Emissions



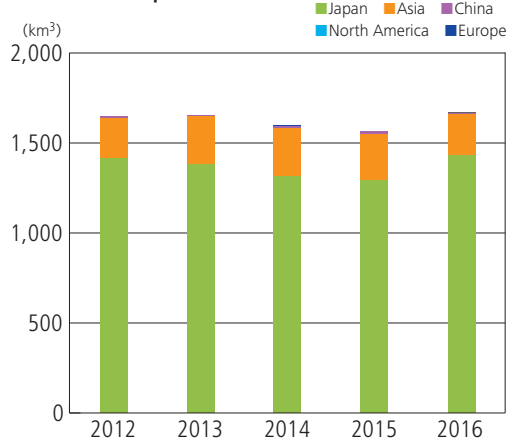
#### Fuel Oil Consumption



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

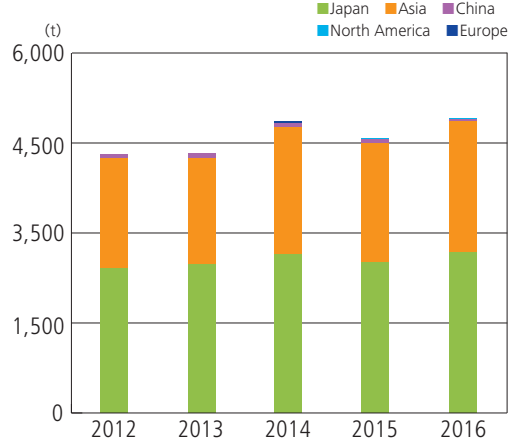


#### Water Consumption



### Waste

#### Total Waste Emissions



## Environmental Accounting

The Shindengen Group has introduced environmental accounting to better promote effective environmental management. It identifies and discloses environmental conservation costs and benefits quantitatively (economic benefits in monetary values

and environmental impacts in physical units).

The below figures are calculated or estimated according to our own standards and the Environmental Accounting Guidelines by the Ministry of the Environment, Japan.

### Environmental Conservation Costs

(Unit : ¥ million yen)

Category	Item	FY 2015		FY 2016	
		Investment	Cost	Investment	Cost
<b>1 Business area costs</b>		8	247	89	295
Breakdown	Pollution prevention costs	6	117	72	139
	Global environmental conservation costs	2	30	15	39
	Recycling, disposal costs	0	100	2	117
<b>2 Upstream/downstream costs</b>	Cost of green procurement, and cost of analytical instruments	1	18	0	15
<b>3 Administration costs</b>	Environmental education fees, certification costs, and internal audit costs	0	222	0	212
<b>4 R&amp;D costs</b>	Development of smart energy management system, power conditioner for solar power generation, ECU with idling function, and chargers for EV/PHEV	0	133	0	54
<b>5 Social activity costs</b>	Participation in local community environmental activities	0	33	0	4
<b>6 Environmental remediation costs</b>	Remediation of contaminated soil and groundwater	7	56	0	29
<b>Total</b>		<b>16</b>	<b>709</b>	<b>89</b>	<b>609</b>

Notes: Some numbers are estimates. Totals are subject to rounding differences.

### Environmental Conservation Benefit

#### [1] Economic Benefit associated with environmental conservation activities

(Unit : ¥ million yen)

Item		FY2015	FY2016
<b>Revenue</b>	Revenues from sale of recycled products	270	189
<b>Expense reduction</b>	Energy expense savings from energy conservation (electricity, fuel oil, etc.)	59	61
	Disposal cost savings from reduced material usage or recycling	3	1
	Other expense savings from environmental improvements	11	0
<b>Total</b>		<b>343</b>	<b>251</b>

#### [2] Environmental Impacts

Item	Unit	FY2015	FY2016
CO <sub>2</sub> emissions	t-CO <sub>2</sub>	82,805	73,622
Electricity consumption	GWh	127	122
Fuel oil consumption	kiloliter	2,007	2,213
Water consumption	1000m <sup>3</sup>	1,562	1,619
Amount of waste	t	91	104
Amount of material recycled	t	3,758	4,135

Notes: For domestic electricity consumption, the following CO<sub>2</sub> emission factors are used: 0.000496t-CO<sub>2</sub>/kWh (Tokyo Electric Power Co., Inc.) and 0.000573t-CO<sub>2</sub>/kWh (Tohoku Electric Power Co., Inc.), 2004. For overseas electricity consumption, each country's CO<sub>2</sub> emission factor is determined using in the Greenhouse Gas Protocol Initiative guidelines.

#### [3] Energy-Saving Impacts of Products

The reductions in electricity consumption and fuel consumption by major energy-saving products of Shindengen Group developed and produced in FY2016 are shown in the table below, as well as the equivalent reduction of CO<sub>2</sub> emissions.

Item	Reduction of electricity consumption	Reduction of CO <sub>2</sub> emissions
IC series	88 GWh	44,000 t-CO <sub>2</sub>

Notes: Reduction of electricity consumption = (annual power consumption of old series – that of new series) x annual sales volume.

Item	Reduction of fuel (gasoline) consumption	Reduction of CO <sub>2</sub> emissions
DC-DC converter for hybrid vehicles	33,967 kiloliters	79,000 t-CO <sub>2</sub>

Notes: Reduction of fuel consumption = (annual consumption of gasoline vehicle – that of hybrid vehicle) x production volume.

The Shindengen Group is committed to conducting business in a way that is both ethical and that complies with laws and regulations and to be adaptable to the ever-changing social values and expectations. The Shindengen Group Action Guidelines have established a set of internal ethical principles that guide the Group's actions at each stage of the value chain including marketing, product development, material procurement, production and logistics.

## Approach to Compliance

### Setting a Compliance Committee

Shindengen Group considers compliance with laws and regulations such as Competition Laws and Bribery Prevention Laws as one of its top priorities. Establishment and timely improvement of effective compliance management procedures and standards is essential. Regular compliance training, as well as keeping up to date with the latest laws and regulations ensures Shindengen can meet its compliance obligations. On October 1st 2015, a Compliance Committee was established, with Shindengen's President as the Chair, and is tasked with managing such compliance efforts.

Committee actions include:

- **Revised Shindengen Group Action Guidelines**  
Reviewed focusing on the Competition Laws and Bribery Prevention Laws and updated the Group Action Guidelines accordingly (April 2016)
- **Competition Law**  
Prepared competition legal provisions and emergency response manuals by the working group under the compliance committee meeting. Additionally, training workshops are held few times a year by subject experts for overseas subsidiaries' Presidents, and sales departments.
- **Bribery Prevention Actions**  
Developed Anti-Bribery provisions, operational manuals by the working group under the compliance committee meeting and held educational training same as the competition law.

### Whistleblowing System and Internal Reporting on Corporate Compliance

To ensure Shindengen Group operates to the highest legal and ethical standards, an internal whistle-blowing system has been established. This aims to provide a safe communication channel for employees to report and respond appropriately to illegal and/or unethical conduct. A whistleblower hotline was established which is responded by the internal audit department, and/or an external lawyer. The communication channels are available to domestic group companies. Overseas subsidiaries have similar safe communication channels, and report periodically to head office management.

### Compliance with the Subcontract Act

Shindengen Group considers compliance with the Subcontract Proceeds Payment Delay Prevention Laws (Subcontract Act), a special Law under the Anti-Monopoly Laws, essential for the promotion of fair trade. Shindengen's Materials Division is responsible for regular education training sessions, preventative actions, and on-site compliance inspections for all group companies.



Compliance Education on Subcontract Act

### Anti-Social Forces

Shindengen is committed to fulfilling its social responsibilities, by not engaging with any group or individual that endangers or harms society. Any group or individual that endangers or harms society identified internally, or with business partners is ceased immediately. Therefore, we kindly ask our stakeholders to sign the "Memorandum of the Anti-social Forces".



## Risk management

### Business Continuity Plan

Shindengen Group's Business Continuity Plan (BCP) ensures risks are managed appropriately at the time of a large-scale disaster. The BCP conforms to ISO 22301 (Business Continuity Management) and provides guidance in managing operational and supply chain risks, until such a time as the business can restart operations as per normal.

The Business Continuity Management (BCM) Committee was established in FY2012, and is chaired by the President. This Committee has strengthened disaster response and business continuity measures under the "Disaster Prevention and Business Continuity Policy" and regularly distributes and collates risk management information from across the Group both domestically and internationally.

Annually, training and top management reviews are held to continuously improve the suitability, appropriateness, and effectiveness of the BCM system.



Business Continuity Training

### Information security

Shindengen is committed to ensuring the security of all workplace information. An information security division is tasked with both protecting the Group's information systems from external attack, and also preventing external leaks from internal sources. Information security education workshops are held annually for all employees (including temporary staff and part time workers). Intrusion detection and prevention software helps to protect, identify and respond to any external threats that may potentially compromise Shindengen's information systems. Additionally, surveillance of employee internet activities, and computer operational logs through integrated monitoring software are designed to manage the risk of an information leak from an internal source.

### Personal Information Protection

Shindengen's "Privacy Policy" recognizes protection of customer privacy and personal information is of the utmost importance.



## Emergency Response and Business Continuity Plan-Statement of Principles

The Shindengen Group Emergency Response and Business Continuity Plan is designed to promote a coordinated and effective response to a natural disaster or other unforeseen event in order to minimize the disruption to the operations of the Group as a whole.

1

### Objectives

- 1 To ensure the safety of employees, customers and affiliated staff
- 2 To fulfill our delivery obligations to customers and enable the resumption of normal business operations as soon as practicable
- 3 To retain the confidence and respect of our customers and suppliers
- 4 To work together with and make a meaningful contribution to both the local community and wider society, particularly with regards to preventing secondary disasters

2

The Emergency Response and Business Continuity Plan will be reviewed both regularly and on an as-needs basis to ensure ongoing relevance and efficacy.

3

This Statement of Principles will be circulated widely both within and outside the Shindengen Group.



## CSR activities in the area of procurement

### Primary Challenges in Materials Procurement Based on ISO26000 Core Themes

Core theme	Topic	Primary challenge
Human rights	Avoiding complicity	<b>Conflict minerals</b> The Shindengen Group is not an enterprise covered under the US Dodd-Frank Wall Street Reform and Consumer Protection Act., however from a human rights perspective, the inclusion of conflict minerals in products is investigated, and all possible efforts are made to effect their removal.
Fair business practices	Preventing corruption	<b>Compliance</b> Materials procurement based on 'Compliance with Laws and Regulations' as determined in the Shindengen Group Behavioral Guidelines. <ul style="list-style-type: none"> <li>• Prevention and early discovery of illegal behavior</li> <li>• Preventing conflict of interest</li> <li>• Preventing leakage of confidential information</li> <li>• Prohibiting insider trading</li> </ul>
	Fair competition	<b>Compliance with Subcontracting Law</b> The Shindengen procurement division, acting with overall responsibility, circulates through the Group companies periodically implementing preventative measures (e.g. hearings, education) to promote compliance. <ul style="list-style-type: none"> <li>• Regular interviews</li> <li>• Education</li> <li>• Individual discussions</li> </ul> <b>Evaluation of suppliers</b> To strengthen healthy relationships with suppliers, and to contribute to the development of these relationships, suppliers are evaluated annually on quality, prices, delivery dates, and business service, and awards presented to superior suppliers.
	Promoting social responsibility in the value chain	<b>Exclusion of anti-social elements</b> To ensure sufficient awareness of the importance of breaking relationships with anti-social elements, and from the viewpoints of social responsibility, compliance, and enterprise defense, the Shindengen Group promotes efforts to break these relationships. <ul style="list-style-type: none"> <li>• Memorandum: Requests signing of a 'Memorandum on Exclusion of Anti-social Elements' with its suppliers.</li> <li>• Education : Implements participation in periodic compliance education in the materials division, and external lectures.</li> </ul>

Note: See 'ISO26000:2010' (published by Japan Standards Association) for core themes and topics.

## Intellectual Property Protection

### Intellectual Property Rights Policy

Shindengen understands the importance of respecting and protecting intellectual property rights. Three principles guide our actions:

- Do not infringe upon intellectual property rights of other companies;
- In the instance where another company's patent is required, obtain agreement from that company prior to commercialization; and
- In the instance where a patent is infringed upon accidentally and subsequently identified, terminate such infringing activities within 6 months.

### Invention Compensation

To encourage innovation, Shindengen guarantees the invention credit rights of employees.

Under the "Rules for Handling Inventions" we have established a compensation system that pays incentives for new designs as prescribed under the Patent Act, Utility Model Law and Design Law. Compensation can include application fees, registration fees, licensing fees, and any transfer of license fees. Additionally, compensation is not strictly limited to instances of registered inventions, but rather assessed on a case-by-case basis before determination of compensation from the 'internal awards provision'.

### Intellectual Property Rights Education

By increasing awareness through education about intellectual property rights, Shindengen aims to encourage innovation, whilst maintaining compliance with the relevant legislation. Thorough research is conducted before any commercialization commences, in order to prevent infringement of intellectual property rights.

Shindengen is also committed to protecting personal and privileged information. Regular training is provided to employees to empower them with the knowledge as to what constitutes intellectual property rights, and privileged information. Regular brainstorming events to encourage inventions in the workplace are also held for each department.

### Counterfeit Products – Zero-Tolerance

Shindengen Group has a zero-tolerance policy for counterfeit products that infringe patents, models, designs and trademarks. trademarks.

### Intellectual Property Management Engineers' Association - Awards

Mr. Wataru Miyazawa of the product planning department of Shindengen received the FY2017 encouragement award from the Intellectual Property Management Engineers' Association. Mr. Miyazawa was involved in developing new electronic devices. Through his daily work, he had come to understand the importance of managing the technology and intellectual property assets. From this, he aimed to become an expert on intellectual property and studied to become an intellectual property and patent law attorney. Whilst studying he developed many strong long-term relationships that contributed to his overall success in the production, patenting and new product planning stages.

The awards at the Intellectual Property Management Engineers' Association were awarded to him (Mr. Wataru Miyazawa) for serving one term as a Steering Committee Member, four terms as a researcher, and two terms as an editor. As a researcher and editor, he wrote articles, published reports on IP management reviews and presented on the Research Report for five times. His contributions to the field of intellectual (engineering) property management are to be commended.



Intellectual Property Management Engineers' Association Award

### Export Control and Security

To maintain international peace and security, Shindengen Group complies with export laws including the "Foreign Trade Control Law" and has established a strict export control system. Shindengen strives to prevent the spread and accumulation of excessive weaponry, with particular regard to weapons of mass destruction or social harm.

At Shindengen, the "Security Trade Control Committee", is tasked with ensuring export transactions meet the high ethical standards imposed by "Security Trade Control Regulations". Additionally, even in the case of domestic sales, the end-user is checked, in order to determine whether the product is ultimately exported, and has the potential to cause social harm and/or endanger international peace.



At Shindengen Group, we understand that the quality and the accumulation of knowledge of all employees engaged in the whole supply chains are the core of the “quality with real value”. Further, we understand the importance of delivering our product and services to our customers quickly, and consistently, whilst maintaining the highest of quality standards. We have established a robust quality management system that includes design, manufacturing and quality assurance.



## Quality Management

### ISO 9001 Certification within Shindengen Group

ISO 9001 is an International Standard that gives requirements for an organization’s quality management system. Shindengen Group (both domestic and international offices and affiliated companies) has obtained ISO 9001 to contribute to the customers by consistently providing products and services that meet their needs and expectations.

### Promoting Activities for Improvement/ Kaizen

Annually, a presentation is held in June at the “Shindengen Group’s Showcase of Improvement/Kaizen” event to share improvement activities undertaken across the Shindengen Group. Specific case studies are examined with a focus on building knowledge upon such successes, further across the

manufacturing processes and the Group.



Showcase of Improvement/Kaizen Sharing Event

Office Names	Applied Standards	Certifying Institution	Acquisition Date
Shindengen Electric Manufacturing Co.,Ltd. Shindengen Mechatronics Co.,Ltd.	ISO 9001	JAB/UKAS	August 5 2018
Shindengen (Thailand) Co., Ltd.	ISO 9001	UKAS	September 15 2018
Lumphun Shindengen Co., Ltd.	ISO 9001	UKAS	June 27 2018
Shindengen Philippines Corp.	ISO 9001	UKAS	December 6 2017
Guangzhou Shindengen Electronic Co., Ltd.	ISO 9001	TGA	August 24 2018
PT.Shindengen Indonesia	ISO 9001	UKAS	February 22 2017
Akita Shindengen Co., Ltd. Oura Factory	ISO/TS 16949	IATF	September 14 2018
Akita Shindengen Co., Ltd. Asuka Factory	ISO/TS 16949	IATF	September 14 2018
Higashine Shindengen Co.,Ltd.	ISO/TS 16949	IATF	September 14 2018

(June 21, 2017)



## Customer Consultation Desk of Power Conditioner for the Solar Power Generation System

As society places increasing focus on renewable energy, improving the customer service aspect of our power conditioners business is essential. Since September 2013, a customer

consultation desk has actively worked with customers to solve problems, and improve customer satisfaction.



# Participation in the Community and Development of the Community

Shindengen Group recognizes that long-term corporate value creation is essential in order to be part of contribution in solving social challenges including global warming issue. With passion and purpose, we work hand-in-hand to empower our people and the communities in which we operate. Below are some of our sustainability initiatives.

## Moving Towards a Low-Carbon Society

### Providing Fast Charger for Electric Vehicles to Zao Town Office

In December 2016, Shindengen delivered a rapid charger (SDQC - 30 - U - CS) for electric vehicles to Zao town office in Miyagi Prefecture (Mr. Hidehito Murakami, Zao Mayor). The installation ceremony was held on January 8th, 2017, and operation of the charging facility officially commenced. The Zao town office is the starting point of the 'Zao Echo Line' spanning the Miyagi and Yamagata prefecture, and is expected to be used as a power supply base for drivers travelling over Zao mountain by EV/PHEV. Additionally, a 'Climate Change Study Group' workshop was held for Zao Town Office staff in which we explained the importance of the Paris Agreement and UN Sustainable Development Goals (SDGs) for the public office.

### Participation of the "9th Electronics Technology Exhibition"

Shindengen displayed both regular and fast chargers and semiconductors for electric vehicles at "The 9th Electronics Technology Exhibition" (held at Tokyo Big Sight - January 18th to January 20th, 2017). With growing social interest in the electronic charger market, our instalment was positively received.



Rapid Charger for Electric Vehicles



Climate Change Study Group



Exhibition



## Engaging Local Communities

### Participation of the "Hanno Verdurous Two Days March Event"

The Hanno Verdurous Two Days March is a community walk on May 28th, 2016 involving walking on the fresh green Oku Musashi Road surrounded by sights such as the Iruma River, and the Tenranzan held. Since last year, Shindengen has been taking part in the event as a walker. For the "20th Anniversary Walk Walk Event", 96 employees walked on the day. Since 11 years ago, Shindengen has set up a place providing free drinks to walkers. This year, Shindengen has provided ice-creams for the first time to walkers which were well received, due to clear weather, not only to walkers but also children.



Hanno Verdurous Two Days March Event

### Summer Carnival – Akita Shindengen

Akita Shindengen is located in Yurihonjo-shi, in the South of Akita Prefecture, bordering the Sea of Japan. It is surrounded by beautiful scenery including the Chokai Mountain, and has been in operation for more than 45 years since 1970. It is the main factory producing semiconductor goods for the Shindengen Group, and has 759 employees. Annually, a summer carnival is held on company grounds to promote employee welfare, as well as engage the local community. On July 16th, 2016, the 15th annual festival was held much to the delight of local residents and employees. We receive voices from many participants saying "looking forward to the event every year". We hope to sustain and continue organizing this event to promote communication with the local communities.



Summer Carnival – Yurihonjo-shi, Akita

### Clean Campaign in South Boso Peninsula (Higashine Shindengen Katsuura)

Higashine Shindengen (Katsuura) participates annually in the Clean Campaign in South Boso. Our employees engage with the local government and community to assist with restoring the beautiful shoreline of Katsuura.



Clean Campaign in Minami-boso

### Shindengen's Athletics and Sports Team

Shindengen's Athletics and Sports Team since its foundation has been supporting the development of local community in Hanno, Saitama Prefecture, through sports activities for the past 60 years, primarily through the long-distance relay race – the 'Ekiden'. Although, Shindengen team is not a professional team, we succeed the spirit of "amateur athletes" as part of our tradition. While working as an employee of Shindengen, we do the training throughout the entire year on holidays and after work. We look forward engaging with the local community in a race traditional in Japanese local communities as well as nationally.



Shindengen Athletics and Sports Team



# Participation in the Community and Development of the Community

## Founding Anniversary Activities

### - Lumphun Shindengen, Shindengen Thailand

Shindengen Group operates two subsidiaries in Thailand. Annually, on the anniversary of our foundation, we engage with local monks to pray for the safety of Shindengen employees and the future development of our companies.



Founding Anniversary Activities

## Company Retreat (Shindengen Vietnam)

In Vietnam, we regularly hold traditional cultural events for our employees to promote employees' satisfaction and as a token of appreciation to them.

In June 25th, 2016, employees were treated to a two-night retreat.



Employee Retreat Activities

In April 24th, 2016, employees participated in the Ekiden competition.

## Participation of the "FUN RUN Event" - Shindengen Philippines

On May 28th, 2016, Shindengen Philippines held the FUN RUN Event. Every year, employees, families and friends gathered to participate and donate in relations to how long they have run. Donations are given to aged care facilities and beds and blood pressure monitors are donated to elementary schools. In 2016, these efforts were recognized by the 'SCHOOLS DIVISION OF CALAMBA CITY' and a commemorative shield was received.



FUN RUN Participants



Ekiden Competition

## Third-Party Written Opinion



Naoko Hase  
ESG Analyst  
The Center for the Strategy of Emergence: ESG Research Center  
The Japan Research Institute, Ltd.

I wish to submit a Third-Party Opinion on Shindengen Group's CSR activities and the information contained in the "Shindengen Group CSR Report 2017", as well as comment on the site-visit I performed of the Akita Shindengen Co., Ltd. factory.

In 2017, the Shindengen Group refreshed the brand, and declared in "Our Promises" that they "will preserve the natural environment and provide products and services that contribute to social development." The Shindengen Group has been contributing to the realization of a sustainable society by providing environmentally-friendly products that employ advanced core technologies (semiconductors, power supply, and module technology). Recently, Shindengen is focused on the electric vehicle (EV) industry, and have developed EV chargers and electronic components for environmentally-friendly cars such as DC-DC converters, diodes, and power modules. It is highly commendable how Shindengen have promoted installation of EV chargers at government offices and roadside stations with local governments in the Akita, Yamagata, and Miyagi prefectures. Regarding disclosure, they also deserve credit for clearly stating that they aim contribute to the United Nations Sustainable Development Goals (SDGs, 2015) of "Affordable and Clean Energy" and "Climate Change". EV chargers reduce greenhouse gas (GHG) emissions, and improve social infrastructure. Shindengen should continually strive to disclose such efforts in order to improve brand image and attract investor interest.

The Shindengen Group has established the Shindengen Group Productivity Innovation System (SPIS) across the Group to improve products, service quality, environmental activities, productivity and safety. The Akita Shindengen Co., Ltd. factory, has made significant efforts to improve manufacturing efficiency, setting clear goals, targets, and regularly performing status checks. It is commendable that the Group has developed good practices not only in domestic factories but also overseas. Shindengen's quality assurance activities, SPIS; Vehicle Quality (VQ); and Quality Kiken Yochi, or quality risk prediction (QKY) are particularly noteworthy, with the Group having received quality awards from clients. Regarding environmental activities, the Group has undertaken activities to improve material and energy efficiency such as cross-cutting check systems to improve yield rates. However, there is still room for improvement by utilizing renewable energy. For example, globally, more than 100 companies have already participated in "RE100" (an initiative of businesses committed to 100% renewable energy). I look forward to Shindengen's consideration of greater use of renewable energy in the future.

Regarding employment, Shindengen have established several programs such as vacation leave, shorter working hours, childcare leave, and nursing leave to promote a more flexible work environment, and greater work-life balance for employees. Since 2016, the statistics for childcare and nursing leave, have been disclosed in the CSR report which is noteworthy. For better communication with stakeholders, Shindengen should

consider disclosing the annual leave uptake rate, and employees with physical and/or intellectual disabilities rate on their website. Of note, at Akita Shindengen Co., Ltd., the rate of employed persons with physical and/or intellectual disabilities is considerably high at 2.6%, and to Shindengen's credit, they have developed manufacturing processes that accommodate these employees. Furthermore, in terms of human resource development, impressively the profile of each employee in R&D department is displayed with his or her research project at reception to improve motivation and morale. Shindengen should consider expanding this across the Group, and publishing research activities on their website.

Regarding diversity, it is important for Shindengen's management to appreciate the nature of their increasingly globalized operations. I visited various Companies in the Shindengen Group, and apparently identified differences, for example, in the way gender equality, and support of women is managed. Before further efforts are made to improve diversity in individual Companies, it is important that Shindengen develops the Group's policy, and basic diversity principles to ensure greater consistency in application across the Group. I look forward to Shindengen's consideration of developing such framework on diversity.

## **Commentary on the Third-Party Written Opinion**

We thank Naoko Hase, an ESG Analyst from the Japan Research Institute, Ltd., for her valuable comments on, and suggestions for our Group's CSR activities.

Shindengen Group has conducted CSR activities according to the seven core subjects of ISO26000. Naoko HASE has evaluated that the Group's products and initiatives are contributing to realizing a more sustainable society, and that appropriate disclosure has been made in relation to the UN's SDGs. It was also advised that the Group should continue to make efforts in the fields of renewable energy, and diversity initiatives including supporting gender equality in the workplace.

Based on the evaluation and advice received, the Shindengen Group will continue to strive to improve environmental activities, and corporate value in-line with our Long-Term Vision.

Thank you for your guidance and support

CSR Committee Secretariat  
Shindengen Electric Manufacturing Co., Ltd.

**Shindengen Electric Manufacturing Co., Ltd.**

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