

Environmental Report 2013



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Environmental Targets

We achieved almost all of the targets in FY2012, although the achievement rate of some items was less than 80 %. We will continue to work toward achieving targets for FY2013 considering the FY2012 results and the changes in the company's environment. Please refer to the following contents.

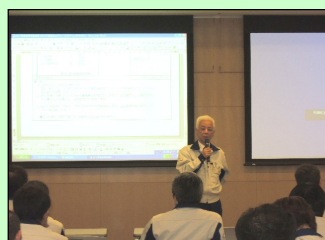
● Environmental Targets and Achievements in FY2012, Environmental Targets for FY2013

	Targets for FY2012	Achievements in FY2012	Evaluation	Targets for FY2013
1	<p>Realization of manufacture of environmentally-friendly products & enhancement of our environmentally-friendly products</p> <p>1) Implementation of R&D and production activities reducing the environmental burden (product miniaturization) Target: Achievement rate: 100 %</p> <p>- Choosing of the themes related to sectoral activities in terms of effects on reducing the environmental burden</p> <p>2) Operational improvement of environmental quality activities Target: Achievement rate: 100 %</p> <p><Common themes in all divisions> - Implementation of Environmental Quality Training Preparation of training materials: by the end of June Training for sectoral secretariats: in July Implementation of sectoral training: from August</p> <p><Implementation of division-specific activities></p>	<p>Achievement rate: 75 % <Main activities> Product miniaturization in the design phase, resource saving, improvement of yield rate, reduction of material consumption, adoption of environmentally-friendly materials, reduction in number of pages of internal standards, etc.</p> <p>Achievement rate: 100 % <Main activities> The company-wide secretariat conducted a training session for sectoral secretariats first and then the sectoral secretariats conducted a training session for members of each division (all the employees).</p>	<p>△</p> <p>◎</p>	<p>Realization of manufacture of environmentally-friendly products & enhancement of our environmentally-friendly products</p> <p>Implementation of R&D and production activities reducing the environmental burden (product miniaturization) - Implementation of activities that lead to reduction in waste of indirect materials Target: Reduction by 3 % in the ratio of purchase amount of indirect materials to production quantity compared with that of FY2012 (for 3 companies of Citizen Electronics Group in Japan)</p>
2	<p>Reduction in greenhouse emissions & promotion of energy conservation activities</p> <p>Reduction in CO2 emissions Target: Reduction by 1 % compared with the CO2 emissions amount of FY2011 (calculated reduction effect)</p> <p>- Reduction by implementing various energy-saving activities (energy-saving subcommittee, each division) Choosing themes (limiting the objects): by the end of May Monitoring of operation: from June</p>	<p>Reduction rate: 1.2 % (Achievement rate: 100 %) (reduction target: 62 tons of CO2, actual reduction: 73 tons of CO2) <Main activities> Setting up of timers for air-conditioning machines, adoption of high-efficiency dryers, promotion of 'Cool Biz' campaign, other energy saving project activities</p>	<p>◎</p>	<p>Reduction in greenhouse emissions & promotion of energy conservation activities (Mid-term target: reduction by 10 % in greenhouse emissions compared to the amount of FY2012 to be accomplished by the end of 2015)</p> <p>Reduction in CO2 emissions - Reduction by implementing various energy-saving activities (energy-saving & waste subcommittee, each division) Target: Reduction by 3 % in the ratio of CO2 emissions to production quantity compared with that of FY2012 (for 3 companies of Citizen Electronics Group in Japan)</p> <p>Reduction in waste</p> <p>Reduction in waste volume - Reduction by implementing various waste reduction activities (energy-saving & waste subcommittee, each division) Target: Reduction by 3 % in the ratio of waste volume to production quantity compared with that of FY2012 (for 3 companies of Citizen Electronics Group in Japan)</p>
3	<p>Implementation of division-specific environmental activities and contribution to environmental protection</p> <p><Common themes in all divisions> Target: Reduction of 30 % (calculated reduction effect) - Reducing the environmental burden by the use of printing volume control software Communication of operational rules: by the end of May Starting of operation: from June</p> <p><Choosing of the themes related to business targets (Policy management, 335 Project, etc.) in terms of effects on reducing the environmental burden> Target: Achievement rate: 100 %</p>	<p>Reduction rate: 29 % (Achievement rate: 97 %)</p> <p>Achievement rate: 80 % <Main activities> Improvement of yield rate, waste reduction, reduction in printout, reusable drink container campaign, virtualization of servers, public relations activities, greenery activities, etc.</p>	<p>○</p> <p>○</p>	<p>Implementation of division-specific environmental activities and contribution to environmental protection</p> <p>1) Raising of environmental awareness i) Planning and implementation of local contribution activities by cleaning and greening activities, etc. Target: more than 1 activity/year in each division ii) Planning and implementation of eco-friendly activities Target: more than 1 activity/year in each division</p> <p>2) Choosing of the themes related to business targets (Policy management, 335 Project, etc.) in terms of effects on reducing the environmental burden Target: Achievement rate: 100 %</p>

[Evaluation]

◎: Achievement rate equal to 100 % or more ○: Achievement rate equal to more than 80 %, but less than 100 % △: Achievement rate equal to less than 80 %

Environmental Target Achievement Debriefing



Environmentally-friendly Products

We are striving to produce Environmentally-friendly Products with our multilateral approaches such as "Miniaturization," "Energy conservation" and "Extended service life." Our typical products, which were manufactured as environmentally-friendly products in FY2012, are as follows.

LED devices

We developed a new product by miniaturizing the package and reducing the number of parts while achieving performance equivalent to the current small-sized and high-efficacy LED package.

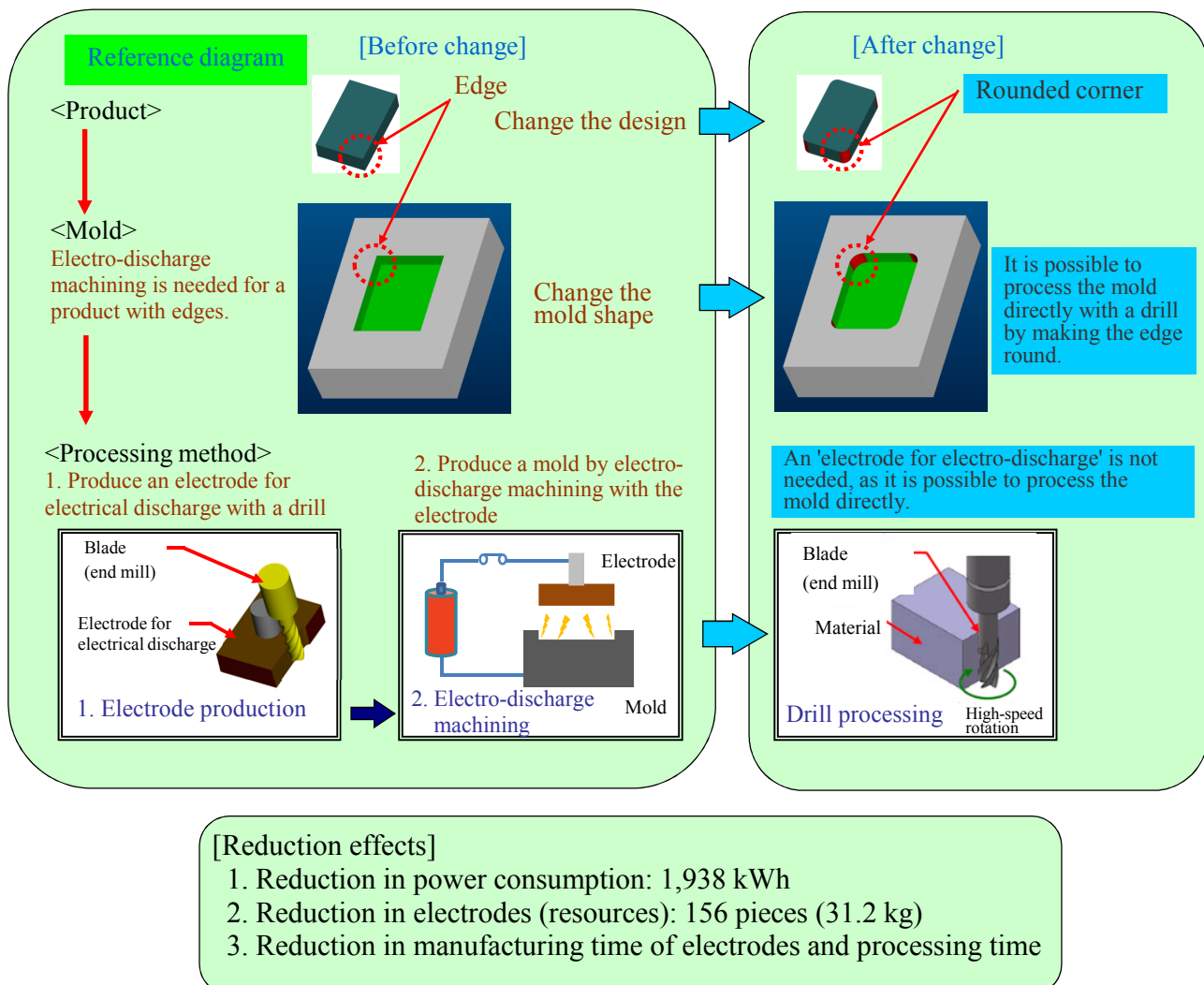
Product	Package size	Luminous efficacy	Ratio of package area	Ratio of the number of parts	Ratio of the number of products obtained from one board
Current model	2.0 mm x 1.6 mm	135 lm/w	1	1	1
Developed model (prototype)	1.2 mm x 1.0 mm	143 lm/w	0.38	0.38	3

Environmentally- friendly approach by process improvement

Citizen Electronics is actively working on not only reduction in size and thickness of products but reduction in waste and energy by process improvement. The following is a typical example of process improvement conducted in FY2012.

Process improvement by changing the product shape in consideration of the mold processing method

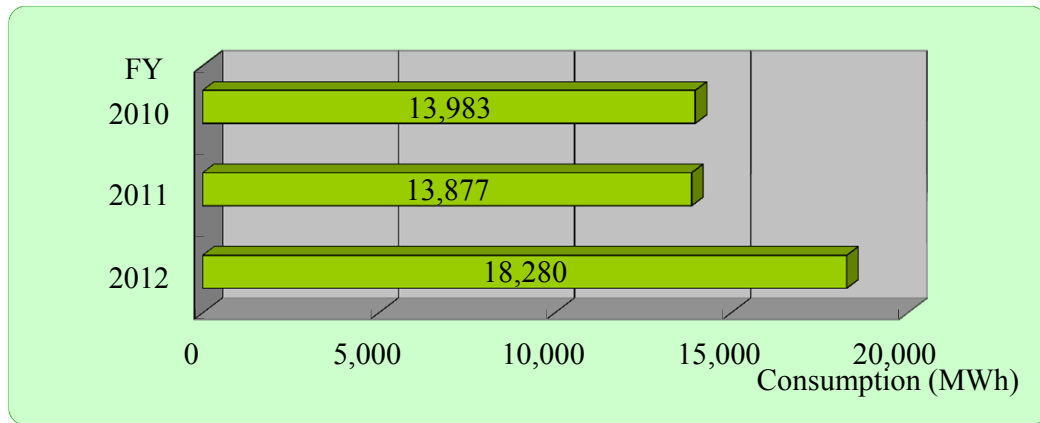
As proposing and implementing a change of the product shape with the design department's cooperation eliminates the need for electro-discharge machining, we succeeded in reducing electrodes and processing time as well as power consumption for electro-discharge machining.



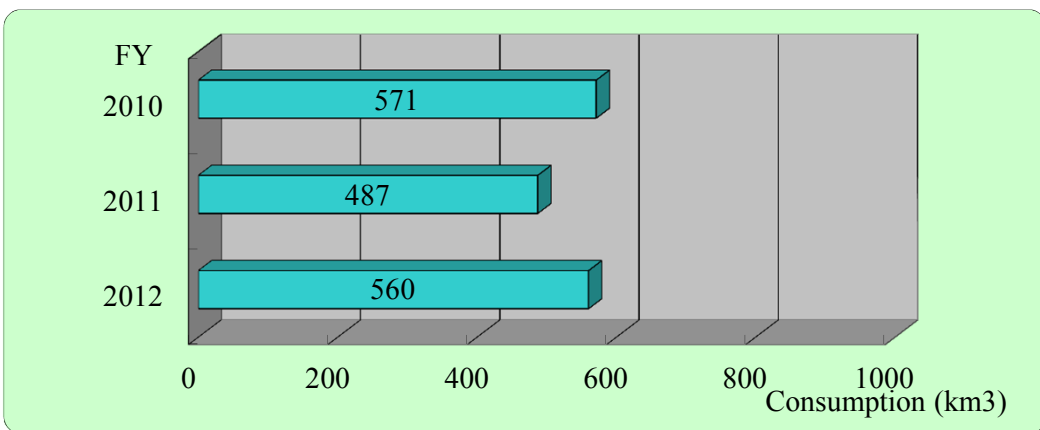
Energy Conservation (1)

Power consumption increased by 32 %, and fuel (utility gas) consumption also increased by 15 % in FY2012.

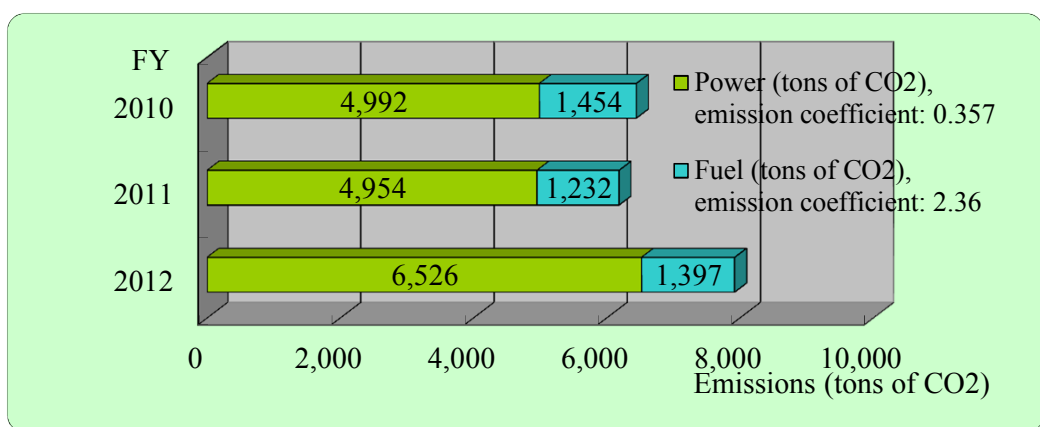
● Power consumption (MWh)



● Fuel (utility gas) consumption (km3)



● CO2 emissions (tons of CO2) <reference value>



Energy Conservation (2)

CO2 emission reduction activities

CO2 emissions in FY2012 have increased by about 28 % compared with those in FY2011 due to the increase in power and utility gas consumption with the integration of manufacturing sites to headquarters. The energy-saving & waste subcommittee and each division implemented activities to minimize the increase.

Main measures to reduce CO2 emissions

1. Control operation of some air-conditioning machines by equipping timers



Equipped timers

Reduction effect = 62 tons of CO2/year (electricity conversion: 175,104 kWh)

2. Continue 'Cool Biz' campaign (mid-May to late October)

Room temperature setting during the campaign: 28 °C

3. Set up high-efficiency dryers for compressors

Reduction effect = 9 tons of CO2/year (electricity conversion: 25,200 kWh)

In addition to the above activities, we adopted the 'calculated reduction effects' system where environmentally-friendly activities implemented in each division are converted to reduction in CO2 emissions and we improved the awareness of all divisions.

Activities	Calculated reduction effects (tons of CO2)
Reduce paper by printing volume control software	1.922
Abolish issuance of accounting slips	0.01
Reduce servers by virtualization	1.234
Conduct reusable drink container campaign	0.003
Reduce electrodes	0.463
Reduce fluorescent lights moderately	0.021
Reduce number of pages of environmental standards	0.004
Conduct greenery activity	0.004
Total	About 3.7 ton

Activities in FY2013

In FY2013, we established a target for reducing 3 % of CO2 emissions compared with those in FY 2012 in consideration of the mid-term plan of the Citizen Group. This target is a reduction target not only for our head office but for the 'Citizen Electronics Group' including subsidiary companies in Japan which are our production sites.

Main measures in FY2013

1. Consider the introduction of energy-saving compressors
2. Develop energy-saving measures by review of production processes and implement them for the entire Group
3. Develop and implement measures in each division by the use of power consumption monitoring devices
4. Reduce standby electricity by review of equipment management

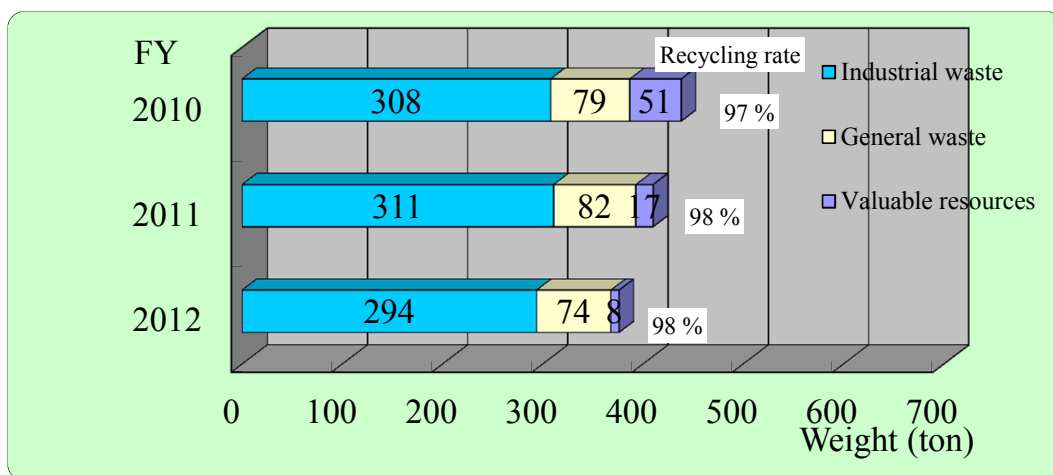
Monitoring of Waste

● Waste volume, amount of valuable resources, and their recycling rate

We have continued to monitor industrial waste, general waste, and valuable resources.

The recycling rate of the total amount consisting of waste and valuable resources was 98 %.

As the waste volume in FY2013 is expected to increase with production increase, we will plan actions to reduce it.



* The percentages indicate the recycling rate of the total amount consisting of waste and valuable resources.

Note - Recycling rate (%) = [(amount of recycled resources + amount of valuable resources)/(waste volume + amount of valuable resources)] x 100

- Valuable resources: Resources with profit reported having subtracted the transportation expense after selling the waste

- Recycled resources: Resources obtained from waste that is recycled.

<Ex.> Recycling rate in FY2012: [(355+8)/(368+8)] x 100 = 98 (%)

Activities in FY2013

We have mainly conducted 'monitoring activities' with regard to waste for several years. However, waste emissions of the 'Citizen Electronics Group' are expected to increase in FY2013 with the integration of manufacturing sites and production increase.

Therefore, we will conduct reduction activities including review of the calculation methods and establish targets again.

We have set a target for reducing waste by 3% compared with FY2012 for FY2013 as 'total emissions of the Citizen Electronics Group' in Japan.

Main measures for FY2013

1. Use garbage disposal
2. Consider the reuse of packaging materials
3. Waste reduction by promoting productivity activities
4. Instill dedication to waste reduction by promoting awareness activities, etc.

Chemical Substance Management

Released and transferred quantities of substances relevant to the PRTR Law

The following table shows the results of released and transferred quantities of substances in FY2012 that are relevant to the PRTR Law. None of them required reporting to the prefectural government.

(in kg)

Contained substance	Substance No.	Annual handling amount	Released products	The amount discharged into the environment				
				Total amount	Amount transferred	Amount released into the air	Amount released into the water	Amount released into the soil
Silver and its water-soluble compounds	82	0	0	0	0	0	0	0
Xylene	80	13	0	13	12	1	0	0
Dodecylbenzene Sulfonic Acid	30	6	0	6	5	1	0	0
Ferric Chloride	71	1260	0	1260	0	0	0	0
Antimony and its compounds	31	1	1	0	0	0	0	0
Normal Hexane	392	8	0	8	0	8	0	0
Ethylene Glycol Monomethyle Ether	58	2	0	2	2	0	0	0
Ethylbenzene	53	0	0	0	0	0	0	0
Toluene	300	5	0	5	0	5	0	0
Manganese and its compounds	412	0	0	0	0	0	0	0
1,2,4-trimethylbenzene	296	0	0	0	0	0	0	0
1,3,5-trimethylbenzene	297	0	0	0	0	0	0	0

Environmental Education and Training

In order to raise employees' awareness about the environment, we conducted training sessions on environmental management system and environmental quality for all employees.



Training session on environmental management system
March 15, 2013

A Member of the Community

● Mt. Fuji Cleanup Campaign

Our company is located at the foot of Mt. Fuji. Fifty people (including employees' family members) participated in the Mt. Fuji Cleanup Campaign and conducted cleanup activities near the fifth station of Mt. Fuji in FY2012.



Mt. Fuji Cleanup Campaign
August 11, 2012

● Cleanup activity outside the company's premises

Also, in June (Environment Month), a cleanup activity was conducted by volunteers from the company's different sections. The cleanup activity included an area from the company's premises to the nearest train station and from the premises to the employees' parking area. About 14 kg of garbage was collected.



Cleanup activity outside the company's premises
June 27, 2012