

STAR MICRONICS CO., LTD.

ENVIRONMENTAL
REPORT
2014
DIGEST VERSION

For the year ended February 28, 2014



FOREWORD

Environmental Protection Activities

In the recent years, all around the globe people are plagued by floods and periods of intense heat, which are thought to be triggered by the recent changes in the earth environment. Japan is also suffering much damage from abnormal weather conditions, the likes of which we have not seen before. Following a dramatic increase of the average temperatures with the global warming, it is expected that towards the end this century the number of such natural disasters is to increase, and we need to renew our awareness of the grave impact these changes will have on our ecosystem and the human society.

In these circumstances, we feel that while enhancing the production and marketing practices of the Company, it is our duty to the society to implement various measures to protect the environment of the earth in such areas as conservation of resources, energy-saving, waste reduction, and recycling.

Always striving to be a company, which offers the customer new products and new ideas and creates new values matching the needs of the times, we also feel the need to fulfill our corporate social responsibility, so we never spare efforts to ensure thorough corporate governance and compliance and take the issue of environment management very seriously.

Putting our heart and soul in our work, we at the STAR MICRONICS shall always endeavor to be a company attractive to its customers, and we hope for continued understanding and support of all of our stakeholders and customers.



May 2014
HAJIME SATO
President and CEO

● Contents

01	FOREWORD
02	ENVIRONMENTAL MANAGEMENT
06	ENVIRONMENTAL LOAD ASSOCIATED WITH BUSINESS ACTIVITIES
08	ENVIRONMENTAL ACCOUNTING
09	ENERGY SAVING ACTIONS ~TO PREVENT GLOBAL WARMING~
13	LOWERING ENVIRONMENTAL CONTAMINATION RISK
15	PROMOTION OF REDUCTION AND RECYCLING ACTIVITY OF WASTE
15	SOCIAL CONTRIBUTION ACTIVITIES RELATED TO THE ENVIRONMENT

Range Covered:

Domestic/ Company offices (total of 4 locations),Subsidiaries (total of 2 companies)
Production Subcontracting Company(1 company), Sales agents (2 companies),Separate Company(1 company)

Overseas/ Subsidiaries (3 key production sites)

Coverage centered on Company activities, with some affiliates such as subsidiaries/sales agents also included.

Period:

· The year "2014" represents the period March 1, 2013 to February 28, 2014.

ENVIRONMENTAL MANAGEMENT

Progress toward ISO 14001 Certification

We have acquired ISO 14001 certification for all three of our domestic factories, all two domestic subsidiaries, one production subcontracting company, one separate company in the Ihara Factory, two domestic sales agents and three key production sites at our overseas subsidiaries.

In conjunction with our affiliates, we will continue activities to strengthen our overall promotion of environmental activities.

[DOMESTIC]

Company Factories / Offices		
Special Products	Ihara Factory	Acquired March 2001
Precision Products	Fujimi Factory	Acquired February 2002
Machine Tools	Kikugawa Factory	Acquired March 2002
General Administration Headquarters R & D Center	Head Office / Quality Technical Center	Acquired September 2001 (Self-conformance declaration: September 2010)

Subsidiaries		
Star Metal Company	Manufacturing Division Kikugawa Factory	Acquired April 2006
	Plating Division	Acquired March 2007
Micro Sapporo Company		Acquired March 2007

Production Subcontracting Company		
BLUEL Co., Ltd.	Ihara Factory	Acquired October 2006

Sales Agents		
C.M.I. Company		Acquired January 2006
Move Company		Acquired January 2006

Separate Company		
Foster Electric Co., Ltd	Ihara Factory	Acquired March 2001
Foster Micro Acoustic Company		

[OVERSEAS]

Subsidiaries (Key Production Sites)		
Star Micronics Manufacturing Dalian Co., Ltd. (Dalian, China)		Acquired May 2002
Shanghai S&E Precision Co., Ltd. (Shanghai, China)		Acquired February 2003
Star Micronics Precision (Thailand) Co.,Ltd. (Ayutthaya, Thailand)		Acquired February 2009

[Self-Conformance Declaration]

At our Head Office and Quality Technical Center, we have instilled activities performed via through Environmental Management Systems and have eliminated almost all environmental load by transferring operations. Accordingly, we issued an ISO14001 self-conformance declaration in September 2010.

Since issuing the self-conformance declaration, we have promoted environmentally-friendly business activities based on environmental policy.



Environmental Audits

[Internal Environmental Audits]

Internal environmental audits are conducted regularly each year at domestic factories and affiliates to confirm that environmental management systems are adequate and effective, and that environmental management programs are appropriate and legally compliant.

We also conduct skills enhancement seminars for internal environmental auditors to improve the expertise of people conducting internal audits.

A comprehensive environmental audit report is created listing items that fall below the expected standards, and the report is submitted to management as data for use in compiling the end-of-year environmental review. Thus audits contribute to improvements in the following year.



Training for auditors

[External Environmental Audits]

Domestic factories and affiliates that have acquired ISO14001 certification are subject to environmental audits (environmental management system inspection) by an external inspection authority. Certification maintenance inspections take place once a year, while renewal inspections are conducted every three years.

The results of these inspections are submitted to management as data for use in compiling the end-of-year environmental review, thereby contributing to improvements in the following year.



Conducting an environmental audit

Environmental Training

Star Micronics and its domestic affiliates believe that to maintain, and further improve, the level of our environmental activities, we need to change the mindset of every single employee. We therefore offer training opportunities for all employees from new hires to management. Training comprises four core categories: general, rank-based, leader-oriented, and specialist. In 2014 (domestic), we conducted events such as an introductory environmental seminar, an environmental manual seminar, an environmental impact evaluation seminar, a waste products seminar, a seminar on the cultivation of internal auditors, and an environmental law seminar.



[Environmental Training Structure]

Training Category	Personnel Eligible	Internal/External Seminars Offered
General training	Regular employees	Introductory seminar, general seminar, waste products separation
Rank-based training	Managers	Managers' seminar
	Top management	Top management seminar
Leader-oriented training	Environmental leaders	Environmental manual seminar (including document management)
Specialist training	Environmental survey team	Environmental impact evaluation seminar
	Internal environmental auditors	Auditor development seminar (internal/external) *
	Personnel in charge of environmental law	Environmental law seminar*
	Public-sector environmental experts	Qualification seminar/test based on laws and regulations
	Personnel in charge of procurement	Green procurement seminar
	Personnel in charge of waste products	Waste products seminar
	Harmful substance handler	OJT by personnel with public-sector environmental qualifications
Noise measurement personnel	OJT by certified internal environmental experts	

*For the certified internal environmental experts

[Public, Environmental Qualified Person Related to Environment]

Name of Qualification	Number of Persons Qualified (Number of Persons Qualified in 2013)	Name of Qualification	Number of Persons Qualified (Number of Persons Qualified in 2013)
Safety manager	5 (0)	Dangerous substance handler	80 (2)
Public health manager	16 (1)	Manager in charge of handling of toxic and harmful substances	3 (0)
Pollution prevention manager	7 (0)	Manager in charge of X-ray operations	1 (0)
Manager in charge of industrial waste requiring special management	17 (0)	Manager in charge of organic solvent operations	34 (1)
Fire prevention manager	14 (0)	Manager in charge of specific chemical substance operations	7 (0)
Promoter of energy management and planning	3 (0)		

Note: For the parent company only. Excludes domestic affiliates.



Emergency Response

Every year, Star Micronics and its domestic affiliates plan and conduct emergency-related training of relevant parties and disaster prevention drills, as well as simulation-based drills for individuals and entire facilities based on manuals, which are evaluated as part of the process. These drills anticipate every conceivable accident or emergency (earthquake, typhoon, explosion, fire, blackout, chemicals leak, and airborne hazard, etc.).

[Simulation-based Drills]



Oil leakage response drill



Response drill for light-oil leakage to a public waterway

[Disaster Prevention Drills]



Evacuation drill



Evacuation drill

Status of Legal Compliance

Star Micronics and its domestic affiliates have stipulated internal regulations for the application of environment-related laws, and compliance with these laws is evaluated in accordance with a list of specific items to be monitored and measured.

Legal compliance is confirmed by checking that results measured are in line with management figures, and the data is stored as an environmental record. When installing, introducing, changing, or disposing of facilities and equipment, we conduct an assessment of the facilities and equipment to evaluate legal compliance.

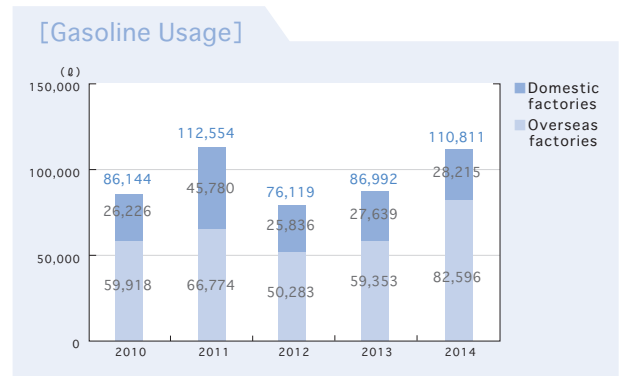
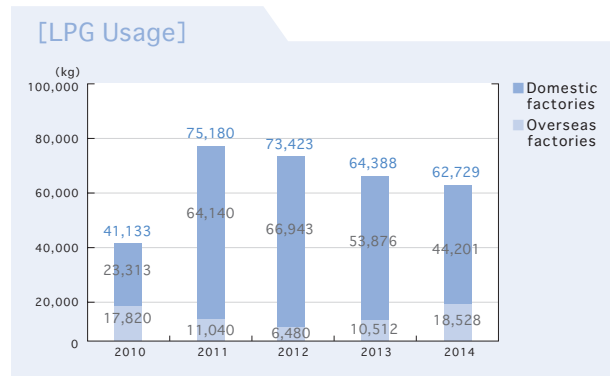
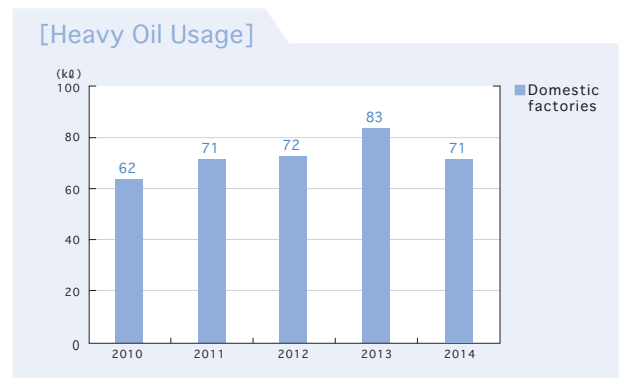
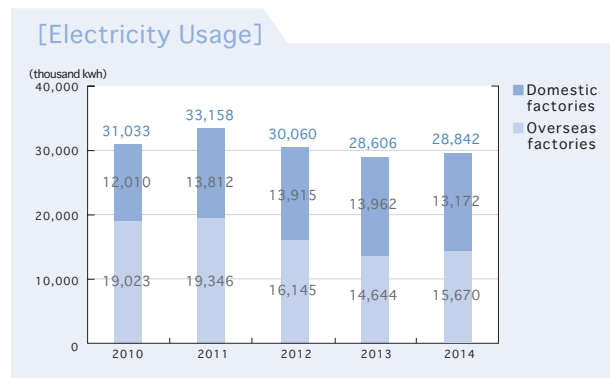
ENVIRONMENTAL LOAD ASSOCIATED WITH BUSINESS ACTIVITIES

Our company uses a variety of resources and energy during the process of conducting business activities. This results in the emission of CO₂ and the generation of waste products. Our company assesses the environmental load associated with our activities and promotes activities to decrease environmental load by reducing the amount of energy consumed, reducing the amount of waste products generated and decreasing the amount of hazardous materials used.

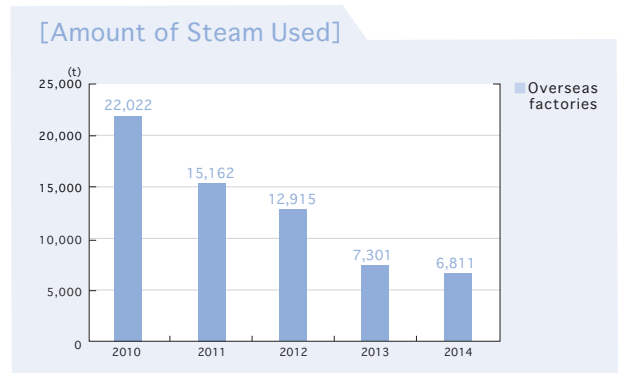
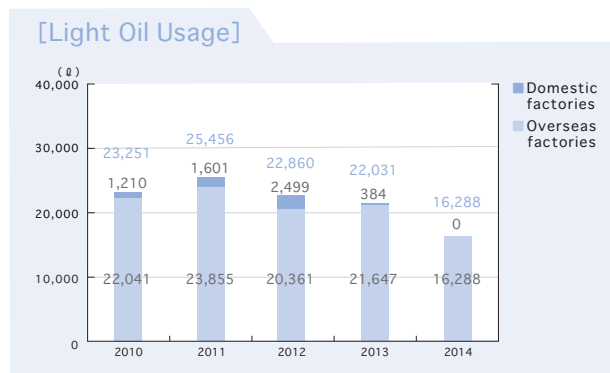
*Scope of Analysis: domestic (Star Micronics Co., Ltd. and affiliated domestic companies), overseas (Star Micronics Manufacturing Dalian Co., Ltd.; Shanghai S&E Precision Co., Ltd.; Star Micronics Precision (Thailand) Co., Ltd. (SMPT); Star Micronics Manufacturing (Thailand) Co., Ltd. (SMMT) :from 2014)

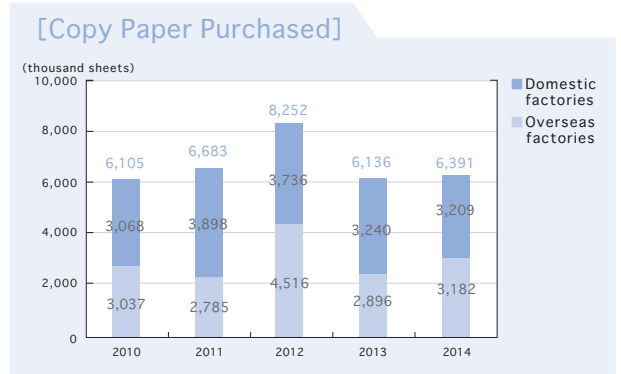
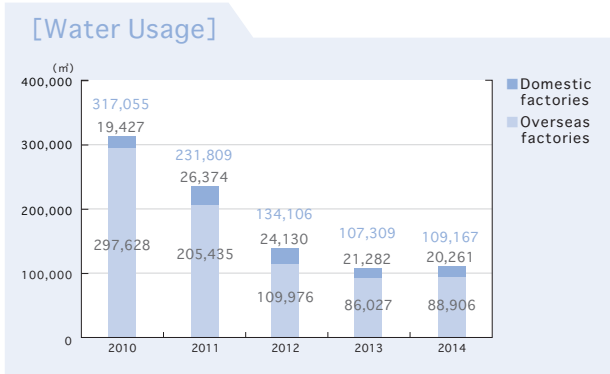
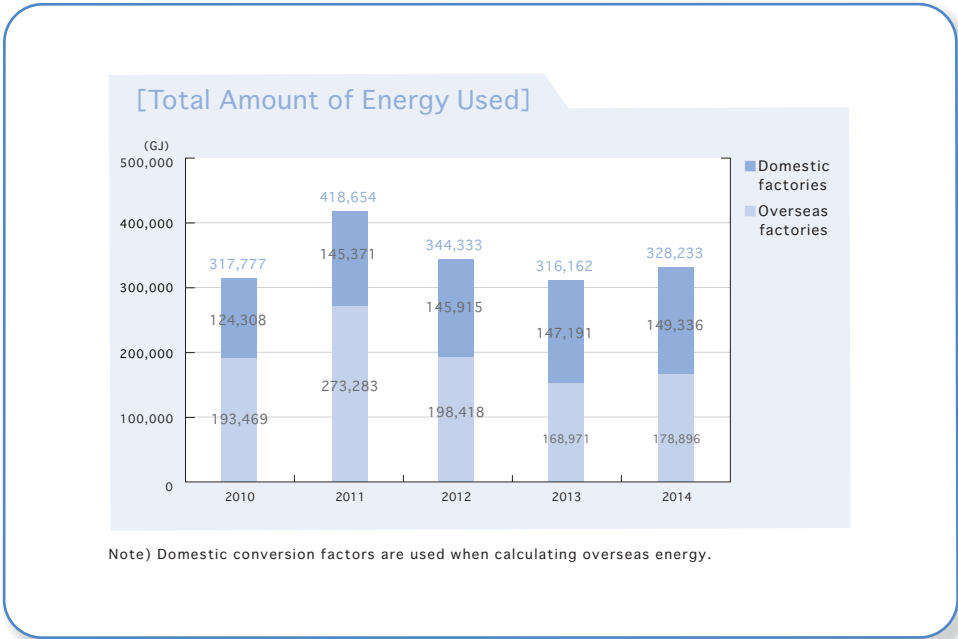
Change in Input Amount (Major Items)

Due to a full-fledged start of operations of the SMMT, the gasoline consumption has increased.

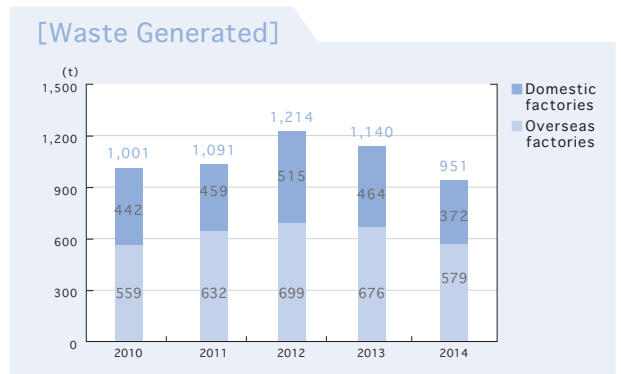
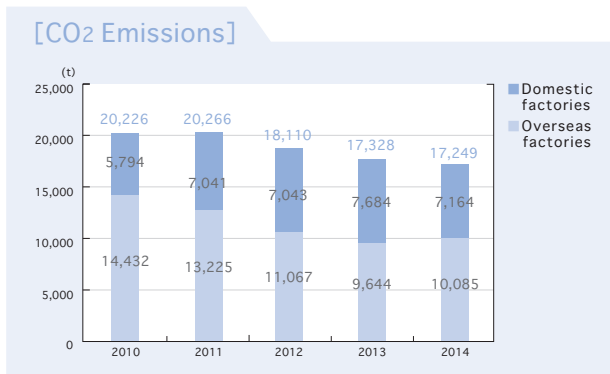


*The increase in 2011 is due to an increase in thermal processing during domestic painting processes caused by an increase in the production of machine tools in 2011.





Change in Discharge Amount (Major Items)



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	57,365	5,464	0	4,527
	Environmental Preservation Cost	Energy conservation	0	2,364	0	0
	Resource Recycling Cost	Treatment/disposal of waste	0	16,009	0	560
Upstream/Downstream Cost		Green procurement difference	0	108	0	0
Management Activity Cost		EMS operation, education, on-site planting	0	26,024	0	2,494
Research & Development Cost		R&D, WEEE/RoHS measures	1,600	1,972	0	0
Social Contribution Cost		Donations, financial support	0	1,064	0	0
Environmental Damage Response Cost		Repairs for ground/water contamination	0	0	0	0
Total			58,965	53,005	0	7,581

Note: Excludes depreciation expense.

[Financial Impact Resulting from Environmental Protection Measures]

(thousands of yen)

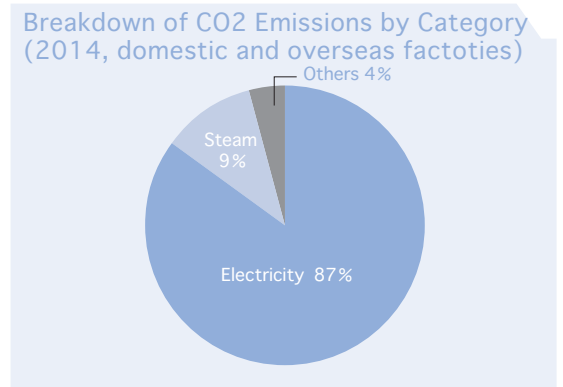
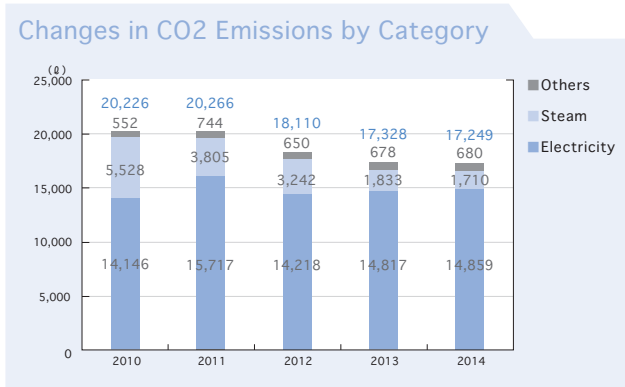
Category		Domestic	Overseas
Earnings	Gains from sales of marketable waste from business activities	61,896	12,219
Expense Reductions (Year on Year)	Total energy expense (electricity/heavy oil/LPG/gasoline/light oil) reductions	1,788	△35,635
	Reductions in water/well water usage expense	906	△577
	Reductions in copy paper purchase expense	△15	△141
	Reductions in waste disposal expense	57,611	△9,637
	Others	0	0
Total		122,186	△33,771

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 CO₂ emissions amount.

[Changes in CO₂ Emissions Amount]



[Less Air Conditioning]

In 2014, 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"> 1. Period Conducted: May 7 to the end of October 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.) 3. Attire: No neckties or uniforms are worn 	<ol style="list-style-type: none"> 1. Period Conducted: December 2 to the end of March 2. Heating temperature: Set to 22°C 3. Attire: Employees are encouraged to wear warm clothes

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



Cool Biz information board



Warm Biz information board



[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)

[Installation of Solar LED Lighting]

We installed solar LED lighting for the nighttime lighting on the premises of Head Office. These lighting facilities use solar energy and therefore do not consume energy in any way that contributes to CO₂ emissions.



Solar LED Lighting

[Renewal of equipment with energy-saving air-conditioners]

At the Fujimi Factory, some of air-conditioners were substituted with new energy-saving models, resulting in a reduction of power consumption by approximately 30%.



Air-conditioner

[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)



LED light



[Incandescent light in the showroom replaced with LED]

We replaced incandescent lighting used for spotlights in Head Office showroom with LED lighting. This has resulted in a 90% reduction in power consumed.



Incandescent light in the showroom replaced with LED

[Green curtain]

In order to conserve energy used for air conditioning in the summer, we used again goya (bitter melon) to create a green curtain at Fujimi Factory. By drawing upon our past experience in cultivating the green curtain, it grew even larger than last year.

As result, it is said that temperatures decrease by 5°C or more on wall surfaces covered by the green curtain. The curtain also leads to increased environmental awareness among employees.



Green curtain created at Fujimi Factory

[The number of company cars owned]

In order to reduce the amount of CO₂ emissions by company cars, our company has implemented the use of lightweight cars and hybrid cars. We have also reduced the number of company cars used by our company.

(Number)

Type of Car Year	Ordinary Cars (Leased)	Ordinary Cars (Purchased)	Mini Cars (Leased)	Hybrid Cars (Leased)	Total
2012	34	2	10	7	53
2013	31	1	10	8	50
2014	30	1	10	9	50

[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 13 - Friday, May 24, 2013
 Monday, October 21 - Friday, November 1, 2013

Participants : 97 individuals

Eco-commute distance : 4,274km

CO₂ reduced : 1,044kg (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 3 days from July 5th (Friday) to July 7th (Sunday) of 2013. As a result, the amount of power used during the 3-day period decreased by 837kwh.

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

Our company developed a range of compact vibration power generators using the energy harvesting technology, which has been gaining much attention in the recent years.

Vibration of machinery and buildings, or vibration of people's bodies when walking or running has never been utilized as an energy source, but the compact vibration power generators developed by STAR MICRONICS can transform these kinds of vibrations into energy, and then utilize this energy to provide electric power for wireless sensor networks or light-emitting LEDs.

This time, we developed three vibration power generators: EH12 designed to operate on vibration of people walking, EH13 operating on vibration of motors and other machinery, and EH15 to match vibration of a human body when running.

In the future, we shall make further improvements to make it possible for each of the models to generate electric power from various types of vibrations thus increasing its generating capacity, and develop products, which can be used for multiple purposes and various areas as electric power sources.



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 2010 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.

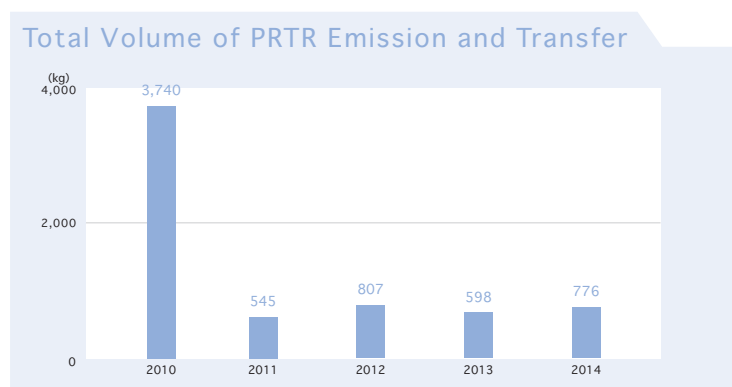
The emission/transfer amount of substances in 2014 was as follows:

[PRTR Reports for all Domestic Factories and Affiliates]

(Unit: kg/year)

Year	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	
2014	309	Nickel Compound	Chroming	0	0	0	0	1	89	90
	227	Toluene	Coating	172	0	0	0	0	476	648
	63	Xylene	Coating	6	0	0	0	0	30	36
	374	Hydrogen fluoride and water-soluble salt	Polishing	0	0	0	0	0	2	2
	Total				178	0	0	0	1	597

*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.





Water pollution measures

In response to the fact that some substances specified as hazardous exceeding the management criteria values were found in the drainage during an on-the-spot inspection conducted by the public administration authorities, STAR MICRONICS took drastic measures changing the pretreatment method of paintwork into one that does not result in emission of substances specified as hazardous.

1. Content of the change: from "zinc phosphate membrane conversion treatment" to "iron phosphate membrane conversion treatment", discontinuing use of zinc and fluoride, which are specified as hazardous substances.
2. Time of implementation: June, 2013
3. Effects: continually achieving values well below the values listed in the management criteria

[Measurement result at the time of the on-the-spot inspection conducted in January, 2014]

Chemical substance name	Standard value	(Unit: mg/L)
		Measured value
Zinc	5	0.3
Fluoride and its compounds	8	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 2014 decreased by 189 tons compared to the previous fiscal year. This decrease was caused by reduced production of machine tools.

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



Environmentally Friendly Policies

Awareness of Earth Environment (from the Star Micronics Group Code of Conduct)

- (1) In our efforts to control CO₂ emissions, comply with global warming directives and streamline business efficiency, we will implement business strategies utilizing energy saving equipment to help achieve our goals.
- (2) We will guide the establishment of the sustainable economic society with ecological awareness and promotion of environmental activities.
- (3) We will guide the realization of the recycling society, trying to utilize all possible resources at all steps from designing to disposal of our products and promoting the environmental load reduction.
- (4) We will recognize environmental issues worldwide and engage in them as a global company group.
- (5) We will report our environmental protection activities widely and promote the environmental communications with the society.



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 2013, we organized cleanup campaigns in June and September.

Time	Place	Participants
June 8th(Saturday)	Miho Masaki beach	19
September 7th(Saturday)	Okitsu River	28



Miho Masaki beach



Okitsu River

[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 2013, we participated in cleanup activities and tree-planting.

Time	Place	Participants
April 20th(Saturday)	Dalian organized tree-planting activities	108
July 6th(Saturday)	Dahei Mountain cleanup activities	170
August 17th(Saturday)	Golden Pebble Beach cleanup activities	145



Tree-planting activities



Cleanup activities of the seashore

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 CSR Promotion Group within the General Affairs Office
Tel: +81-54-263-1111 Fax: +81-54-263-1057

