



Environmental Report 2011

 CITIZEN ELECTRONICS CO., LTD.

Environmental Targets

- Environmental Targets and Achievements in FY2010
- Environmental Targets for FY2011

Chemical Substance Management

- Released and transferred quantities of substances relevant to the PRTR Law

Environmentally-friendly Products

- Environmentally-friendly products in FY2011

Environmental Education and Training

- Explanatory Meeting for Green Procurement Standard Revision
- Explanatory Meeting for Environmental Quality System

Energy Conservation

- Power consumption
- Fuel (Utility gas) consumption
- CO₂ emissions

A Member of the Community

- Cleanup activity outside the company's premises
- 1 Million Woods Tree Planting Movement
- Mt. Fuji Cleanup Campaign

Monitoring Activity on Waste

- Combustible waste
- Waste volume, amount of resources, and their recycling rate

Target achievement in FY2010 was almost the result as planned. We will continue to work toward achieving targets for FY2011 considering the FY2010 results. Please refer to the following contents.

●Environmental Targets and Achievements in FY2010, Environmental Targets for FY2011

Targets in FY2010		Achievement	Evaluation	Targets for FY2011	
1	Realization of manufacturing the environmentally-friendly products & Enhancement of our environmentally-friendly products. 1) Implementation of R&D and Production Activities reducing the environmental burden Target: Plan achievement rate: 100% 2) Reinforcement of EMS (Environment Management System) ①Improvement of the EMS system Target: Improvement rate: 20% ②Operational improvement of Environmental Quality Activities Target: Implementation of two or more themes	Achievement rate: 91 percent <Main activities> - Design of the environmentally-friendly products - Improvement of yield rate - Establishment of integrated production line - Reduction of material consumption Achievement rate: 50 percent <Main activities> - Completion of draft on person in charge's job description. System was not implemented. - Shortening of response time to customer inquiries/ requests. Internal cooperation in order to hasten completion of reports. Publication of management table. Review of registration system was not conducted. - Regulations Revision and Green Procurement Standards Revision were conducted. Review of operational standards was not conducted. Achievement rate: 87 percent <Main activities> - Revaluation of working standards - Implementation of the study group - Utilization of analysis data	○ △ ○	Realization of manufacturing the environmentally-friendly products & Enhancement of our environmentally-friendly products. 1) Implementation of R&D and Production Activities reducing the environmental burden Target: Plan achievement rate: 100% <Concrete steps> - Miniaturization, Energy-saving of the products (R&D) - Improvement of yield rate, Reduction of material consumption, Establishment of integrated production line, etc. - Review and improvement of processes 2) Operational Improvement of Environmental Quality Activities Target: Achievement rate: 100% <Concrete steps> - Enlightenment and education of Environmental Quality Activities - Activities (that include delivery time shortening) based on the review and reinforcement of the system	
	Reduction in greenhouse emissions & promotion of energy conservation activities 1) Reduction in CO₂ emissions to 1% less than FY2009's figure. 2) Drawing up of the CO₂ reduction plan of 25% CO₂ emissions reduction targets for FY2020 compared with the CO₂ emissions amount in FY1990 Target: Completion of drawing up of the plan by March, FY2011	Achievement rate: 100 percent 7,114 (tons of CO₂) → 6,452 (tons of CO₂) 9.3% reduction Achievement rate: 100 percent <Main activities> - Acknowledgement of the situation - Strategy examination - Planning	◎ ◎	Reduction in greenhouse emissions & promotion of energy conservation activities 1) Reduction in CO₂ emissions by 10% compared with the CO₂ emissions amount in FY2010. <Concrete steps> - Planning and development of energy-saving measures by application of the "Case studies of energy-saving activities" or by support of the subcommittee 2) Starting preparations of the CO₂ reduction activity in Citizen Electronics Group <Concrete steps> - Starting of preparations for energy-saving activities implementation including subsidiaries and factories in China.	
3	Implementation of division-specific environmental activities and contribution to environmental protection. Themes related to business targets (policy management) in terms of effects on reducing the environmental burden Feasible actions considering outside case examples of energy conservation activities Target: at least 1 theme	Achievement rate: 92 percent - Reduction by PC power-saving - Reducing the number of component parts - Reducing the amount of waste of supplementary materials - Reducing the amount of waste of materials for parts by improving the yield rate, etc. <Main activities> - Development of energy-saving products - Replacement of air-conditioning system - Public relations - Energy-saving voluntary implementation patrol	○	Implementation of division-specific environmental activities and contribution to environmental protection. Target: Achievement rate: 100% - Choosing of the themes related to business targets (Policy management, 335 Project, etc.) in terms of effects on reducing the environmental burden - Feasible actions considering outside case examples of energy conservation activities Target: at least 1 theme <Concrete steps> - Finding the themes related to Policy management, 335 Project, etc., developing the activities.	

[Evaluation] ○: Achievement rate equal to more than 100 percent ○: Achievement rate equal to more than 80 percent, but less than 100 percent △: Achievement rate less than 80 percent





Environmentally-friendly Products

We are striving to produce Environmentally-friendly Products with our multilateral approaches such as "Miniaturization", "Energy conservation" and "Extended service life". We introduce typical products which are considered as environmentally-friendly products in FY2010 as follows.

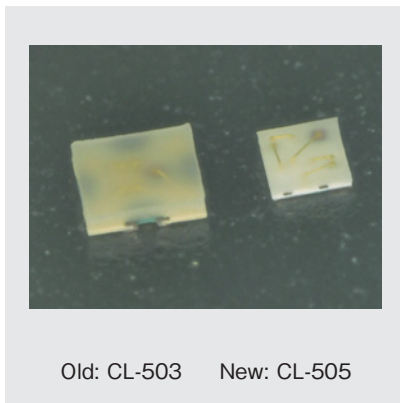
(1) LED Devices

●Miniaturization of Top-emitting Tri-color LED

CL-503(1.5×1.3×0.35mm)

➡ CL-505(1.0×1.0×0.26mm)

62% miniaturization



●Miniaturization of Side-emitting Tri-color LED

CL-425(3.25×1.35×0.45mm)

➡ CL-426(2.8×0.85×0.35mm)

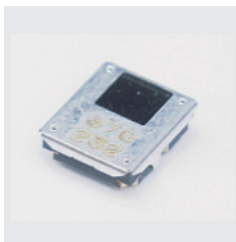
58% miniaturization



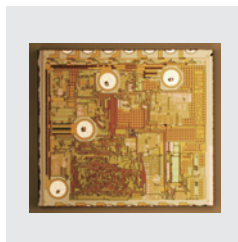
(2) Remote Sensors

●The power consumption of Remote Sensors is decreased by half.

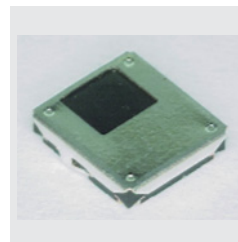
0.45 - 0.85mA @2.7 - 5.5V



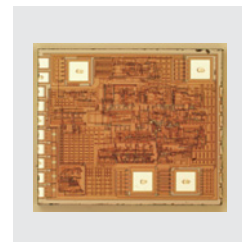
Current product



0.2 - 0.45 mA @2.7 - 5.5V



Improved product



(3) Lighting Devices

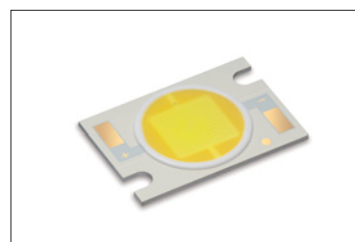
●We reduced the number of the parts for the customers by developing the lighting devices with the high wattage.

2 use of CL-L233



Size: 23.0(L)×17.5(W)×1.4(H)mm

1 use of CL-L330



Size: 28.0(L)×19.0(W)×1.4(H)mm

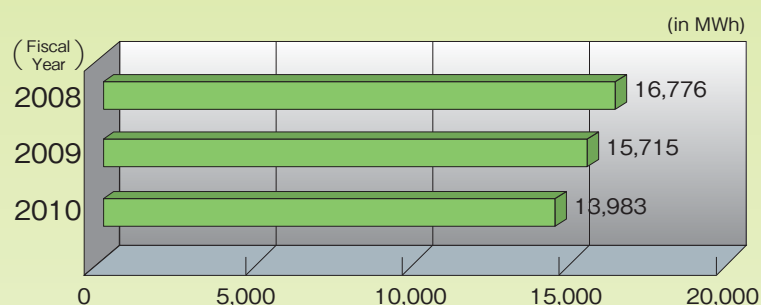
PCB footprint: 34% Reduction



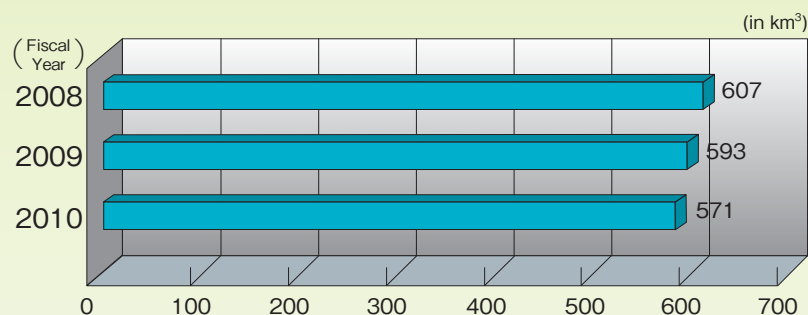
Energy Conservation—1

With energy conservation measures such as the introduction of energy-saving measures on the test equipment, the replacement a boiler with a Gas Heat Pump, complete control of all air conditioners with regard to operation time and temperature, and with transportation of equipment to other factories, energy consumption has decreased by approximately eleven percent, and fuel (utility gas) consumption has also decreased by approximately four percent.

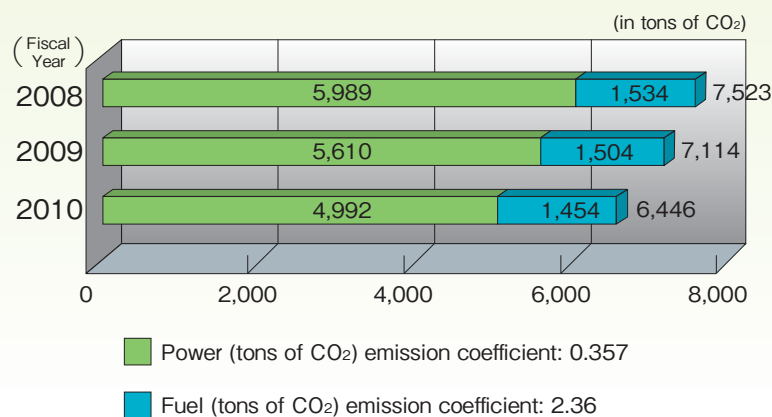
● Power consumption (MWh)



● Fuel (Utility gas) consumption (km³)



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





Energy Conservation—2

Monitoring of effects by introduction of energy-saving measures on the test equipments



Three testing machines during energy-saving operation

Effect of energy conservation

Reduction in CO₂ :

—28.2[tons of CO₂] per year

[Equivalent to —79.0MWh per year]

Implementation of energy-saving by introduction of Gas Heat Pump



Installed Gas Heat Pump on the No.3 Building rooftop

Effect of energy conservation

Reduction in CO₂ :

—18.0[tons of CO₂] per year

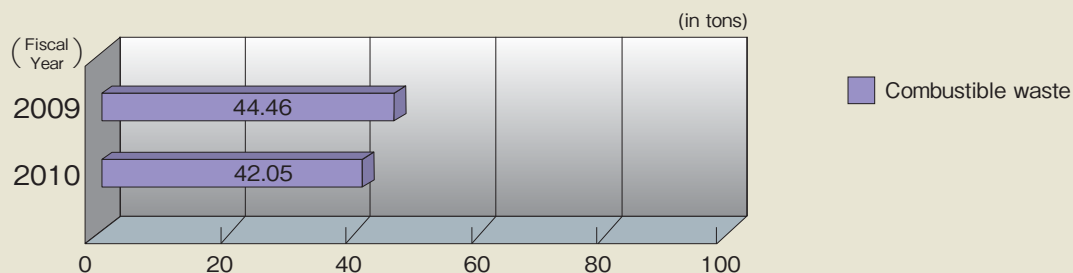
[Equivalent to —50.2MWh per year]



Monitoring Activity on Waste

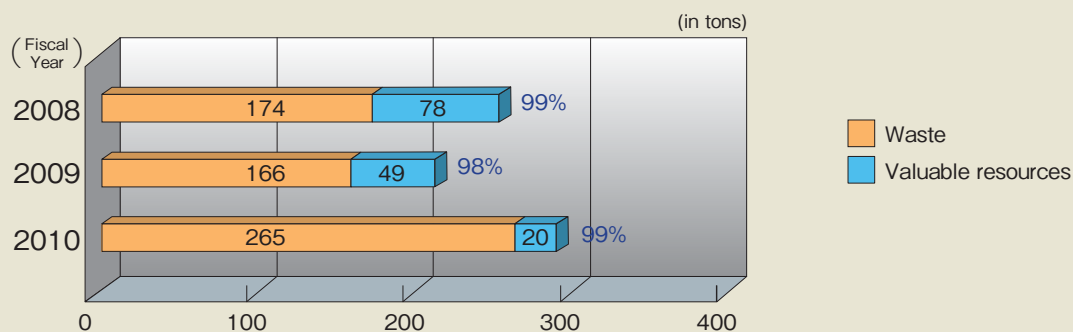
As the main activities of waste reduction in FY2010, by abiding by both the disposal standards in important documents and the waste segregated disposal standards, the recycling rate was increased and reduction of combustible waste was achieved. As for the actual reduction in FY2010, compared to the actual amount of the total combustible waste amount (44.46 tons) in FY2009, actually 5.4% reduction (42.05 tons) was accomplished.

● Combustible waste



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

Waste volume in FY2010 was increased by sixty percent compared to that of FY2009, and the amount of valuable resources in FY2010 was decreased by forty-one percent compared to that of FY2009. The recycling rate in FY2010 was increased by ninety-nine percent. We are going to continue to treat reduction of waste and improvement of the recycling rate as maintenance activities.



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

[Ex.] Recycling rate in FY2010: $[(261+20)/(265+20)] \times 100 = 99$ (%)

Note

- Recycling rate (%) = $[(\text{amount of recycled resources} + \text{amount of valuable resources}) / (\text{waste volume} + \text{amount of valuable resources})] \times 100$
- Valuable resources: Resources with profit reported having subtracted the transportation expense after selling the waste
- Recycled resources: Resources obtained from waste that is recycled.



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 FY2010 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 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	21	14	7	7	0	0	0
Xylene	80	10.44	0	10.44	0	10.44	0	0
Dodecylbenzene Sulfonic Acid	30	4.52	0	4.52	0	4.52	0	0
Ferric Chloride	71	1,162	0	1,162	0	0	0	0
Antimony and its compounds	31	22	22	0	0	0	0	0
Normal Hexane	392	8	0	8	0	8	0	0
Ethylene Glycol Monomethyl Ether	58	4.4	0	4.4	0	4.4	0	0



Environmental Education and Training

Concerning the maintenance and improvement of environmental activities, education of employees is regarded as necessary. Therefore appropriate education of employees at regular intervals is conducted. In FY2010, education was undertaken for the purpose of making Green Procurement Standard Revision and Environmental Quality System known to employees.



Explanatory Meeting for Green Procurement Standards Revision



Education of Environmental Quality System

A Member of the Community

As one of the education programs, new employees at CITIZEN ELECTRONICS CO., LTD. took part in the "1 Million Woods Tree Planting Movement" sponsored by Yamanashi Prefecture which was held in April FY2010 in Tsuru City, where they planted Japanese cherry blossoms and maple trees with local residents and volunteers. Also, fifty-three people participated in the "Mt. Fuji Cleanup Campaign" and conducted cleanup activities near the 5th station of Mt. Fuji. In August, FY2010. Also, in June on the "Environmental activity enhancement period", the cleanup activity was conducted by forty-six employees, who were chosen from the company's different sections. The cleanup activity included an area from the company's premises to the nearest station and from the premises to the employees' parking area. Twenty-six kg of waste was collected.



1 Million Woods Tree Planting Movement (April 24, 2010)



Mt. Fuji Cleanup Campaign (August 7, 2010)



Cleanup Activity outside the company's premises (June 16, 2010)

