

## Group Code of Conduct, Article ④

Recognize that environmental issues are a common concern of mankind and a crucial issue for management in terms of the survival and activities of the company, and engage these issues in a voluntary, proactive manner.

# Promoting Downsizing to Reduce Environmental Impact

**Citizen Group Environmental Policy**  
Revised April 1, 2010

**Slogan**  
**“Small is Eco”**

**1 Promoting downsizing**  
Use production and technology innovations to reduce environmental impact, generate profits and reduce CO<sub>2</sub> emissions

**2 Creating new environmental value through Citizen Environmental Products**  
Identify new environmentally-conscious content of products and parts

**3 Minimizing environmental risks**  
Compliance with global environmental laws and regulations (REACH regulations, US regulations, Chinese regulations, etc.)

**4 Enhancing communication with local communities through environmental and social contribution activities**



## “Small is Eco”

“Small is Eco” was adopted in 2010 as a group-wide slogan that makes use of the Group’s expertise to invigorate environmental activities throughout the Group. Downsizing is central initiative within those environmental activities.

Citizen Watch has been developing miniaturization technologies since about 2003. Such technologies not only reduce environmental impact by saving space, resources, energy, and manpower and reducing costs, they also provide environmental value by reducing water usage, chemical usage, and detrimental effects on the work environment and health. Citizen Group refers to this added value as a whole as “downsizing.”

Representative examples of integrated operations in the watch business include the KM-2 micro-cam lathe and miniaturization of watch assembly lines of Citizen Heiwa Watch.

In 2011, we began trial use of “functional water technology” for washing the cutting oil that adheres to watch components, and in addition to the miniaturization of facilities, we are adopting the downsizing concept with washing processes as well.



Washing watch components using functional water

**Citizen Heiwa Watch**  
Example of Application of Miniaturization Technology and Observed Effects

**We are developing environmentally conscious production facilities, and introduction of the KM-2 has resulted in a 75% reduction in electricity consumption, a 70% reduction in mass, and a 12% reduction in installation space per unit, providing energy, resource (cost), and space saving benefits.**

**Observed Effects**  
(CO<sub>2</sub> Reduction in FY 2011)

CO<sub>2</sub> emissions

**226 tons**  
(overall)

Reduction in environmental impact per unit

Electric power

**1.3 kWh**

Mass of resources


**500 kg**

Space


**0.9 m<sup>2</sup>**

**Standards for Determining Observed Effects**  
The environmental impact reduction effects including energy, resource, and space savings were converted to reductions in carbon dioxide. The carbon dioxide units used are listed below.  
Electric power: 0.357 kg-CO<sub>2</sub>/kWh  
Resources (iron): 2.5 kg-CO<sub>2</sub>/kg (iron)  
Space: 76.0 kg-CO<sub>2</sub>/m<sup>2</sup> per year


**Earlier C-7 model**



**KM-2**



# Development of Environmentally-Friendly Products — LEDs for Lighting



**“Gentle Light That Adds Color to Our Lives”**  
**Nodoka Oyamada**  
Opto Devices Division  
Citizen Electronics Co., Ltd.

## Environmentally-Friendly Light That Uses Watch Manufacturing Technology

LEDs are an environmentally-friendly light source. Compared to incandescent light bulbs, LEDs use only about one-seventh or one-eighth the power and do not contain any hazardous substances such as the mercury found in fluorescent lights. LEDs also have longer life spans, contributing to a reduction in waste caused by replacement. LEDs are truly the “lighting of the future.”

Citizen Electronics began developing LED lighting in 2003 and successfully developed a lighting LED with a brightness of 17,000 lumens, the world’s highest level, in 2011.

The Citizen Electronics environmental policy of “smaller, thinner, higher-performance product designs” is applied here too, and the presence of the beneficial tradition of pursuing the “lighter, thinner, shorter, smaller” can be sensed in the attitudes of each developer.

## Providing Healing Light to People and the World

Awareness concerning electricity increased dramatically following the Great East Japan Earthquake in 2011, and demand for energy-saving products and renewable energy is increasing rapidly.

We will continue our efforts to develop environmentally-friendly products with the aim of providing products that lend even a little of our strength so that we can contribute to solving various problems around the world including the restoration of areas affected by disasters.

Light is an essential item that cannot be removed from our lives. It is my desire that such light causes no detrimental stimulus or harm to people or the global environment, that is safe and secure, that at times can calm or excite people, and that is both pleasant and enjoyable.

A team member meeting

## Approximately 51% Energy Savings Achieved with LED Lighting — Inubosaki Lighthouse illuminated

The Inubosaki Lighthouse in Choshi, Chiba Prefecture was selected as one of the “world’s 100 lighthouses.” The lighthouse provides maritime weather information and plays a role as a differential GPS station to provide GPS differential information and is crucial for safe and economic navigation by ships. LEDs powered by solar panels are used to light up the lighthouse. The LED lights use LEDs manufactured by Citizen Electronics, and compared to the earlier metal halide lamps, they reduce power consumption by approximately 51%.

## Example Initiative

\* The LED lights were manufactured by IWASAKI ELECTRIC Co., Ltd.

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