



MEC 

ENVIRONMENTAL REPORT 2018

Contents

ENVIRONMENTAL POLICY

BASIC POLICY
ON THE ENVIRONMENT

1 ENVIRONMENTAL MANAGEMENT

ENVIRONMENTAL
MANAGEMENT SYSTEM 2

OTHER ENVIRONMENTAL
INITIATIVES 3

2 ENVIRONMENTAL PERFORMANCE

ENVIRONMENTAL
ACCOUNTING FOR FY2017 5

OVER ALL ENVIRONMENTAL
IMPACTS ASSOCIATED WITH
BUSINESS ACTIVITIES 7

TRENDS IN
ENVIRONMENTAL
PERFORMANCE 8

MANAGEMENT OF
CHEMICAL
SUBSTANCES 10

ENVIRONMENTAL POLICY

BASIC POLICY ON THE ENVIRONMENT

Management philosophy

“Visionary Technology”
“Reliable Quality”
“Meticulous Service”

Making use of our greatest strength our ability to develop our core technology with interface treatment related to electronics, we will expand our global business activities to help create a rich and wonderful society with the principles of Visionary Technology, Reliable Quality, and Meticulous Service.

COMPANY MOTTO Enjoy your work

COMPANY RULES

- Let's always aim to achieve new targets without fear of failure. Repeatedly try new ideas and improvements with unyielding curiosity.
- Let's make improvements with an insatiable curiosity.
- Let's carry out work with our combined power and a feeling of gratitude and cooperation.
- Let's make a fun workplace where people pay attention to health and safety.
- Let's contribute to society.

Based on the above-mentioned management policy, we have established the following environmental policies to guide us in taking our environmental protection activities. In accordance with this policy, we are making efforts to protect the environment and conserve resources and energy, and we will continue to contribute to the creation of a sustainable and rich society in harmony with the global environment.

Environmental policy

In accordance with the environmental management system in compliance with ISO14001, we are promoting environmental protection.

1. Recognizing the environmental aspects in our activities, we will comply with environmental laws and regulations and other requirements, while at the same time striving to continuously improve our environmental management system and increase the management level.
2. In order to make efficient use of resources, prevent pollution and protect the environment, we will:
 - Measures to save energy
 - Reduction of waste, promotion of recycling
 - Provide of products that were manufactured while considering the product life cycle
 - Implement of chemical management
3. We will make this environmental policy well known to all those who work in our company, and also disclose it to the general public.

April 1, 2015
Kazuo Maeda, President & CEO
MEC COMPANY LTD.

1 ENVIRONMENTAL MANAGEMENT

ENVIRONMENTAL MANAGEMENT SYSTEM

MEC COMPANY LTD. has established an environmental management system (EMS) that conforms to ISO 14001 in order to promote ongoing environmental protection activities.

At the Amagasaki Headquarters(HQ), which was newly started in 2017, we have also acquired ISO 14001 certification. We will continue working to improve the environmental management system and the management level.

Outline of the Company in FY2017

We have concentrated the Head Office, R&D Center and factories that were dispersed in Hyogo Prefecture, and started running the Amagasaki Headquarters from January 2017. With this integration, waste such as redundant administrative processing has been reduced, but due to prototyping and evaluation for transferring the manufacturing of products, the Nishinomiya Factory and the Amagasaki Factory are in both being operated at the same time. For this reason, we are operating at three factories—Nagaoka Factory, Amagasaki Factory and Nishinomiya Factory.

In addition, due to the change in our fiscal year-end, FY2017 was the nine months from April 1 to December 31.

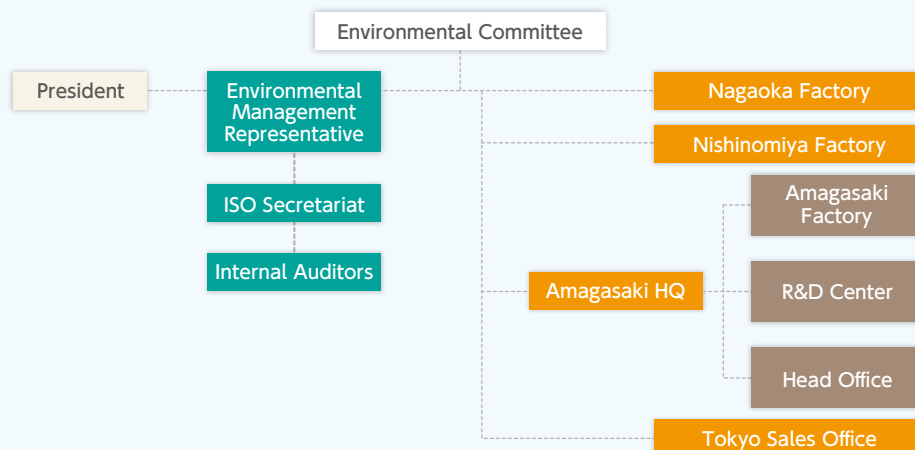
Implementation of external audit

In FY2017, we underwent external audits as follows. The Amagasaki Headquarters (concerning the Head Office/R&D center), Nishinomiya Factory, Nagaoka Factory and Tokyo Sales Office were audited in May and June 2017, and the Amagasaki Headquarters (concerning the Amagasaki Factory) were audited in August 2017. In the audits, as an assessment of conformity based on our environmental management system, the auditors confirmed we had corrected the items pointed out in the previous internal audit. They also evaluated the operational status and effectiveness of our environmental targets and confirmed the status of compliance including with laws and regulations. As a result, one incompatibility was pointed out, but we have corrected it and maintained certification for our environmental management system.

Environment promotion organizations

The Company sets the head of the Corporate Planning Division as the Environmental Management Officer. And with the Environmental Committee, consisting of the ISO secretariat and members appointed from each place of business, as well as the internal auditor positioned at the center, activities in various initiatives and goals are being conducted at each business office by persons responsible for the workplaces and by employees.

We are carrying out environmental activities with the following organizations. (as of April 2018)



Acquisition of ISO 14001 certification

Certification review agency	Bureau Veritas Japan Co., Ltd.
Certified Income Office	Amagasaki HQ(Head Office, R&D center, Amagasaki Factory), Nishinomiya Factory, Nagaoka Factory, Tokyo Sales Office
Initial authentication date*	September 9, 2000

* Date of entry of standard certification registration

1 ENVIRONMENTAL MANAGEMENT

Table Environmental targets and results for FY2017

○: Achievement rate 80 to 100%
 △: Achievement rate 50 to 80%
 ×: Not Achieved or Less than 50%

Environmental objective	Site	FY2017 Environmental targets	FY2017 Results	Evaluation
Contribute to customers' activities to reduce environmental burden	Tokyo Sales Office	Make 18 concrete proposals for environmental improvement centering on priority customers	Number of proposals: 67	○
Ensure smooth operation of environmental management system at Amagasaki HQ	Amagasaki HQ	Confirm and optimize provisional version of each procedure (At the very least, make forms for operations related to the Fire Services Act, the Poisonous and Deleterious Substances Control Law, Water Pollution Prevention Act/Sewage Act, and Waste Disposal Law)	By creating procedures on laws and regulations (the Fire Services Act, the Poisonous and Deleterious Substances Control Law, Water Pollution Prevention Act/Sewage Act, and Waste Disposal Law), operations became clear.	○
Compliance with wastewater standards	Nishinomiya Factory	Construction of mechanism to control copper concentration (After constructing the mechanism, the target is achieved if there is no more than one instance of exceeding the voluntary standard value)	Throughout the period, the copper concentration was stably kept low. We controlled copper as planned, but the amount of zinc concentration significantly exceeded the official reference value in November.	△
Compliance with environmental laws and regulations	Nagaoka Factory	Create a mechanism for managing the copper concentration of wastewater, and have zero instances where the voluntary standard value for copper is exceeded	As a result of conducting a simple measurement of the concentration of copper, we found no instances where the voluntary standard value for copper was exceeded, and we were able to achieve the target of zero instances where the voluntary standard value for copper is exceeded.	○

OTHER ENVIRONMENTAL INITIATIVES

Solar power system [Amagasaki HQ]



At the Amagasaki Headquarters, we are using more electricity than ever for air conditioning etc. to improve the working environment at the production site. Therefore, in order to lead our efforts to less environmental burden, even a little less, we effectively utilize the rooftops of our business sites by setting up solar panels there. We are striving to use clean energy as renewable energy.



The amount of electricity generated by the solar panels can be checked on a real time basis with a monitor.

1 ENVIRONMENTAL MANAGEMENT

Efforts for biodiversity—MEC's forest activities [Nagaoka/Amagasaki]



Nagaoka MEC Forest



Amagasaki MEC Forest

MEC is engaged in forestry activities at two locations: Nagaoka City, Niigata Prefecture and Amagasaki City, Hyogo Prefecture. About 10 years have passed since we began doing this in the city of Nagaoka, and the land which had been wasteland of idle fields has become part of a forest. In both the Nagaoka Forest and the Amagasaki Forest, we cooperate with the prefecture, municipalities and local forestry associations and continue striving to create healthy forests that are suitable for various creatures, considering biodiversity.

	Nagaoka MEC Forest	Amagasaki MEC Forest
Activate	November, 2008	March, 2013
Forest development site	Ozumi Mishimadani-machi, Nagaoka, Niigata Prefecture	Ogimachi, Amagasaki, Hyogo Prefecture
Area	6,000m ²	600m ²
Types of planting	keyaki and other broad-leaved trees	wild cherry, konara oak, and other broadleaf trees
URL	http://www.mec-co.com/en/special/forest/	

● Promotion of LED lighting—Amagasaki HQ

When newly building the Amagasaki Headquarters, we changed the lighting fixtures in the whole building to LEDs in consideration of the environment. This reduces the power consumption to about 50% of that of fluorescent lights. Moreover, as the lifetime of the devices themselves is about four times longer, it is possible to reduce the consumption of resources in changing the lighting appliances. Also, the LEDs do not contain harmful substances (such as mercury and lead) so we can also reduce adverse effects on the environment when disposing of them.

● Environmental beautification around the workplace—Amagasaki HQ

With the aim of beautifying the area surrounding the site, we pick up garbage in the ditches and roads three times a week in a system where the participants take turns to work, except during very hot summer days. Not only is this part of our community contribution, but since most of our products are connected to water we wanted to help, even a little, the mechanism by which rainwater ditches function well and water circulates properly. This also was the trigger for us to start such activities. The collected garbage is properly sorted and processed.

● Efforts to reduce power consumption

We keep in mind the need to prevent global warming by reducing power consumption. Therefore, we position the period from May to September as Cool Biz (a Japanese campaign to help reduce the electricity used for cooling workplaces) and from November to the following March as Warm Biz (a campaign to wear warm clothing to reduce the electricity used for heating workplaces). We set the temperature of air conditioners according to the criteria recommended by the Ministry of the Environment and recommend that our employees wear clothing that is comfortable even in those conditions.

● Efforts for reuse and recycling

For a long time, we have been collecting stationery such as writing instruments that are no longer used at home. We donate them to the Stationery Reuse Project so that they can be used by disadvantaged children in developing countries. The amount we can offer is small, but we are doing it from the viewpoint of helping ensure effective utilization of resources.



2 ENVIRONMENTAL PERFORMANCE

ENVIRONMENTAL ACCOUNTING FOR FY2017

We use environmental accounting to calculate cost (expense) and effect (quantity) as a mechanism to quantitatively evaluate our environmental conservation efforts.

Our environmental conservation cost for FY2017 was 73,737,000 yen. Of this, 37% was R&D cost, which is an expense related to R&D on products with a low environmental burden. In addition, 8% was an upstream/downstream cost related to consigning recycling such as consigning work to collect used plastic containers and wash them.

[Development standards]

- Data gathering period : April 1, 2017 to December 31, 2017
For the comparison data, converted to 12-month period from 9-month period.
- Scope : MEC CO., LTD. Nonconsolidated Amagasaki HQ (Head Office, R&D Center, Amagasaki Factory) , Nagaoka Factory, Nishinomiya Factory, Tokyo Sales Office, Higashihatsushima(Former R&D Center)
- Environmental conservation cost only targets costs whose objectives are clearly related to environmental conservation activities.
- For the research and development cost, costs which can be categorized into themes are individually processed, while costs which cannot be directly categorized are distributed in proportion based on theme-specific work hours.
- The amount of the cost includes depreciation costs and maintenance and management costs of facilities, as well as labor costs which are used for the purpose of environmental conservation.

■ Table Environmental conservation cost in FY2017

(thousand yen)

Category		Main activities	Cost
(1) Cost within business areas			33,516
Break down	1. Cost of preventing pollution	Maintenance and management of wastewater treatment facilities, prevention of water contamination, etc.	(14,738)
	2. Cost of protecting the global environment	Energy conservation measures	(0)
	3. Resource recycling cost	Cost of outsourcing the disposal of industrial wastes	(18,778)
(2) Upstream and downstream costs			5,705
(3) Management activity cost			5,506
(4) Research and development cost			27,351
(5) Cost of social activities			1,659
(6) Cost of responding to environmental damage			0
Total			73,737

(thousand yen)

Item	Amount
Total amount of investment during the applicable period	492,230
Total cost of research and development during the applicable period	786,948
The monetary amount of valuable goods sold in regards to (1)-3	726
The monetary amount of valuable goods sold in regards to (2)	0
Other (solar power generation) sold amount	4,050

2 ENVIRONMENTAL PERFORMANCE

The environmental conservation effect is expressed based on the change in the absolute amount from the previous year (FY2016).

Primary units (the amount per ton of production) are also used for some indexes.

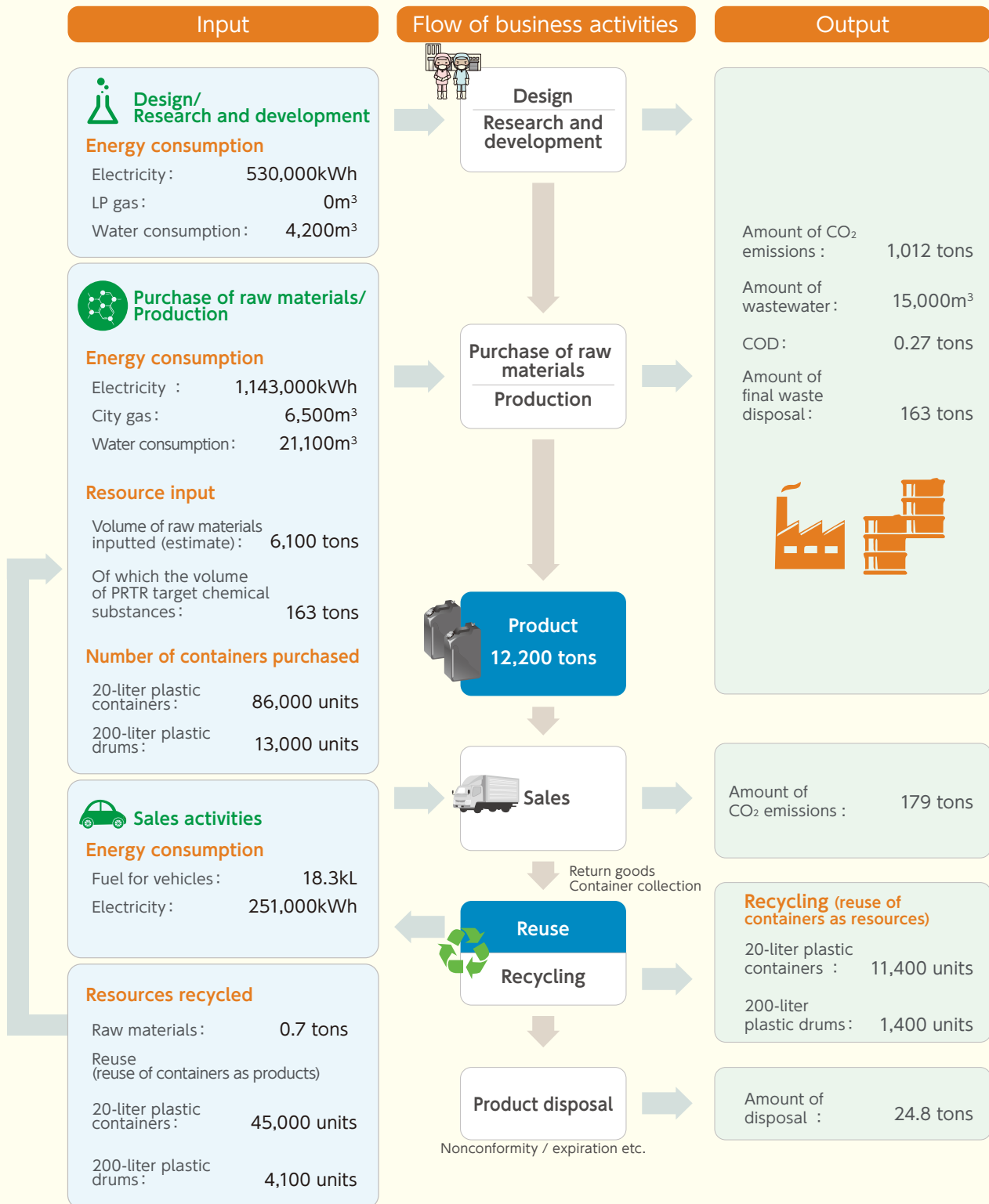
■ Table Environmental conservation effects in FY2017

Category of environmental conservation effects			Environmental performance index				
			Value of the index (amount)	Value of the index (amount) 12-month conversion	Comparison from the last year	Value of the index (intensity)	Comparison from the last year
(1) Effects in response to costs within the business areas	Effects in regards to the input of resources into business activities	Amount of electricity input	1,923 [thousand kWh]	2,564 [thousand kWh]	+ 606 [thousand kWh]	158 [kWh/t]	- 1.8 [%]
		Amount of city gas input	6.5 [thousand m ³]	8.7 [thousand m ³]	- 0.2 [thousand m ³]	0.5 [m ³ /t]	- 27 [%]
		Amount of water input	25.3 [thousand m ³]	33.7 [thousand m ³]	+ 7.8 [thousand m ³]	2.1 [m ³ /t]	- 2.3 [%]
	Effects in regards to the environmental load of business activities and associated wastes	Amount of CO ₂ emissions	1,192 [t-CO ₂]	1,589 [t-CO ₂]	+ 369 [t-CO ₂]	98 [kg-CO ₂ /t]	- 2.3 [%]
		Amount of COD emissions	0.3 [t]	0.4 [t]	- 0.4 [t]		
		Total amount of industrial waste emissions	205 [t]	273 [t]	- 60 [t]		
(2) Effects corresponding to the upstream and downstream costs	Effects in regards to assets and services produced from business activities	Cumulative quantity of reused plastic containers	45.0 [thousand units]	60.0 [thousand units]	+ 3.3 [thousand units]		
		Cumulative quantity of reused plastic drums	4.1 [thousand units]	5.5 [thousand units]	- 0.8 [thousand units]		

2 ENVIRONMENTAL PERFORMANCE

OVER ALL ENVIRONMENTAL IMPACTS ASSOCIATED WITH BUSINESS ACTIVITIES

April-December 2017 (results for 9 months)



The diagram above describes the entire amount of the relationship between our business activities in FY2017 and the environment.

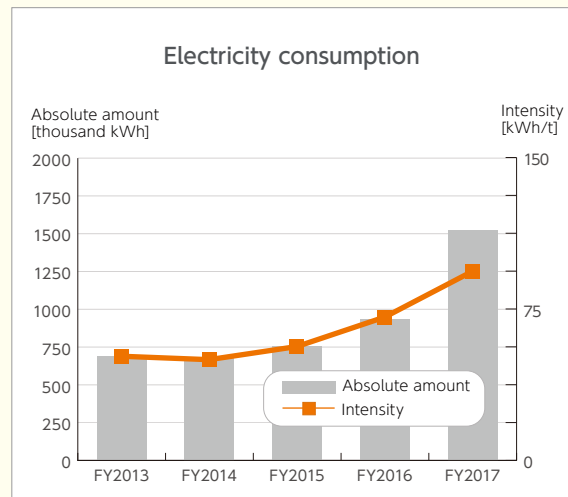
2 ENVIRONMENTAL PERFORMANCE

TRENDS IN ENVIRONMENTAL PERFORMANCE

Electricity consumption

[converted to 12-month period]

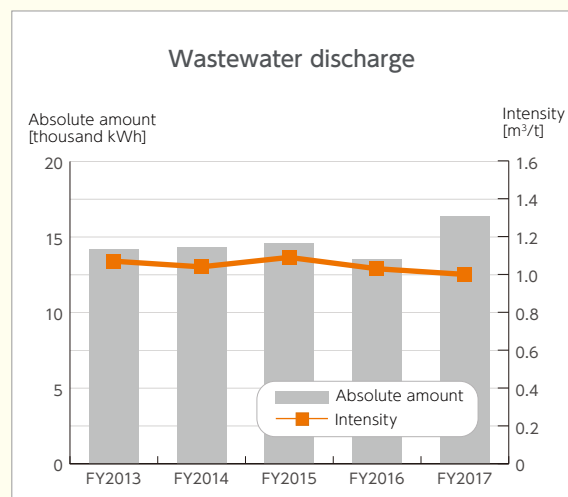
Total electricity consumption at our factories in FY2017 came to 1,524,000 kWh, up 62.6% or 587,000 kWh compared with FY2016. The consumption rate also increased by 34%. This was because we switched from a two-factory structure consisting of the Nishinomiya and Nagaoka Factories to a three-factory structure made up of the former two and the Amagasaki Factory and because we increased our production volume. It was also due to the fact that the Amagasaki Factory has equipment that takes into consideration the need for a comfortable work environment (especially air conditioning) in ways that go beyond other factories, resulting in an increase in electricity usage. Therefore, in an attempt to make up for this at the Amagasaki Headquarters we have installed solar panels on the rooftop to compensate even a little for the extra environmental burden coming from the increased electricity consumption.



Amount of Wastewater

[converted to 12-month period]

We use water as part of our raw materials. Besides that, we also use a lot of water for things like cleaning of production equipment. In order to effectively utilize water resources, we are working to improve our manufacturing operations and equipment cleaning methods. In addition, we have introduced automatic washing equipment to clean containers, and we are striving to manage and optimize our use of water. The amount of water we discharged in FY2017 was 16.4 km³, up 2.9 km³ compared with FY2016, but the consumption rate has not fluctuated, remaining at 1.0 m³/t.



Efforts for reusing plastic containers and plastic drums

In order to effectively utilize the limited resources without waste, we are working to reuse (recycle) plastic containers and drums. We consign contractors to collect empty containers that contained our products once they have been used by our customers.

We determine whether we can reuse the collected containers. If they can be reused, then we wash plastic containers at our own sites, and outsource work to wash plastic drums, wash some of them ourselves and reuse them.

The recovery rates for plastic containers and plastic drums in FY2017 were 43.5% and 30.1%, respectively.

We are actively collecting and reusing plastic containers and drums, but with the increase in overseas shipments, their collection rate and reuse rate are declining year by year.

2 ENVIRONMENTAL PERFORMANCE

Proper disposal of wastes

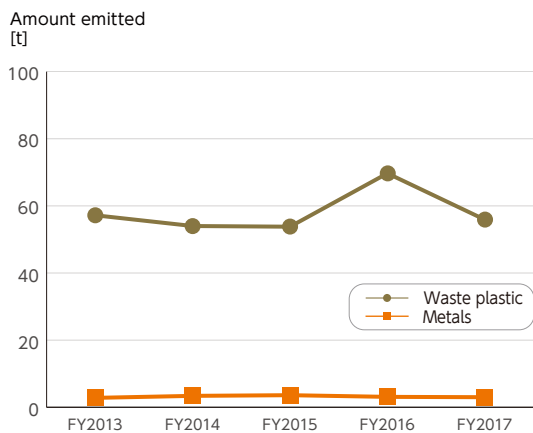
(converted to 12-month period)

In FY2017, the amount of waste we generated came to 273 tons, which was 18% less than FY2016. In FY2016, the amount of waste increased drastically with the relocation to the Amagasaki Headquarters, but in FY2017 it seems that it has returned to normal. However, we disposed of prototypes that were made for beginning operation of the Amagasaki Factory and so the amount was not drastically reduced.

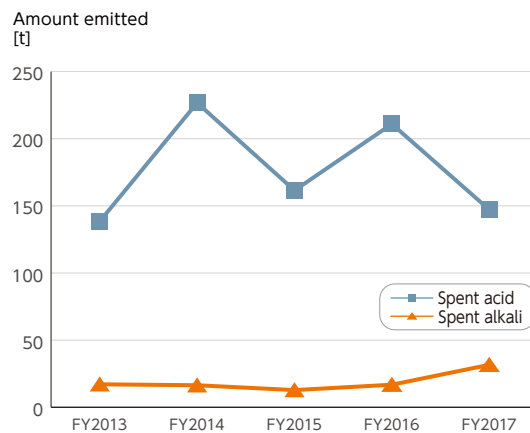
We are working to reuse (recycle) plastic containers and plastic drums. Moreover, since FY2008, we have been striving to recycle waste plastics and reduce our waste disposal volume of plastic containers, pallets and such like that cannot be reused at our factories. We also sort metals and sell them as valuables. Apart from that, we classify waste from each workplace based on the rules of each workplace.

Of the waste generated, the amount that can be recycled came to 55 tons in FY2017, 21% less than FY2016. The amount of waste we disposed of in FY2017, excluding that which was recycled, amounted to 218 tons, down 17% from FY2016. Going forward, we will strive to curb the generation of waste, and make efforts to reduce our environmental burden by thoroughly separating and recycling the generated waste.

Amount of waste plastic and metals emitted



Amount of spent acid and alkali emitted



2 ENVIRONMENTAL PERFORMANCE



MANAGEMENT OF CHEMICAL SUBSTANCES

Management of chemical substances in products

We work hard so as to prevent unintentional contamination of products with substances that should not be included in them (prohibited substances) based on laws and regulations, industry standards, and requests from customers. To this end, we have established a chemical substance management system and we monitor processes ranging from the purchase of raw materials to the shipment of products and provide education for handlers. In March 2018, we revised our Management Standard for Chemicals in Products to improve the level of its utilization in operation.

We will continue striving to reinforce our management of chemicals in products not only in our company but also at suppliers.

《 Policy on chemical substances contained in products 》

- 1.Prevent environmental pollution, reduce environmental load, reduce waste and promote recycling
- 2.Promote the development and improvement of environmentally friendly (less harmful) products
- 3.Comply with environmental laws and regulations and other requirements
- 4.Collect and disclose the latest information, and thoroughly ensure safety management

Responsible mineral procurement

We follow the RBA (Responsible Business Alliance) Code of Conduct, which is the CSR Code of Conduct for the electronic industry, automobile industry and others. Conducting responsible mineral procurement (Responsible Minerals Initiative) so that the so-called conflict minerals* are not used for products—that is one of our important themes. We also have established an in-house structure to ensure that the corresponding minerals are not used in our products, and we thoroughly monitor our activities from the stage of purchasing raw materials.

***Mineral resources (tantalum, tin, tungsten and gold) derived from a mine funded by armed forces that cause human rights abuses and environmental destruction in Congo and its neighboring countries.**

The PRTR System* — Handling of target substances

Among the chemicals we used in FY2017, 18 chemicals and 178 tons of them were PRTR target substances. We are using them while properly managing them at factories and R&D Center.

*The PRTR System

A system by which administrative agencies grasp, summarize, and publish the amount of chemical substances released to the environment or contained in waste that goes outside the workplace based on companies' business reports and estimates.



We are continuing to be actively involved in environmental conservation activities based on the recognition that one of our important missions is to reduce environmental loads.

MEC COMPANY LTD.



<http://www.mec-co.com>