



JDI Japan Display Inc. Group

## Environmental Report 2014

# A clean earth for the next generation



# Top Message

Japan Display Inc. was listed on the First Section of the Tokyo Stock Exchange on March 19, 2014. The fact that we were able to successfully conclude the merger of three companies and have our stock listed roughly two years after the founding of the company is due entirely to the support and good graces we have received from our customers, clients, shareholders, and all other concerned parties, for which we would like to express our heartfelt gratitude.

Continuing on from 2012 we have continued to develop our "Innovation Vehicles." The Innovation Vehicles are state-of-the-art displays designed to lead technical development, and are positioned as a bridge linking our customers with our latest technologies. These products simultaneously achieve a substantial reduction in power consumption, high resolution, high contrast, a thin module structure, a narrow border, integrated touch functions, and so on. Thus they are capable of improving environmental consciousness such as power saving, resource saving while providing customers with richer value. We will continue to incorporate environmental considerations into the processes used to produce our products to create truly inspiring and innovative products that give consideration both to value and the environment.

The production of liquid crystal displays is accompanied by large inputs of energy and resources and outputs of wastes. As a business operator running a business that involves a significant environmental burden, we have a particularly large responsibility to continue to work to reduce this environmental burden at the production stage. When it comes to the particularly important theme of reducing emissions of CO<sub>2</sub>, water, chemical substances, and waste, we set numerical targets and promote continual improvement activities. Furthermore, when it comes to global warming, we participate in the "Commitment to a Low Carbon Society" plan that the industrial world has begun working to address, and thereby contribute to achieving the targets of industry as a whole.

It is expected that the importance of information and communication technology (ICT), particularly smart devices like smartphones and tablets, will continue to grow when it comes to creating a new environmentally conscious, energy saving society. We intend to contribute to the creation of this new society by ceaselessly making efforts in the innovation of the displays supporting ICT.

We look forward to your continued support for our company.



**Shuichi Otsuka**

Chief Executive Officer  
and Chief Executive  
for the Environment

Last year we acquired integrated ISO14001 certification for our plants and offices within Japan. Through this integrated certification we have established unified environmental objectives and targets, and have promoted environmental activities through the combined efforts of all of our plants and offices. This report provides an overview of these activities. Our environmental activities can be largely broken down into two aspects: the product-related and the production-related environmental activities.

Firstly, as for the product-related environmental activities, we think that the regulations of various countries related to the chemical substances in products, such as REACH and RoHS, as well as the demands from our customers in this area, will continue to rise steadily. We will continue to undertake meticulous management including confirmation of the chemical substances in product during the development and design stage, prevention of contamination in our production lines, and so on. We have established criteria for environmental consciousness of our products and define products satisfying the criteria as "environmentally conscious products." As one of our environmental targets, we have set a target with the proportion of the environmentally conscious products as its key performance indicator, and we will continue to work toward achieving it.

Next, as for the production-related environmental activities, first of all, we conform to all laws and ordinances related to the environment in our production activities. We are recognizing that recent increase of proportion of high value-added products has been accompanied by an increase in the processes which has led to increase of the environmental burden per a sheet of glass. With a view towards reducing our environmental burden, we have been working for continual reductions in energy such as electricity, gas; water; waste; and chemical substances. Topics that will be introduced include reduction of CO<sub>2</sub> emissions by changing the humidification process for our clean rooms and by installing greenhouse gas abatement systems. Our hope is that these case examples will be helpful to everyone facing with similar challenges.

Finally, I would like to mention the famous saying (philosophy) of the Ohmi merchants of "Sampo yoshi (Good for three ways)," which means "good for the seller, good for the buyer, and good for the society." It is a philosophy that says that commerce must not just be done on terms that are beneficial to the seller, but that it must also wholeheartedly satisfy the buyer and moreover must contribute to promote the development and welfare of local communities. We think that our environmental activities correspond to "good for society," and as such we will continue to promote such activities in an ongoing manner.

Moving forward, we ask for your continued support.



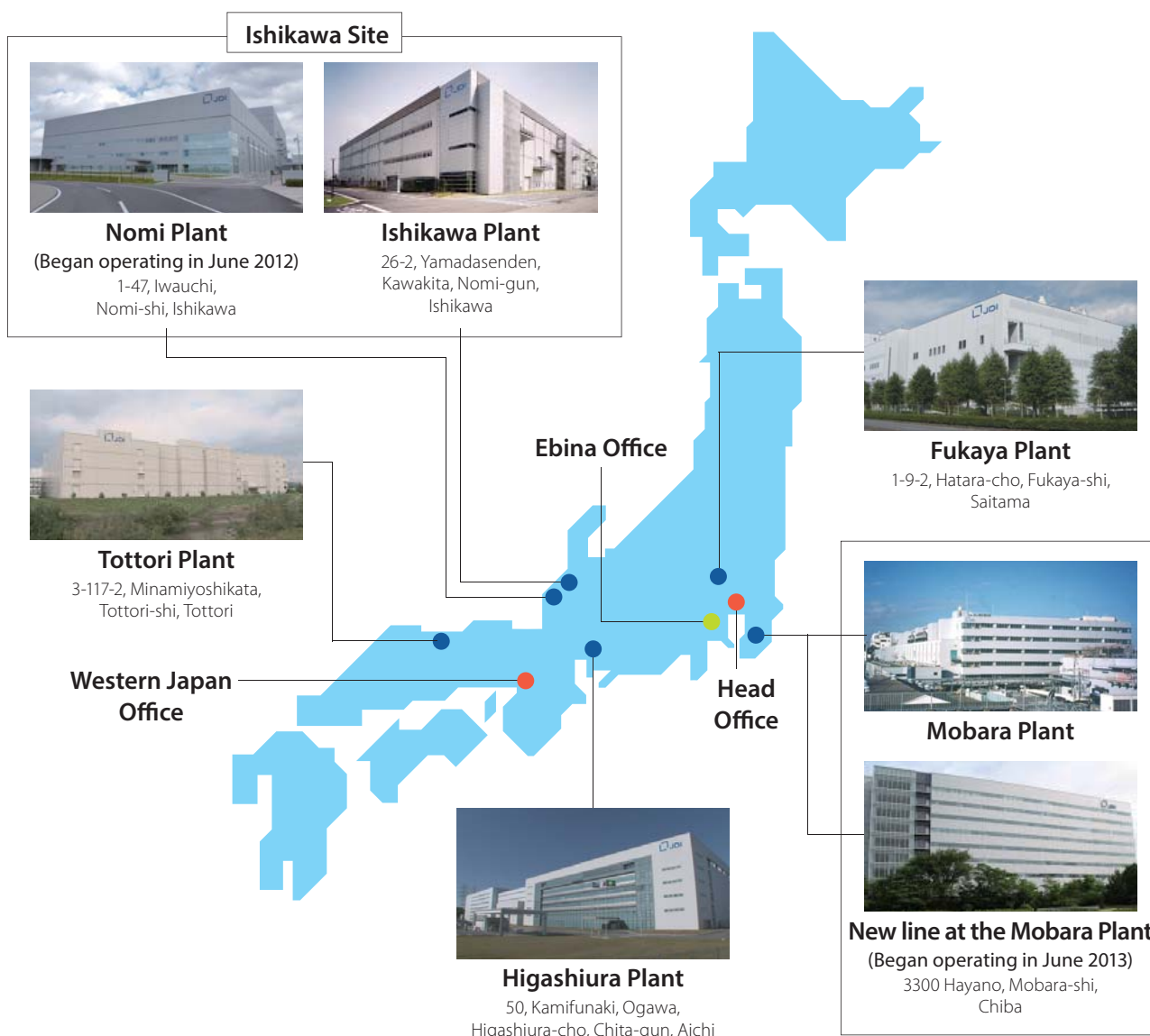
**Takao Yasuda**

Chief Administrative Officer  
and Environmental  
Management Officer

# Company Outline

<b>Company name</b>	Japan Display Inc.	<b>Head office address</b>	3-7-1, Nishi-shinbashi, Minato-ku, Tokyo
<b>Start of business</b>	April 1, 2012	<b>Capital</b>	96.8 billion yen
<b>Representative</b>	Shuichi Otsuka, President and CEO	<b>No. of employees</b>	Approximately 14,800 people (consolidated) (as of July 1, 2014)
<b>Business content</b>	Development, design, production, and sale of small- and medium-sized display devices and related products		

## Domestic plants and offices



### Introduction to our new plants

#### Overview of the Nomi Plant

- Line generation: Generation 5.5  
(Glass size: 1,300 mm x 1,500 mm)
- Start of operations: June 2012
- Site location: Iwauchi, Nomi-shi, Ishikawa
- Floor area: Roughly 95,700 m<sup>2</sup>

#### Overview of the Mobara Plant's new line

- Line generation: Generation 6  
(Glass size: 1,500 mm x 1,850 mm)
- Start of operations: June 2013
- Site location: Hayano, Mobara-shi, Chiba
- Floor area: Roughly 201,000 m<sup>2</sup>

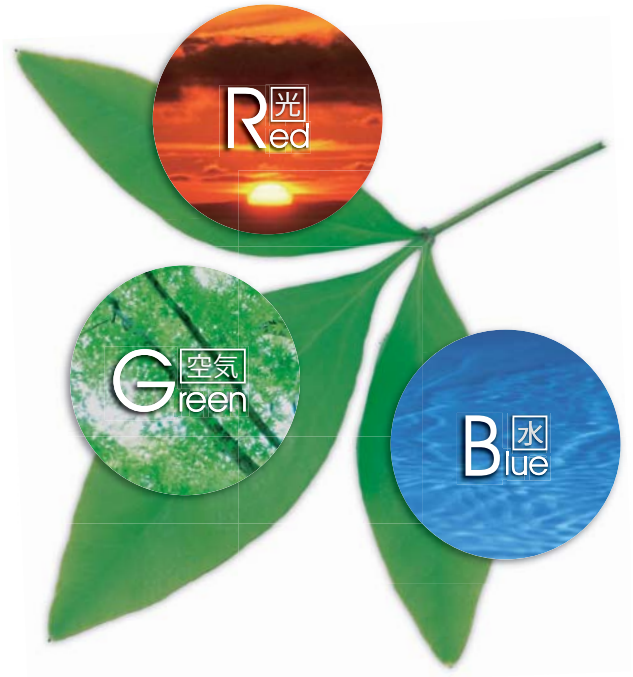
**Overseas sales subsidiaries** A total of seven offices in the United States, Europe, China, Hong Kong, Taiwan, and South Korea

**Overseas manufacturing subsidiaries** A total of five sites in China, the Philippines, and Taiwan



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## Editorial Policy

This is the second environmental report issued by Japan Display Inc. continuing on from last year.

We think it important to appropriately disclose information to and communicate with all of our stakeholders. This report was compiled with the goal of conveying our activities for the realization of a sustainable society in an easy to understand manner.

In editing the report, we expressed ideas by incorporating as many figures and photographs as possible, and we introduce each of our activities through their own page layout. We plan to issue this regularly once each year while working to make the report even easier to read in the future.

A version that has been translated into English is also available from our website (<http://www.j-display.com/english/Environment/report2014/report2014.html>), and we would be pleased if people were to make use of this as well.

If there are any comments, advice, and so forth, please contact the publisher below so that we can use them as references for the future.

### ■ Target Period

April 2013 - March 2014

Some activities outside of the above period are also included.

### ■ Date Issued

August 2014

### ■ Assumed Readers

This report is aimed at a diverse range of stakeholders that includes our customers, clients, everyone in our local communities, and more.

### ■ Publisher

Environmental Management Department, CSR Promotion Division, Japan Display Inc. (TEL +81-3-6732-8362)

# Environmental Policy

## ■ Slogan

**A clean earth for the next generation**

## ■ Mission

At Japan Display Inc. we recognize that protecting the earth's environment is a critical challenge for humanity. We aim to grow together with society, expressing our respect for people and the environment through the small- and medium-sized display products and services we provide.



## ■ Basic Policy

We will formulate an environmental management system based on ISO14001 standards, develop an organizational structure for its implementation, and continually improve this system throughout our business.

We will comply with international, national and local environmental regulation and other voluntary requirement and work to prevent environmental pollution.

We will basically adhere to the following standards in areas of our business that have a significant impact on the environment by setting and periodically reviewing objectives and targets and work to the continual improvement of the performances.

## ■ Key Measures

1. Pursue the prevention of global warming, preservation of water resources, and energy and resource conservation. Carefully manage chemicals and continually strive to reduce and replace them with alternatives that have a lower environmental burden. Pursue a target of zero emissions through a 'reduce, reuse, recycle' program.
2. Promote green procurement and provide environmentally conscious products and services that reduce environmental burden.
3. Consider the preservation of ecosystem by examining and managing the effects of our production activities on the environment while also working to improve their environmental aspects.
4. Work to contribute to society by proactively participating in local activities for protecting nature and preserving the environment.

To ensure that our environmental policy is put into practice, we will raise awareness of it among our employees by providing them with notification and education on environmental matters. We will also seek cooperation from our business partners with our environmental initiatives.

Date enacted: April 1, 2012

Shuichi Otsuka  
Chief Executive Officer  
Japan Display Inc.

# Product Overview

To meet customers' wide range of demands, we provides the most suitable flat panel displays, like low temperature poly-silicon LCD for ultra-high resolution, IPS for wide viewing angle and high picture quality, WhiteMagic™ for power-saving, Pixel Eyes™ for thin and light touch functionality, etc.

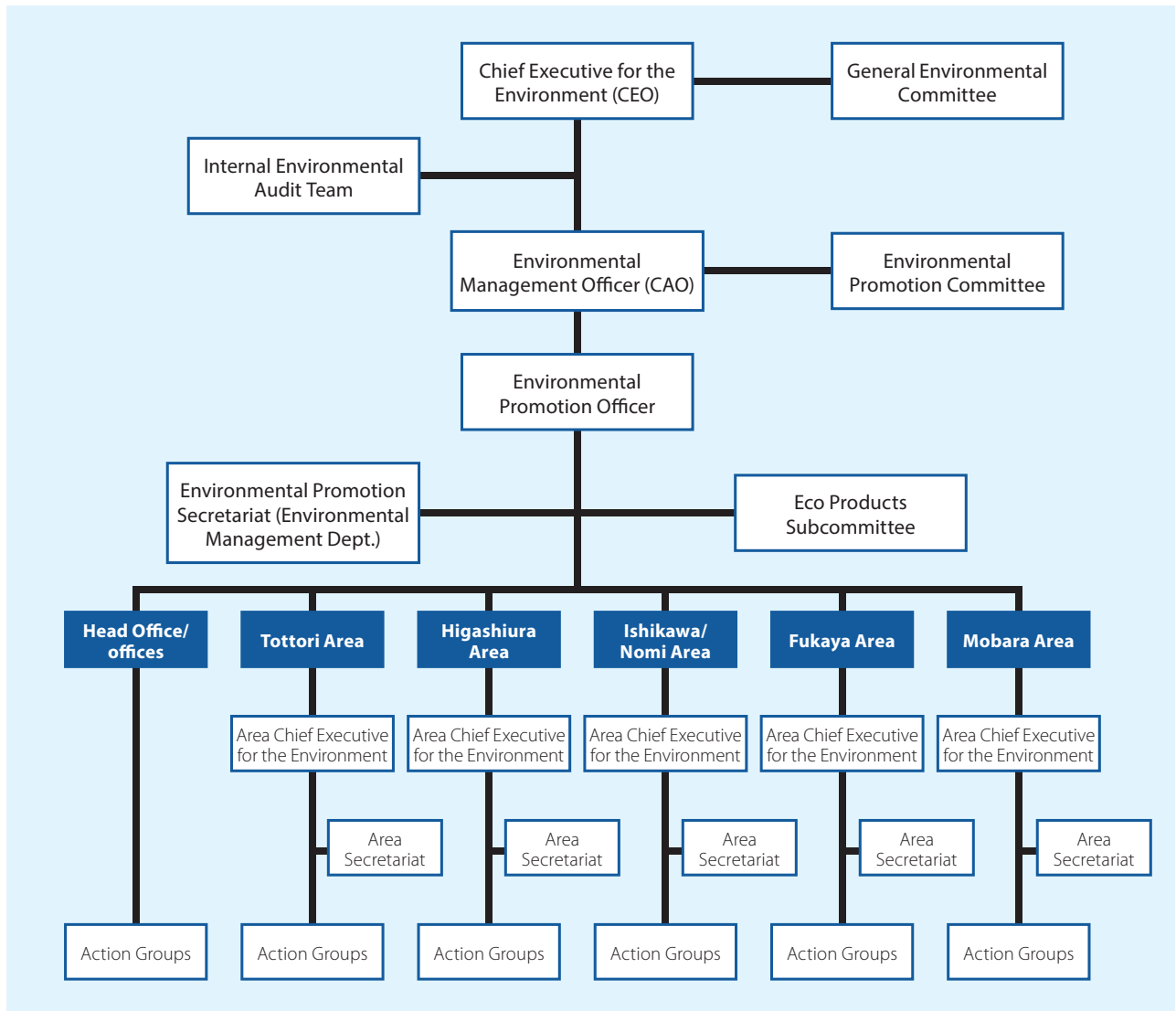
Pixel Eyes and WhiteMagic are trademarks of Japan Display Inc.



# Environmental Management Organization

We began environmental activities geared towards acquiring integrated ISO 14001 certification in FY2013, and acquired our certification on November 25, 2013.

Our environmental management organization, which constitutes integrated management structure, is comprised of Chief Executive for the Environment (CEO) as Top Management, Environmental Management Officer (CAO), Environmental Promotion Officer; Head office/offices, and five areas for manufacturing.



Schematic Diagram of our Environmental Management Organization

Under the Chief Executive for the Environment, the Environmental Management Officer, to whom responsibility and authority for environmental activities has been transferred, manages environmental activities. The Environmental Promotion Officer coordinates overall environmental activities for the Head office, offices, and each area.

Our management-level executives gather together to perform Management Review at the General Environmental Committee, which is chaired by the Chief Executive for the Environment.

In addition, the Environmental Promotion Committee, which is chaired by the Environmental Management Officer, is our highest deliberative body for environmental activities whose members consist of Area Chief Executives for the Environment, promotion leaders for Head office and offices, and others.

When it comes to our document architecture on environmental activities, our highest-ranking provisions have been pulled together and termed the Environmental Management Manual. Our environmental management system is applied through this and the Area Environmental Manuals, rules, and so forth that are tied in with this and include specific contents for each area.

As for the effectiveness of our environmental activities, our Internal Environmental Audit Team, which consists of auditors from within the company, examines the environmental activities of our Action Groups from an objective perspective. Moreover, we ask external third-party organizations to periodically confirm that our system of environmental activities is compliant with ISO 14001:2004 Requirements.

Practical matters for these environmental activities are coordinated by our Environmental Promotion Secretariat, which collaborates with the Area Secretariats to promote and manage the activities of our Action Groups.

The above diagram schematically shows our environmental management organization.

## Environmental Targets

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### ■ Environmental Targets and Actual Performance for FY2013

In FY2013, we have started unified activities by adopting common indicators for environmental target and establishing overall target value for domestic area.

The environmental targets and actual performance for these are shown in the table below. The targets were achieved for all of the items.

Some examples of improvement relating to each item and other activities for biodiversity, and so on will be introduced in the following pages.

Item	Indicator	Target value	Actual value	Evaluation
Reduce emissions of energy-derived CO <sub>2</sub> *1	Reduction rate for basic unit*4 (Baseline: FY2012)	1.7%	9.0%	○
Reduce the amount of water received		4.7%	8.0%	○
Reduce emissions of the priority controlled chemical substances*2		2.0%	17.0%	○
Reduce emissions of waste, etc.*3		3.9%	6.8%	○
Expand environmentally conscious products	-	Determine indicator	Determine indicator	○

\*1: The CO<sub>2</sub> emissions coefficient from electricity is 0.476 t-CO<sub>2</sub>/MWh (receiving-end CO<sub>2</sub> emissions basic unit for FY2011 announced by the Federation of Electric Power Companies of Japan). The other conversion factors are from the Act on the Rational Use of Energy and the Act on Promotion of Global Warming Countermeasures.

\*2: The priority controlled chemical substances refer to 36 substances selected as being subject to priority control efforts.

They include volatile organic compounds (VOC) and PRTR targeted substances, and constitute the bulk of the substances that we use and emit.

\*3: Waste, etc. = General waste + Industrial waste + Valuables

\*4: The denominator for the basic unit is the glass substrate area (converted value)

## ■ Environmental Targets for FY2014

The environmental targets for FY2014 have been established as shown in the following table. Carrying on from our activities in FY2013, we are promoting integrated activities with a view towards common environmental targets. Starting in FY2014, we have begun to include our Nomi Plant, which is characterized by high energy efficiency and high water reuse rate.

Item	Indicator	Target value
Reduce emissions of energy-derived CO <sub>2</sub>	Reduction rate for basic unit (Baseline: FY2012)	20.0%
Reduce the amount of water received		27.0%
Reduce emissions of the priority controlled chemical substances		7.0%
Reduce emissions of waste, etc.		5.0%
Expand environmentally conscious products	Proportion of environmentally conscious products*5	85%

\*5: Proportion of environmentally conscious products = Number of environmentally conscious products for the fiscal year in question / Number of products developed in the fiscal year in question



# Environmental Audits

In order to promote company-wide environmental activities in an efficient manner, we have constructed a unified environmental management system. As a result, on November 25, 2013 we acquired integrated ISO14001 certification for our Head office, offices, and plants.

The following section indicates the results of the internal audit we conduct on a periodic basis once every year, as well as the results of the audit by an external certification body when we acquired the certification.

Moving forward, we will continue to promote continual improvements.

## (1) ISO 14001 Internal Audits

**Date:** July 12 - August 30, 2013

**Target:** Head Office, Western Japan Office, Ebina Office, Tottori Plant, Higashiura Plant, Ishikawa Plant, Nomi Plant, Fukaya Plant, Mobara Plant

**No. of findings:** 11 nonconformities, 22 recommendations for improvement

Item	General summary (overview) of the audit
Nonconformities, recommendations for improvement	There were no findings related to the priority audit items, and the environmental promotion activities under the Environmental Management Manual were affirmed. The findings related to education and operations stood out, but they were minor in nature.
Good Practice	There were several proposals on visualization related to environmental activities, and consideration will be given to deploying them in the future.

**Conclusion:** It was affirmed that our environmental management system is functioning effectively as we work towards integrating the environmental activities of our Head office, offices, and plants.

## (2) ISO 14001 External Audits

**Date:** October 29 - November 1, 2013

**Target:** Head Office, Western Japan Office, Ebina Office, Tottori Plant, Higashiura Plant, Ishikawa Plant, Nomi Plant, Fukaya Plant, Mobara Plant

**Certification body:** Bureau Veritas Japan

**Applicable standards:** ISO 14001:2004

**No. of findings:** 0 nonconformities, 7 observations, 1 opportunity for improvement

### Detailed audit findings

Priority audit items	General summary (overview) of the audit
Effectiveness of the internal audit	The internal audit was performed in line with the overall plan formulated by the company, and high levels of both effectiveness and credibility were maintained.
Effectiveness of the management review	The positive effects inherent to the management reviews were adequately demonstrated, and the plants are functioning effectively as well.
Effectiveness of the target achievement system	The unattained targets are currently being revised into performance indicators that are consistent with current conditions. The system is functioning effectively.
Compliance status	All legal and regulatory requirements have been identified and are kept up to date. There were some compliance oversights, with the hope being that conclusive responses to these are forthcoming.

**Conclusion:** There were no nonconformities with environmental management, and audit target are compliant with the audit criteria.



Left: External audit (scene from an audit meeting at the Tottori Plant on Oct. 30, 2013)

Right: External audit (scene from an on-site inspection at the Mobara Plant on Oct. 30, 2013)



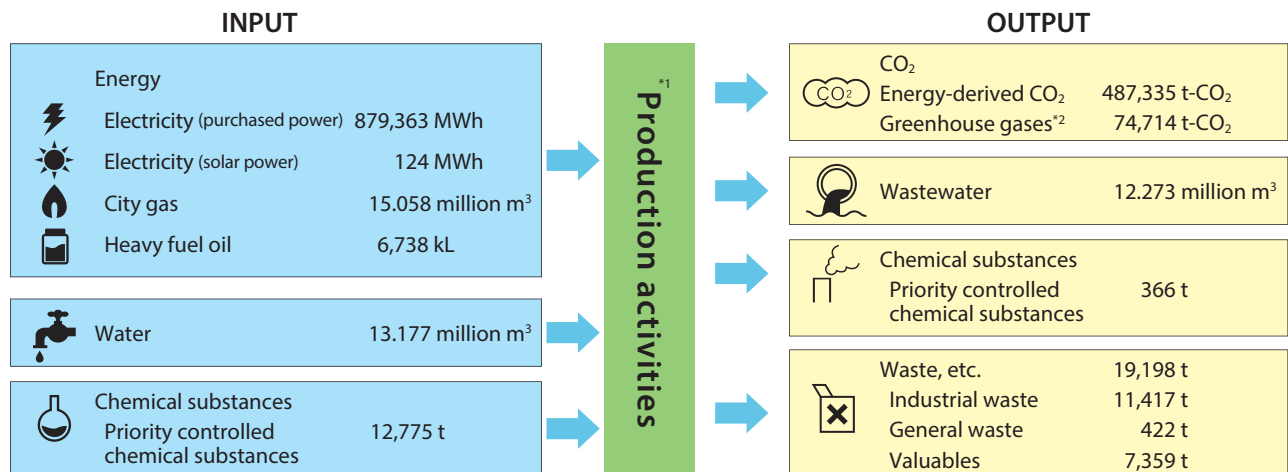
Left: External audit (scene from the audit of the Ishikawa Plant on Oct. 29, 2013)

Right: External audit (scene from an audit meeting at the Fukaya Plant on Oct. 29, 2013)

## Environmental Aspects

When it comes to our business activities, these involve inputs such as energy and resources and the creation of products, which is accompanied by outputs such as CO<sub>2</sub>, waste, and so on. These inputs and outputs are regarded as environmental aspects within ISO 14001.

An overview of this is shown in the figure below. The basis of our environmental improvement activities lies in reducing the amount of inputs and outputs, and we work to address such activities by determining each of these items for every area in a detailed manner.



\*1: From this time, Nomi plant has been added to scope. As a result, 6 domestic plants are the scope of the above figure.

\*2: The range of greenhouse gases are PFC, HFC, and SF<sub>6</sub> (the target substances of the Act on Promotion of Global Warming Countermeasures).

# Environmental Accounting

We are also working on environmental accounting in order to promote environmental measures that are based on analyses from an accounting dimension. We have established accounting items to be collected by referring to the Ministry of the Environment's Environmental Accounting Guidelines, while also taking matters like their degree of importance into consideration.

Our environmental conservation cost and environmental conservation benefit for FY2013 are shown in the table below.

When it comes to our environmental conservation cost, we have divided these up into pollution prevention, global environmental conservation, and resource circulation cost. Investment that were made as part of this include those for various energy saving measures, as well as the installation of additional greenhouse gas abatement systems, noise reduction measures, the installation of waste fluid pits, and more. In terms of expenses, those for environmental analysis and measurement, waste disposal, repair fees, outsourcing fees, and so forth were generated on a routine basis.

Moreover, expenses for survey and repair were generated in relation to complying with the Soil Contamination Countermeasures Act following the dismantling of buildings with poor earthquake-resistance at the Mobara Plant (Page 23).

When it comes to environmental conservation benefit, as a consequence of our setting up highly energy efficient production lines, we have succeeded in suppressing increases of CO<sub>2</sub> and waste despite the rise in our production output.

We are also striving to reduce our emissions of waste along with disposal expense by means of converting waste into valuables.

Summary of Environmental Conservation Cost

Unit: 1 million yen

Major category	Item	Details	Investment	Expense
Environmental conservation cost (cost within business areas)	Pollution prevention cost	Cost for preventing air pollution, water pollution, soil pollution, noise, foul odors, and more.	20	2,220
	Global environmental conservation cost	Cost for preventing global warming, conserving energy, preventing the depletion of the ozone layer, and more.	87	53
	Resource circulation cost	Cost for the efficient utilization of resources, as well as the recycling, treatment, and disposal of industrial waste and general waste.	0	366
	Total		107	2,639

\*Analysis and measurement costs related to the environment are also included in the costs within business areas.

Summary of Environmental Conservation Benefit

Major category	Category	Item	Benefit
Environmental conservation benefit (physical unit)	Environmental conservation benefit related to environmental burdens and waste	Emissions of energy-derived CO <sub>2</sub> *3 [1,000 t-CO <sub>2</sub> ]	68
		Emissions of waste, etc.*3 [t]	1,957
Economic benefit associated with environmental conservation activities	Operating revenue related to environmental burdens and waste	Revenue from the sale of valuables [1 million yen]	63

\*3: In order to consider the changes in the production output, values were derived using the following formula, which was established by referring to the Environmental Accounting Guidelines.

Benefit = Emissions from the previous fiscal year × (glass substrate area from the fiscal year in question / glass substrate area from the previous fiscal year) – Emissions from the fiscal year in question.

# Environmentally Conscious Production

## Global Warming Prevention and Energy Conservation

Here, we will introduce the respective improvement case examples of installing greenhouse gas abatement systems to prevent global warming, and changing the humidification process for our clean rooms to conserve energy.

### ■ Reducing CO<sub>2</sub> Emissions through the Installation of Greenhouse Gas Abatement Systems (Mobara Plant)

For the operation of our new line, we have installed abatement systems for the PFC, HFC, SF<sub>6</sub>, and other greenhouse gases used in our manufacturing processes in an effort to reduce emissions of CO<sub>2</sub>.

A plasma abatement system is used for PFC, HFC, SF<sub>6</sub>, while a heater abatement system is used for NF<sub>3</sub>, through which we have reduced emissions of greenhouse gases with an abatement rate over 95%.



External view of a heater abatement system



External view of a plasma abatement system

Effect: CO<sub>2</sub> reductions 816,000 t-CO<sub>2</sub>/year

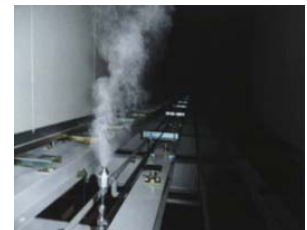
### ■ Changing the Clean Room Humidification Process (Tottori Plant)

The clean rooms within our plants are controlled at a set temperature and humidity, with steam generated from a boiler that runs on city gas used to control the humidity.

A large volume of steam is needed in winter, when the humidity is particularly low. Accordingly, the operating rate of the boiler went up and a large quantity of city gas was consumed.



Spray humidifier



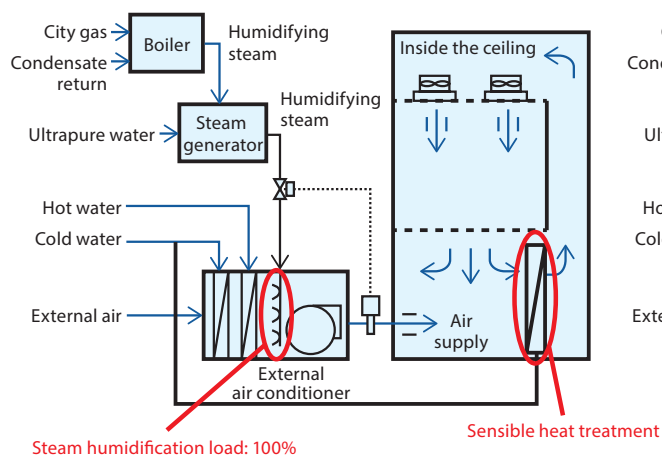
Humidification conditions through spraying

To this humidification process, we added a spray humidifier in some areas that directly sprays pure water inside the clean rooms to humidify them. This has allowed us to reduce the amount of steam from the boiler (thus reducing the amount of city gas), while also reducing the air conditioning load by using the cooling effects of the vaporization heat when the spraying is performed (thus reducing the amount of electricity). At the same time, this has also allowed us to institute cost reductions of approximately 9 million yen per year.

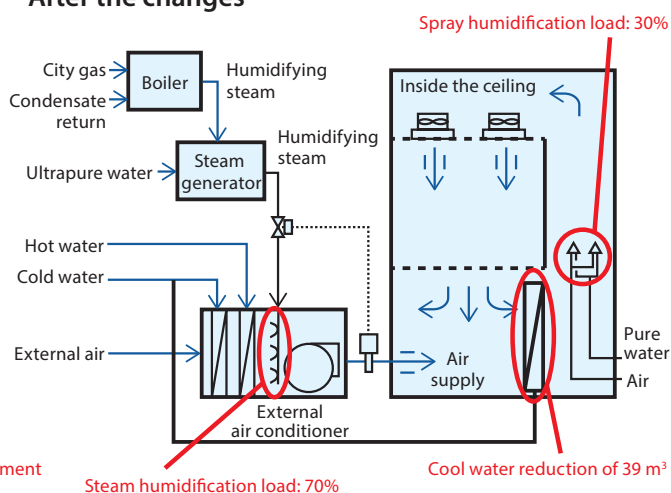


Effect: City gas reductions 189 t-CO<sub>2</sub>/year  
 Reductions in electricity 72 t-CO<sub>2</sub>/year

### Before the changes



### After the changes



## Waste Reduction Activities

We are working to reduce waste by employing the 3Rs (Reduce, Reuse, Recycle) as the foundation for this. Here, we will introduce a case example from our Fukaya Plant, including its past history.

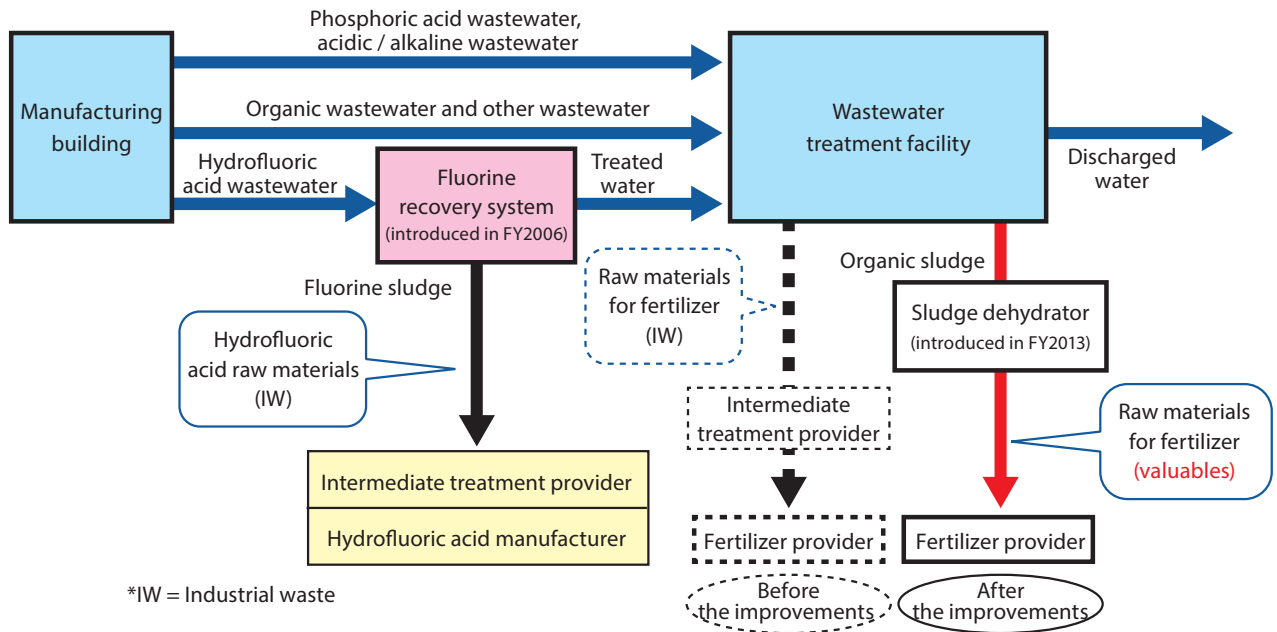
### ■ Converting Organic Sludge into Valuables (Fukaya Plant)

Various types of wastewater are emitted from the manufacturing building for our liquid crystal panels, which is purified at a wastewater treatment facility before being discharged into a river. This treatment gives rise to a solid waste called sludge. Fukaya Plant has been making efforts to reduce the volume of this sludge and to recycle it.

First, we introduced a fluorine recovery system in the form of calcium fluoride (CaF<sub>2</sub>), enabling it to recycle the fluorine sludge into hydrofluoric acid (FY2006).

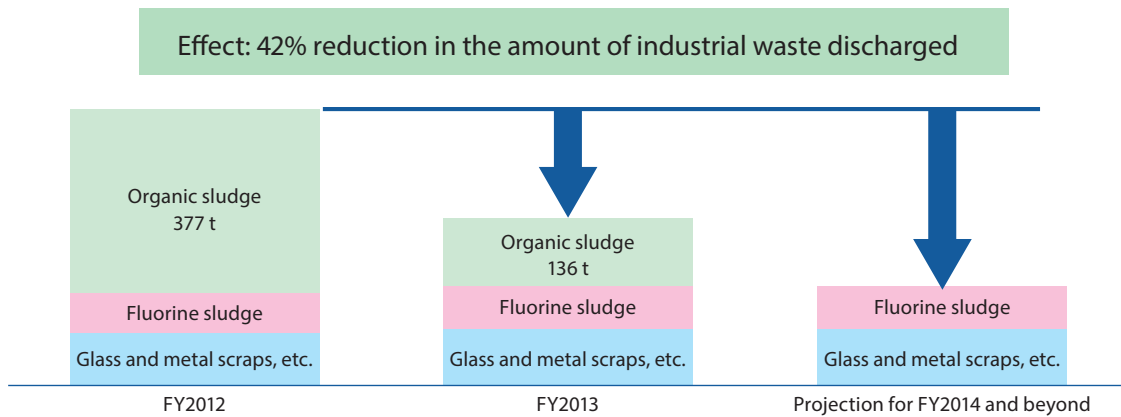
The organic sludge produced by the wastewater treatment facility contains large quantities of phosphorous, which is an important component in fertilizer. Eliminating the fluorine opened up the possibility of converting this sludge into the raw materials for fertilizer. As a result of repeated examinations, we succeeded in converting this into said raw materials (FY2010). But before this could be sold to fertilizer vendors, it had to be treated by intermediate treatment providers. So even though the sludge was a raw material for fertilizer, it was being emitted as industrial waste.

Therefore, in FY2013 we introduced a sludge dehydrator that enabled us to meet the moisture content requirement that had been posing a bottleneck. Doing so allowed us to sell the organic sludge as a valuable directly to fertilizer providers.



### Recycling of sludge generated from the treatment of wastewater

As indicated in the following diagram, the organic sludge consisted of about 2/3 of the total industrial waste (IW). For FY2013, this resulted in a reduction of 42% (241 t) of our overall waste, and starting from FY2014 on we will be converting all of this to valuables. As such, we project that we will be able to substantially reduce the amount of industrial waste we discharge by approximately 66%.



### Changes in the breakdown of the industrial waste discharged

## Protection of Water Resources

By way of initiatives for the protection of water resources, this report will introduce case examples of improvements in reducing water by changing the treatment path for inorganic recovered water, as well as maintaining water quality through the steady operation of treatment equipment for wastewater from polishing.

### ■ Reducing Water by Changing the Treatment Path for Inorganic Recovered Water (Tottori Plant)

In our manufacturing process we primarily use pure water for the cleaning of panels, with roughly half of the wastewater from this cleaning treated as recovered water by a recovery unit and reused as raw water for producing pure water once again.

Moreover, the two types of recovered water of organic<sup>\*1</sup> and inorganic<sup>\*2</sup> recovered water would undergo biological treatment and membrane treatment at a recovery unit. The results of a continuous survey on their respective water qualities had revealed that this inorganic recovered water was of a water quality where it could be used to produce pure water directly without having to undergo treatment via the recovery unit. So it had been changed to directly collected to the treatment tank before the water production stage.

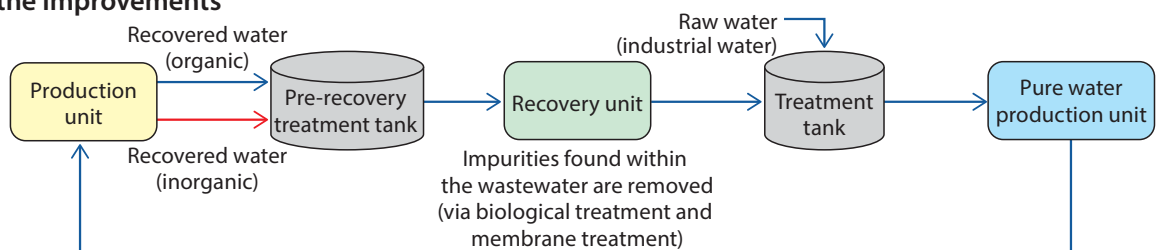
This has allowed us to reduce the amount of raw water used to produce pure water (by reducing water inputs). At the same time, this has also allowed us to reduce the amount of electricity used by the recovery unit while also cutting treatment costs (by 16 million yen a year), such as those for the biological treatment in the recovery unit.

\*1: Organic recovered water: Recovered water that contains organic components

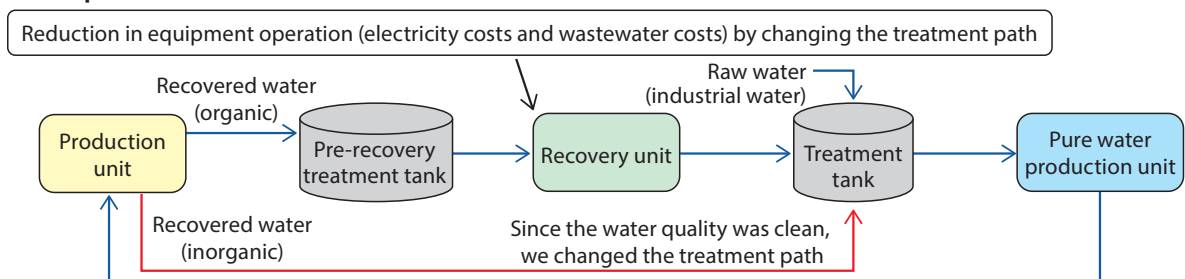
\*2: Inorganic recovered water: Recovered water that contains inorganic components

**Improvement effect:** Water reductions 37,000 m<sup>3</sup>/year  
CO<sub>2</sub> reductions 220 t-CO<sub>2</sub>/year

#### Before the improvements



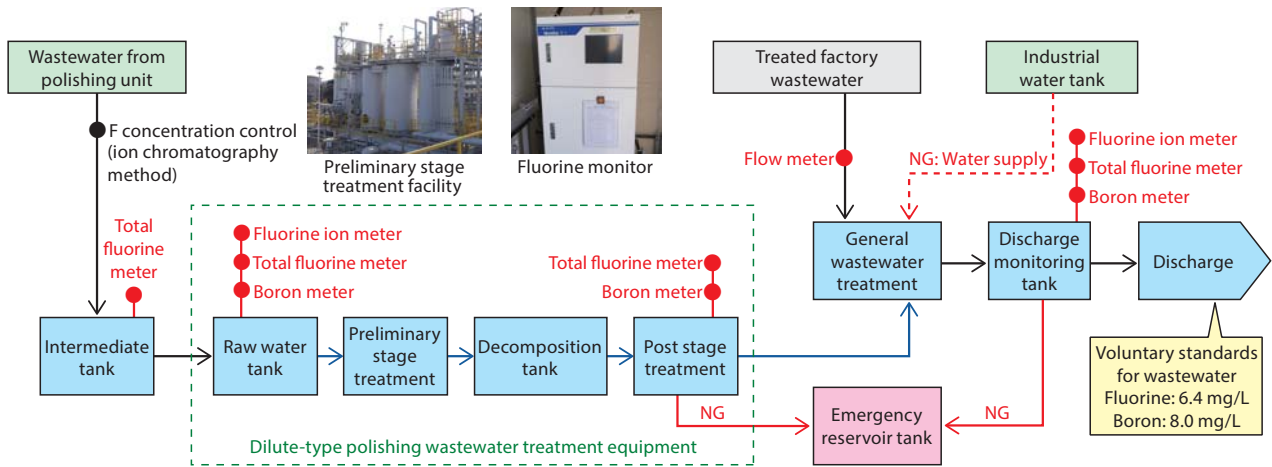
#### After the improvements



## ■ Maintaining Water Quality through the Steady Operation of Treatment Equipment for Wastewater from Polishing (Mobara Plant)

We have newly established a polishing process for glass substrate that has followed in the wake of the launch of our new line. In addition to our conventional wastewater treatment, we have newly installed a treatment facility for wastewater that includes the fluorine and boron emitted from the polishing process, system to control concentrations of the wastewater, and emergency reservoir tank to handle abnormal event.

What is more, for the final discharge of the water into rivers, we undertake appropriate management through the setting of voluntary standard values that are 20% stricter than the legally mandated standard values.



Schematic diagram of the polishing wastewater treatment flow

## Management of Chemical Substances

When it comes to the chemical substances used in our production processes, we have integrated the controlled substances and management methods in striving to carry out appropriate management through a comprehensive management system. Currently, the total number of substances registered at our plants is approximately 2,000. In addition, we manage the inputs and outputs of chemical substances in compliance with laws such as greenhouse gases, substances subject to notification through PRTR<sup>\*1</sup>, etc., 36 substances that we have designated as priority controlled chemical substances, and more.

When it comes to the chemical substances in products, we have launched a management system to accommodate the international regulations that grow stricter every year, as well as the demands of our customers. By using this system we have been worked to determine the chemical substances contained in the goods we procure and survey the amounts contained therein in striving to handle them appropriately.

Here we will introduce our PRTR notification status and the management system for the chemical substances contained in products.

<sup>\*1</sup>: An abbreviation of Pollutant Release and Transfer Register. This is a system in which the quantities of chemical substances designated as harmful that are discharged into the environment (air, water, soil) or transferred out of business sites contained in waste must be determined by the business itself, which must also notify this to the national government.



## PRTR Notification Status

Here, we report on PRTR notification, which is required for each of our domestic plant.

At present, there are five substances that are subject to notification. Quantities of each substance used and emitted are different depending on factors such as the specifications for the products manufactured at each plant.

The total values for which notification was provided for each plant are shown in the list of substances subject to PRTR notification.

Moving forward, we will work to provide notification in accordance with laws and regulations, while also reducing and appropriately managing the quantities of chemical substances we use and discharge.

List of substances subject to PRTR notification

Unit: kg

Item	Quantity discharged				Amounts transferred
	to Air	to Public water bodies	to Land (on-site)	Landfill disposal on site	Off-site
2-Aminoethanol	130	2,000	0	0	1,400
Indium and its compounds	0	30	0	0	720
Hydrogen fluoride and its water-soluble salts	4	0	0	0	13,000
Boron and its compounds	3	1,700	0	0	12,000
Molybdenum and its compounds	0	160	0	0	2,600

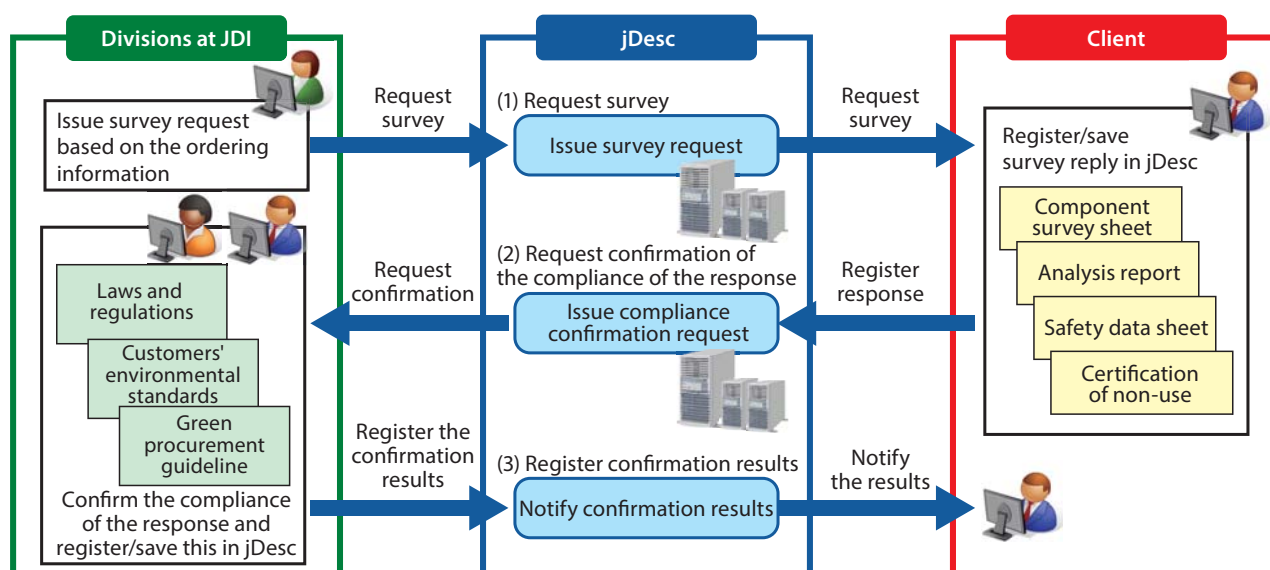
## Management System for the Chemical Substances in Products

When it comes to the chemical substances in products, we have unified the individual management systems of each company, and since April 1, 2013 we have been operating this as a management system for the chemical substances in products (jDesc<sup>2</sup>) that links our clients with JDI.

With this system, we request our clients to conduct surveys and have them register the environmental data related to contained chemical substances. This data is verified by multiple divisions at JDI to confirm its compliance with laws and regulations, our customers' environmental standards, and the standards in our own green procurement guideline. Furthermore, based on this we also confirm certification of non-use, summarize the quantities of substances contained in products, and more.

For the future, we will work together with our clients in an effort to further improve the accuracy for managing the chemical substances contained in the goods we procure.

\*2: JDI Environmental Information System for Chemical Substance



Conceptual diagram of our management system for the chemical substances contained in products

# Products with Environmental Consideration

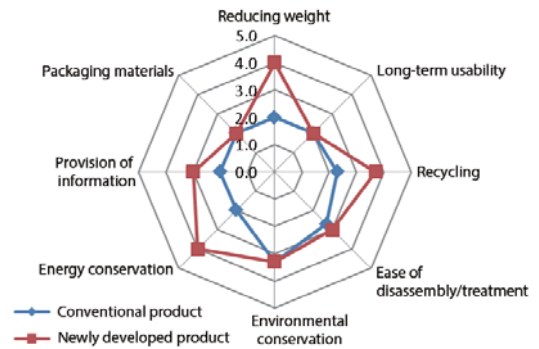
The environmental performance of liquid crystal display devices largely governs the environmental performance of the final product. Therefore, it is important to evaluate their environmental performance from the development and design stages to create products with an environmental burden that is as small as possible. In this section we will introduce our activities during FY2013 in relation to our products with environmental consideration.

## ■ Status of activities related to Environmentally Conscious Products

We have established eight items for evaluating the environmental performance of our products. Our product undergoes a five-stage evaluation for each item. Those products that fulfill designated standard are defined as "environmentally conscious products," of which environmental performance are regarded to be excellent.

The figure on the right shows evaluation example for a product determined to be environmentally conscious products.

What is more, beginning in FY2014 we have decided on establishing environmental target related to our environmentally conscious products. Specifically, we have set out the proportion of environmentally conscious products (number of environmentally conscious products / number of developed products) as an indicator, and are aiming to achieve a proportion of 85% for FY2014. As such, we are working to develop products that contribute to reduce environmental burden.



**Example for determination of environmentally conscious products**

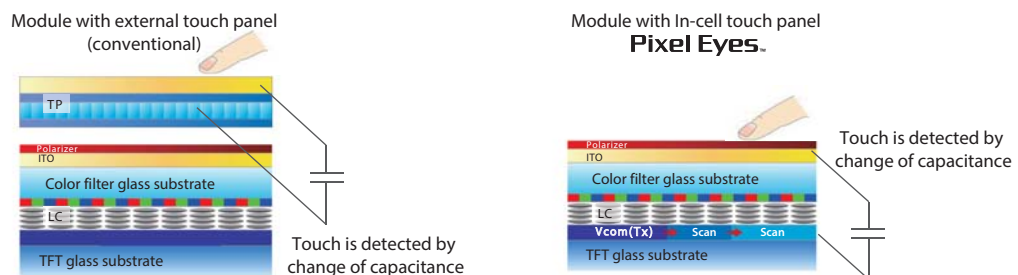
## ■ Pixel Eyes™ Contributing to Thinner and Lighter Set

Touch operation is an indispensable function for the liquid crystal display screens of smartphones, tablets, and other devices.

But, to realize touch operation, a specialized external touch panel had to be installed on the liquid crystal display screen, which caused problems of increased thickness and weight.

We have developed and are mass-producing a liquid crystal module (Pixel Eyes™) that incorporates capacitive touch sensors capable of multipoint detection into our liquid crystal display.

Since this eliminates the need for conventional external touch panels, it contributes to making the sets thinner and reducing their weight, while also improving the visibility of the display.



## ■ Our WhiteMagic™ Display Won the Technology Award at the Digital Camera Grand Prix 2014

WhiteMagic™ which is equipped with our own proprietary low power consumption technology, won the technology award at the Digital Camera Grand Prix 2014.

WhiteMagic™ boosts the screen brightness from approximately 1.5 to 2-times<sup>\*1</sup> via a RGBW (red, green, blue, and white) pixel composition, which adds white pixels to the mainstream RGB (red, green, and blue) pixel composition of conventional liquid crystal panels.

This makes it easy to align the camera's focus and confirm photographed images even in conditions with intense sunlight. When WhiteMagic™ is used at the same brightness as usual, it can reduce power consumption by controlling the brightness of the backlight.

WhiteMagic™, which achieves low power consumption, meets the demands of customers across a broad range of uses, including in digital cameras, smartphones, and beyond. <sup>\*1</sup>: Our own comparison



Conventional product



WhiteMagic.

Pixel Eyes and WhiteMagic are trademarks of Japan Display Inc.

## Ecosystem Conservation Activities

We promote ecosystem conservation activities that take the regional characteristics of our plants within Japan into consideration. We will introduce the afforestation activities (SOZO Forest) at our Ishikawa Plant and the conservation activities for Firefly River at our Mobara Plant from among these.

### ■ SOZO Forest (Ishikawa Plant)

SOZO Forest, located on the grounds of our plant, was created in 2006 through the planting of saplings consisting mainly of trees characteristic to the region (zelkova and cherry blossom trees, etc.) through the participation of employees, their families, and people from the local community. Every year, primarily children from the local community plant seasonal flowers in the flowerbeds and planters, remove weeds, and perform other upkeep.

The forest is intended to raise awareness of and to educate the employees on environmental conservation, with the goal of having this serve as a place where customers and employees can become close to greenery. The name SOZO Forest was solicited from among the employees, and was created out of the desire to have the forest continue to give rise to imagination and creativity (in Japanese, *sozo* means both imagination and creativity).

Saplings that were 20-30 cm when they were first planted have now grown larger to a size of about 2-3 m. We will continue to promote conservation activities together with the local community to ensure that the trees of SOZO Forest grow larger still in the future.



SOZO Forest

### ■ Conservation Activities for Firefly River (Mobara Plant)

Each year the larvae of the Genji fireflies that inhabit Firefly River, which is located on the premises of our Mobara Plant, come ashore from the river around the beginning of April when the river water becomes warmer. They enter their pupal stage underground, and then from early to mid-June they appear on the ground and take flight as adult fireflies. Firefly River is cleaned in early May after the larvae have left the river. This year the cleaning was carried out on May 10 with the participation of 20 people.

Every year the volunteers weed the area around the river and remove sludge and fallen leaves from the river bottom, while also draining and cleaning a pond located downstream from Firefly River. These are all done at the same time in order to maintain the environment in which the fireflies live.

Since the pond is also inhabited by carp and killifish, the pond is cleaned only after the fish have been relocated to a temporary, makeshift water tank. The employees are looking forward to seeing the sight of fireflies flitting about the newly cleaned river this year as well.



A scene from the pond clean-up activities



A scene from the Firefly River clean-up activities



Carp swimming happily



# Displaying at Exhibitions

With the goal of disclosing information to our stakeholders, we display products that incorporate the latest in technology from our company at various different exhibitions for mutual communication.

This year we will report on our displays at FPD International 2013 and SID Display Week 2014.

## ■ Displaying at FPD International 2013

FPD International 2013 was held for three days starting from October 23, 2013 at Pacifico Yokohama.

We displayed the "Innovation Vehicles"<sup>\*1</sup> 2013," equipped with evolved characteristic functions, designed for the growing tablet and automotive applications markets.

"7.0-inch Wide-QXGA for tablet applications": We have realized high resolution (432ppi) with specifications like those of smartphones. With our new WhiteMagic™ it cuts power consumption by approximately 60% compared to our conventional RGB-type modules. It also realized a narrow border of 1.0mm and a thin module structure of only 1.17mm thickness. Our new Pixel Eyes™, which comes equipped with our evolved touch sensor functions, enables smooth input via a 1.0 mm diameter pen.

"Reflective 7.0-inch Wide-UXGA with full-color moving images" : We have refined optical design that optimally scatters reflected light in its pursuit of beauty that appears as if it were printed on paper. It achieves moving images with a high resolution of 321 ppi and full-color (262k colors) with ultra-low power consumption.

"High picture quality, wide color gamut, curved surface displays for styling interior design of automotive": We have adopted IPS-NEO™ to achieve profound black and beautiful colors from any viewing angle. Our curved displays produce a coherent feel with the vehicle's interior design, and have been equipped with our Pixel Eyes™ liquid crystal module with highly sensitive integrated touch sensors that can be operated even while wearing gloves.

In addition, we also displayed our line-ups of displays designed for automotive, smartphones, and medical and broadcasting applications, which gave a large number of people an understanding of our advanced technical capabilities.

\*1: The "Innovation Vehicles" are state-of-the-art displays designed to lead technical development, and are positioned as a bridge linking our customers with our latest technologies.

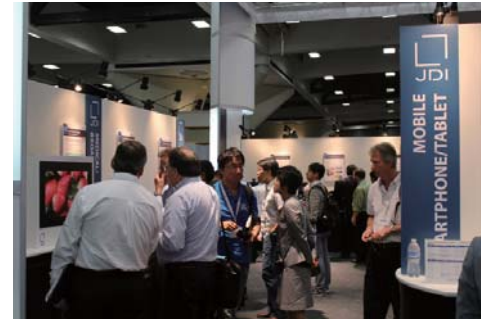


## SID Display Week 2014

For six days starting from June 1, 2014 we took part in SID Display Week 2014, which is one of the world's largest international display conferences, and which was held in San Diego, United States. There we made presentations at symposium and displayed products at our booth.

At the symposium we gave three presentations and held four poster sessions. Under the concept of a "High Resolution World" that is being ushered in by our low temperature poly-silicon technology, we displayed technologies such as our high definition 4K2K liquid crystal modules for tablets, WhiteMagic™, which achieves low power consumption, and our Pixel Eyes™ with In-cell touch panel technology.

At our booth, we displayed large number of our products, including our 10.1-inch 4K2K LCD module that was displayed for the first time, into corners for Innovation Vehicles, smartphone and tablet, automotive applications, medical and broadcasting, 4K2K, and industrial use products. Our booth was visited by numerous people from mobile, automotive applications, and industrial device manufacturers from around the world, who got an understanding for our cutting-edge power saving and thin module technologies.

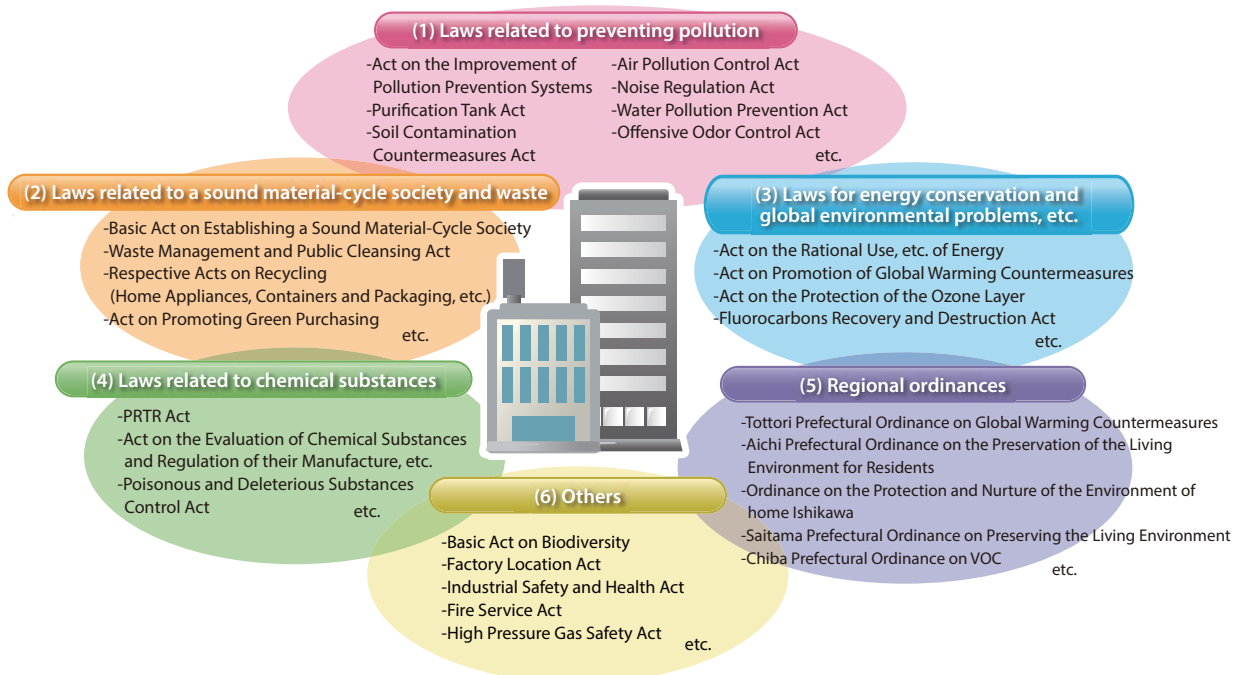


WhiteMagic, Pixel Eyes, and IPS-NEO are trademarks of Japan Display Inc.

## Legal Compliance

Compliance is one of the most fundamental challenges when it comes to companies fulfilling their social responsibility. We pre-emptively prevent the discharge of environmental pollutants and other contaminants into the soil, groundwater, and atmosphere, while also creating system for compliance to environmental laws and undertaking environmental conservation activities. In FY2013, there was no violation of environmental laws.

Major laws related to the environment are indicated below.



## ■ Soil Contamination Countermeasures at the Mobara Plant

Following the dismantling of buildings with poor earthquake-resistance at the Mobara Plant, we conducted a voluntary soil contamination survey pursuant to the Soil Contamination Countermeasures Act. The results of this revealed that there was soil contamination from heavy metals and other substances in some of the sections.

We reported the survey results to Chiba Prefecture, which serves as the supervisory body, and after it was designated as a contaminated area not suspected of posing health hazard (date designated: November 15, 2013; designation number: H25-4), we disclosed this information.

With the guidance of Chiba Prefecture, we are currently carrying out construction work on countermeasures through the appropriate methods in compliance with the Soil Contamination Countermeasures Act as we remain in contact with the neighboring residents. What is more, the soil that has been excavated and removed is being appropriately processed by licensed, specialized transporter and processor.

### <Overview of the construction work on countermeasures against contaminated soil>

Construction period: December 2013 - December 2015 (scheduled)

Targeted area: 8,700 m<sup>2</sup> (100 m<sup>2</sup> x 87 sections)

Construction work details:

Excavation and removal of the contaminated soil

Containment measures for the contaminated soil (installation of impermeable walls)

Prevention of scattering of the contaminated soil (asphalt paving)



A scene from the excavation and removal work on the contaminated soil



Before the dismantling of the buildings



After the dismantling of the buildings

## Communication

We promote social welfare and contribution activities that are firmly rooted in local communities at each of our plants in Japan.

Of these, we will introduce the Kawakita Clean Campaign and delivery lecture to day-nurseries by the Ishikawa and Nomi Plants, the Tottori Sand Dunes clean-up activities by the Tottori Plant, the clean-up activities for the Ichinomiya River by the Mobara Plant, and the communication activities with our overseas manufacturing sites.

### Activities by the Ishikawa and Nomi Plants

This year marks the 17th time that we have carried out the Kawakita Clean Campaign & Tedori River Clean-up Blitz, which is held annually. These consist of clean-up activities over an extensive zone covering a total length of 20 km, and which include major roadways within Kawakita Town and the embankments along the Tedori River.

For FY2013, on May 17, a total of 478 employees working at the Ishikawa and Nomi Plants as well as other neighboring companies and their families took part in collecting 320 kg of trash.

We held delivery environmental lecture to three day-nurseries in Kawakita Town.



Opening ceremony



Roadside clean-up activities

In these lecture, children at the day-nurseries learned about environmental conservation by quizzes on trash, water, and forests. The children listened enthusiastically to the explanation, which incorporated movies and sound effects.

What is more, an experiment to light up LED lamps on a model of the Hokuriku Shinkansen (bullet train) with solar panels attached that uses waste (plastic bottles) earned loud cheers from the children each time the LED lamp lit up.

This gave the children an opportunity to learn about topics like the effective use of resources and the use of renewable energy while having fun.



Learning by being given quizzes



A scene from the explanation



Experiment to light up by a solar panel

## Activities by the Tottori Plant

Our Tottori Plant takes part in clean-up activities for the Tottori Sand Dunes twice a year in the spring and fall in order to contribute to the communities in the eastern part of Tottori Prefecture, with this marking the eighth time it has taken part in these activities. There were a total of 137 participants, with this also serving as an occasion for communication among employees. The Tottori Sand Dunes are local treasure built up by the natural environment. We will continue to proactively take part in such activities in order to leave an environment maintained in a clean state to future generations.

What is more, we also carry out periodic clean-up activities in the vicinity around the plant, while coming into contact with local residents. As this area is used by our employees for commuting, we work to preserve and improve the environment not only on the premises of our plant, but also that of the local region as well.



Clean-up activities at the Tottori Sand Dunes



Clean-up activities in the vicinity around the plant

## Activities by the Mobara Plant

Every year we carry out clean-up activities for the mouth and neighboring part of the Ichinomiya River, which runs from north to south near the plant.

The Ichinomiya River Mouth Clean-up Project sponsored by the Committee to Promote Environmental Conservation of basins of the Ichinomiya River, etc. is normally held in October every year. But in FY2013 this was postponed due to an approaching typhoon, and so it was held on February 16, 2014 instead.

Although a cold northern wind was blowing due to the snowfall two days before, we were fortunate to have clear and sunny skies. Over the span of about two hours, 800 kg of combustible trash and 280 kg of incombustible trash was collected with the participation of 325 employees from 16 companies.

The clean-up activity of the river near the plant is carried out in February in conjunction with an activity hosted by the Foundation for protection of the Ichinomiya river. This year 20 people participated in carrying out the activities.



Due to the heavy rains by an approached typhoon in October, an area including neighboring of our plant was inundated by water. As a countermeasure, the city carried out the removal of sand deposited along the riverbanks, weeds, and branches, so the volume of waste was smaller than in ordinary years. Yet over the course of about one hour, two light truck's worth of combustible garbage and incombustible garbage were collected.

2,420 kg of waste, or enough to fill nine dump trucks, was collected from the river as a whole through the participation of 642 people from 27 resident's associations and three companies. We received a letter of appreciation from the Foundation for protection of the Ichinomiya river for the contribution to promoting the beautification of the environment along the Ichinomiya River.

Moving forward, we will continue to promote ongoing environmental conservation activities together with the local community.



Scenes from the Ichinomiya River mouth clean-up activity

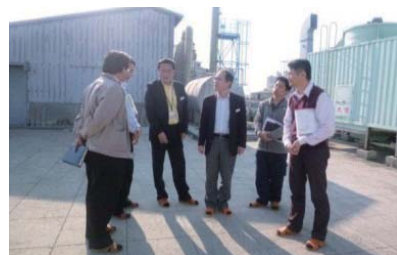


Scenes from the Ichinomiya River clean-up activity

## Activities with Overseas Manufacturing Sites

Our five overseas manufacturing sites (three in China, one in Taiwan, and one in the Philippines) have also acquired their each ISO 14001 certification and are carrying out spirited activities. On-site visits by the member of Head office to all five sites were carried out between January and February 2014, where the status of their environmental activities and their environmental facilities were confirmed and evaluated.

For the future, we will further activate the periodic environmental meetings with the overseas manufacturing sites, monthly reports on environmental data and reports on environmental information to share the environmental information and to enhance the governance functions related to the environment.



Scenes from an on-site visit to one of our overseas manufacturing sites (Taiwan)



<Note>

If there is any conflict between Japanese version and English version, the Japanese version prevails.

## **Japan Display Inc.**

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