

The background of the cover is a light green gradient with a pattern of white and light green leaves and stems. The text is centered in the middle of the page.

ENVIRONMENTAL  
REPORT  
2016  
DIGEST VERSION

For the year ended February 29, 2016





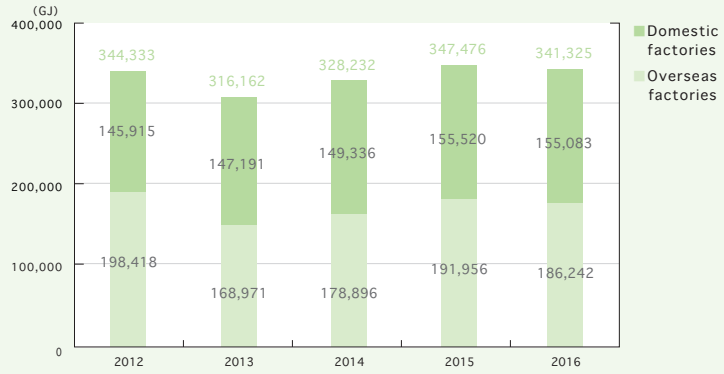






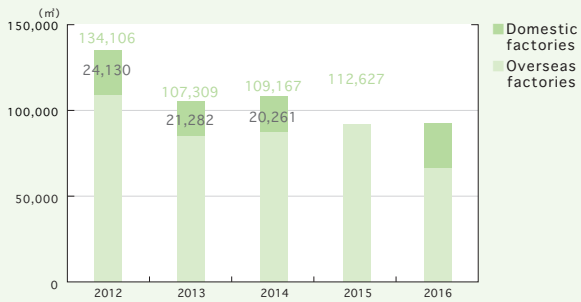


### [Total Amount of Energy Used]

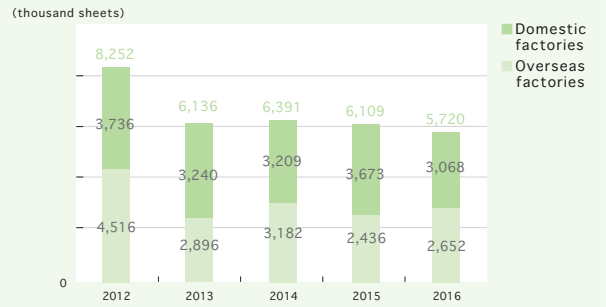


Note) Domestic conversion factors are used when calculating overseas energy.

### [Water Usage]



### [Copy Paper Purchased]





## ENVIRONMENTAL ACCOUNTING

### [Environmental Protection Costs]

(thousands of yen)

Category		Initiatives	Domestic		Overseas	
			Investment	Expenses	Investment	Expenses
Costs within Business Area	Pollution Prevention Cost	Prevention of air/water/ground contamination	1,196	9,616	0	6,086
	Environmental Preservation Cost	Energy conservation	7,306	1,398	0	478
	Resource Recycling Cost	Treatment/disposal of waste	395	8,524	0	1,921
Upstream/Downstream Cost		Green procurement difference	0	149	0	0
Management Activity Cost		EMS operation, education, on-site planting	0	26,945	0	2,662
Research & Development Cost		R&D, WEEE/RoHS measures	0	2,953	0	0
Social Contribution Cost		Donations, financial support	0	445	0	0
Environmental Damage Response Cost		Repairs for ground/water contamination	0	0	0	0
Total			8,897	50,030	0	11,147

Note: Excludes depreciation expense.

### [Financial Impact Resulting from Environmental Protection Measures]

(thousands of yen)

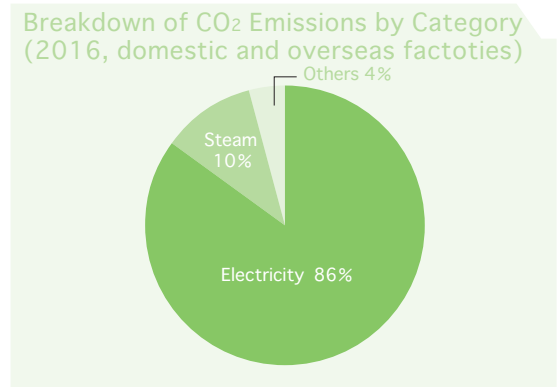
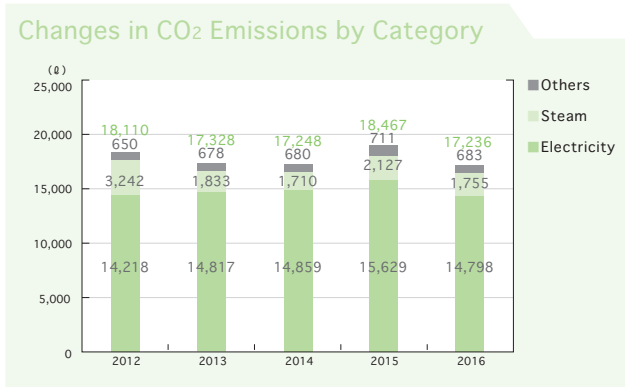
Category		Domestic	Overseas
Earnings	Gains from sales of marketable waste from business activities	40,990	1,666
Expense Reductions (Year on Year)	Total energy expense (electricity/heavy oil/LPG/gasoline/light oil) reductions	24,130	-20,881
	Reductions in water/well water usage expense	-1,252	2,144
	Reductions in copy paper purchase expense	386	-133
	Reductions in waste disposal expense	315	2,451
	Others	0	0
Total		64,569	-14,753

Note: In the expense reduction figures, a minus indicates that a reduction was not achieved and the expenses increased.

## ENERGY SAVING ACTIONS ~TO PREVENT GLOBAL WARMING~

Our company is taking a variety of actions to reduce the amount of energy consumed and is working to reduce CO<sub>2</sub> emissions amount.

### [Changes in CO<sub>2</sub> Emissions Amount]



### [Less Air Conditioning]

In 2016, we lengthened our company's Cool Biz Campaign in accordance with lengthening of the period at the Ministry of the Environment.

Cool Biz Campaign	Warm Biz Campaign
<ol style="list-style-type: none"> <li>1. Period Conducted: May 7 to the end of October</li> <li>2. Air conditioning temperature: Set to 28°C (Although the campaign does not apply to manufacturing and reception areas, these are included as much as possible.)</li> <li>3. Attire: No neckties or uniforms are worn</li> </ol>	<ol style="list-style-type: none"> <li>1. Period Conducted: December 1 to the end of March</li> <li>2. Heating temperature: Set to 22°C</li> <li>3. Attire: Employees are encouraged to wear warm clothes</li> </ol>

Information is posted at the entrances to each office and visitors are urged to cooperate.



Cool Biz information board



Warm Biz information board

### [Installation of solar power facilities]

As part of environmental conservation actions, we installed solar power facilities on roofs of Kikugawa Factory and the factory at Star Metal Company.

The two facilities provide a total output of 350 kilowatts. It has power generated 450 thousand kilowatt-hours in the fiscal year 2016. an amount equivalent to the power consumed by about 125 average households. All of the generated electricity is sold to Chubu Electric Power Co., Inc.



Solar Power Facility of Kikugawa Factory  
(Red flame)



Solar Power Facility of Star Metal Company  
(Red flame)

### [Heat shielding using roof shades]

We have installed roof shades on our Kikugawa South Factory and Ihara Factory. These roof shades alleviate the drastic temperature increases associated with summer and reduce the amount of energy used for air conditioning. As a result, Ihara Factory has reduced energy consumption in summer by 28%.



Roof shades(Kikugawa South Factory)



Roof shades(Ihara Factory)

### [Efficient and power-saving outside light]

We replaced mercury-vapor lamps in Micro Sapporo Company with metal halide lamps which feature high-brightness, power-saving and a long lifespan. Replacement with these new lamps realized a reduction in energy consumption of approximately 50%.

Also, at our Head Office we installed LED lighting which consumes one-tenth of the power of conventional mercury-vapor lamps.



Metal halide lamp(Micro Sapporo Company)



LED light(Head Office)

[The number of company cars owned]

In order to reduce the amount of CO<sub>2</sub> emissions by company cars, our company has implemented the use of lightweight cars and hybrid cars.

(Number)

Type of Car Year	Ordinary Cars (Leased)	Ordinary Cars (Purchased)	Mini Cars (Leased)	Hybrid Cars (Leased)	Total
2014	30	1	10	9	50
2015	30	0	10	9	49
2016	30	0	10	9	49

[No-Car Campaign]

Every year, our company holds a No-Car campaign for employees who commute by car or motorcycle to offices within Shizuoka City. We implemented a 2-week No-Car campaign in both spring and autumn of this year.



Implementation Report

Enforcement period : Monday, May 18 - Friday, May 29, 2015  
 Monday, October 19 - Friday, October 30, 2015

Participants : 75 individuals

Eco-commute distance : 2,848Km

CO<sub>2</sub> reduced : 771Kg  
 (calculated based on fuel consumption of 10 km/ℓ)

[Lights-Down Campaign]

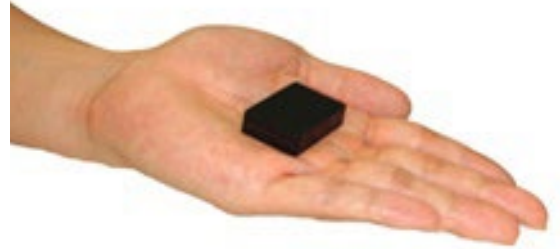
This year, our company once again participated in the Lights-Down Campaign held by the Ministry of the Environment. The rooftop neon logo signs at our Head Office, Ihara Factory and Fujimi Factory were turned off at 8:00 PM for the 2 days from July 6th (Monday) to July 7th (Tuesday) of 2015. As a result, the amount of power used during the 2 day period decreased by 558 Kilo-watt hours.

[Vibration power generators (conservation of energy/resources)]

Our Company is developing a vibration power generator which utilizes energy harvesting technology. This technology is attracting increased attention in recent years.

Conventional technology did not use the vibration from machines, structures or the human body (in walking and running) as energy. However, the vibration power generator developed by our Company is capable of converting such vibration into energy. This enables efficient power usage for energy which was previously thrown away.

In the future, in addition to seeking further improvement in generation capability, we will promote the manufacturing of products which combine our Company's vibration power generator with various sensors and wireless communication sensors. This will enable monitoring of power sources in various fields including structures, moving bodies and machines. Our Company also seeks to contribute to conservation of resources by providing wireless and battery-less technology to the field of wireless sensor networks, an area for which significant future growth is expected.



Vibration power generator: EH12

## Response to the Revised Energy Conservation Act

[Energy conservation activities by the Energy Conservation Panel]

As a business which is subject to the revised Energy Conservation Act, our company must reduce our energy consumption rate every year in the mid- to long-term. In response to this law, our company has appointed an Energy Management Supervisor and an Energy Management Planner who fulfill a central role in energy conservation activities. We have also established an Energy Conservation Task Force and formulated Compliance Rules for Promoting Energy Conservation to serve as guidelines. Through such measures, we are actively working to conserve energy.

## LOWERING ENVIRONMENTAL CONTAMINATION RISK

### Managing Chemical Substances

Star Micronics and its domestic affiliates have created and implemented internal regulations for the management of harmful substances and dangerous materials handled by the Company in order to ensure proper and safe management of chemical substances. These internal regulations, based on the relevant laws and statutory regulations, are designed to ensure that the environment is taken into account in the purchasing, storage, use and disposal of such substances.

#### [Response to PRTR Law]

In accordance with the PRTR (Pollutant Release and Transfer Register) Law, we have continued to submit notification regarding the emission and transfer volume for Class I Designated Chemical Substances. The annual handling volume of such substances has decreased greatly due to the use of powder paints which do not contain organic solvents (including substance subject to PRTR) and to a change to alternative materials. As a result, since 2011 there are no longer any offices or affiliated companies for which submission is required.

However, from the perspective of appropriate handling of chemical substances, we will continue to gather data on emission and transfer volume.

The emission/transfer amount of substances in 2016 was as follows:

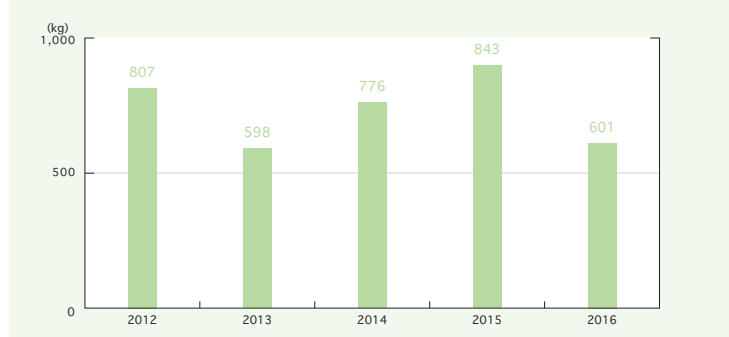
#### [PRTR Reports for all Domestic Factories and Affiliates]

(Unit: kg/year)

Factory	Substance No.	Chemical Substance Name	Use	Emissions Volume			Transfer Volume			Total
				Air	Public Drainage Areas	Ground within Factory	Landfill within Factory	Washed into Sewage	Waste within Factory	
Micro Sapporo Company	309	Nickel Compound	Chroming	0	0	0	0	1	36	37
Star Metal Company	227	Toluene	Coating	167	0	0	0	0	383	550
	63	Xylene	Coating	-21	0	0	0	0	31	10
Fujimi Factory	374	Hydrogen fluoride and water-soluble salt	Polishing	0	0	0	0	0	4	4
Total				146	0	0	0	1	454	601

\*The PRTR (Pollutant Release and Transfer Register) Law is a means of obtaining, collating and disclosing emission and transfer volume data for harmful chemical substances.

Total Volume of PRTR Emission and Transfer



## Measurement result at the time of the on-the-spot inspection conducted in December, 2015

[Star Metal Company]

(Unit: mg/ℓ)

Chemical substance name	Standard value	Measured value
Zinc	5	Less than 0.1
Fluoride and its compounds	8	Less than 0.1
Ammonia and its compounds	100	Less than 0.7

Furthermore, in order to maintain and monitor the standard values above, STAR MICRONICS is implementing weekly voluntary inspections using a simplified measuring method in the Machine Tools Division. Use of the powder coating method allows our company to reduce environmental load at the manufacturing stage.

This new method has realized the environmental effect of cutting atmospheric pollutants (VOC) drastically and reducing industrial waste by one-third.



Powder coating

## Response to EU Environmental Regulations

Environmental regulations in the European Union (EU) have had a significant impact not only within the EU region but also in various countries around the world, and many Japanese manufacturing industries have been forced to respond in some way.

For our products that fall under WEEE and RoHS directives, we are operating based on our internal regulations for management of substances that burden the environment and on green purchasing guidelines.

Also, for REACH Regulations, we are implementing sequential surveys in regards to whether our products include any SVHC, which are added every year.

[Use of X-ray Fluorescence Spectrometers]

We use X-ray fluorescence spectrometers to measure levels of chemical substances contained in components of our printers that fall under the WEEE and RoHS directives, as well as to conduct inspections on receipt of the components.

Our machine tools do not fall under these directives, but we have taken aggressive measures such as using X-ray fluorescence spectrometers to measure the composition of components with a view to reducing harmful substances. Components used in the actual machines in our key products are 99% RoHS compliant, excluding certain NC control equipment.

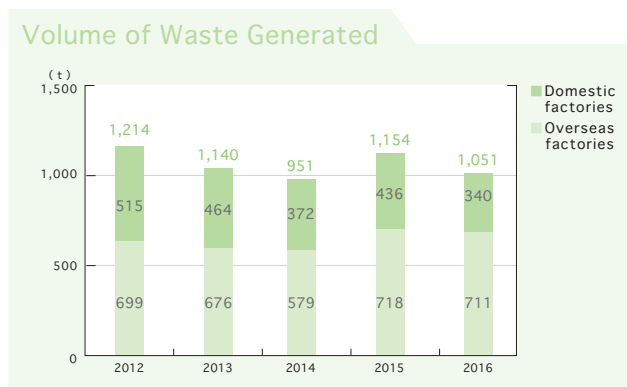


X-ray fluorescence spectrometer

## PROMOTION OF REDUCTION AND RECYCLING ACTIVITY OF WASTE

Star Micronics and its domestic affiliates have created and implemented internal waste management regulations in order to properly dispose of waste produced from corporate activities in line with the requirements of the Waste Disposal Law and to promote voluntary activities.

### Volume of Waste Generated and Recycling Rate



Waste products generated in 2016 decreased by 103 tons compared to the previous fiscal year. The recycling rate was 99.2%. Our company shall continue to instruct group employees regarding the dismantling and separation of trash in order to improve our recycling rate.



## SOCIAL CONTRIBUTION ACTIVITIES RELATED TO THE ENVIRONMENT

### Social Contribution Activities

CSR activities at Star Micronics entail an active role in contributing to society with the cooperation of our employees.

#### [Participation in voluntary cleanup campaigns in Shizuoka city]

Inviting participation of the employees and their families, Star Micronics participates in voluntary cleanup campaigns organized by the municipal authorities of Shizuoka every year. In 2015, we organized cleanup campaigns in June and September.

Time	Place	Participants
June 6th(Saturday)	Miho-Masaki Beach	11
September 5th(Saturday)	Okitsu River	21



Okitsu River



Our participant

#### [China: voluntary activity in Dalian]

In Star Micronics Manufacturing Dalian Co., Ltd., one of the main production bases of the Company overseas located in Dalian, China, we are annually organizing voluntary activities, in which employees give their support to the community.

In 2015, we participated in tree planting and cleanup activities.

Date	Place	Participants
April 18th(Saturday)	Dalian organized tree-planting activities	140
July 4th(Saturday)	Area around factory and Dahei Mountain cleanup activities	146
August 29th(Saturday)	Golden Pebble Beach cleanup activities	147



Tree-planting activities



Cleanup activities of the area around factory(left) and beach(right)



## Publication of the Environmental Report

From the perspective of conserving the environment through such measures as reducing energy usage and saving resources, Star Micronics does not publish its Environmental Report in paper form. Instead, the report is published on the Star Micronics website as a PDF-format file.

Environmental activities of Star Micronics · · · <http://www.star-m.jp/eng/company/co05.html>

For enquiries regarding this environmental report, please contact the General Affairs & CSR Group within the General Affairs Office  
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