



JDI Japan Display Inc. Group

Environmental Report 2013



A clean earth for the next generation



Top Message

Japan Display Inc. was launched on April 1, 2012 as a new company formed through the integration of Sony Mobile Display Corporation, Toshiba Mobile Display Co., Ltd. and Hitachi Displays, Ltd. which had engaged in the business of small- and medium-sized displays. On April 1, 2013 we achieved full integration through a merger of our subsidiaries in Japan.

Our identity is "Putting emphasis on imagination and creativity, continually bringing new value into the world by providing people with a truly inspiring live interface."

In October 2012, we announced advanced products named "Innovation Vehicles", the fruits of the integration. These products simultaneously achieved a substantial reduction in power consumption, high resolution, high contrast, thin module structure, narrow border, integrated touch function and so on, thus realized improvement in environmental consciousness such as conserving energy and resources while provide customers with richer value. We continue to incorporate the environmental consciousness into the processes to bring out products to create truly inspiring innovative products considering both value and 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 CO₂, water, chemical substances and wastes, we set numerical targets and promote continual improvement activities. Furthermore, when it comes to global warming, we participate in "Commitment to a Low Carbon Society" that the industrial world have 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 hope your continued support to our company.



Shuichi Otsuka
President and Chief Executive Officer,
and Chief Executive for the Environment

Ever since the launch of Japan Display Inc. we have carried out activities in line with our environmental management system at subsidiaries or plants. An overview of these activities is written in this report.

When it comes to environmental consideration in relation to products, we have established multifaceted determination criteria for things like energy conservation and weight reductions, and have termed those products that fulfill predetermined conditions "environmentally conscious products." We are moving forward with activities designed to increase the ratio of these environmentally conscious products. As for the chemical substances contained in our products, we have enacted green procurement guidelines through which we have defined unified standards of prohibited and controlled substances in products. . Furthermore, we have adopted a new system for efficiently encouraging the submission of environmental information from our business partners and promoting internal checks on and management of data, with this going into operation starting in FY2013. For the future, we will continue to soundly respond to the demands related to the chemical substances contained in our products, even as they grow increasingly complex from year to year.

Important themes when it comes to environmental consideration in production include preventing global warming, conserving energy, protecting water resources, and reducing wastes. Topics that will be introduced include the recovery of waste heat, advanced compressor control, the recovery of water, and in-plant treatment of effluent. We hope that these case examples will be helpful as a reference to everyone faced with similar challenges. What is more, in regards to the chemical substances used in production, we have instituted an integrated management system in order to determine the quantities of the vast number of substances used and emitted. By using this system as well, we are making progress with the sound management of chemical substances.

In order to forcefully promote such activities for the environment, we have resolved to acquire certification for ISO14001, which is a standard for environmental management systems, in an integrated manner across all of the domestic plants and offices. Starting from FY2013 we have initiated activities through a new environmental management organization that has its sights set on this integrated certification. As such, we will establish integrated environmental objectives and targets and continue to promote environmental activities through the combined efforts of all of our plants and offices. We ask for your continued support.

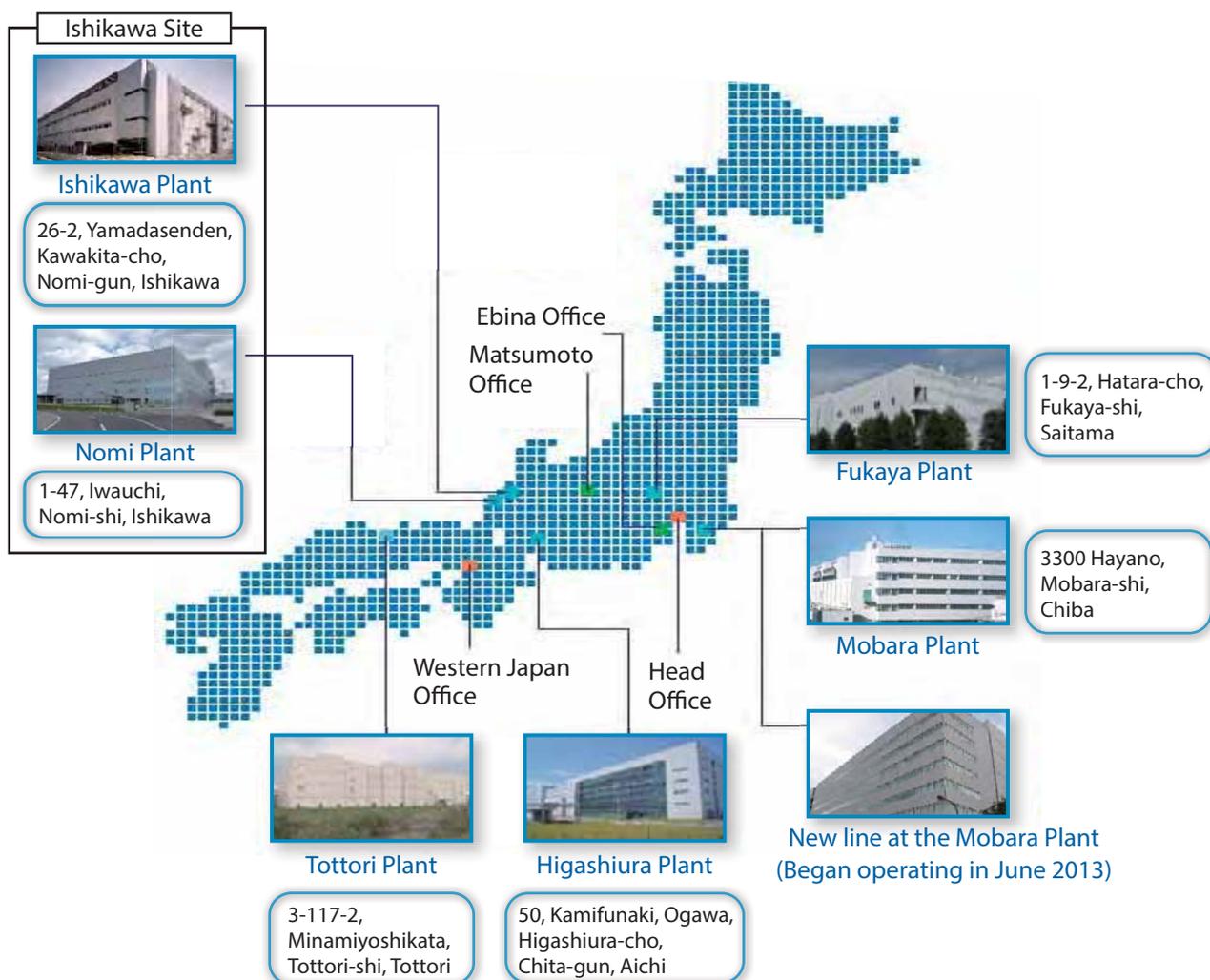


Takao Yasuda
Chief Administrative Officer and
Environmental Management Officer

Company Outline

Company name	Japan Display Inc.		
Head office address	Landic Shinbashi Building 2, 3-7-1, Nishi-shinbashi, Minato-ku, Tokyo, 105-0003, Japan		
Start of business	April 1, 2012	Stockholders	Innovation Network Corporation of Japan (69.52%)
Capital	327.5 billion yen (including capital surplus)		Sony Corporation (9.93%) Toshiba Corporation (9.93%) Hitachi, Ltd. (9.93%) Other (0.69%)
Representative	Shuichi Otsuka, President and CEO		
No. of employees	Approximately 6,200 people		
Business content	Development, design, production and sale of small- and medium-sized display devices and related products		

Domestic plants and offices



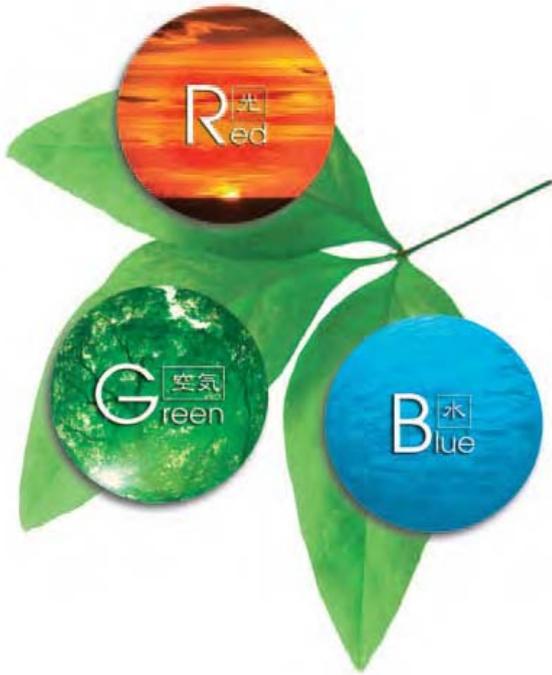
Overseas sales offices

A total of six offices in the United States, Europe, China, Hong Kong, Taiwan and South Korea

Overseas manufacturing sites

A total of five sites in China, the Philippines, and Taiwan

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Editorial Policy

This is the first environmental report issued by Japan Display Inc.

We consider that it is important to disclose appropriate 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 charts, graphs and photographs as possible, and 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.

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

■ Target Period

April 2012 – March 2013

Including some activities not taken actions during above period.

■ Date Issued

August 2013

■ Assumed Readers

This report is aimed at a diverse range of stakeholders that includes our customers, business partners, everyone in our local communities, the government, and our employees.

■ Publisher

Environmental Management Department, Japan Display Inc.

■ 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 continuously 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.

Product Overview

We provide liquid crystal devices with a focus on the following three fields.

Rapidly growing markets, such as smartphones, tablets



Markets where high quality and reliability are demanded, such as automotive and medical displays



Consumer-related value-added fields, such as digital still cameras



Environmental Management Organization

As of the previous fiscal year, we had acquired ISO14001 certification for each area and had promoted individual EMS activities, and had also begun environmental activities aimed at acquiring integrated ISO14001 certification for the end of 2013. Our environmental management organization is constructed as follows. Beneath the Chief Executive for the Environment (CEO) as the Top Management, the Environmental Management Officer (CAO), and Environmental Promotion Officer. Beneath them are the head office and other offices, and five areas of plants.

EMS: Environmental management system

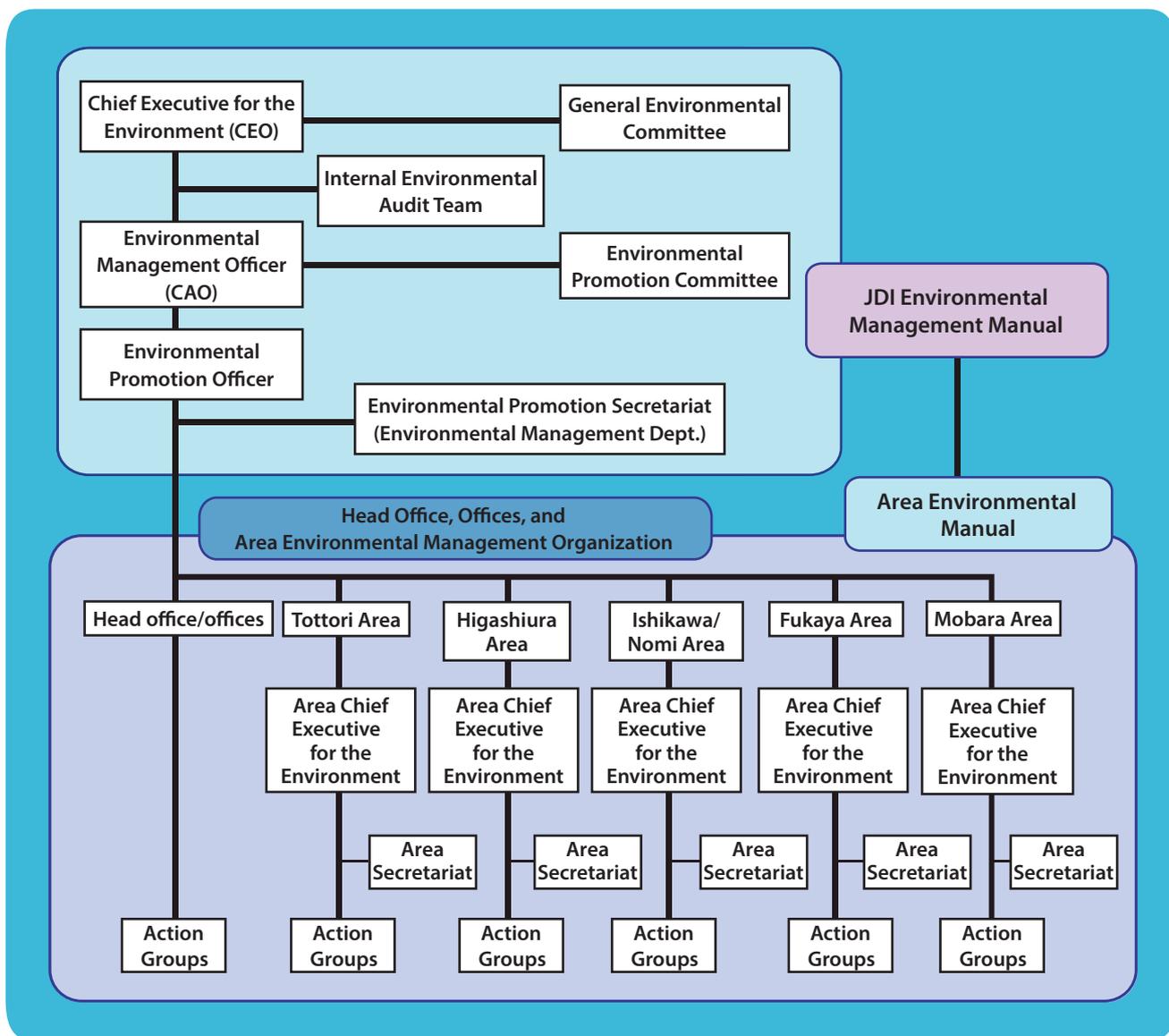
Under the Chief Executive for the Environment, the Environmental Management Officer, who has transferred responsibility and authority for environmental activities, manages environmental activities and the Environmental Promotion Officer coordinates overall environmental activities.

Our management-level executives gather together to perform Management Reviews in the general environmental meeting which is chaired by the Chief Executive for the environment. In addition, the Environmental Promotion Meeting, 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.

Our highest-ranking provisions on environmental activities have been pulled together and termed an 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 but unique to each area.

As for the effectiveness of our environmental activities, our Internal Environmental Audit Team which consists of auditors from within the company, examines our environmental activities from an objective perspective. Moreover, we ask the external third-party organizations periodically to confirm that our system of environmental activities is complied with ISO14001.

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



Schematic Diagram of JDI's Environmental Management Organization

Environmental Targets

■ Environmental Targets and Actual Performance for FY2012

For FY2012 we carried out activities in line with our environmental management systems for each area, with the environmental targets and actual performance for these shown in the table below. The targets were achieved for almost all of the items.

(RR=Reduction Rate, RRBU=Reduction Rate in the basic unit)

Category	Plant	Target indicators	Baseline FY	Target value	Actual value	Evaluation	Related page
Global warming prevention / energy conservation	Tottori	Reduction in emissions of CO ₂ [t-CO ₂]	2011	1,910	1,946	○	-
		Emissions of greenhouse gases [t-CO ₂]	-	10,201	7,173	○	-
	Higashiura	Reduction in emissions of CO ₂ [t-CO ₂]	2011	901	1,452	○	-
		Emissions of greenhouse gases [t-CO ₂]	-	13,660	9,577	○	-
	Ishikawa	RRBU for emissions of CO ₂	2002	24%	66%	○	p.13
	Fukaya	Electricity used at manufacturing buildings (relative value notation)	-	100	98	○	p.13
Mobara	RR in emissions of CO ₂	1990	40%	57.1%	○	-	
Protecting water resources	Tottori	Reduction in water usage [m ³]	2011	158,248	101,014	*1	p.15
	Higashiura	Reduction in water usage [m ³]	2011	5,250	5,971	○	-
	Mobara	RRBU for water usage	2011	1%	7.2%	○	-
Management of chemical substances	Tottori	VOC emissions [t]	-	25	16.9	○	-
	Higashiura	VOC emissions [t]	-	243.1	164.0	○	-
	Mobara	Emission rate of VOC (amount emissions / amount handled)	-	11%	5%	○	-
3Rs for waste	Tottori	Emissions of waste [t]	-	1,006	820	○	-
		Reduction in emissions of waste [t]	2011	137	126	*2	-
	Higashiura	Emissions of waste [t]	-	3,271	1,902	○	p.14
		Reduction in emissions of waste [t]	2011	50	57	○	
	Ishikawa	RRBU for the emissions of wastes, etc.	2002	54%	71%	○	-
	Fukaya	Emissions of developer effluent [t] (indicator for in-plant treatment)	-	0	0	○	-
Mobara	RR in emissions of wastes	2005	25%	35.5%	○	-	
Expanding environmentally conscious products	Ishikawa	No. of products that achieve voluntary environmental standards	-	7	7	○	-
	Fukaya	Module power consumption, weight (target achievement rate notation)	-	4/4	4/4	○	-
	Mobara	Percentage of Eco-Product sales	-	81%	82%	○	-
		Number of models in Eco-Products Select program	-	1	1	○	-
Other activities	Tottori	Local contribution activities, publicity and awareness activities, consideration for biodiversity	-	Full implementation	Full implementation	○	p.24
	Higashiura	Local contribution activities, publicity and awareness activities, ramping up activities for biodiversity	-	Full implementation	Full implementation	○	p.19, 23
	Ishikawa	Local contribution activities, an environmental newspaper and an environmental report, emphasis month (for various theme)	-	Full implementation	Full implementation	○	p.24
	Fukaya	Clean-up activities around the plant, emphasis month (for various theme)	-	Full implementation	Full implementation	○	-
	Mobara	Activities to preserve ecosystem, improvement rate in activity indicators	2010	5%	5.4%	○	p.19, 23

- The basic unit of the glass substrate area (value / glass substrate area) is simply denoted as basic unit.
- Energy-derived CO₂ is simply denoted as CO₂.
- VOC refers to volatile organic compounds (a general term for organic chemical substances that are easily volatilized under ordinary temperatures and pressures).

*1: Targets that were not achieved as a result of delays from the plan of the period in which the water reduction measures were implemented

*2: Targets that were not achieved due to the worsening of the usage efficiency of the components subject to measures as a result of the production decreases in the fourth quarter

■ Environmental Targets for FY2013

Starting from FY2013 we have started sharing indicators for our environmental targets, established overall targets for the areas within Japan, and started integrated activities. Our environmental targets for FY2013 in relation to our production-related activities are shown in the table below. In accordance with these overall targets we have also set environmental targets and promote activities for each area.

Category	Contents of activities	Target indicators	FY2013 target values
Global warming prevention / energy conservation	Reduce emissions of energy-derived CO ₂	Reduction rate for the basic unit of glass substrate area (Baseline:FY2012)	1.7%
Protecting water resources	Reduce the amount of water received		4.7%
Management of chemical substances	Reduce emissions of the priority controlled chemical substances		2.0%
3Rs for waste	Reduce emissions of wastes, etc.		3.9%

- The CO₂ emission coefficient from electricity is 0.476 t-CO₂/MWh (end of use CO₂ 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 on Promotion of Global Warming Countermeasures.

- The priority controlled chemical substances refer to 36 substances selected as being subject to priority efforts to reduce them.

They include substances for which large quantities are emitted and used from among VOC, PRTR targeted substances, greenhouse gases and so forth.

- Wastes, etc. = General wastes + Industrial wastes + Valuables

Valuables correspond to a category of wastes, and refer to things that do not constitute legally recognized waste since they can be sold for money.

When it comes to environmental consideration in relation to products, we have established multifaceted determination criteria for things like energy conservation and weight reductions, and have termed those products that fulfill predetermined conditions "environmentally conscious products." For FY2013, we will set targets that are suited to expanding our line-up of environmentally conscious products based on the performance we have achieved thus far.

With regard to our other activities to contribute to society and for biodiversity and so forth, we respect the variety of activities that have been carried out in each area. So for that reason we will promote activities by setting targets for each area without establishing overall, integrated targets.

Environmental Audits

Since we are continually improving and enhancing our environmental activities, we periodically carry out external audits by third-party certification organizations and internal audits by company employees once a year.

(1) ISO14001 External Inspections

Area name	Inspection dates	Certification organization	Inspection results	Overall assessment
Tottori	December 17, 20 – 21, 2012	Bureau Veritas Japan	No nonconformities	There were no nonconformities with the management system, and it was verified that the management system is compliant with the inspection standards such as standard requirements.
Higashiura	December 17 – 19, 2012		No nonconformities Two opportunities for improvements	
Ishikawa	January 21 – 23, 2013	Japan Audit and Certification Organization (JACO)	No nonconformities Two issues with room for improvements	The systems, objectives and targets have improved, so the overall assessment was "Improved."
Nomi				
Fukaya	November 21 – 22, 2012	JACO	No nonconformities One issue with room for improvement	The maintenance and improvement status of EMS and its effectiveness were inspected over the past year, and it was confirmed that these continue to function effectively.
Mobara	February 21 – 22, 2013	JACO	No nonconformities	It was determined that the organizational management system is compliant with standard requirements and is being implemented effectively, so maintaining certification is recommended.

(2) ISO14001 Internal Audits

Area name	Audit dates	Internal audit results	Overall assessment
Tottori	October 2 – 19, 2012	AFI (nonconformities requiring correction): 2 COM (items for which improvements are recommended): 6 GP (excellent items for which lateral deployment to other divisions is recommended): 14	There were no serious nonconformities such as fatal system flaws or compliance violations of laws and regulations, and it was determined that the management system is functioning effectively.
Higashiura	October 2 – 19, 2012	AFI (nonconformities requiring correction): 2 COM (items for which improvements are recommended): 5 GP (excellent items for which lateral deployment to other divisions is recommended): 12	
Ishikawa	October 23 – December 12, 2012	Nonconformities: 1 Observations: 5	It was determined that environmental management is being maintained and improved.
Nomi			
Fukaya	August 21, 22, 24, 2012	Nonconformities: 0 Observations: 2	EMS is functioning effectively and is being continually maintained and improved. Active efforts are also being made for activities to reduce the environmental burden, the results of which have been confirmed.
Mobara	November 26 – December 7, 2012	Nonconformities (minor): 2 Recommendation for improvements: 5	There were no findings that will lead to serious nonconformities, and the management system is being effectively implemented and maintained.



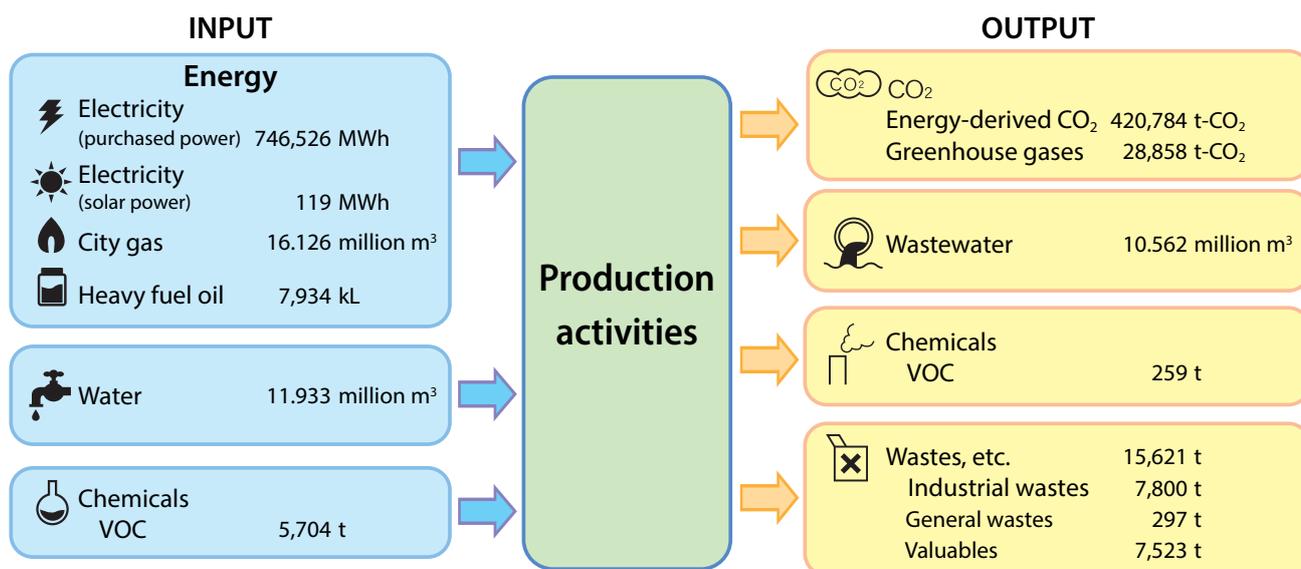
External inspection
(A scene from an inspection meeting at the Mobara Plant in February 2013)



Internal audit
(A scene from the division audit at the Ishikawa Plant in October 2012)

Environmental Aspects Involved in Business Activities

When it comes to our business activities, these involve inputs of energy and resources and the creation of products, which is accompanied by outputs such as CO₂, waste, etc. These inputs and outputs are regarded as environmental aspects within ISO14001. The basis of our environmental improvement activities lies in reducing the amount of the inputs and outputs, and we work to address such activities by determining each of these items for every plant in a detailed manner.



- VOC refers to volatile organic compounds (a general term for organic chemical substances that are easily volatilized under ordinary temperatures and pressures).
- The CO₂ emission coefficient from electricity is 0.476 t-CO₂/MWh (end of use CO₂ 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.
- Greenhouse gases include PFC, HFC and SF₆ (the target substances of Act on Promotion of Global Warming Countermeasures).
- Valuables correspond to a category of waste, and refer to things that do not constitute legally recognized waste since they can be sold for money.

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 that are shared across all of the areas 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 costs for FY2012 are shown in the table below. Since the environmental conservation effects are found through the difference with the previous fiscal year, for this year it only displays the environmental conservation costs.

The major investments include the effluent treatment facilities (preventing water pollution) and the water cooler facilities (efficient utilization of resources) at the Mobara Plant. Aside from this, investments have been made in relation to preventing global warming at several of our plants. The major costs include repair costs related to effluent treatment facilities (preventing water pollution), air conditioners (preventing global warming) and sludge treatment (recycling industrial waste).

Unit: 1 million yen

Category	Item	Detailed item	Investment	Cost	
Environmental conservation costs	Pollution prevention costs	Costs for preventing air pollution	13	138	
		Costs for preventing water pollution	294	545	
		Costs for preventing other pollution	3	108	
		Subtotal	310	792	
	Global environmental conservation costs	Costs for preventing global warming and conserving energy	72	78	
		Other costs for global environmental conservation	0	65	
		Subtotal	72	143	
	Resource circulation costs	Costs for efficient utilization of resources	563	1	
		Costs for recycling industrial waste	19	108	
		Other costs contributing resource circulation	0	27	
		Subtotal	582	136	
	Total			964	1,070

Environmentally Conscious Production

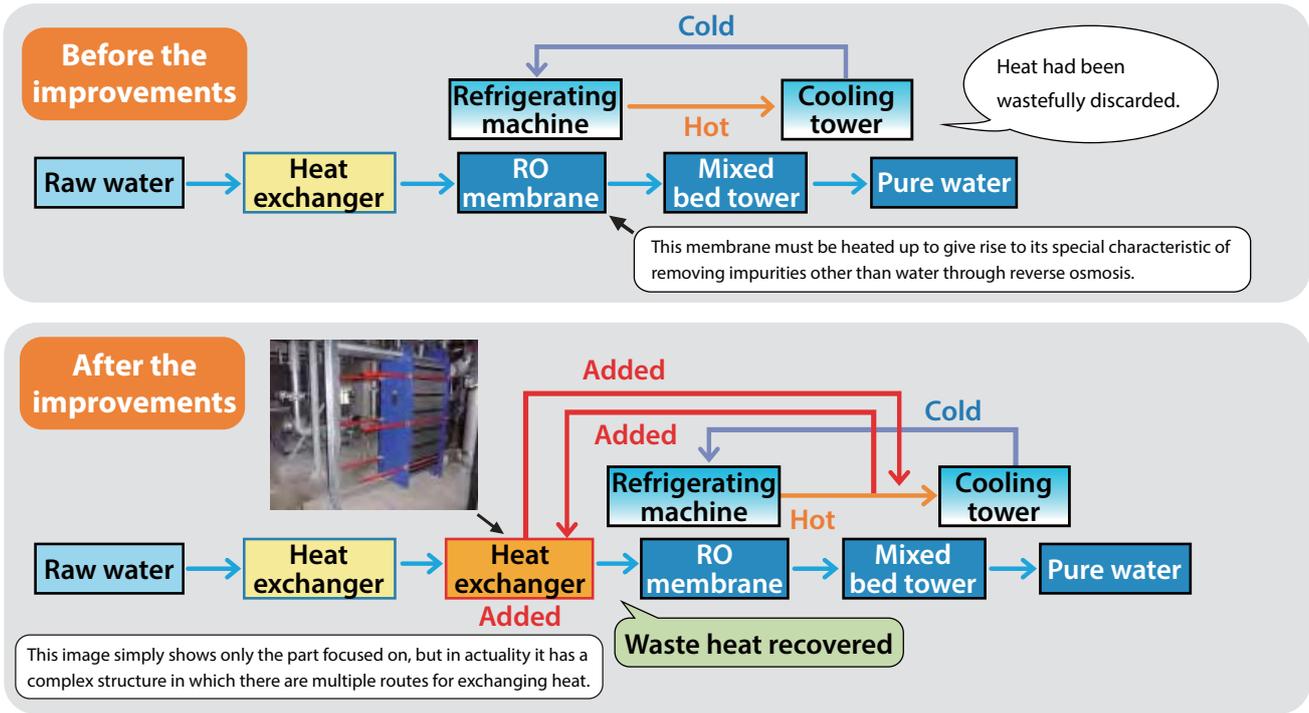
Global Warming Prevention and Energy Conservation

We will introduce two case examples of improvements made to facilities that use large quantities of energy from among our activities for global warming prevention and energy conservation.

■ Reducing the Amount of Steam Used by Recovering Waste Heat from Refrigerating Machines (Ishikawa Plant)

Steam produced by boilers is primarily used to heat the raw water for the pure water that is used for production. Conversely, the coolant water that has been warmed up by the refrigerating machines for air conditioning is returned to low temperature in cooling towers, with the heat being wastefully discarded. Therefore, newly adopting heat exchangers and arranging it so that the heated coolant water is used for heating the raw water (waste heat recovery) has allowed us to cut down on the amount of steam used and thereby reduce the amount of fuel used for our boilers.

Results CO₂ reduction: 1,700 t-CO₂/year Cost reduction: 35 million yen/year



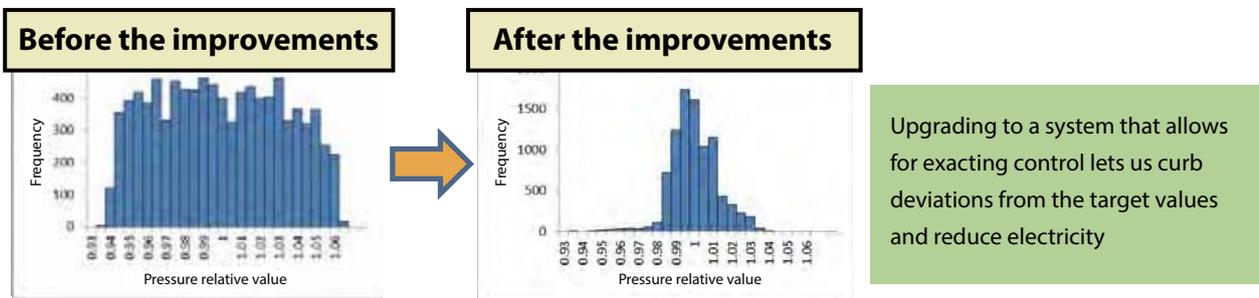
Advanced Unit Control for Compressors (Fukaya Plant)

A method known as unit control is used extensively in order to keep the discharge pressure for the compressors that produce the high-pressure air used in production within the prescribed control range. This involves using multiple compressors (seven in this example) and varying their discharge pressure in a graded manner by opening and closing their valves and operating and stopping the devices.

We upgraded this control system for unit control to one that has more advanced functionality compared with before. With the new system we can select the optimal combinations in a more exacting manner than before in accordance with fluctuations in the usage status for the high-pressure air. As a result of this we can curb the deviations from the target values to reduce electricity as shown in the following diagram.

Results CO₂ reduction: 230 t-CO₂/year Cost reduction: 6.9 million yen/year

Discharge pressure histogram



Waste Reduction Activities and Waste Management

Employing the 3Rs [Reduce, Reuse, Recycle] as the foundation, we are reducing effluent and wastes by means of such as reduction of the frequency of liquid exchange for our production equipment, improvement of the production processes. We are also promoting recycling activities that allow us to restore the emitted waste to its original state to the extent possible and use it again.

We will introduce case examples of our activities during FY2012 at our Higashiura Plant.

■ In-plant treatment of developer waste (Higashiura Plant)

In the past, the developer waste emitted from our liquid crystal production process had been outsourced to an industrial waste disposer. However, we had been considering treating this via our own effluent treatment facilities in order to reduce costs, and as a result of multiple tests, we have realized in-plant treatment.

Before the improvements

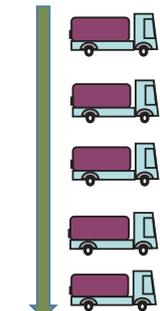
Amount of waste emitted (effluent)
241 t / year
Treatment costs
About 2.6 million yen



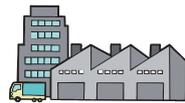
Developing fluid effluent used in our liquid crystal display manufacturing process



In-plant effluent tank



Amount of effluent emitted
241 t / year



Treated by an industrial waste disposer (externally)

After the improvements

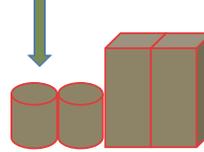
Amount of waste emitted (sludge)
100 t / year
Treatment costs
About 850,000 yen



Developing fluid effluent used in our liquid crystal display manufacturing process



In-plant effluent tank



Treatment at effluent treatment facilities (internal facilities)

Excess sludge is generated following the effluent treatment



Treated by an industrial waste disposer (externally)
⇒ Used as raw materials for cement

Amount of sludge emitted
100 t / year



The volume of the excess sludge is reduced via a dehydrator (internal facilities)



Effluent treatment facilities



Upper portion of effluent treatment facilities

■ Waste Management (All Plants)

In order to protect against the problem of the illegal dumping of waste that has recently become a social problem, we undertake waste management pursuant to all laws as a waste emitter. In addition, we also voluntarily determine environmental and other standards, and visit our business partners that undertake waste disposal and transportation to ensure that no accidents or problems or the like are occurring while also calling upon them for their cooperation.



Image of a JDI standard check sheet



Inside the facilities of a waste disposal company



Transport company's parking area

■ Introducing a Concentrated Water Recovery Apparatus (Tottori Plant)

We use pure water (clean water) for production at our plants.

Pure water is created by purifying industrial water through RO membranes (*1) in a pure water production process. However, water that has filtered through the RO membranes of the RO equipment produces not only pure water, but also water that contains contaminants that is known as concentrated water. Conventionally all of this concentrated water was treated as effluent and was discharged (flow chart).



Concentrated water collection and treatment device

By introducing the concentrated water recovery apparatus shown in the picture at right we now collect, purify and reuse this concentrated water as pure water, thereby effectively utilizing it as water resources.

(*1) RO membrane: This refers to a reverse osmosis membrane. It features a mechanism whereby it uses an osmosis membrane (a membrane that only allows water molecules to pass through) to apply greater pressure than osmotic pressure to achieve reverse osmosis, thereby removing salts.

Results

Before the improvements: Average amount of effluent in one day: 4,000 m³/day

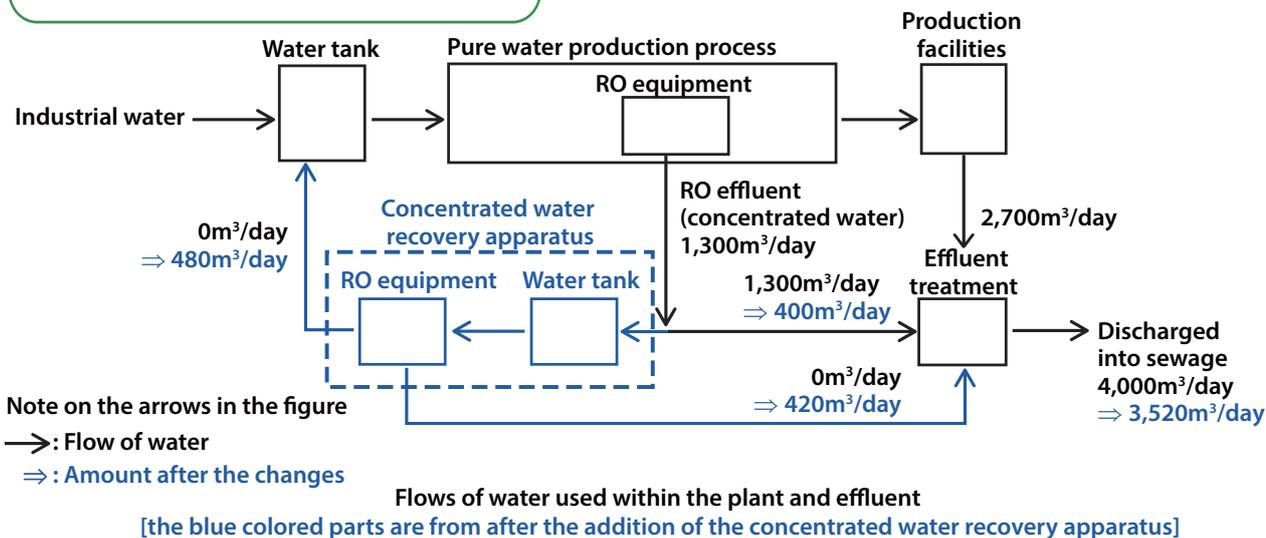
After the improvements: Average amount of effluent in one day: 3,520 m³/day

* Started in the fiscal month of March in FY2012

Improvement (Reduction) Results

Reduction in water use: 175,200m³/year

Cost reduction: 44.851 million yen/year



Investment in Environment-related Facilities

The effluent, gases, wastes, etc. that are emitted as a result of our production activities are appropriately managed pursuant to laws and regulations. This section will introduce some of the investments we have made in environment-related facilities from among the facilities that we improved following in the wake of our increase in production, such as adding additional effluent treatment facilities at our Mobarra Plant and our measures to reduce the amount of waste we emit.

To handle the increase in the burden from effluent containing organic elements that has come about in the wake of the increase in production, we have increased our number of organic effluent treatment facilities.

The structure of our facilities is made from reinforced concrete FRP and mortar, and consist of a raw water tank, a neutralization tank, an aeration tank, a sedimentation pond, a contact aeration tank, sand filtration, and so on. They have a capacity of 800 m³/day, and have reduced our raw water BOD burden from 800 mg/L to not greater than 7 mg/L.

These facilities went into operation in April of last year and have contributed to increasing our production capacity and maintaining the quality of water.

We updated our facilities as a result of the deterioration of our treatment and dehydration equipment for mixed sludge (organic / inorganic).

These facilities consist of a set of screws and a flight conveyor belt. They have a sludge treatment capacity of 60 kg-DS/h, and the moisture content is 70% or less.

These facilities went into operation in April of last year and have contributed to reducing the amount of sludge treated by improving the sludge moisture content ratio and to boosting the reliability of the facilities.

*kg-DS: Unit of dry weight of sludge



Exterior view of our organic effluent treatment facilities



Exterior view of our screw press dehydrator

Management of Chemical Substances

When it comes to the chemical substances used in our production processes, we have integrated the substances and management methods that had been managed individually at each subsidiary and revised our management segments in the aim of enacting consistent regulations and undertaking appropriate management. What is more, the amounts of chemical substances we use and the amounts we emit each month are managed via a system that manages these for every area in an integrated manner. There are approximately 2,000 chemical substances in total that are currently registered at our plants.

We manage the monthly amount of inputs and outputs of chemical substances, such as greenhouse gases, PRTR targeted and other regulated substances, as well as 36 priority controlled chemical substances, and so forth.

■ Management Methods for Chemical Substances

Except for the water and air that we deal with in our business activities, we manage all chemical substances which are considered to have a serious impact on human health or the environment.

We divide chemical substances into three categories based on their risk: prohibited chemical substances, reduction control chemical substances and ordinary control chemical substances.

The prohibited chemical substances are substances whose use in manufacturing is prohibited by international conventions or the laws and regulations of various countries. They primarily consist of substances that deplete the ozone layer; persistent organic pollutants; Class I, II and III specified chemical substances from the Soil Contamination Countermeasures Act.

Reduction control substances are substances subject to notification under domestic laws and regulations and substances subject to management in terms of how much is emitted or transferred. They primarily consist of Class I specified substances under the PRTR Act, VOC, greenhouse gases, poisonous and deleterious substances and so on. Monthly management of the amount used and emitted, their reduction and replacement to low risk substances is promoted.

Ordinary control chemicals consist of substances that are used in our business activities other than prohibited chemical substances and reduction control chemical substances.

When new chemical substances are used they are crosschecked against these categories, and we continue to institute proper management moving forward.

PRTR (Pollutant Release and Transfer Register): A system for providing notification on the release and transfer of chemical substances pursuant to the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof.

■ Management System for Chemical Substances

Inputting the amount of each chemicals used in our plants into a system allows us to compute the amount of emitted chemical substances through automated calculations.

The calculated results are connected via the Internet to our head office and each area so that we can view the actual input and output results for every plant.

Viewing the amount emitted can be effectively utilized to create notification materials in accordance with laws and regulations and to manage the amounts of priority controlled chemical substances in the environmental objectives.

The following figure shows a diagram of our chemical substances management system. We will continue to make efforts to control the chemical substances in accordance with laws and regulations and work to manage them.

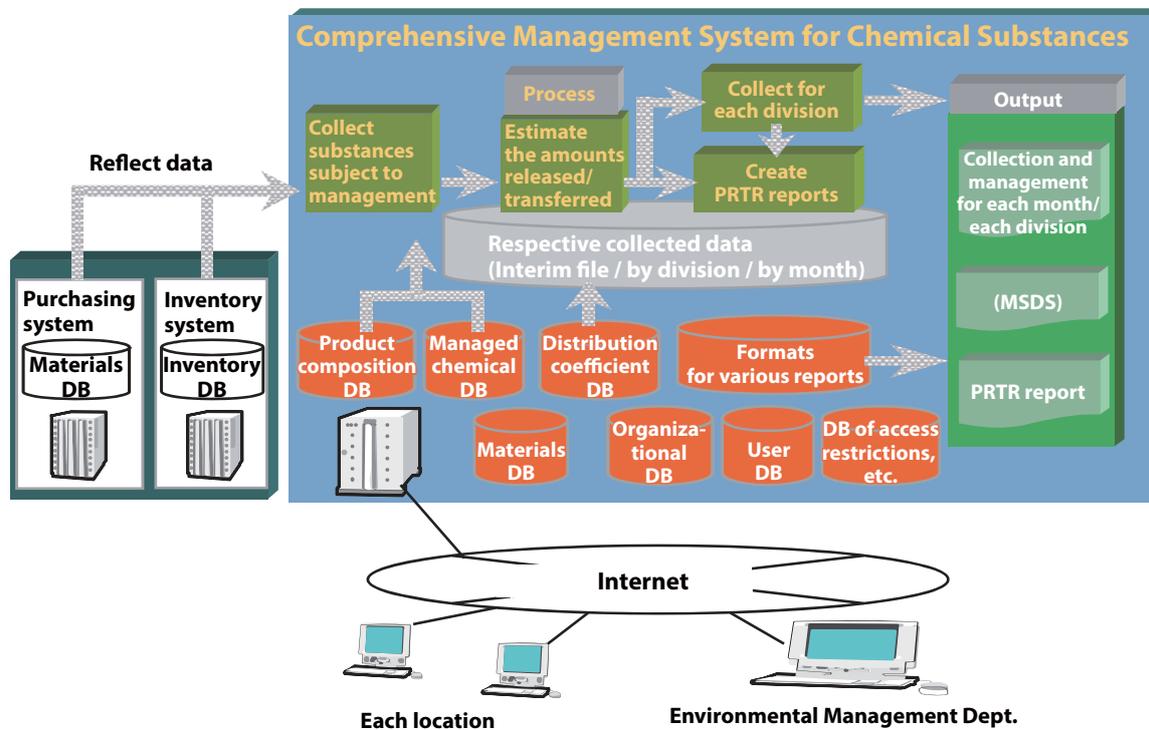


Diagram of Our Chemical Substances Management System

Environmentally Conscious Products

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 initiatives during FY2012 in relation to our environmentally Conscious products.

■ Preparing Standards for Environmentally Conscious Products

In FY2012 we created standards and established the eight evaluation items in the table at right to go along with the special features of our liquid crystal display devices. We conduct evaluations for each item and those products that are in compliance are defined as “environmentally conscious products.” We have arranged it so that these evaluations are carried out without fail over the course of new product development.

We have positioned FY2013 as a test period for these standards, and are setting targets for the following fiscal year and beyond.

Item
Reducing weight
Long-term usability
Recycling
Ease of disassembly and treatment
Environmental protection
Energy conservation
Provision of information
Packaging materials

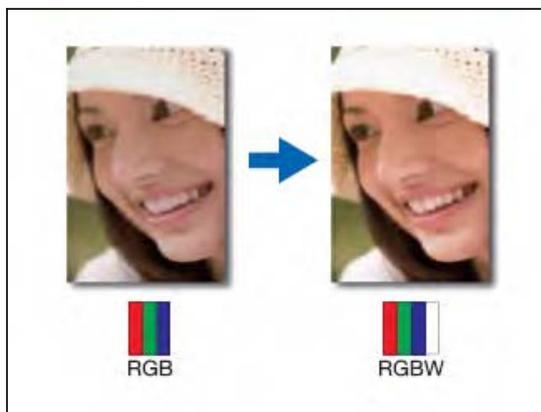
Evaluation items for environmentally conscious products

■ WhiteMagic™ Substantially Reducing Power Consumption

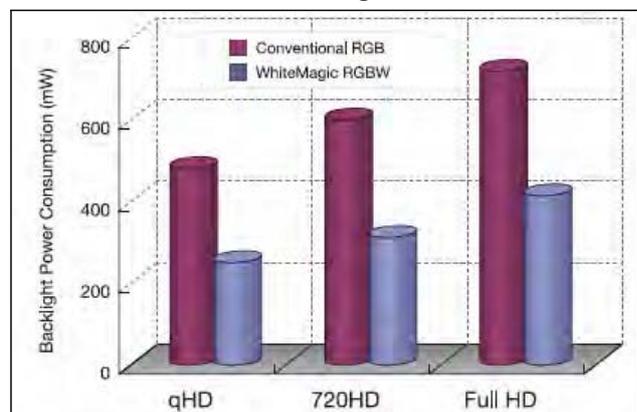
As opposed to the traditional RGB pixel format for liquid crystal display devices we have developed WhiteMagic™, which achieves power savings through our proprietary RGBW pixel format and technology for controlling the backlight brightness.

With WhiteMagic™ the power consumption of the backlight can be reduced approximately 50% compared to conventional products, which enables it to contribute significantly to lowering the power consumption of the final product. Sales of products equipped with WhiteMagic™ began in 2013.

Displays in high brightness mode have about twice the brightness of conventional products



Comparison of power consumption
Approximately 50% reduction in the power consumption of the backlight



■ Creating Standards for Green Procurement

Since the final consumption areas for our products are spread all over the world, we think it important having green procurement standards compliant with the regulations on the chemical substances of various countries. For FY2012 we had been operating under each company’s standards prior to integration, but for FY2013 and beyond we have created green procurement standards that include a system that treats the group as a single company.

Specifically, we have selected prohibited and controlled substances in products, set their thresholds, and created extensive range of rules including various survey and questionnaire forms. Together with this, we have also worked to adopt a system (*jDesc) for operating this electronically. We held explanatory meetings aimed at our internal employees and for our business partners regarding the rules and this system from February to March 2013, and put them into operation starting from April.

Moving forward we will continue to strive to thoroughly manage the chemical substances contained in our products and make efforts to ensure that our customers can use our products with peace of mind.

*JD Environmental Information System for Chemical Substance

Ecosystem Conservation Activities

We are promoting ecosystem conservation activities that take the characteristics of the local areas into consideration at each of our plants in Japan. Of these, here we will introduce the butterfly garden at our Higashiura Plant and the Firefly River conservation activities by our Mobara Plant.

■ Creation of the Butterfly Garden

Our Higashiura Plant created a butterfly garden (consisting of flowerbeds and gardens where primarily those flowers and vegetation preferred by butterflies are grown with attention paid to the connection between said vegetation and insects) in the lawn space along its front-facing parking lot in 2011. This was done with the objective of conserving the natural environment in an integrated manner with the adjoining Natural Environment Learning Forest (Satoyama) in order to maintain and improve a natural environment that is easy for butterflies to survive in.

Since these flowers and vegetation have died away depending on the seasons, thereafter a number of the employees, including the plant manager, have periodically replanted these flowers and vegetation. For the future, the plant will maintain and improve the natural environment while observing the changes in the inbound butterflies in striving to be a plant that harmoniously coexists with the surrounding nature.

■ Conservation Activities for Firefly River

Firefly River, which is inhabited by "Genji fireflies", is a river on the premises of our Mobara Plant.

We have given the river an incline for the part that is about 2 m wide and 30 m long and flowed groundwater that has been pumped up. Every year around the middle of May when the fireflies emerge from the river and enter their pupal stage the employees cut down the weeds in the surrounding area and remove the sludge and weeds from the inside of the river. Furthermore, downstream there is a fancy carp pond, and on the day in question the employees clean up Firefly River and also transfer out all of the fancy carp so that they can clean the bottom of the pond.

The employees are looking forward to seeing the sight of fireflies happily flitting about this year as well.



Scenes from the replanting of the flowers



A scene from the pond clean-up activities



A scene from the Firefly River clean-up activities



Fancy carp swimming happily



A family of spot-billed ducks

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 FPD International and SID, which are held every year, in striving for back-and-forth communication. This year we will report on our displays at FPD International 2012 and SID Display Week 2013.

■ FPD International 2012

FPD International 2012 was held for three days from October 31 to November 2, 2012 at Pacifico Yokohama. As part of this, we displayed three types of "Innovation Vehicles," namely those for smartphones, tablets and automotive displays. Innovation Vehicles refer to cutting edge displays designed for taking the lead in technological development, and our aim is to have them serve in an intermediary role that connects customers up with the latest in technology from our company.

The Innovation Vehicle for smartphone applications features key technologies for forthcoming high-end smartphone applications adopted into a large 5.0-inch diagonal size module with full HD resolution, with high contrast ratio of 2000:1 achieved by implementing new in-plane switching (IPS) technology, with low power consumption that is approximately 50% less by utilizing an RGBW pixel structure, with a thin module structure of only 1.0 mm thickness including an integrated touch function (without cover glass), and with a narrow border of 1.0 mm. The Innovation Vehicle for tablet applications features key technologies adopted into slightly larger 7.0-inch diagonal size module with high WQXGA resolution.

The Innovation Vehicle for automotive applications features a 12.2-inch diagonal size module. The display adopts advanced technologies desirable for next-generation automotive displays such as true-black appearance, styling design freedom enabled by corner cut and curved surface technologies, low power consumption, and integrated touch function.

In addition, we also displayed products like our line-ups of reflective displays with ultra-low power consumption liquid crystal displays for tablets, and more. As such, our booth was thronged with enthusiastic visitors day after day.



■ **SID Display Week 2013**

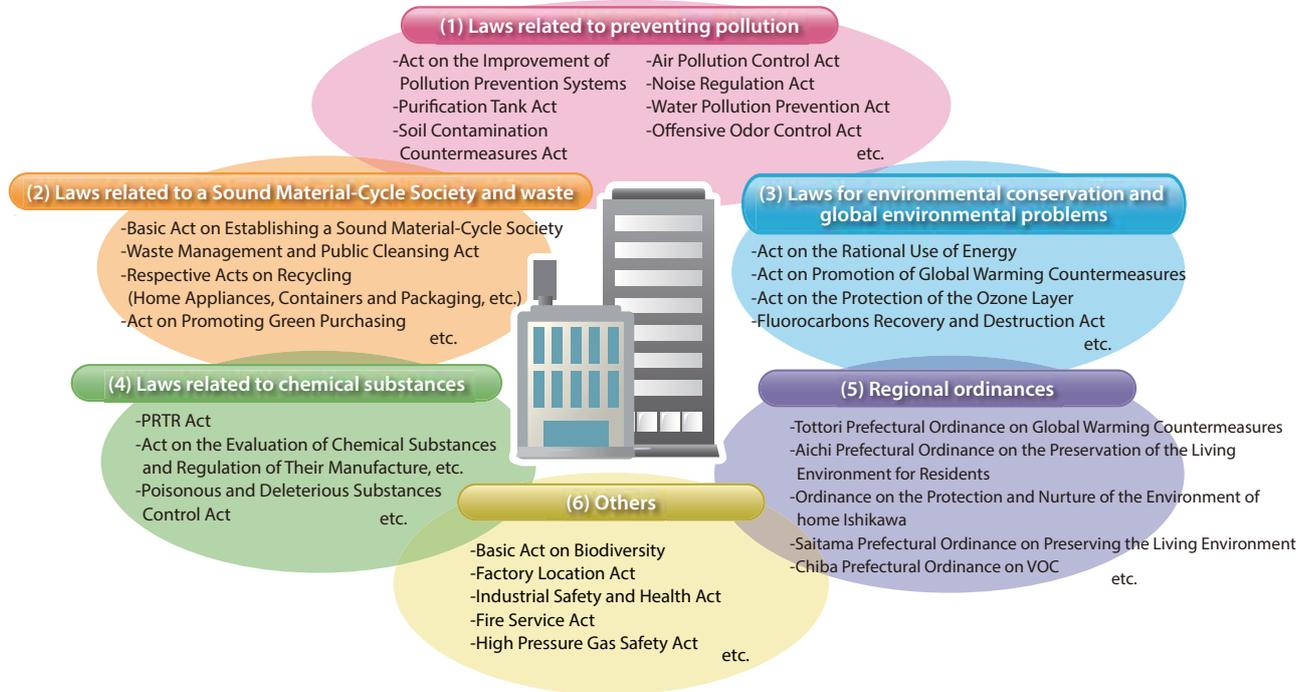
We made seven announcements and speeches and displayed actual products at the exhibition hall at SID Display Week 2013, which was held in Vancouver, Canada from May 20 to 24, 2013. Day after day our booth was visited by people from mobile device, automotive device and industrial device manufacturers from around the world. Through individual meetings with our customers we were able to explain our cutting edge power saving and slim-lining technology to gain their understanding regarding our products.



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 initiatives for adhering to environmental laws and undertaking environmental conservation activities.

Major laws related to the environment are indicated below.



PRTR Notification Status

There are laws and regulations that require that notification be made to government authorities for the prevention of pollution, waste, energy saving, and so on. Of these, this section will report on the PRTR notifications that are required for each of our plants.

Although there are slight differences in the amounts of each substance that are used and emitted depending on differences in the specifications of the products manufactured and the manufacturing methods at each plant, and so forth, currently, there are five substances that are subject to notification. A total of the value that has been notified from each plant is shown in the list of substances requiring PRTR notification in the table below.

Moving forward, we will continue to make efforts to provide notification in accordance with laws and regulations, reduce the amount of chemical substances we use, and accurately determine the amounts emitted.

List of Substances Requiring PRTR Notification

Unit: (kg)

Item	Released amounts				Transferred amounts
	to Air	to Public water bodies	to Land (on-site)	Landfill disposal on site	Off-site
2-Aminoethanol	150	1,034	0	0	1,480
Indium and its compounds	0	24	0	0	52
Hydrogen fluoride and its water-soluble salts	3.2	0	0	0	10,000
Boron and its compounds	0	1,170	0	0	11,670
Molybdenum and its compounds	0	80	0	0	1,430

*Hydrogen fluoride and its water-soluble salts turn into calcium fluoride after having been treated to remove their harmfulness, so the releases to public water bodies is 0. (From the PRTR Guidelines)

Communication

■ Coordination with Local Communities

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 neighbouring area clean-up activities by the Higashiura Plant, the clean-up activities for the mouth of the Ichinomiya River by the Mobara Plant, the Kawakita clean campaign by the Ishikawa Plant, the Tottori Sand Dunes clean-up activities by the Tottori Plant, and more.

Activities by the Higashiura Plant

As part of its activities to contribute to the local community, under the leadership of the members of ISO14001 publicity and awareness raising subcommittee, we periodically execute environmental volunteer activity to pick up trash in the neighbouring area of the plant.

In FY2012, 113 people took part in the activity on Saturday, March 16, and they collected enough trash to almost fill a two-ton truck. This was the 14th time that this activity, which began in 2001, has been held, and a total of 1,443 people have taken part in it. We would like to continue holding this activity in an ongoing manner in the future.



Scenes from the neighbouring area clean-up activity



Activities by the Mobara Plant

The Ichinomiya River flows from north to south near the plant premises, and after the water used in our production processes has been purified approximately 9,000 m³ of it is discharged into the river every day.

The Ichinomiya River flows out to the Ichinomiya Coast about 10 km downstream from the plant. The plant carries out clean-up activities in the area around the mouth of the river in October of every year in order to protect the fish and shellfish in the neighbouring sea area.

The clean-up starts at nine o'clock in the morning and begins by dividing the workers up into two groups that move down along the two shores of the river's mouth, where they pick up and gather trash and sort it into combustible waste and incombustible waste.

This year it rained the day before and there was a great deal of driftwood, so it was hard going to carry out the task while clearing this away. But after only about two hours they were able to pile two two-ton trucks high with combustible waste mainly consisting of plastic and incombustible waste such as cans, bottles.

Small and medium-sized enterprises and venture firms have gathered within Chiba Prefecture. As such, the New Business Creation Matching in Japan Display was held with the aim of pairing the outstanding technologies and products of these companies with the research and development seeds and superlative technologies we possess in order to create new businesses.

The first meeting of this group was held on June 6 at our J1 building, where the 18 companies that participated held technology explanations and presentations. On the day of the event products developed by Japan Display Inc. were also displayed, which brought the session to a rousing closing.



Scenes from the clean-up activities



Activities by the Ishikawa Plant

The Kawakita Clean Campaign is carried out every year. This activity, which was carried out for the 16th time in FY2012, consists of clean-up activities that cover a wide range that includes the interior of Kawakita Town and the banks of the Tedoru River that flows through the neighbouring area.

This time around it was held on Saturday, May 26, with 390 people in total taking part in including employees as well as their families from the Ishikawa Plant, affiliate companies and neighbouring business sites. The trash that was collected was sorted into combustible waste and incombustible waste, and amounted to 390 kg in total.



Participated people



A scene from the clean-up in Kawakita Town

Activities by the Tottori Plant

In FY2012 the Tottori Plant took part in the Tottori Sand Dunes collective clean-up (on Sunday, April 8 and Sunday, October 14) that it has been participating in every year (twice yearly).

Forty people took part in, including members of the publicity and awareness raising subcommittee, anyone who wanted to participate from the workplace, and their families, and worked up an invigorating sweat as they kept the sand dunes that are the pride of Tottori clean.



Clean-up activities on the Tottori Sand Dunes

The plant is also calling on employees to "Stop Idling" [their cars] in the plant parking lot as one of its initiatives for activities to prevent global warming (the photo shows the letter of recognition issued by Tottori Prefecture).



Since being certified as an Outstanding Business Promoting Waste Reduction in Tottori City in 2011, we have continued to promote the reduction of waste through activities to sort the waste generated by our business sites (the photo shows the certificate issued by Tottori City).



<Note>

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

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