

# Eco-services



## 1 Product-related services

(maintenance, upgrading, repair/reform)

## 2 Reuse and recycling services

(collection, etc.)

## 3 Outsourcing services

(waste disposal, control of hazardous items, chemical treatment, facility management)

## 4 Management-related services

(consulting, accreditation, analysis, evaluation, etc.)

## 5 Others

(e-commerce, eco-tourism, hotels, information transfer, etc.)

In the *Eco-products Directory 2009*, “eco-services” refer not only “technological improvements” but also “ways to use products” and “environmental management” as well as “mechanisms that enable environmental impact reduction through financial products.” Typical eco-services include vehicle sharing, where, for example, 10 people share one vehicle instead of each driving his/her own. This results in fewer vehicles on the road, thus reducing the environmental impact of travel considerably. As another example of eco-service, regular maintenance and upgrading can be performed on conventional products so that they can be used longer. In this directory, “eco-services” also refer to “eco-funds where investments are made in business firms with excellent performance in caring for the environment.”

The technological development of eco-products normally requires time and money. However, eco-services often only require good ideas to promote environmental impact reduction. Eco-services have not yet been widely recognized by consumers. A system should be developed to publicize the availability and advantages of eco-services so that they permeate society, encouraging further environmental impact reduction.



**ES-1-001**

**Product-related**

**returnable container managing systems**

**NETLOOPASS — a system using IC-tags to manage returnable containers in logistics**

**Environmental performance**

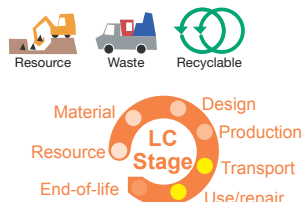
From the perspective of consideration for the environment, returnable containers are frequently used for logistics between enterprises. However, there are many new problems related to management such as a lack of containers when shipping a product or an excess of containers. These problems are caused by an inability to determine the number of containers in inventory or their whereabouts.

We have developed NETLOOPASS as an optimal solution to such problems.

**Product performance**

By attaching IC-tags to returnable containers such as folding containers and pallets, it is possible to prevent containers from being lost, retained or purchased in excess by managing when, where and in what quantity they are shipped or returned.

Customers can choose 13.56MHz (ISO15693 Standard) or UHF (EPC global Class 1 Generation 2 Standard) IC-tags depending upon their specific needs and it is possible to use IC-tags even if the container is made of metal.



**TOPPAN PRINTING CO., LTD.**

1, Kanda Izumi-cho, Chiyoda-ku, Tokyo, 101-0024, Japan  
Tel +81-3-3835-5549 Fax +81-3-3835-0847  
E-mail [eco@toppan.co.jp](mailto:eco@toppan.co.jp)  
URL <http://www.toppan.co.jp/english/>  
URL <http://www.toppan.co.jp/english/csr/>

Available in: We have sold our products throughout the world.

**ES-1-002**

**Product-related**

**treatment of metal surfaces**

**High-Performance Surface Treatment Technology "TRIBEC™ Series"**

**Environmental performance**

Various surface treatment technologies are applied to molds for extending their lives. Recently growing environmental awareness has resulted to change the type of lubricants along with other drastic modifications and has shortened the operating lifetime of molds. In an effort to improve their operating life, Hitachi Metals developed "the TRIBEC™ Series". By identifying the necessary performance attributes of each application based on an extensive analysis on mold abrasion over many years, Hitachi Metals has achieved high-performance surface treatment of molds that is operating-environment specific. "The TRIBEC™ Series" provides protection for molds used even in harsh conditions where environmentally conscious lubricating methods are used. In addition, mold abrasion can be suppressed with polishing to remove damaged portions and enables reuse of "TRIBEC™".



**Hitachi Metals, Ltd.**

SEAVANS North Building, 1-2-1, Shibaura, Minato-ku, Tokyo, 105-8614, Japan  
Tel +81-3-5765-4410  
E-mail [hmcc@hitachi-metals.co.jp](mailto:hmcc@hitachi-metals.co.jp)  
URL <http://www.hitachi-metals.co.jp/e/>  
URL [http://www.hitachi-metals.co.jp/e/prod/prod19/p19\\_02.html](http://www.hitachi-metals.co.jp/e/prod/prod19/p19_02.html)  
URL [http://www.hitachi-metals.co.jp/e/corp/corp14\\_01.html](http://www.hitachi-metals.co.jp/e/corp/corp14_01.html)

Products with TRIBEC™ applied

**ES-1-003**

**Product-related  
green gifts**

**Present Tree**

**Product performance**

A Present Tree is a gift that involves the delivery of a certificate detailing a planted tree, along with a message card. Trees will be planted for the reproduction of tropical forests on Kalimantan Island.

You can have two planted trees.

One of the trees is planted for recovering tropical forest.

The other is a teak, and this afforestation enables the sustainable supply of woods, and creates the employment of locals.

After ten years, the teak will be cut down and sold. The income from the teak will be paid to the owner. The income will also be able to be used for reforestation or environmental conservation activities.

As another privilege, a CO<sub>2</sub> offset certificate comes with the Present Tree. The planted tree will become forest and that will absorb carbon dioxide. It contributes to the prevention of global warming.

The owner certificate features the owner's name, and latitude and longitude of the position where the teak sapling is planted, which is measured by GPS (Global Positioning System).

**VIVO Corporation Co.,Ltd**

3-5-4, Tanashicho, Nishitokyo-shi, Tokyo, 188-0011, Japan

Tel +81-42-465-7563 Fax +81-42-465-7241

E-mail [info@vivo.jp](mailto:info@vivo.jp)

URL <http://www.env-r.com/tree>



Available in: Japan

Present Tree contents

**ES-1-004**

**Product-related  
elevator refurbishment services**

**Quick Elevator Refurbishment Thanks to Addition of New Control Panel**

**Environmental performance**

- Mitigation of climate change: Reduction in power consumption due to the change from conventional AC feedback control to inverter control.
- Efficient use of resources: Possible to perform refurbishment work without removing the existing motor, hoist, car, and platform facilities. Elimination of unnecessary replacement for the efficient utilization of existing resources.

**Product performance**

- Short work period: Reduced time required for transport and replacement work because of the division of the control panel into compact units.
- Reduced frequency of trouble: Change from a relay system to a microcomputer controlled system brings enhanced reliability as there are fewer replacement parts.
- Remote surveillance: Remote surveillance for 24 hours x 365 days.



Elevator Control Board Refurbishment CV260RN

**TOSHIBA ELEVATOR AND BUILDING SYSTEMS CORPORATION**

5-27, Kitashinagawa 6-chome, Shinagawa-ku, Tokyo, 141-0001, Japan

Tel +81-3-5423-3330 Fax +81-3-5423-3425

URL <http://www.toshiba.co.jp/index.htm>

URL <http://www2.toshiba-elevator.co.jp/elv/infoeng/index.jsp>

ES-2-001

Reuse and recycling  
retreaded tires

Retread tires for trucks and buses

Environmental performance

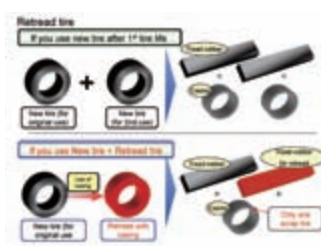
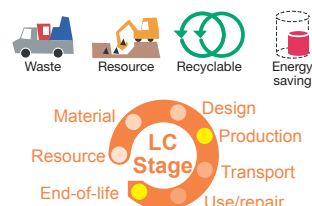
Through the retreading method, CO<sub>2</sub> emissions and energy consumption during tire manufacturing process can be significantly reduced as well as scrap tire reduction. Bridgestone also provides new tires properly designed as a retread casing in order to maximize the value of casing and reuse efficiency. Bridgestone will make continuous effort for further public enlightenment of the Eco concept responding to social justice and the needs of customers through retread activity.

Product performance

"Retread" means attaching new tread rubber on a worn-out tire to revive tire life. There are two ways of retreading. One is assembling already cured tread (Pre-Cured Tread or PCT) on a worn-out tire, which is called "COLD" type retread, because the curing temperature is relatively low (100-120 degrees C). The other is assembling non-cured tread, which is called "HOT" type retread, because the curing temperature is relatively high (140-150 degrees C) and this is similar to new tire production.

Bridgestone Corporation

10-1, Kyobashi 1-chome Chuo-ku, Tokyo, 104-8340, Japan  
Tel +81-3-3563-6082 Fax +81-3-3563-1165  
URL <http://www.bridgestone.co.jp/english/index.html>



Retread tires image

ES-2-002

Reuse and recycling  
recycling systems

Ecocement System

Environmental performance

Ecocement is the recycling system for incineration residues from MSW incinerators. Such residues are utilized as the major raw material of Ecocement with minimum addition of natural resources.

Characteristics of Ecocement

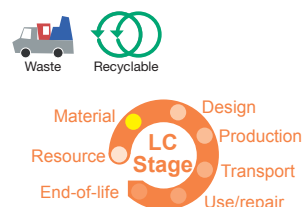
1. This system ensures that dioxins contained in residues are safely decomposed during high temperature in excess of 1,350°C.
2. This system includes equipment that extracts and refines heavy metals contained in the incineration residues for recycling.
3. This system contributes to decrease of landfill burden.

Product performance

Ecocement is similar in quality to ordinary Portland cement. It is utilized to redy-mixed concrete, concrete product and soil stabilizer.

TAIHEIYO CEMENT CORPORATION

St. Luke's Tower, 8-1, Akashi-cho, Chuo-ku, Tokyo, 104-8518, Japan  
Tel +81-3-6226-9088 Fax +81-3-6226-9172  
URL <http://www.taiheiyo-cement.co.jp>



Ecocement System

ES-2-003

Reuse and recycling  
recycling systems

Ash Washing System

Environmental performance

Ash Washing System is a recycling system for incineration residues, otherwise known as soot & dust and bottom ash from MSW incineration, as a cement raw material. This system can be introduced at existing cement plants simply by installing pretreatment facilities of the Ash Washing system.

Characteristics of the Ash Washing System

1. Dioxins contained in the incineration residues are safely decomposed during the high temperature burning process at cement rotary kiln in excess of 1,450°C.
2. The pre-treatment of bottom ash requires only removing metals and screening other large foreign objects. Soot & dust includes many chlorides and need to be treated to remove them using water. Soot & dust and bottom ash are utilized as a cement raw material after pre-treatment

TAIHEIYO CEMENT CORPORATION

St. Luke's Tower, 8-1, Akashi-cho, Chuo-ku, Tokyo, 104-8518, Japan  
Tel +81-3-6226-9088 Fax +81-3-6226-9172  
URL <http://www.taiheiyo-cement.co.jp>



Ash Washing System

ES-2-004

Reuse and recycling  
recycling systems

AK System

Environmental performance

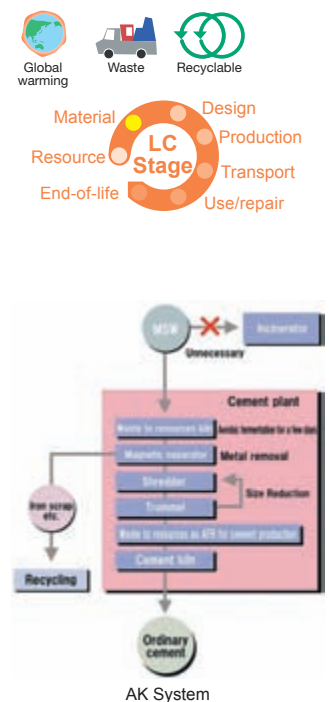
AK (Applied Kiln) System recycles household garbage into raw material and alternative fuel for ordinary Portland cement production. This can be introduced at existing ordinary Portland cement plants by modification and installation of specific equipment.

Characteristics of AK System

1. MSW is directly transported to the cement plant equipped with the AK System.
2. MSW is placed into a rotary digester and is aerated and fermented around 3 days. MSW converts into a homogeneous and stable product that can be utilized as fuel and raw material for cement production.
3. The generation of dioxins is suppressed during the high temperature burning process in excess of 1,450°C.

TAIHEIYO CEMENT CORPORATION

St. Luke's Tower, 8-1, Akashi-cho, Chuo-ku, Tokyo, 104-8518, Japan  
Tel +81-3-6226-9088 Fax +81-3-6226-9172  
URL <http://www.taiheiyo-cement.co.jp/>



AK System

**ES-2-005**

**Reuse and recycling  
recycling systems**

**FRP Recycling Using Depolymerization Under Ordinary Pressure**

**Environmental performance**

This technology is unique in that it does not require pretreatment (crushing, etc.) or the facilities and energy for the pressurization. This technology helps reduce processing costs and environmental load while ensuring health and safety. Moreover, the relatively long glass fibers recovered enable production of reusable FRPs with about 70% of the tensile strength of virgin FRPs.

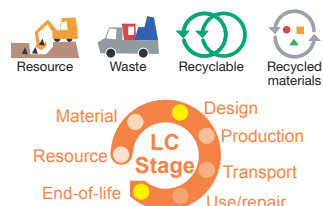
**Product performance**

FRP raw materials such as thermosetting resins make FRP difficult to recycle because they cannot be decomposed after being molded. Hitachi Chemical's FRP recycling technology, which uses tripotassium phosphate as a catalyst and benzyl alcohol as a solvent, can decompose FRP at 200 degrees centigrade under ordinary pressure for about 10 hours. FRPs are readily separated into glass fibers, fillers, resins and other components, which are reprocessed into FRPs at a low cost.

**Hitachi Chemical Co., Ltd.**

1500 Ogawa Chikusei-shi, Ibaraki, 308-8521, Japan  
Tel +81-296-20-2304 Fax +81-296-28-4637  
URL <http://www.hitachi-chem.co.jp/english/index.html>  
URL <http://www.hitachi-chem.co.jp/english/products/index.html>  
URL <http://www.hitachi-chem.co.jp/english/csr/index.html>

Available in: Japan



FRP dissolving process

**ES-2-006**

**Reuse and recycling  
recycling systems**

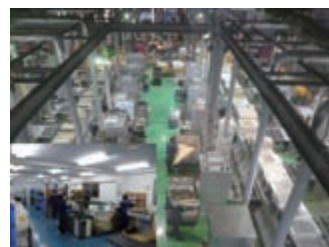
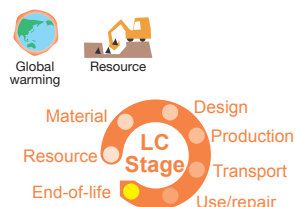
**Recycling of Electronic Appliances Toward Recycling-oriented Society**

**Environmental performance**

Tokyo Eco Recycle Co., Ltd. disassembles used electric appliances manually to separate valuable resources thoroughly. One step forward from an effort just to "recover resources" for environmental protection to "create resources" has achieved a new business model. Tokyo Eco, a front-runner in the world has been striving to establish a novel approach representing the recycling industry. Tokyo-Eco strives for "zero emission", which means waste going to landfill sites be reduced to zero. Our landfill ratio of 0.1% is at the top level in Japan. At the same time, information security is highly taken into account (e.g., being certified for "privacy marking") in order to promote recycling in the information society.

**Tokyo Eco-Recycle, Ltd.**

38 Wakasu, Koutou-ku, Tokyo, 136-0083, Japan  
Tel +81-3-3522-6690 Fax +81-3-3522-6688  
URL <http://www.tokyo-eco.co.jp>



Recycling of PCs, washing machines, and air-conditioners



**ES-2-007**

**Reuse and recycling  
recycling systems**

**Tungsten Recycling System for Carbide Cutting Tools**

**Environmental performance**

Tungsten is a refractory metal in its property, and tungsten carbide has high hardness at high temperature and is used for the cemented carbide cutting tools which are indispensable to metalwork a variety of parts and components in automobiles, household electric appliances, and other industries.

Tungsten is also known as one of the rare metals, and its resource in the world is very limited. Tungsten materials processed by the conventional recycling method are used in limited application areas because of its insufficient quality.

mitsubishi materials group has developed a new recycling method to recycle tungsten, while ensuring the high quality of recycled tungsten. At present, we are the only manufacturer that can recycle used cemented carbide by metallurgical refining process. We recycle tungsten from used cemented carbide tools and alloys collected in the manufacturing process.

**JAPAN NEW METALS CO.,LTD**

1-6-64 Sennari-cho, Toyonaka, Osaka, 561-0829, Japan  
Tel +81-6-6333-1171 Fax +816-6331-5358  
URL <http://www.jnm.co.jp/eng/index.html>  
URL <http://www.mmc.co.jp/corporate/en/csr/csr.html>

Available in: Japan



Carbide Cutting Tool

**ES-2-008**

**Reuse and recycling  
recycling systems**

**World's first totally closed-loop recycling system for polyester**

**Environmental performance**

The closed-loop recycling system of ECOCIRCLE™

- will produce no waste
- will suppress petroleum consumption
- will significantly reduce CO<sub>2</sub> emissions and energy consumption

**Product performance**

ECOCIRCLE™ is an advanced system that turns PET bottles and polyester products back into highly pure polyester raw material (99.99%). By separating additives and coloring agents, purity equivalent to raw material produced from petroleum can be achieved.

ECOCIRCLE™ is a Teijin Fiber trademark.



**Teijin Fibers Limited**

2-1, Kasumigaseki 3-chome, Chiyoda-ku, Tokyo, 100-8585, Japan  
Tel 0088-22-0175  
E-mail [tfj0604@teijin.co.jp](mailto:tfj0604@teijin.co.jp)  
URL [http://www.ecocircle.jp/index\\_e.html](http://www.ecocircle.jp/index_e.html)

Closed-loop recycling system



## ES-2-009

Reuse and recycling  
recycling systems

## Tea dregs recycling system

## Environmental performance

With the increase of demand for green tea beverages, the amount of tea dregs discharged during the process of production is increasing year by year. Even though the tea dregs contain a lot of functional ingredients such as polyphenol, it is easy to rot because of its containment of water and high temperature.

As a way to dispose tea dregs discharged, it can be dried out and reused. However, a large amount of energy is consumed to make it dry because of its water containment. That is not good for the environment.

As a result, most of the usage of tea dregs is for compost so far.

At ITO EN we have overcome those obstacles and succeeded in developing a technology to process the tea dregs with water in it.

Creating products made out of tea dregs such as board, gypsum-board, resin, and paper, making a good use of green tea function with the technology is "the tea dregs recycling system".

## ITO EN, LTD.

21 MEKAMI, SAGARA-CHO, MAKINOHARA-SHI, SHIZUOKA-KEN,

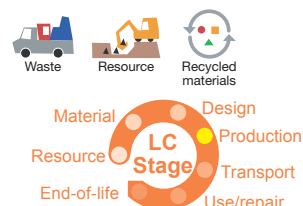
421-0516, Japan

URL <http://www.itoen.co.jp/>

URL <http://www.itoen.co.jp/csr/recycle/index.html>

URL <http://www.itoen.co.jp/csr/report/index.html>

Available in: Japan



Sample (Resin with tea)

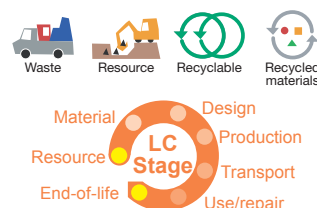
## ES-2-010

Reuse and recycling  
recycling systems

## Efforts to achieve a higher recycling rate under the concept of compliance

## Environmental performance

We strive to recycle used resources, including metals (e.g., iron and aluminum), waste office automation equipment (e.g., PCs) and automobiles. We are also actively engaged in activities to raise awareness in regard to environmental conservation. These include factory tours upon request for the general public at some of our facilities to publicize the importance of recycling.



## SUZUKI SHOKAI Inc.

Nippon Life Insurance Sapporo Bld 10F, 1-1 North3 West4, Chuo-ku, Sapporo-shi, Hokkaido, 060-0003, Japan

Tel +81-11-280-1281 Fax +81-11-280-8900

URL <http://www.suzuki-shokai.co.jp>

Available in: Japan, Asia

Ishikari factory Shredder Plant

## ES-2-011

Reuse and recycling  
recycling systems

## Separate collection of various kinds of metals, plastics and glass contained in shredder dust

## Environmental performance

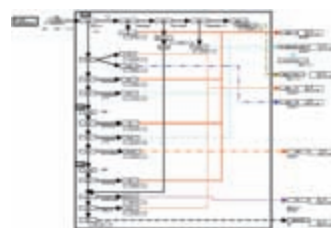
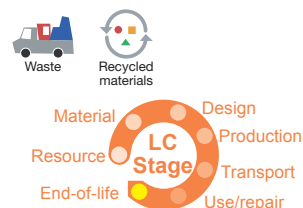
Separating shredder dust generated from waste household appliances and automobiles has conventionally been considered difficult. However, efforts are now made to reduce the amount of waste for final disposal by separately collecting such dust and making effective use of it—metals and glass for material recycling (i.e., to be recycled as raw materials) and plastics for thermal recycling (i.e., energy recovery).

## Product performance

The raw material, shredder dust, is sieved and subjected to manual screening, crushing, wind gravity separation, magnetic separation, nonferrous metal separation and fluidized bed gravity separation. In each of these processes, recyclable materials, including those for fuels, are extracted. Although the proportions of these recyclable materials differ depending on the type of raw material, the weight-based percentage is roughly estimated as approximately 35 to 42% for iron, copper, aluminum, other metals and glass, and 25 to 35% for plastics to be used as fuels. The amount of final disposal is approximately 30% of the original amount.

## R&amp;E Co., Ltd

223-1 Tomiura-cho, Noboribetsu-shi, Hokkaido, 059-0462, Japan  
Tel +81-143-80-2233 Fax +81-143-80-2232  
E-mail [kankyo@rande.co.jp](mailto:kankyo@rande.co.jp)  
URL <http://www.rande.co.jp>



Flowchart of work processes at the shredder dust-recycling factory

## ES-3-001

## Outsourcing

## data deletion management

## An environmentally friendly, reliable data erasure service

## Environmental performance

This is an environmentally friendly data erasure service with the following characteristics:

- (1) Data media are dried, dry-distilled and carbonized in a furnace using nitrogen.
- (2) Data is then erased by heating with an electric heater.
- (3) Combustion does not occur since oxygen is not used, thereby significantly reducing CO<sub>2</sub> emissions (compared with crushing and combustion after data erasure using strong magnetism).
- (4) The original materials (e.g., metal) and fuel (carbide) are both recycled.
- (5) External air pollution is prevented through the use of exhaust gas detoxification and deodorization devices.
- (6) Carbon offsets are purchased to compensate for the CO<sub>2</sub> discharged during the operation of this service.
- (7) Carbon offset and work completion certificates are issued.

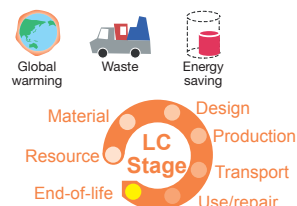
## Product performance

Completely erases data on magnetic tapes, optical discs, floppy disks and hard disks at a location designated by the client, enabling protection of information, the environment and customers.

## Imation Corp. Japan

Forest Hills West Wing 18-16, Minami-Aoyama 4-Chome, Minato-ku, Tokyo, 107-0062, Japan

Available in: Tokyo metropolitan area in JAPAN \*Please inquire of us about the service areas other than the above area.



Truck put on the equipment & Carbonized cartridge

## ES-3-002

## Outsourcing

## pipe flushing services

## Water-saving flushing system for newly built hot and cold water pipes

## Environmental performance

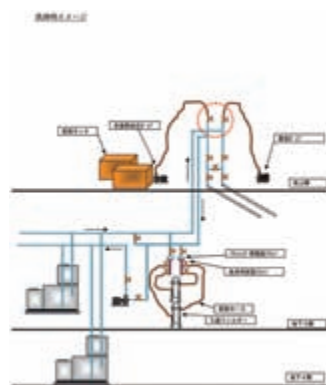
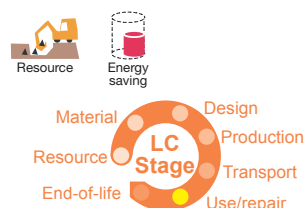
The flushing method for hot and cold water pipes conserves resources by significantly reducing the volume of wash water used as well as the number of working hours involved.

## Product performance

The amount of wash water used in the flushing for newly made hot and cold water pipes is significantly reduced using a transmission barrier filter. At the same time, the number of working hours involved in filling pipes with water are also reduced by using a vacuum pump. Ex.) Fewer frequencies of water changes needed: conventionally, 50 to 100 t of wash water are required to flush a pipe with a capacity of 10 t, but the new method takes only about 20 t to complete washing. The technique is expected to be used in cogeneration systems for district cooling and heating and for pipes to cool large-sized machinery.

## NIHON MIZU-SHORI KOUGYOU CO.,LTD.

8-14 Sugahara-chou, Kitaku, Osaka, 530-0046, Japan  
Tel +81-6-6363-6330 Fax +81-6-6363-6372  
E-mail mizushori@nifty.com  
URL <http://www.mizu-shori.com>



ES-3-003

Outsourcing

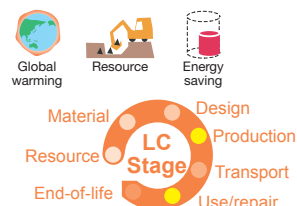
## energy management services

## Energy Management Service

## Environmental performance

UGL Premas is a leading total asset management company in Asia. Headquartered in Singapore, with staff strength of 2000, we provide facilities management and engineering services for various types of facilities across Asia and Middle East regions.

Our Energy Centre, the first accredited ESCO, specialises in energy management solutions and procurement services. It has helped building owners identify savings of more than S\$10 million annually in total.



## United Premas Limited

Block 750 Oasis, Chai Chee Road Technopark @ Chai Chee #01-01, 469000, Singapore  
Tel +65-6876-0088 Fax +65-6538-8146  
E-mail [info@ugl-premas.com](mailto:info@ugl-premas.com)  
URL [www.ugl-premas.com](http://www.ugl-premas.com)



ES-3-004

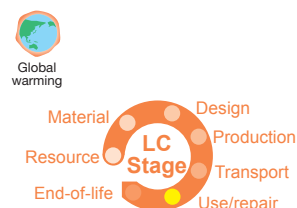
Outsourcing

## landfill gas collection volume evaluation

## Landfill Gas Collection Volume Evaluation Method

## Product performance

For successful landfill gas (LFG) collection and/or power generation projects or CDM projects, accurate evaluation of LFG emission and collection volume is crucial. Through a number of actual project experiences in Southeast Asia, Kajima developed a step-wise evaluation methodology comprising a preliminary study (Surface Methane Flux/Concentration Study), diagnosis study (Passive Gas-Well Test) and detailed study (Pumping Gas-Well Test). The preliminary study that measures methane concentration and methane flux on the landfill surface provides economical and quick assessment for further studies, the diagnosis study that measures the volume and composition of the LFG being emitted through a few small observation wells and conducts chemical analysis on waste samples provides approximate estimation of project costs, and the detailed study that pumps LFG from a few actual production wells and studies the relation between pumping power and methane concentration provides accurate LFG collection volume data and operational data.



## Kajima Corporation

6-5-11, Akasaka, Minato-ku, Tokyo, 107-8348, Japan  
Tel +81-3-5544-0734 Fax +81-3-5544-1733  
E-mail [env-act@ml.kajima.com](mailto:env-act@ml.kajima.com)  
URL [http://www.kajima.co.jp/tech/g\\_warming/index.html](http://www.kajima.co.jp/tech/g_warming/index.html)



Pumping Gas-Well Test

## ES-4-001

Management-related  
package software

## Agricultural Information Management System: GeoMation Farm

## Environmental performance

- 1) By analyzing the relation between fertilizer and quality/quantity of a crop, farmers can judge the suitable amount of fertilizer. This leads to low environmental load.
- 2) By plotting scattering of the outbreak of disease or harmful insects on the farmland map, farmers can prevent and exterminate these pests with low agricultural chemicals.

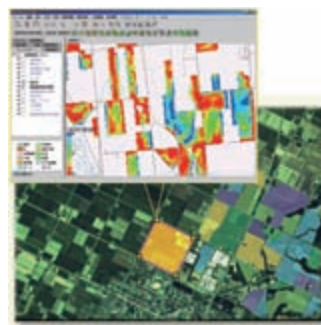
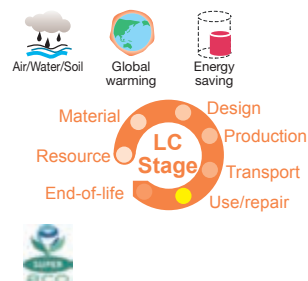
## Product performance

Remote sensing technology can judge the percentage of dryness of ears of wheat. By using this information, farmers can harvest only dry wheat and this leads to energy-saving drying. According to the evaluation result by SI-LCA index, CO<sub>2</sub> emissions for drying wheat can be reduced 33% by using "GeoMation Farm".

## Hitachi Software Engineering Co., Ltd.

4-12-7 Higashishinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan  
Tel +81-3-5780-2111  
URL <http://www.hitachi-sk.co.jp/english/index.html>  
URL <http://hitachisoft.jp/geomation/farm>  
URL <http://hitachisoft.jp/csr/index.html>

Available in: Worldwide



Agricultural Information Mgmt: GeoMation Farm

## ES-4-002

Management-related  
package software

## Bioinformatics Software for DNA/RNA/Amino Acid Sequence Analysis

## Environmental performance

DNASIS Pro reduces man-hours by 88% by adding the function which coordinates with the reagent order site, and contributes to energy saving. The amount of CO<sub>2</sub> reduction for one year is 182.7kg.

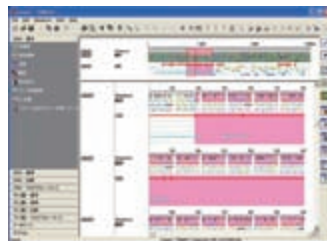
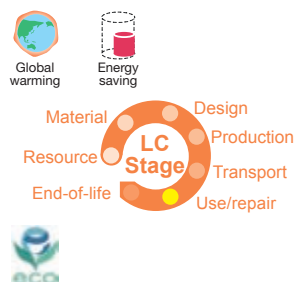
## Product performance

Life science research is making great advances in broad applications such as drug discovery, food safety and environmental conservation. "DNASIS Pro" bioinformatics software contributes to life science research by helping scientists be more productive. "DNASIS Pro" enables researchers edit, annotate and analyze DNA, RNA and amino acid sequences. It includes a comprehensive set of analytical tools that can be expanded with optional homology search, multiple alignment, and base calling and sequence assembly modules. Its unique, customizable features are designed to save researchers time and accelerate their life science research.

## Hitachi Software Engineering Co., Ltd.

4-12-7, Higashishinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan  
Tel +81-3-5780-2111  
URL <http://hitachisoft.jp/products/lifescience/>  
URL <http://hitachisoft.jp/products/lifescience/lineup/dnasis/DNASISPro/>  
URL <http://www.miraibio.com/dnasis-max/dnasis-max-overview.html>

Available in: Japan



DNASIS Pro

## ES-4-003

Management-related  
environmental management

## Information Collecting and Analyzing Tool Supporting Environmental Management

## Environmental performance

- The system is a WEB-base scheme that is yielded from actual business needs and has an enough record about being used.
- In one platform (server), installed are three sub-systems for collecting and analyzing the information, for controlling waste with the administration of agents, and for monitoring chemical substances. "ECO Rates" is a total package in which each sub-system is connected each other.
- We offer "version up" service every year to conform to the latest law and acts.
- "Add on" operation and customization of the function can be arranged so as to meet the customer's business uses. In addition, we support the customers on the whole from the introduction of system to the practical use policy and operative rules.

## Product performance

"ECO Rates" supports, as a real managing system, the information management that is the base of the environment management.

## Mitsubishi Electric Corporation

2-7-3, Marunouchi, Chiyoda-ku, Tokyo, 100-8310, Japan

Tel +81-3-3218-9024 Fax +81-3-3218-2465

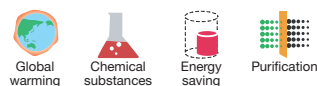
E-mail eqd.eco@pj.MitsubishiElectric.co.jp

URL <http://global.mitsubishielectric.com/index.html>

URL <http://global.mitsubishielectric.com/company/csr/environment/products/index.html>

URL <http://global.mitsubishielectric.com/company/csr/index.html>

Available in: Japan



ECO Rates Integrated Environmental Information system

## ES-4-004

Management-related  
environmental education content

## Environment Education Contents Series "Environmental Communication Club"

## Environmental performance

"Environmental Communications Club" is an environmental educational package for understanding global environmental problems and the negative environmental impact, and for considering the environment. Contents include animation and games. Users can enjoy and learn about environmental issues. These contents are used for study by school children's class trips to the garbage incinerator and the recycling plaza of the municipality.



## TOSHIBA PLANT SYSTEMS &amp; SERVICES CORPORATION

Muza Kawasaki Central Tower, 1310, Omiya-cho, Saiwai-ku, Kawasaki-Shi, 212-8551, Japan

Tel +81-44-548-7711 Fax +81-44-548-7884

E-mail [eco.master@toshiba-tpsc.co.jp](mailto:eco.master@toshiba-tpsc.co.jp)

URL <http://www.toshiba-tpsc.co.jp/english/company/act.htm>

URL <http://www.toshiba.co.jp/env/en/report/index.htm>

Various Contents



ES-4-005

Management-related

LCA software

## LCA software "JEMAI-LCA Pro"

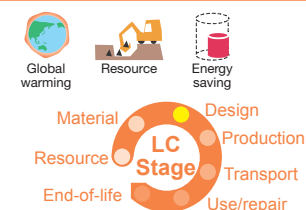
## Environmental performance

JEMAI-LCA Pro is LCA software developed by the National Institute of Advanced Industrial Science and Technology (AIST) and Japan Environmental Management Association for Industry (JEMAI). The JEMAI-LCA series has been available since 2000, and over 1000 copies have been sold, occupying the largest share in Japan's LCA software market. Now, an English version is available. The software is equipped with the following functions: -A modifiable inventory database containing a wide range of processes with resource consumption and emissions. -New data adding through a process sheet or visual input output sheet. -Process tree management. -Estimation of environmental impact in overseas countries using electricity data and an import model of 200 countries/regions. -Inventory analysis and impact assessment including Japanese and European methods. -Report writing support based on the format outlined in the ISO 14040s specifications.

## Japan Environmental Management Association for Industry (JEMAI)

2-1 Kajicho 2-chome, Chiyoda-ku, Tokyo, 101-0044, Japan  
Tel +81-3-5209-7708 Fax +81-3-5209-7716  
E-mail [jemai-lca@jemai.or.jp](mailto:jemai-lca@jemai.or.jp)  
URL <http://www.jemai.or.jp/>  
URL [http://www.jemai.or.jp/CACHE/lca\\_details\\_lcaobj198.cfm](http://www.jemai.or.jp/CACHE/lca_details_lcaobj198.cfm)

Available in: Worldwide



JEMAI-LCA Pro

ES-4-006

Management-related

LCA software

## Life Cycle Assessment Software "Easy-LCA"

## Environmental performance

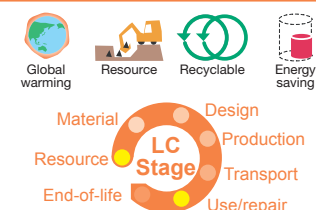
Easy-LCA is a supporting tool to conduct life cycle assessment (LCA) effectively. It evaluates quantitatively the influence of the product on the environment at the stage of design, and combines scientifically the results with the analysis and improvement of the product.

## Main features

- The latest database based on the economical statistics table of fiscal year 2000 (published in 2004) has been included.
- Assessment of the discharge of environmental loading is possible according to the distinction of units and parts.
- Comparison of an old product and the new one is possible
- Impact evaluation
- Inventory evaluation of 30 kinds of products including CO<sub>2</sub> / NO<sub>x</sub> / SO<sub>x</sub> is possible.

## TOSHIBA PLANT SYSTEMS &amp; SERVICES CORPORATION

Muza Kawasaki Central Tower, 1310, Omiya-cho, Saiwai-ku, Kawasaki-Shi, 212-8551, Japan  
Tel +81-44-548-7711 Fax +81-44-548-7884  
E-mail [eco.master@toshiba-tpsc.co.jp](mailto:eco.master@toshiba-tpsc.co.jp)  
URL <http://www.toshiba-tpsc.co.jp/english/company/act.htm>  
URL <http://www.toshiba.co.jp/env/en/report/index.htm>



Easy-LCA screens

Eco-materials

Eco-components

Eco-products

Eco-services // Management-related

1  
2  
3  
4  
5



## ES-4-007

Management-related  
library systems

## A library system "Livre"

## Environmental performance

We can reduce CO<sub>2</sub> of 66.6% by using "Livre".

## Product performance

Livre is library system, which Hitachi Systems & Services, Ltd. offers.

The characteristics of "Livre" are as follows.

- Enables easy operation for the loan and the return of the library book.
- Enables quick search for books.
- Provides variety of statistics associated with the library operation.



Main Menu of "Livre"

## Hitachi Systems &amp; Services, Ltd.

Nagoya Lucent Tower, 6-1 Ushijima-cho Nishi-ku, Nagoya, 451-6028, Japan  
Tel +81-52-569-2128 Fax +81-52-569-2132  
E-mail livre-sales@hitachi-system.co.jp  
URL <http://www.hitachi-system.co.jp/lvr/>

## ES-4-008

Management-related  
document solutions

## Document Solution "LIBINITY"

## Environmental performance

LIBINITY is a unified brand of the document solution of Hitachi Systems & Services, Ltd.

It reduces the consumption of paper, which leads to the reduction of the CO<sub>2</sub> emission associated with the transportation of the paper by 42.3%. This reduction is achieved by replacing distribution of conventional paper with information sharing on the WWW.

## Product performance

LIBINITY ECM is characterized by "SCALABILITY" changing a system scale by step-by-step expansion depending on the number of the documents / the users. It can enable all customers' document systems to realize "COMPLIANCE", "SECURITY", "RELIABILITY" easily. "LIBINITY Millemasse" is a high-performance filing system to keep a large quantity of documents and images for unification. It easily realizes high document management at a low cost.



Screen image of "LIBINITY Millemasse"

## Hitachi Systems &amp; Services, Ltd.

JR Shinagawa East Building, 2-18-1 Konan, Minato-ku, Tokyo, 108-8250, Japan  
Tel +81-3-3763-3264 Fax +81-3-3763-3291  
E-mail libinity@hitachi-system.co.jp  
URL <http://www.hitachi-system.co.jp/libinity/>

**ES-4-009**

**Management-related  
energy saving solutions**

## Office HVAC for Comfort and Energy Saving

### Environmental performance

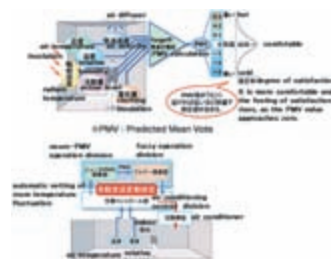
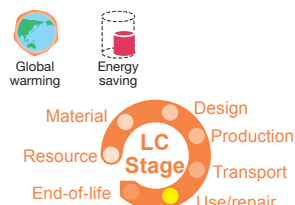
- Mitigation of climate change: 10-20% reduction of energy consumption by the reduced consumption of cool water, hot water and fan power and the prevention of excessive cooling and heating.
- Efficient use of resources: Control is executed by software. Minimization of hardware means resource saving in the manufacturing phase.

### Product performance

- Comfortable environment: Air-conditioning control based on Predicted Mean Vote (PMV) to maintain a comfortable indoor environment.

## TOSHIBA CORPORATION Social Infrastructure Systems Company

1-1, Shibaura 1-Chome, Minato-Ku, Tokyo, 105-8001, Japan  
Tel +81-3-3457-4368 Fax +81-3-5444-9280  
URL <http://www.toshiba.co.jp/index.htm>  
URL <http://www.toshiba.co.jp/env/en/report/index.htm>



Neuro-PMV Control

**ES-4-010**

**Management-related**

**consulting services for geothermal and hydraulic power generation**

## Consulting service for geothermal and hydraulic power generation

### Environmental performance

Mitsubishi Materials has long been actively involved in geothermal and hydraulic energy development and utilization acquired through our own underground resources business.

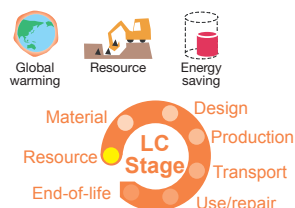
We have six hydroelectric power plants (approx. 17MW total) and two geothermal power plants (59.5MW total) in Japan. Geothermal power generation utilizes steam energy extracted from underground by drilling wells as deep as 2,000 meters.

It requires specialized techniques and technology to utilize effectively this kind of high temperature-underground resources in all stages of site survey, drilling, and maintenance of output power.

We have acquired the necessary techniques and technology through our direct involvement in developing and operating our two geothermal power plants. With this experience, we are actively participating in geothermal area surveys and technological development projects at home and abroad.

## Mitsubishi Materials Corporation (Geothermal & Electric Power Center)

1-297, Kitabukuro-cho, Omiya-ku, Saitama-shi, Saitama, 330-8508, Japan  
Tel +81-48-641-5624 Fax +81-48-641-5632  
URL <http://www.mmc.co.jp/corporate/en/index.html>  
URL <http://www.mmc.co.jp/corporate/en/corporate/business/energy.html>  
URL <http://www.mmc.co.jp/corporate/en/csr/csr.html>



Ohnuma Geothermal Power Plant (9.5MW)

Available in: Global

**ES-4-011**

**Management-related  
energy services**

**ESCO (Energy Service Company)**

**Environmental performance**

In projects undertaken between 2000 and 2007, we have achieved an aggregated reduction of approximately 220,000 tons per year of CO<sub>2</sub> emissions.

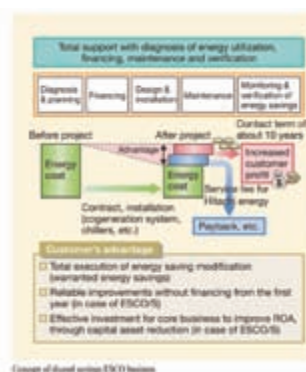
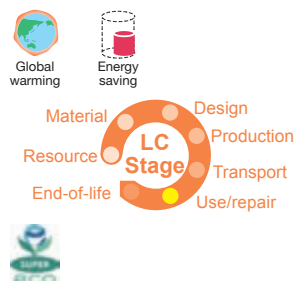
**Product performance**

The ESCO business forms a new business scheme that offers comprehensive services for energy saving to customers, and covers the cost required for repairing relevant equipment with a budget saved by energy saving. The service includes energy saving diagnosis, energy saving proposal, equipment installation, finance, and maintenance. The project aims to substantially reduce energy consumption and CO<sub>2</sub> emissions. Taking advantage of the Group's collective strengths, Hitachi has already achieved remarkable successes in a wide variety of sites, including factories, hospitals, office buildings, and research facilities.

**Hitachi, Ltd., Urban Planning and Development Systems**

14-1, Sotokanda 4-chome, Chiyoda-ku, Tokyo, 101-8010, Japan  
Tel +81-3-3620-1040 Fax +81-3-5697-2624  
E-mail info.toshi.bk@hitachi.com  
URL <http://www.hitachi.co.jp/products/urban/energy/index.html>

Available in: Japan, Philippines, Thailand, Singapore



ESCO (Energy Service Company)

**ES-4-012**

**Management-related  
wastewater management**

**Wastewater Treatment Technology—MSABP™, HiPOx™ and ELCAT™**

**Environmental performance**

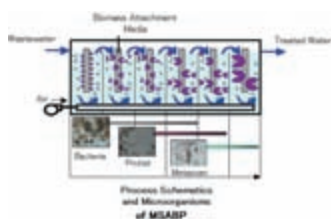
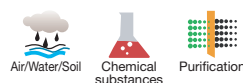
We deliver a total solution for water recycle/reuse through our environment-friendly technologies.

**Product performance**

- 1) MSABP: Multi-stage bioprocess utilizing micro-organism food chain
  - \* No waste sludge, small foot print and low operating cost (less energy and CO<sub>2</sub>)
  - \* System performance is consistent under large load fluctuations
  - \* Likely applicable to food/petroleum/chemical/pharmaceutical industries
- 2) HiPOx™: Innovative Advanced Oxidation Process (AOP) using hydrogen peroxide and multiple ozone injection
  - \* Decomposes 1,4-Dioxane, PPCPs and EDCs, etc.
- 3) ELCAT™: Electro-catalytic wastewater treatment process
  - \* High treatment capability for toxic, non-biodegradable materials
- 4) Carbon Fiber (CF) for wastewater treatment
  - \* CF naturally attracts living organisms and cleans up waste water

**Teijin Limited**

2-1, Kasumigaseki 3-chome, Chiyoda-ku, Tokyo, 100-8585, Japan  
Tel +81-3-3506-4593  
E-mail to.nishikawa@teijin.co.jp  
URL <http://www.teijin.co.jp/english/index.html>



**ES-5-001**

**Others**

## LCA system integration

### System Integration Life Cycle Assessment "SI-LCA"

#### Environmental performance

Quantitative evaluation methodology on the environmental load of system & service products has become increasingly important. Hitachi has developed "SI-LCA" (System Integration - Life Cycle Assessment) which is an environmental impact assessment methodology and a software program for the purpose of evaluating the effects on CO<sub>2</sub> emission of SI products and service over the entire life cycle.

#### Product performance

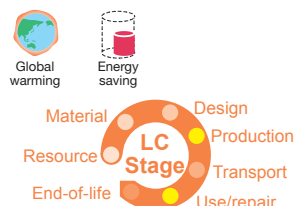
SI-LCA (System Integration - Life Cycle Assessment) has three features:

- (1) SI-LCA evaluates 10 lifecycle stages: procurement, design, shipment, transportation, installation, field operation, usage, maintenance, collection and recycling.
- (2) SI-LCA evaluates the environmental impact of hardware, software and services.
- (3) SI-LCA evaluates quantitatively both positive effect such as a reduction in the movement of people/mass and negative effects such as energy consumption during operation.

### Hitachi, Ltd.

Hitachi Omori 2nd Bldg., 27-18, Minami Oi 6-chome, Shinagawa-ku, Tokyo, 140-8572, Japan  
Tel +81-3-5471-2745 Fax +81-3-5471-2746

Available in: Japan



SI-LCA target stages

**ES-5-002**

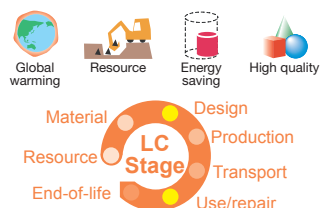
**Others**

## railway cars

### E2-Series of Railcars Conserved Energy

#### Environmental performance

As for energy consumption, by making improvements such as reduction in the weight of railcar bodies, the Shinkansen's energy consumption was reduced by about 30% compared to 20 years ago. Regenerative brakes utilize energy generated during the braking, and return this electricity to the overhead wires.



### East Japan Railway Company

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo, 151-8578, Japan  
Tel +81-3-5334-1122  
E-mail [eco@jreast.co.jp](mailto:eco@jreast.co.jp)  
URL <http://www.jreast.co.jp/eco/>

Available in: Tohoku, Joetsu, Nagano Shinkansen

E2-series for Asama and Hayate Shinkansen trains

## ES-5-003

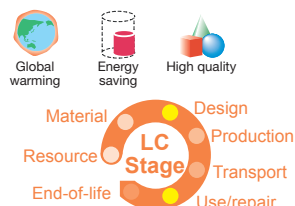
## Others

## rail transportation services

## The series N700 with enhanced energy efficiency

## Environmental performance

The Tokaido and Sanyo Shinkansen, playing an important role in the main intercity transportation in Japan, can be regarded as a transportation mode with more energy-efficient performance (e.g. lower CO<sub>2</sub> emissions per unit carriage of passengers) compared with other transportation modes such as airplanes. The Series N700, newly developed and commercially launched in the summer 2007 with the three concepts of "The fastest cutting edge rolling stock", "Superior comfort", and "Superior environmental performance", realized further energy efficiency, for example, by reducing air resistance as a result of the thorough pursuit of smooth body surface by developing a new nose shape and cover-all hood, and by introducing the body inclining system. JR Central and JR West plan to introduce 96 trainsets over the five years ending FY2011.



## Central Japan Railway Company / West Japan Railway Company

Central Japan Railway Company  
JR Central Towers, 1-1-4, Meieki, Nakamura-ku, Nagoya, Aichi, 450-6101, Japan  
URL <http://jr-central.co.jp>  
West Japan Railway Company  
4-24, Shibata 2-chome, Kita-ku, Osaka, 530-8341, Japan  
URL <http://www.westjr.co.jp>



Available in: Tokaido and Sanyo Shinkansen

Series N700

## ES-5-004

## Others

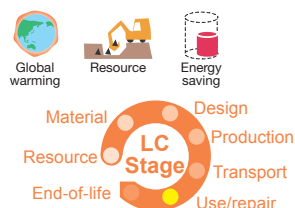
## rail transportation services

## Operation of the world's first diesel hybrid railcar

## Environmental performance

In July 2007, the world's first diesel hybrid railcars, the Kiha E200 Type, entered service on the Koumi Line. Diesel hybrid railcars operate efficiently by using electricity generated by a diesel engine to charge a battery which reduces emissions and by regenerative brakes, which charge the battery when braking. Efficiency in tests was approximately 20% better than a standard diesel railcar\*. The diesel hybrid railcar is quiet when idling at a station (approx. 30dB). Hazardous substances in the exhaust, such as NOx and graphite, are reduced approximately 60%.

\*Results are based on test runs on level ground. On the Koumi Line, which has steep grades, efficiency improved by approximately 10%.



## East Japan Railway Company

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo, 151-8578, Japan  
Tel +81-3-5334-1122  
URL <http://www.jreast.co.jp/eco/>



Available in: Koumi Line

The world's first diesel hybrid railcar Kiha E200 Type



ES-5-005

Others

## rail transportation services

## Environmentally Friendly E231 Series

## Environmental performance

The E231 series reduces operational energy consumption by 50% compared to that of the 103 series, and in terms of weight, 90% of the E231 series railcar can be recycled. Servicing the Yamanote, Takasaki, Utsunomiya, and other metropolitan lines, the E231 series currently realizes the most environmentally friendly design.



## East Japan Railway Company

2-2, Yoyogi 2-chome, Shibuya-ku, Tokyo, 151-8578, Japan  
Tel +81-3-5334-1122  
E-mail [eco@jreast.co.jp](mailto:eco@jreast.co.jp)  
URL <http://www.jreast.co.jp/eco/>



Available in: Metropolitan areas

E231 series run on the Utsunomiya Line

ES-5-006

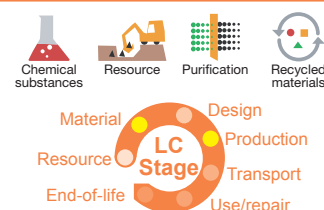
Others

## new year's cards

## Eco Green New Year's Cards (name-printing service available)

## Environmental performance

We develop environmentally friendly products. In 1988 in Hokkaido, we introduced an on-demand printer that uses only the amount of paper absolutely necessary to print New Year's cards. In 2004, we launched Cardbox — an e-commerce website for greeting cards and New Year's cards. Through these efforts, we have extricated ourselves from the conventional flow of business, which is characterized by significant print loss, and succeeded in labor savings. In 2008, we initiated a carbon offset business through afforestation and launched Green Eco New Year's Cards as part of the business. We also offer a name-printing service (for promotional products) on the Cardbox website and at retail stores nationwide. Using part of the proceeds from these sales, we plant trees in Nenga-no Mori (the New Year's Card Forest) in Hokkaido's Bihoro town, thereby offsetting approximately two kilograms of CO<sub>2</sub> for every 10 cards. In 2008, we sold 95,000 cards with a projected offset of about 19,000 kg of CO<sub>2</sub> in the autumn of 2009.



## Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan



Available in: Japan

Green Eco New Year's Cards

ES-5-007

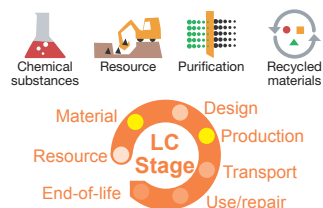
Others

new year's cards

## Eco Green New Year's Cards (postcards)

## Environmental performance

When we initiated a carbon offset business in 2008, we launched carbon offset-type Green Eco New Year's Cards in bags—a conventional way of selling cards—along with an opportunity for consumers to participate in afforestation initiatives. Specifically, we sold sets of three ecologically designed New Year's cards with lottery numbers and QR codes. The QR codes enable card recipients to see that approximately 400 grams of CO<sub>2</sub> is absorbed per card through afforestation. In 2008, 2,500 sets were sold at supermarkets, bookstores, fancy goods stores, etc. nationwide with a projected offset of about 5,000 kg of CO<sub>2</sub> by the autumn of 2009.



Green Eco New Year's Cards

## Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Available in: Japan

ES-5-008

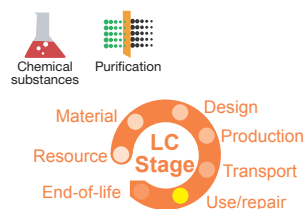
Others

printing services

## Waterless printing

## Environmental performance

Pripress Center Corporation promotes environmentally friendly eco printing methods, and recommends waterless printing as part of these efforts. Unlike the conventional method of offset printing, no dampening solution is used in this process. This enables printing without waste water and the adverse environmental effects associated with it.



Butterfly mark

## Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan

Available in: Japan



ES-5-009

Others

printing services

### Soy ink

#### Environmental performance

Pripress Center Corporation promotes the provision of environmentally friendly products and services, and recommends printing with soy ink as part of these efforts.

Soy ink is produced by replacing some of the petroleum solvents contained in conventional ink with a natural material extracted from soybeans. As it contains very low levels of volatile organic compounds (VOCs), it helps to prevent air pollution and improve work environments.



### Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan



Available in: Japan

Soy sticker

ES-5-010

Others

printing services

### Non-VOC ink

#### Environmental performance

Pripress Center Corporation promotes environmentally friendly products and services, and recommends printing with non-VOC ink as part of these efforts.

Non-VOC ink exerts a lower burden on the environment, as all petroleum solvents contained in conventional ink are replaced with vegetable-derived alternatives.



### Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan



Available in: Japan

Publications printed using non-VOC ink

Eco-materials

Eco-components

Eco-products

Eco-services // Others

1

2

3

4

5

## ES-5-011

## Others

## printing services

## Use of environmentally friendly printing paper

## Environmental performance

Pripress Center Corporation promotes environmentally friendly products and services, and recommends printing on paper certified by the Forest Stewardship Council (FSC) or paper produced from thinned wood as part of these efforts.

It is also important in terms of effective resource management to use paper containing materials from forests certified by the FSC as being properly managed for environmental conservation and paper produced from thinned wood, which is generated as a result of thinning out stumpage that grows densely in the course of forest development.



## Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan



Available in: Japan

Publications printed using paper produced from thinned wood

## ES-5-012

## Others

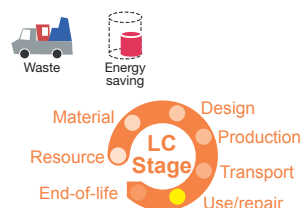
## printing services

## On-demand printing

## Environmental performance

Pripress Center Corporation promotes environmentally friendly products and services, and on-demand printing is one aspect of these efforts.

Unlike conventional offset printing, on-demand printing uses no printing plates, and the process is carried out directly onto the paper. Elimination of the need to make plates means lower energy consumption and higher material conservation. In addition, it is also possible to perform various types of printing in small lots (a process that is inefficient in offset printing), making the technique economically effective too.



## Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan



Available in: Japan

Examples of products printed using on-demand printing

ES-5-013

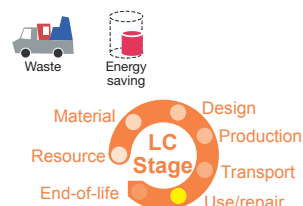
Others

## website constructing services

## KANTANET

## Environmental performance

Pripress Center Corporation promotes environmentally friendly products and services, and the KANTANET business blog is part of these efforts. Printed materials are a familiar and easy-to-read medium, and represent an effective and indispensable tool for disseminating information. However, page space is limited, and the resources consumed increase as the amount of information rises. The company recommends that websites also be used in the interests of resource conservation for situations in which printed materials are not absolutely necessary.



## Pripress Center Corporation

2-3, North2 West14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan



Available in: Japan

KANTANET

Eco-materials

Eco-components

Eco-products

Eco-services // Others

1

2

3

4

5

# **Classified index of goods and services**



# Classified index of goods and services

## ■ Eco-materials

### Metals

mold steel .....	EM-1-001, EM-1-002
steel pipes .....	EM-1-003, EM-1-004
steel materials .....	EM-1-005, EM-1-006
sheet steel .....	EM-1-007, EM-1-008, EM-1-009, EM-1-010, EM-1-011, EM-1-012, EM-1-013, EM-1-014, EM-1-015, EM-1-016, EM-1-017, EM-1-018
coated steel .....	EM-1-019, EM-1-020, EM-1-021
construction methods .....	EM-1-022
copper alloy .....	EM-1-023, EM-1-024
coated aluminum metal .....	EM-1-025
granulated blast furnace slag .....	EM-1-026

### Polymers

epoxy molding compound .....	EM-2-001
wafer coating materials .....	EM-2-002
laminates material systems .....	EM-2-003
biodegradable resin .....	EM-2-004, EM-2-005, EM-2-006, EM-2-007
plastic bags .....	EM-2-008
plastic resin .....	EM-2-009

### Natural materials

bamboo flooring .....	EM-3-001
tatami matting .....	EM-3-002
heat-resistant polylactic acid .....	EM-3-003
biodegradable films .....	EM-3-004
biodegradable trays .....	EM-3-005
corn fiber .....	EM-3-006, EM-3-007, EM-3-008, EM-3-009, EM-3-010, EM-3-011, EM-3-012, EM-3-013, EM-3-014
cotton fabrics .....	EM-3-015, EM-3-016, EM-3-017, EM-3-018
pure worsted yarn .....	EM-3-019

### Foam

phenolic foam insulation .....	EM-4-001
--------------------------------	----------

### Ceramics and glass

optical glass .....	EM-5-001
ceramic, stone, and clay products .....	EM-5-002
ceramic bearing balls .....	EM-5-003
granulated blast furnace slag .....	EM-5-004
carbon-fiber sheets for repairing .....	EM-5-005
blast furnace cement .....	EM-5-006

steel bars .....	EM-5-007
------------------	----------

## Composites

reconstituted wood .....	EM-6-001
adhesive products .....	EM-6-002
rubber-reforming materials .....	EM-6-003

## Others

polycrystalline silicon .....	EM-7-001
columnar-crystal large-diameter silicon .....	EM-7-002
construction materials .....	EM-7-003
demister .....	EM-7-004
concrete blocks .....	EM-7-005
photo voltaic systems .....	EM-7-006
poly lactic acid .....	EM-7-007
ammonia .....	EM-7-008

## ■ Eco-components

### Construction components

fiber wall materials .....	EC-1-001
heat insulating films .....	EC-1-002

### Electrical and electronic components

wire cables .....	EC-2-001, EC-2-002, EC-2-003, EC-2-004
motors .....	EC-2-005, EC-2-006
electric contacts .....	EC-2-007
audio cables .....	EC-2-008
X-ray tube assemblies .....	EC-2-009
CCD cameras .....	EC-2-010
rechargeable batteries .....	EC-2-011
secondary batteries .....	EC-2-012
alkaline dry batteries .....	EC-2-013
nickel metal hydride batteries .....	EC-2-014, EC-2-015
button batteries .....	EC-2-016
solar charging controllers .....	EC-2-017
lighting .....	EC-2-018

### Semiconductor related devices and component

parts of semiconductor manufacturing equipment .....	EC-3-001
films for solar cells .....	EC-3-002
permanent magnets .....	EC-3-003, EC-3-004
power modules .....	EC-3-005
single chip inverter .....	EC-3-006
wiring devices .....	EC-3-007
soft magnetic parts .....	EC-3-008
wireless modules .....	EC-3-009
detector switches .....	EC-3-010



circuit substrate for motor-drives .....	EC-3-011
solid state relays .....	EC-3-012
LCD modules for mobile phones .....	EC-3-013
flash memory .....	EC-3-014

## Machine parts

parabolic mirrors .....	EC-4-001
stabilizers .....	EC-4-002
heat transfer tubes .....	EC-4-003
magnet rolls for feeding toner .....	EC-4-004

## Automobile parts

power cable harnesses .....	EC-5-001
parts for motor vehicles/motorcycles .....	EC-5-002
tires for passenger cars .....	EC-5-003, EC-5-004, EC-5-005, EC-5-006, EC-5-007
tires for trucks and buses .....	EC-5-008, EC-5-009, EC-5-010, EC-5-011
rubber hoses .....	EC-5-012
parts for driving, transmission, and operating components .....	EC-5-013, EC-5-014
parts for internal combustion engines .....	EC-5-015, EC-5-016, EC-5-017
parts for chassis and bodies .....	EC-5-018
alternators .....	EC-5-019
titanium mufflers .....	EC-5-020

## Packaging

beverage for baby & kids .....	EC-6-001
paper beverage containers .....	EC-6-002
beverage .....	EC-6-003, EC-6-004
beer .....	EC-6-005, EC-6-006, EC-6-007
wine .....	EC-6-008
whisky .....	EC-6-009
films .....	EC-6-010, EC-6-011, EC-6-012, EC-6-013
beverage filling systems .....	EC-6-014
biodegradable containers .....	EC-6-015
biodegradable foam .....	EC-6-016
plastic cups .....	EC-6-017
paper trays .....	EC-6-018
aluminum beverage cans .....	EC-6-019
food boxes .....	EC-6-020
polylactic acid .....	EC-6-021, EC-6-022
plastic products .....	EC-6-023
paper food packaging containers .....	EC-6-024

## Others

color filters .....	EC-7-001
---------------------	----------

## ■ Eco-products

### Home electric appliances/lighting

cooking heaters .....	EP-1-001, EP-1-002, EP-1-003
rice cooker & warmer.....	EP-1-004, EP-1-005, EP-1-006
microwave ovens.....	EP-1-007, EP-1-008
steam microwave ovens .....	EP-1-009
refrigerators .....	EP-1-010, EP-1-011, EP-1-012, EP-1-013, EP-1-014
food waste disposers.....	EP-1-015
food waste dryers .....	EP-1-016, EP-1-017, EP-1-018
washing machines .....	EP-1-019, EP-1-020
washing machines with drier .....	EP-1-021, EP-1-022, EP-1-023
vacuum cleaners .....	EP-1-024, EP-1-025, EP-1-026, EP-1-027
air purifiers.....	EP-1-028, EP-1-029, EP-1-030
air conditioners .....	EP-1-031, EP-1-032, EP-1-033, EP-1-034, EP-1-035, EP-1-036, EP-1-037, EP-1-038, EP-1-039, EP-1-040
dishwashers .....	EP-1-041, EP-1-042
hair dryers .....	EP-1-043
shavers.....	EP-1-044
televisions.....	EP-1-045, EP-1-046, EP-1-047, EP-1-048, EP-1-049, EP-1-050, EP-1-051, EP-1-052, EP-1-053, EP-1-054
video cameras .....	EP-1-055, EP-1-056, EP-1-057
blu-ray disc players .....	EP-1-058
blu-ray disc recorders .....	EP-1-059
projectors .....	EP-1-060
digital set top boxes .....	EP-1-061
DVD recorders.....	EP-1-062
IC recorders.....	EP-1-063
audio players .....	EP-1-064
compact stereo systems.....	EP-1-065
network disk recorders.....	EP-1-066
HDD & DVD recorders.....	EP-1-067
home IT systems .....	EP-1-068
memory cards.....	EP-1-069
hard disk drives .....	EP-1-070
pipe fan .....	EP-1-071
water pumps.....	EP-1-072
alkaline ion water purifiers.....	EP-1-073
hot-water supply systems .....	EP-1-074
quartz infrared heaters.....	EP-1-075
solar charge controllers.....	EP-1-076
energy saving device .....	EP-1-077
portable power packs .....	EP-1-078
televisions/refrigerators .....	EP-1-079

fluorescent lamps .....	EP-1-080, EP-1-081, EP-1-082, EP-1-083, EP-1-084, EP-1-085, EP-1-086
mercury alternative lamps .....	EP-1-087
LED arrays .....	EP-1-088, EP-1-089, EP-1-090, EP-1-091, EP-1-092, EP-1-093, EP-1-094, EP-1-095
amalgam lamps .....	EP-1-096
ceramic metal halide lamps .....	EP-1-097
halogen lamps .....	EP-1-098
lamps .....	EP-1-099, EP-1-100
fluorescent lighting .....	EP-1-101, EP-1-102, EP-1-103, EP-1-104
LED solar power lighting .....	EP-1-105
security lighting .....	EP-1-106
induction lighting .....	EP-1-107
solar power lighting .....	EP-1-108, EP-1-109
fluorescent lamp stabilizers .....	EP-1-110
starters .....	EP-1-111
natural light systems .....	EP-1-112
digital cameras .....	EP-1-113, EP-1-114, EP-1-115, EP-1-116, EP-1-117, EP-1-118

## **Carriers/automobiles**

automobiles .....	EP-2-001, EP-2-002, EP-2-003, EP-2-004, EP-2-005, EP-2-006, EP-2-007, EP-2-008, EP-2-009, EP-2-010, EP-2-011, EP-2-012, EP-2-013, EP-2-014, EP-2-015, EP-2-016, EP-2-017, EP-2-018, EP-2-019, EP-2-020, EP-2-021, EP-2-022, EP-2-023, EP-2-024, EP-2-025, EP-2-026, EP-2-027, EP-2-028, EP-2-029, EP-2-030
trucks .....	EP-2-031
buses .....	EP-2-032
motorcycles .....	EP-2-033
bicycles .....	EP-2-034
forklifts .....	EP-2-035
monorails .....	EP-2-036
energy storage systems for rolling stock .....	EP-2-037
car navigation systems .....	EP-2-038

## **OA/IT equipment**

multifunctional copy machines/printers .....	EP-3-001, EP-3-002, EP-3-003, EP-3-004, EP-3-005, EP-3-006, EP-3-007, EP-3-008, EP-3-009, EP-3-010, EP-3-011, EP-3-012, EP-3-013, EP-3-014, EP-3-015, EP-3-016, EP-3-017, EP-3-018, EP-3-019, EP-3-020, EP-3-021, EP-3-022, EP-3-023, EP-3-024, EP-3-025
--	--

printers .....	EP-3-026, EP-3-027, EP-3-028, EP-3-029, EP-3-030, EP-3-031, EP-3-032, EP-3-033, EP-3-034
scanners.....	EP-3-035, EP-3-036, EP-3-037, EP-3-038, EP-3-039, EP-3-040, EP-3-041, EP-3-042, EP-3-043, EP-3-044, EP-3-045, EP-3-046, EP-3-047
projectors .....	EP-3-048, EP-3-049, EP-3-050
DLP™ projectors.....	EP-3-051
LCD projectors .....	EP-3-052
network cameras .....	EP-3-053
cameras .....	EP-3-054
facsimiles.....	EP-3-055, EP-3-056
handy terminals .....	EP-3-057, EP-3-058
mobile information terminals .....	EP-3-059
cellular/PHS telephone sets .....	EP-3-060, EP-3-061
personal computers .....	EP-3-062, EP-3-063, EP-3-064, EP-3-065, EP-3-066
office computer systems.....	EP-3-067
full-IP telephone systems .....	EP-3-068, EP-3-069
hard disks .....	EP-3-070
PC servers .....	EP-3-071, EP-3-072
enterprise server.....	EP-3-073
blade servers.....	EP-3-074
adapters .....	EP-3-075
switchers .....	EP-3-076
private branch exchange.....	EP-3-077
disk arrays.....	EP-3-078
displays .....	EP-3-079
external magnetic disk equipment .....	EP-3-080
DVD multi drives.....	EP-3-081
electronic boards .....	EP-3-082
electronic cash registers .....	EP-3-083
checkout scanners.....	EP-3-084
decolorable toner .....	EP-3-085
automated teller machines .....	EP-3-086
cash dispense machines.....	EP-3-087

## Office supplies/furniture

chairs.....	EP-4-001, EP-4-002, EP-4-003, EP-4-004, EP-4-005, EP-4-006, EP-4-007, EP-4-008, EP-4-009, EP-4-010, EP-4-011, EP-4-012, EP-4-013, EP-4-014, EP-4-015, EP-4-016, EP-4-017, EP-4-018
chairs & desks .....	EP-4-019
desks.....	EP-4-020, EP-4-021
office partitions .....	EP-4-022
wiring floors .....	EP-4-023

chalks .....	EP-4-024
paper .....	EP-4-025
calendar .....	EP-4-026, EP-4-027, EP-4-028

## Apparel/textiles

baby ware.....	EP-5-001
bags .....	EP-5-002, EP-5-003, EP-5-004, EP-5-005, EP-5-006, EP-5-007, EP-5-008, EP-5-009, EP-5-010, EP-5-011, EP-5-012, EP-5-013
headwear .....	EP-5-014, EP-5-015, EP-5-016, EP-5-017
footwear .....	EP-5-018
number cards .....	EP-5-019
wallets .....	EP-5-020

## Household goods and equipment

craft tapes .....	EP-6-001
fit light tapes .....	EP-6-002
toilet rolls .....	EP-6-003, EP-6-004, EP-6-005, EP-6-006, EP-6-007
system kitchens .....	EP-6-008
hot-water supply systems .....	EP-6-009
cogeneration systems .....	EP-6-010, EP-6-011, EP-6-012
cooking stoves.....	EP-6-013
heat pump water heaters .....	EP-6-014
heat pump water heating systems.....	EP-6-015, EP-6-016, EP-6-017, EP-6-018, EP-6-019
heat pump water heater floor heating systems.....	EP-6-020
water/space heaters .....	EP-6-021
floor heating systems.....	EP-6-022
generators .....	EP-6-023
photovoltaic inverter.....	EP-6-024
photovoltaic modules .....	EP-6-025
solar power systems.....	EP-6-026
elevators.....	EP-6-027
hand dryers .....	EP-6-028
ventilators .....	EP-6-029
metal sanitary ware .....	EP-6-030, EP-6-031
faucets .....	EP-6-032
bath supplies .....	EP-6-033, EP-6-034, EP-6-035, EP-6-036, EP-6-037, EP-6-038, EP-6-039, EP-6-040
toilets.....	EP-6-041, EP-6-042, EP-6-043, EP-6-044, EP-6-045, EP-6-046, EP-6-047, EP-6-048, EP-6-049, EP-6-050, EP-6-051, EP-6-052, EP-6-053, EP-6-054, EP-6-055, EP-6-056, EP-6-057, EP-6-058, EP-6-059, EP-6-060, EP-6-061, EP-6-062, EP-6-063
urine collectors .....	EP-6-064

detergents .....	EP-6-065, EP-6-066, EP-6-067, EP-6-068, EP-6-069, EP-6-070, EP-6-071, EP-6-072, EP-6-073, EP-6-074
washing balls .....	EP-6-075
adhesives .....	EP-6-076
mattresses.....	EP-6-077
chopping boards .....	EP-6-078
heat ray shielding paints .....	EP-6-079
paints.....	EP-6-080, EP-6-081, EP-6-082, EP-6-083
wet sheet.....	EP-6-084
bowls.....	EP-6-085, EP-6-086
chopsticks.....	EP-6-087
chopstick boxes .....	EP-6-088, EP-6-089
heat retaining device for bathwater .....	EP-6-090
glassware .....	EP-6-091
fragrances .....	EP-6-092, EP-6-093, EP-6-094

## **Building and civil engineering**

vertical greening system units .....	EP-7-001
binders .....	EP-7-002, EP-7-003
insulating panels for residential houses .....	EP-7-004
paints.....	EP-7-005, EP-7-006
water synthetic resin paints.....	EP-7-007
pavement blocks for preventing air pollution by photo-catalysis.....	EP-7-008
construction materials .....	EP-7-009, EP-7-010, EP-7-011, EP-7-012, EP-7-013, EP-7-014, EP-7-015
block pavement systems with long-term water-holding function.....	EP-7-016
tiles.....	EP-7-017, EP-7-018, EP-7-019, EP-7-020, EP-7-021, EP-7-022, EP-7-023
floor materials .....	EP-7-024
reform doors .....	EP-7-025
thermal insulating window sashes .....	EP-7-026
air conditioning systems.....	EP-7-027
air conditioners .....	EP-7-028, EP-7-029, EP-7-030, EP-7-031, EP-7-032, EP-7-033
freezing/refrigerating/air conditioning systems.....	EP-7-034
mirror duct systems .....	EP-7-035
architecture.....	EP-7-036, EP-7-037, EP-7-038, EP-7-039, EP-7-040, EP-7-041, EP-7-042
landscape design.....	EP-7-043
urban planning and management.....	EP-7-044
green roof systems .....	EP-7-045
bio green grass.....	EP-7-046
concrete products .....	EP-7-047
plastic resin.....	EP-7-048
floating systems.....	EP-7-049
continuous subterranean diaphragm wall members.....	EP-7-050
carpet tile.....	EP-7-051

## Machines and equipment

air conditioning systems .....	EP-8-001
office air conditioners .....	EP-8-002, EP-8-003, EP-8-004
hydraulic excavators .....	EP-8-005
liquefied CO <sub>2</sub> manufacturing systems .....	EP-8-006
conveyer rubber belts .....	EP-8-007
rubber hoses .....	EP-8-008
tire temporary mobility restoration kits .....	EP-8-009
biomass boiler systems .....	EP-8-010
generators .....	EP-8-011
power boilers .....	EP-8-012
heat pump water heaters for business use .....	EP-8-013, EP-8-014
pumps .....	EP-8-015
textile machinery .....	EP-8-016
computerized numerical controllers .....	EP-8-017
electronic microscopes .....	EP-8-018, EP-8-019
wire electric discharge machines .....	EP-8-020
valves .....	EP-8-021
assembly equipment .....	EP-8-022
welding tips .....	EP-8-023
power transformers .....	EP-8-024
cogeneration .....	EP-8-025
polymer electrolyte fuel cells .....	EP-8-026, EP-8-027
solid oxide fuel cells .....	EP-8-028
vending machines .....	EP-8-029
gas meters .....	EP-8-030
wind turbines .....	EP-8-031, EP-8-032
motors .....	EP-8-033
standard transformers .....	EP-8-034
uninterruptible power supplies .....	EP-8-035
turbo-molecular pumps .....	EP-8-036
compact green laser modules .....	EP-8-037
medical equipment .....	EP-8-038, EP-8-039, EP-8-040, EP-8-041, EP-8-042, EP-8-043, EP-8-044, EP-8-045
measuring instruments .....	EP-8-046, EP-8-047, EP-8-048, EP-8-049, EP-8-050, EP-8-051, EP-8-052, EP-8-053, EP-8-054
signal analyzers .....	EP-8-055
catalytic PFC decomposers .....	EP-8-056
digital subscriber line terminal devices .....	EP-8-057
three-phase capacitance switchers .....	EP-8-058
ozone generators .....	EP-8-059
electronic hybrid functional control panels .....	EP-8-060
LPG regulators .....	EP-8-061
switchgear .....	EP-8-062, EP-8-063
air compressors .....	EP-8-064, EP-8-065
condensing unit .....	EP-8-066, EP-8-067



chiller .....	EP-8-068, EP-8-069, EP-8-070, EP-8-071, EP-8-072
lighting control systems .....	EP-8-073
programmable displays .....	EP-8-074
UV curing systems .....	EP-8-075
scrubber .....	EP-8-076, EP-8-077, EP-8-078
aerators .....	EP-8-079
reactors .....	EP-8-080
turbine systems .....	EP-8-081
turbine generators .....	EP-8-082
residential fuel cells .....	EP-8-083
hydro-power generation systems .....	EP-8-084
protective relays .....	EP-8-085
high frequency relays .....	EP-8-086
traction motors .....	EP-8-087
gas-insulated switchgears .....	EP-8-088
remote terminal units for distribution automation systems .....	EP-8-089
distribution transformers .....	EP-8-090
switchboards .....	EP-8-091, EP-8-092, EP-8-093
power meters .....	EP-8-094
modular power management .....	EP-8-095
fluoride gas capture abatement systems .....	EP-8-096
purifying systems .....	EP-8-097
water purification systems .....	EP-8-098
recycling systems .....	EP-8-099, EP-8-100
energy collection systems .....	EP-8-101
recycle systems .....	EP-8-102
elevators .....	EP-8-103
room dryers .....	EP-8-104
demisters .....	EP-8-105, EP-8-106, EP-8-107
demister filters .....	EP-8-108
oil .....	EP-8-109, EP-8-110, EP-8-111, EP-8-112, EP-8-113, EP-8-114, EP-8-115

## **Others**

elemental feeds .....	EP-9-001, EP-9-002, EP-9-003
fertilizers .....	EP-9-004, EP-9-005
wood pellet heating burners .....	EP-9-006
jelly .....	EP-9-007, EP-9-008
congee .....	EP-9-009, EP-9-010, EP-9-011
peanut milk .....	EP-9-012
soup .....	EP-9-013
displays .....	EP-9-014
mechanical rubber products .....	EP-9-015
daily disposable soft contact lenses .....	EP-9-016
photovoltaic modules .....	EP-9-017, EP-9-018
field microscopes .....	EP-9-019
laser rangefinders .....	EP-9-020

lenses .....	EP-9-021
electronic toll collection (ETC) devices .....	EP-9-022
memory card camera recorders .....	EP-9-023, EP-9-024
DVD/CD discs .....	EP-9-025
toys .....	EP-9-026
wrist watches .....	EP-9-027
solar chargers .....	EP-9-028
pens .....	EP-9-029, EP-9-030, EP-9-031, EP-9-032
drawing boards .....	EP-9-033, EP-9-034, EP-9-035
drawing paper .....	EP-9-036
handmade paper .....	EP-9-037
scrub pads .....	EP-9-038
file folders .....	EP-9-039, EP-9-040, EP-9-041, EP-9-042, EP-9-043, EP-9-044, EP-9-045, EP-9-046, EP-9-047
clipboards .....	EP-9-048
towels .....	EP-9-049, EP-9-050
dust cleaners .....	EP-9-051
glasses .....	EP-9-052
fonts .....	EP-9-053

## ■ Eco-services

### Product-related services

returnable container managing systems .....	ES-1-001
treatment of metal surfaces .....	ES-1-002
green gifts .....	ES-1-003
elevator refurbishment services .....	ES-1-004

### Reuse and recycling services

retreaded tires .....	ES-2-001
recycling systems .....	ES-2-002, ES-2-003, ES-2-004, ES-2-005, ES-2-006, ES-2-007, ES-2-008, ES-2-009, ES-2-010, ES-2-011

### Outsourcing services

data deletion management .....	ES-3-001
pipe flushing services .....	ES-3-002
energy management services .....	ES-3-003
landfill gas collection volume evaluation .....	ES-3-004

### Management-related services

package software .....	ES-4-001, ES-4-002
environmental management .....	ES-4-003
environmental education content .....	ES-4-004
LCA software .....	ES-4-005, ES-4-006
library systems .....	ES-4-007

document solutions .....	ES-4-008
energy saving solutions .....	ES-4-009
consulting services for geothermal and hydraulic power generation .....	ES-4-010
energy services .....	ES-4-011
wastewater management.....	ES-4-012

## Others

LCA system integration .....	ES-5-001
railway cars .....	ES-5-002
rail transportation services .....	ES-5-003, ES-5-004, ES-5-005
new year's cards.....	ES-5-006, ES-5-007
printing services.....	ES-5-008, ES-5-009, ES-5-010, ES-5-011, ES-5-012
website constructing services .....	ES-5-013

# **Company list**



# Company list

## A

Acircle Corporation .....	EP-6-077
Active Life co.ltd. ....	EP-4-025, EP-5-019
Ajinomoto Co., Inc. ....	EP-9-001, EP-9-002, EP-9-003
Alfa Green, ltd .....	EP-7-002, EP-7-003
Anritsu Corporation.....	EP-8-048, EP-8-049, EP-8-055
Asahi Breweries, Ltd.....	EC-6-005, EC-6-006, EC-6-007, EC-6-008
Asahi Food & Healthcare Co., Ltd.....	EP-9-005
ASAHI KASEI CONSTRUCTION MATERIALS CORPORATION .....	EM-4-001
Asahi Soft Drinks Co., Ltd.....	EC-6-003, EC-6-004

## B

Babcock-Hitachi K.K. ....	EP-8-012
BNF CO.,LTD. ....	EP-9-051
Bokwang Ceramics, Ltd.....	EP-6-048, EP-6-049, EP-6-050, EP-6-051
Bridgestone Corporation .....	EM-6-002, EC-3-001, EC-3-002, EC-5-002, EC-5-003, EC-5-004, EC-5-005, EC-5-006, EC-5-007, EC-5-008, EC-5-009, EC-5-010, EC-5-011, EP-8-007, EP-8-008, EP-8-009, EP-9-014, EP-9-015, ES-2-001

## C

CANON ELECTRONICS INC. ....	EP-3-036, EP-3-037, EP-3-038, EP-3-057, EP-3-058
CANON INC. ....	EP-1-116, EP-3-001, EP-3-002, EP-3-003, EP-3-004, EP-3-005, EP-3-006, EP-3-048, EP-3-053, EP-9-021, EP-3-007, EP-3-035, EP-3-049
Central Japan Railway Company / West Japan Railway Company .....	ES-5-003
CONDE HOUSE co., ltd.....	EP-4-015, EP-4-016, EP-4-017, EP-4-018

## D

DAE SHIN INDUSTRIAL CO.,LTD .....	EM-7-004, EP-8-105, EP-8-106, EP-8-107, EP-8-108
DAIKIN INDUSTRIES, LTD. ....	EP-1-032, EP-1-033, EP-6-015, EP-6-016, EP-7-028, EP-7-029, EP-7-030, EP-7-031, EP-7-032, EP-7-033, EP-7-034
Dai Nippon Printing Co., Ltd. ....	EC-6-011, EC-6-012, EC-6-013, EC-6-014, EC-6-017, EC-6-018
DCT Co.,Ltd .....	EP-1-111
Doinky Doodles! .....	EP-5-012

## E

EARTH KAKEN Corporation.....	EP-7-005
East Japan Railway Company .....	ES-5-002, ES-5-004, ES-5-005
EBARA CORPORATION .....	EP-8-015, EP-8-072, EP-8-096
Ecowell Co., Ltd.....	EP-1-017, EP-1-018
Elite Information Industry .....	EP-9-039, EP-9-040, EP-9-041, EP-9-042, EP-9-043, EP-9-044, EP-9-045, EP-9-046, EP-9-047, EP-9-048
Energy Partnership.....	EP-1-077, EP-1-102, EP-1-107
EnGro Corporation Ltd.....	EM-5-004, EM-5-006
ENWPC CORP.....	EP-7-010, EP-7-011, EP-7-024
EPSON DIRECT CORPORATION.....	EP-3-062, EP-3-063
Eye-biz Pte Ltd. ....	EP-9-052

## F

Fuji Electric Systems Co.,Ltd .....	EP-8-091, EP-8-092, EP-8-093
FUJIKOKI Co.Ltd.....	EP-8-070
Fujitsu Frontech Limited.....	EP-3-059
Fujitsu Limited .....	EP-3-065, EP-3-066, EP-3-072, EP-3-073, EP-3-079
Fuji Xerox Co., Ltd.....	EP-3-013, EP-3-029, EP-3-030



FURSYS,INC..... EP-4-001, EP-4-021, EP-4-022

## G

Gastech Industries..... EP-8-061

Golden Pace Enterprise..... EP-1-096

Green Chemical Co., Ltd ..... EM-2-004, EM-2-005, EM-2-006, EM-2-007

Grenzone Pte Ltd. .... EM-7-006, EP-1-078, EP-1-089, EP-1-099,  
EP-1-108, EP-1-109, EP-7-049, EP-8-094,  
EP-9-028

Gruppo Pieta CO., LTD..... EP-6-090

GS Caltex Corporation ..... EP-8-109, EP-8-110, EP-8-111, EP-8-112,  
EP-8-113, EP-8-114, EP-8-115

Gukpyeong R.I.C Corporation..... EP-6-092, EP-6-093, EP-6-094

## H

HAKUICHI CO. Ltd. .... EP-6-085, EP-6-086, EP-6-087, EP-6-088,  
EP-6-089

HANCHANG PAPER CO., LTD..... EM-7-007, EC-6-021, EC-6-022

HANKOOK SHINHWA PAINT ..... EP-6-083

HANYO SCIENCE CO.,LTD. .... EP-9-004

HATTORI PAPER MFG.Co.,Ltd. .... EP-6-065, EP-6-084

Hitachi-Omron Terminal Solutions, Corp..... EP-3-086, EP-3-087

Hitachi Appliances, Inc. .... EP-1-001, EP-1-006, EP-1-008, EP-1-012,  
EP-1-015, EP-1-019, EP-1-020, EP-1-025,  
EP-1-029, EP-1-035, EP-1-072, EP-6-019,  
EP-8-013, EP-8-068

Hitachi Cable, Ltd. .... EC-2-001, EC-2-002, EC-2-003, EC-2-004,  
EC-3-007, EC-4-003, EC-5-001, EC-5-012

Hitachi Chemical Co., Ltd..... EM-2-003, EC-5-018, ES-2-005

Hitachi Chemical Industrial Materials Co.,Ltd..... EP-7-007

Hitachi Communication technologies, Ltd..... EP-3-077

Hitachi Construction Machinery Co., Ltd..... EP-8-005

Hitachi Global Storage Technologies..... EP-3-070

Hitachi High-Tech Instruments Co., Ltd. .... EP-8-022

Hitachi High-Technologies Corporation .....	EP-8-018, EP-8-019, EP-8-046
Hitachi High-Tech Trading Corporation.....	EP-8-047
Hitachi Industrial Equipment Systems Co.,Ltd. ....	EP-8-033, EP-8-034, EP-8-064, EP-8-065
Hitachi Lighting, Ltd. ....	EP-1-086, EP-1-087, EP-1-090
Hitachi, Ltd. ....	EC-3-006, EP-1-048, EP-1-050, EP-1-055, EP-1-060, EP-2-036, EP-3-074, EP-8-031, EP-8-035, EP-8-056, ES-5-001
Hitachi, Ltd., Automotive Systems.....	EC-5-013, EC-5-015, EC-5-016, EC-5-019
Hitachi, Ltd., Disk Array Systems Division .....	EP-3-080
Hitachi, Ltd., Platform Solutions Division .....	EP-3-067
Hitachi, Ltd., Urban Planning and Development Systems .....	ES-4-011
Hitachi Maxell, Ltd. ....	EC-2-016
Hitachi Medical Corporation .....	EP-8-038, EP-8-039, EP-8-040, EP-8-041
Hitachi Metals, Ltd. ....	EM-1-001, EM-1-002, EC-3-003, EC-3-004, EC-5-017, ES-1-002
Hitachi Metals Singapore Pte. Ltd. ....	EC-3-008
Hitachi Plant Technologies, Ltd. ....	EP-7-027, EP-8-001, EP-8-006, EP-8-098
Hitachi Software Engineering Co., Ltd.....	ES-4-001, ES-4-002
Hitachi Systems & Services, Ltd. ....	ES-4-007, ES-4-008
Hitachi Valve, Ltd. ....	EP-8-021
Holcim (Singapore) Pte Ltd.....	EP-7-012, EP-7-013, EP-7-014, EP-7-015
Honda Motor Co., Ltd. ....	EP-2-027, EP-2-029, EP-2-033, EP-6-023
HUMAN Care Innovation Venture Company, Hitachi, Ltd.....	EP-6-064

## I

Ideas & Solutions.....	EM-3-005, EP-5-013, EP-9-036, EP-9-037
IGTECH .....	EP-6-075
IKEHIKO CORPORATION Co.,Ltd.....	EM-3-002, EC-1-001
Imation Corp. Japan .....	EP-9-025, ES-3-001
INAX Corporation .....	EP-6-031, EP-6-042, EP-6-043, EP-7-017, EP-7-018, EP-7-019, EP-7-020, EP-7-021, EP-7-022, EP-7-023
Inovex Enterprises Pvt. Ltd. ....	EP-9-038
ITO EN, LTD.....	ES-2-009

ITOKI CORPORATION.....EP-4-014, EP-4-020

## J

Japan Environmental Management Association for Industry (JEMAI) ..... ES-4-005  
 JAPAN NEW METALS CO.,LTD ..... ES-2-007  
 JEMCO Inc. ....EM-7-002  
 JFE Engineering Corporation .....EP-8-002, EP-8-010, EP-8-011  
 JFE Steel Corporation ..... EM-1-003, EM-1-004, EM-1-005, EM-1-007,  
 EM-1-008, EM-1-009, EM-1-010, EM-1-011,  
 EM-1-012, EM-1-013, EM-1-014, EM-5-002

## K

Kajima Corporation..... EM-7-005, EP-7-047, ES-3-004  
 Kanematsu corporation ..... EC-2-014  
 KAWASAKI HEAVY INDUSTRIES, LTD..... EC-2-015  
 Korea UB Clean Co, Ltd. .... EM-3-004, EC-6-015, EC-6-016  
 Kotobuki Paper Co.Ltd.....EP-6-003, EP-6-004, EP-6-005, EP-6-006,  
 EP-6-007  
 KUBOTA Corporation ..... EP-7-046  
 KURABO INDUSTRIES LTD..... EM-3-015, EM-3-016, EM-3-017, EM-3-018,  
 EM-3-019  
 KYOCERAMITA ..... EP-3-019, EP-3-020, EP-3-021, EP-3-022,  
 EP-3-023, EP-3-024, EP-3-025, EP-3-032

## L

Livingwisdom Co.,Ltd..... EP-6-078  
 Loofenlee Co., Ltd. .... EP-1-016

## M

Materialhouse Co.,LTD .....EP-1-100, EP-1-112  
 Microwave Packaging Singapore Pte Ltd..... EC-6-024  
 MIRACOO Co., Ltd. .... EP-7-006  
 Mitsubishi Aluminum Co., Ltd. ....EM-1-025

Mitsubishi Electric Corporation .....	EC-3-005, EC-5-014, EP-1-010, EP-1-028, EP-1-037, EP-1-038, EP-1-039, EP-1-040, EP-1-074, EP-1-103, EP-6-009, EP-6-020, EP-6-024, EP-6-025, EP-6-027, EP-6-028, EP-6-029, EP-8-017, EP-8-020, EP-8-024, EP-8-050, EP-8-051, EP-8-052, EP-8-053, EP-8-054, EP-8-057, EP-8-058, EP-8-059, EP-8-060, EP-8-063, EP-8-071, ES-4-003
Mitsubishi Electric Lighting Corporation .....	EP-1-095
MITSUBISHI ELECTRIC OSRAM Ltd. ....	EP-1-080, EP-1-083, EP-1-098
Mitsubishi Fuso Truck and Bus Corporation .....	EP-2-031, EP-2-032
Mitsubishi Materials C.M.I. Corporation .....	EC-2-007
Mitsubishi Materials Corporation .....	EP-6-079, EP-7-008, EP-7-009, EP-7-016
Mitsubishi Materials Corporation (Geothermal & Electric Power Center) .....	ES-4-010
Mitsubishi Materials Corporation (Sanda Plant Shizuoka DBA Center) .....	EC-3-011
Mitsubishi Materials Corporation (Yokkaichi Plant) .....	EM-7-001
MITSUBISHI MOTORS CORPORATION .....	EP-2-026, EP-2-030
Mitsubishi Shindoh Co., LTD (the former Sambo Copper Alloy Co., LTD) .....	EM-1-024
MU Company Limited .....	EP-8-076, EP-8-077, EP-8-078, EP-8-079, EP-8-080

## N

NAKASHIMA PROPELLER Co.,Ltd. ....	EP-8-097
NET PARADIGM INDIA PVT, LTD.....	EP-5-001, EP-5-011
NIHONHAKUBOKU INDUSTRY CO.,LTD. ....	EP-4-024
NIHON MIZU-SHORI KOUGYOU CO.,LTD.....	ES-3-002
Nikken Sekkei Ltd.....	EP-7-035, EP-7-036, EP-7-037, EP-7-038, EP-7-039, EP-7-040, EP-7-041, EP-7-042, EP-7-043, EP-7-044
NIKON CORPORATION .....	EM-5-001, EP-1-117, EP-1-118, EP-9-019, EP-9-020

Nippon Steel Corporation.....	EM-1-006, EM-1-015, EM-1-016, EM-1-017, EM-1-018, EM-1-019, EM-1-020, EM-1-021, EM-1-022, EM-1-026, EM-5-005, EM-5-007, EC-5-020, EP-7-050
NIS Corporation.....	EP-9-053
Nissan Motor Co., Ltd. ....	EP-2-025, EP-2-038
N.I. Teijin Shoji Co., Limited.....	EC-1-002
NPO JAPAN One Dish Aid Association .....	EC-6-020

## O

Ohdensha Inc. TOKYO BRANCH .....	EP-1-081, EP-1-110
Okamura Corporation .....	EP-4-013, EP-4-019
OKONG CORP. ....	EP-6-076
Olive Green Marketing Pte Ltd.....	EM-3-006, EM-3-007, EM-3-008, EM-3-009, EM-3-010, EM-3-011, EM-3-012, EM-3-013, EM-3-014
Osaka Gas Co., Ltd. ....	EP-2-028, EP-6-010, EP-6-013, EP-6-021, EP-8-003, EP-8-025, EP-8-026, EP-8-027, EP-8-028

## P

Panasonic Communications Co., Ltd.....	EP-3-008, EP-3-046, EP-3-055, EP-3-056, EP-3-068, EP-3-069, EP-3-075, EP-3-081, EP-3-082
Panasonic Corporation, Automotive Systems Company.....	EP-9-022
Panasonic Corporation, AVC Networks Company .....	EP-1-046, EP-1-047, EP-1-049, EP-1-053, EP-1-056, EP-1-057, EP-1-058, EP-1-059, EP-1-061, EP-1-062, EP-1-063, EP-1-064, EP-1-065, EP-1-069, EP-1-114, EP-1-115, EP-3-051, EP-3-052, EP-9-023, EP-9-024
Panasonic Corporation, Energy Company .....	EC-2-013
Panasonic Corporation, Home Appliances Company .....	EC-3-009, EP-1-002, EP-1-005, EP-1-009, EP-1-013, EP-1-023, EP-1-026, EP-1-034, EP-1-041, EP-6-018, EP-6-044, EP-8-029

Panasonic Corporation, Lighting Company .....	EP-1-082, EP-1-084
Panasonic Corporation, Motor Company .....	EC-2-005, EC-2-006
Panasonic Corporation, System Solutions Company .....	EP-1-066, EP-3-076
Panasonic Ecology Systems Co., Ltd .....	EP-1-071
Panasonic Electric Works Co., Ltd. ....	EC-3-012, EP-1-043, EP-1-073, EP-1-094, EP-1-104, EP-4-023, EP-6-022, EP-8-073, EP-8-074, EP-8-075, EP-8-086
Panasonic Electronic Devices Co.,Ltd.....	EC-3-010, EC-4-004
Panasonic Welding Systems Co.,Ltd.....	EP-8-023
PFU LIMITED .....	EP-3-039, EP-3-040, EP-3-041, EP-3-042, EP-3-043
Phocos .....	EP-1-076
Phocos SEA Pte Ltd. ....	EC-2-017, EC-2-018, EP-1-079, EP-8-095
Plan Creations Co., Ltd.....	EP-9-026
Pripress Center Corporation .....	EP-4-026, EP-4-027, EP-4-028, ES-5-006, ES-5-007, ES-5-008, ES-5-009, ES-5-010, ES-5-011, ES-5-012, ES-5-013
PT. EPOS MODERN INDONESIA.....	EP-1-093, EP-4-012

## R

R&E Co., Ltd .....	ES-2-011
RICOH COMPANY LTD.....	EP-3-017, EP-3-018, EP-3-026, EP-3-027, EP-3-028
ROYAL TOTO CO., LTD. ....	EP-6-033, EP-6-036, EP-6-037, EP-6-038, EP-6-039, EP-6-040, EP-6-045, EP-6-046, EP-6-047, EP-6-052, EP-6-053, EP-6-054, EP-6-055, EP-6-056, EP-6-057, EP-6-058, EP-6-059, EP-6-060, EP-6-061, EP-6-062, EP-6-063

## S

SAMJIN INDUSTRIAL .....	EP-6-080, EP-6-081, EP-6-082
SAMLIP ENGINEERING CO., LTD.....	EP-6-032
SAN-ETSU METALS Co., Ltd. ....	EM-1-023

SANKEI KOGYO CO LTD .....	EP-4-002, EP-4-003, EP-4-004, EP-4-005, EP-4-006, EP-4-007, EP-4-008, EP-4-009, EP-4-010, EP-4-011
SANYO Electric Co.,Ltd. ....	EP-1-024, EP-1-044, EP-2-034
SEED CO.,LTD.....	EP-9-016
Seiko Epson Corporation.....	EP-3-014, EP-3-015, EP-3-031, EP-3-033, EP-3-034, EP-3-047
SEKISUI CHEMICAL CO., LTD. ....	EM-7-003, EP-6-001, EP-6-002
Sharp Corporation .....	EP-1-011, EP-1-021, EP-1-030, EP-1-031, EP-1-052, EP-1-054, EP-1-091, EP-1-105, EP-3-009, EP-3-010, EP-3-011, EP-3-012, EP-9-017, EP-9-018
SHIMADZU CORPORATION.....	EC-4-001, EP-8-036, EP-8-037
SHIMIZU CORPORATION.....	EP-7-001
Shotoku Glass CO.....	EP-6-091
Showa Denko K.K .....	EM-7-008
Soai co.,ltd.....	EP-9-006
Sony Corporation .....	EP-1-045, EP-1-113
SPACEPORT INC.....	EP-9-027
S S Herbals .....	EP-6-072, EP-6-073
Star Bamboo (S) Pte Ltd .....	EM-3-001
SUMINOE TEXTILE CO., LTD. ....	EP-7-051
Sumitomo Bakelite Co., Ltd.....	EM-2-001, EM-2-002
Sun Ace Kakoh (Pte.) Ltd .....	EC-4-002
SUZUKI SHOKAI Inc. ....	ES-2-010

## T

TAIHEIYO CEMENT CORPORATION .....	ES-2-002, ES-2-003, ES-2-004
TAISUN ENTERPRISE CO., LTD.....	EP-9-007, EP-9-008, EP-9-009, EP-9-010, EP-9-011, EP-9-012, EP-9-013
Teijin Aramid BV .....	EM-6-003
Teijin Fibers Limited .....	ES-2-008
Teijin Limited.....	EM-3-003, ES-4-012
The Little Export Company .....	EP-5-018

The Nikka Whisky Distilling Co., Ltd. ....	EC-6-009
Tokico Technology,Ltd. ....	EP-8-030
Tokyo Eco-Recycle,Ltd. ....	ES-2-006
Tokyo Electric Power Company .....	EC-2-012, EP-6-017
Tokyo Gas Co., Ltd. ....	EP-6-011, EP-6-012
Too Corporation.....	EP-9-029, EP-9-030, EP-9-031, EP-9-032, EP-9-033, EP-9-034, EP-9-035
TOPPAN COSMO, INC.....	EM-6-001
TOPPAN PRINTING CO., LTD.....	EC-6-002, EC-6-010, EC-7-001, ES-1-001
Toshiba Carrier Corporation.....	EP-1-036, EP-8-004, EP-8-014, EP-8-066, EP-8-067, EP-8-069, EP-8-104
TOSHIBA CORPORATION Digital Media Network Company .....	EP-1-051, EP-1-067, EP-1-070, EP-3-050, EP-3-054
TOSHIBA CORPORATION Mobile Communications Company .....	EP-3-060, EP-3-061
TOSHIBA CORPORATION Personal Computer & Network Company.....	EP-3-064, EP-3-071
TOSHIBA CORPORATION Power Systems Company .....	EP-8-081, EP-8-082
TOSHIBA CORPORATION Semiconductor Company.....	EC-3-014
TOSHIBA CORPORATION Social Infrastructure Systems Company .....	EP-3-085, EP-8-090, EP-8-099, EP-8-100, EP-8-101, EP-8-102, ES-4-009
TOSHIBA CORPORATION Transmission Distribution & Industrial Systems Company.....	EC-2-011, EP-2-037, EP-8-062, EP-8-085, EP-8-087, EP-8-088, EP-8-089
TOSHIBA ELECTRIC APPLIANCES CO.,LTD. ....	EP-6-014
Toshiba Electron Tubes & Devices Co.,Ltd.....	EC-2-009, EC-2-010
TOSHIBA ELEVATOR AND BUILDING SYSTEMS CORPORATION .....	EP-8-103, ES-1-004
Toshiba Fuel Cell Power Systems Corp. ....	EP-8-083
TOSHIBA HOME APPLIANCES CORPORATION.....	EP-1-003, EP-1-007, EP-1-014, EP-1-022, EP-1-027, EP-1-068
TOSHIBA HOME TECHNOLOGY CORPORATION.....	EP-1-004
TOSHIBA LIGHTING & TECHNOLOGY CORPORATION.....	EP-1-085, EP-1-088, EP-1-092, EP-1-097, EP-1-101, EP-1-106
Toshiba Materials Co., Ltd.....	EM-5-003
Toshiba Matsushita Display Technology Co.,Ltd. ....	EC-3-013



TOSHIBA MEDICAL SYSYSTEMS CORPORATION .....	EP-8-042, EP-8-043, EP-8-044, EP-8-045
TOSHIBA PLANT SYSTEMS & SERVICES CORPORATION .....	EP-8-084, ES-4-004, ES-4-006
Toshiba Solutions Corporation .....	EP-3-044, EP-3-045, EP-3-078
TOSHIBA TEC CORPORATION .....	EP-3-016, EP-3-083, EP-3-084
TOSTEM CORPORATION .....	EP-6-008, EP-7-004, EP-7-025, EP-7-026
TOTO LTD.....	EP-1-042, EP-6-030, EP-6-034, EP-6-035, EP-6-041
Toyota Industries Corporation .....	EP-2-035, EP-8-016
Toyota Motor Corporation .....	EP-2-001, EP-2-002, EP-2-003, EP-2-004, EP-2-005, EP-2-006, EP-2-007, EP-2-008, EP-2-009, EP-2-010, EP-2-011, EP-2-012, EP-2-013, EP-2-014, EP-2-015, EP-2-016, EP-2-017, EP-2-018, EP-2-019, EP-2-020, EP-2-021, EP-2-022, EP-2-023, EP-2-024
Triple Pim Co., Ltd. ....	EP-5-002, EP-5-003, EP-5-004, EP-5-005, EP-5-006, EP-5-007, EP-5-008, EP-5-009, EP-5-010, EP-5-014, EP-5-015, EP-5-016, EP-5-017, EP-5-020

## U

Unichemy Co.,Ltd. ....	EP-9-049, EP-9-050
United Premas Limited .....	EP-7-045, ES-3-003
Universal Can Corporation.....	EC-6-019
Universal Integrated Corporation Consumer Products Pte Ltd .....	EP-6-066, EP-6-067, EP-6-068, EP-6-069, EP-6-070, EP-6-071, EP-6-074

## V

Varo Technology Co., Ltd.....	EC-2-008
VIVO Corporation Co.,Ltd .....	ES-1-003

## W

Wakodo Co., Ltd.....	EC-6-001
WELL ELECTRONICS CO., LTD. ....	EP-1-075

WINPRO Co Ltd .....	EP-8-032
WINRIGO (S) PTE LTD .....	EM-2-008, EM-2-009, EC-6-023, EP-6-026, EP-7-048

# Members list



# APO Green Productivity Advisory Committee

(as of 1 February 2009)

## ■ Chairperson

Dr. Tamotsu Nomakuchi      Chairman  
Mitsubishi Electric Corporation

## ■ Vice Chairpersons

Prof. Ryoichi Yamamoto      Professor  
Institute of Industrial Science & International Research Center for  
Sustainable Materials  
University of Tokyo

Mr. Hideaki Sekizawa      Representative Director and Executive Vice President  
Nippon Steel Corporation

Mr. Teisuke Kitayama      Chairman of the Board  
Sumitomo Mitsui Banking Corporation

## ■ Advisers

Mr. Yoichi Morishita      Corporate Counsellor  
Panasonic Corporation

Mr. Masatoshi Yoda      Former President of Ebara Corporation

Mr. Etsuhiko Shoyama      Chairman  
Hitachi, Ltd.

Mr. Kazuyoshi Terashima      Former Vice President of Ebara Corporation

## ■ Members

Mr. Seiichi Ueyama      Managing Director  
Aeon Retail Co., Ltd.

Mr. Hidehiro Shinohara      General Manager  
Environment & Safety Department  
Ajinomoto Co., Inc.

Mr. Katsuhiko Sugie      General Manager  
Market Development Department, Consulting Division  
Amita Corporation

Mr. Takeshi Kurashige      Producer  
Social & Environmental Management Department  
Asahi Breweries, Ltd.

Mr. Shuji Kato      Director  
Member of the Board, Chief Social Responsibility Officer  
Bic Camera, Inc.

Mr. Yoshinobu Shizukuishi      Manager  
Marketing Department  
Biznet Corporation

Mr. Kohei Fujimoto	Manager Environment Communications Department Canon Inc.
Mr. Satoru Fujimoto	Manager Global Environment Department Daikin Industries, Ltd.
Mr. Yasushi Iwao	General Manager Marketing Department Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd.
Mr. Tsutomu Ishibashi	General Manager Corporate Environmental Management Department Ebara Corporation
Mr. Hiroyuki Akiyama	Group Manager Environment Management Group, Corporate Social Responsibility Department Fuji Xerox Co., Ltd.
Mr. Mitsugu Sato	General Manager Advanced Business Group FUJITSU FIP CORPORATION
Dr. Nobuo Kamehara	Corporate Vice President Material Analysis Group Fujitsu Quality Laboratory Ltd.
Ms. Chie Saito	G-Project Inc.
Mr. Yoichi Takahashi	General Manager Corporate Environmental Policy Division Hitachi, Ltd.
Mr. Hitoshi Maekawa	General Manager Administrative Division, Environmental Management Department ITOKI CORPORATION
Mr. Takashi Hongo	Special Advisor, Head Environment Finance Engineering Department Japan Bank for International Cooperation
Mr. Masami Shinohara	Vice President CSR Division Japan Tobacco Inc.
Mr. Kenji Taniguchi	Staff Deputy Manager Corporate Planning Department JFE Holdings, Inc.
Mr. Koichi Yamane	Deputy General Executive Environmental Sustainability Office JVC KENWOOD Holdings, Inc.

Mr. Toru Nakagawa	Director, General Manager Environmental Protection & Safety Department, Production Technology Division Kaneka Corporation
Mr. Tadashi Matsui	Vice President Environment and Safety Kao Corporation
Dr. Nobutake Nunomura	Corporate Officer General Manager, Environment Department Kikkoman Corporation
Mr. Shinichi Saitou	Group Leader Environment Group, Corporate Social Responsibility Division Kokuyo Co., Ltd.
Mr. Keiji Matsuura	General Manager CSR Promotion Division, Corporate CSR Promotion Division KYOCERA MITA Corporation
Mr. Toshio Yagitani	Vice President International Project Department MAYEKAWA MFG. CO., LTD
Mr. Shinji Hirano	General Manager for Special Task Corporate Environmental Policy Planning Office Meidensha Corporation
Mr. Yoshitaka Moriide	Manager Marketing Department Ministop Co., Ltd.
Mr. Michio Hiruta	General Manager Corporate Environmental Sustainability Group Mitsubishi Electric Corporation
Mr. Yoshihiko Hara	General Manager Environment Management Division Mitsubishi Materials Corporation
Mr. Eiichi Hamada	Director Safety, Environmental & Quality Assurance Department MITSUBISHI RAYON CO., LTD.
Mr. Masayuki Saita	General Manager Environmental Management Division, CSR Promotion Unit NEC Corporation
Mr. Teruo Furuyama	Senior Manager Technical Group, Environmental Affairs Division Nippon Steel Corporation
Mr. Shogo Saegusa	Deputy General Manager Environment Management Group, Global Government Affairs Department, Environmental and Safety Technologies, Technology Development Division Nissan Motor Co., Ltd.

Mr. Yasuhiro Maruyama	General Manager Sustainable Management Office, Environment Management Department Oji Paper Co., Ltd.
Mr. Yuichiro Yamaguchi	Manager Environment Department Osaka Gas Co., Ltd.
Dr. Narito Shibaike	Manager Environmental Planning Group, Corporate Environmental Affairs Division Panasonic Corporation
Mr. Kenichi Nakajima	Chairman Re-Tem Corporation
Mr. Hiroshi Uramoto	Senior Management Corporate Environment Division Ricoh Company, Ltd.
Mr. Shingo Sumi	General Manager Environment Management Department, Corporate Environment Center, Environmental Management H.Q., Innovation Group Sanyo Electric Co., Ltd.
Mr. Yusuke Saraya	President Saraya Co., Ltd.
Mr. Teruyuki Hayashi	President Seibu Landscape Co., Ltd.
Mr. Yasuhito Hirashima	Manager Global Environmental Policy Department Seiko Epson Corporation
Mr. Masayasu Taniguchi	General Manager Environmental Management Group, CSR Department Sekisui Chemical Co., Ltd.
Mr. Yuji Kodama	Senior Manager Environment Improving Department Sekisui House Ltd.
Dr. Hiroshi Morimoto	Executive Officer, Group General Manager Environmental Protection Group Sharp Corporation
Dr. Tatsumi Sato	General Manager Global Environmental Management Department Shimadzu Corporation
Mr. Ryo Sasaki	President Shinagawa Chemical Ind. Co., Ltd.
Mr. Seiichi Jimbo	Deputy General Manager Environmental Affairs Department Sony Corporation



Mr. Koji Sato	General Manager CSR Department Sumitomo Mitsui Banking Corporation
Dr. Masamitsu Takaya	Executive General Manager Environmental Affairs Department Suntory Limited
Dr. Rokuro Tomita	Director, Managing Executive Officer TAIHEIYO CEMENT CORPORATION
Mr. Naoki Arai	Executive Adviser Teijin Limited
Ms. Mizue Tsukushi	Founder and CEO The Good Bankers Co., Ltd.
Mr. Takeshi Nishibori	CSR Manager General Planning Department The Shiga Bank, Ltd.
Mr. Yoshihiro Kageyama	General Manager Environment Department Tokyo Electric Power Company
Mr. Kyoji Tomita	Manager Environment Department Tokyo Gas Co., Ltd.
Mr. Shinichi Sanbongi	General Manager Corporate Marketing Planning Department Toray Industries, Inc.
Mr. Kiyoshi Sanehira	General Manager Corporate Environment Management Division Toshiba Corporation
Mr. Hiroyuki Kimura	Manager Product Planning Promotion Department, Marketing Planning Division TOTO LTD.
Mr. Tetsuo Miyazawa	General Manager Environment Department Toyo Seikan Kaisha, Ltd.
Mr. Yoshihiro Ando	Group Manager Public Affairs Group, Environmental Affairs Division Toyota Motor Corporation
Mr. Yukihiro Kumagai	General Manager CSR Department, Environment Promotion Office Unicharm Corporation
Mr. Toshiroh Ikegami	Director Urban Gauss Inc.

# **APO Green Productivity Advisory Committee for Establishment of Eco Products Database**

(as of 1 February 2009)

## ■ **Chairperson**

Prof. Ryoichi Yamamoto	Professor Institute of Industrial Science & International Research Center for Sustainable Materials University of Tokyo
------------------------	---

## ■ **Members**

Mr. Takeshi Kurashige	Producer Social & Environmental Management Department Asahi Breweries, Ltd.
Mr. Shuji Kato	Director Member of the Board Chief, Social Responsibility Officer Bic Camera, Inc.
Mr. Takashi Tobe	Associate Staff Manager Environment Communications Department, Environment Planning Center, Environment Headquarters Canon Inc.
Mr. Yasushi Iwao	General Manager Marketing Department Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd
Mr. Tadashi Matsui	Vice President Environment and Safety Kao Corporation
Mr. Shinichi Saitou	Group Leader Environment Group, Corporate Social Responsibility Division Kokuyo Co., Ltd
Mr. Teruo Furuyama	Senior Manager Technical Group, Environmental Affairs Division Nippon Steel Corporation
Mr. Shogo Saegusa	Deputy General Manager Environment Management Group, Global Government Affairs Department, Environmental and Safety Technologies, Technology Development Division Nissan Motor Co., Ltd.

Mr. Yasuhiro Maruyama	General Manager Sustainable Management Office, Environment Management Department Oji Paper Co., Ltd.
Dr. Narito Shibaike	Manager Environmental Planning Group, Corporate Environmental Affairs Division Panasonic Corporation
Mr. Hiroshi Uramoto	Senior Management Corporate Environment Division Ricoh Company, Ltd.
Dr. Hiroshi Morimoto	Executive Officer, Group General Manager Environmental Protection Group Sharp Corporation
Mr. Koji Sato	General Manager CSR Division Sumitomo Mitsui Banking Corporation
Mr. Yoshitane Hirata	Specialist Corporate Environment Management Division Toshiba Corporation
Mr. Michio Hiruta	General Manager Corporate Environmental Sustainability Group Mitsubishi Electric Corporation
Mr. Kenichi Nakajima	Chairman Re-Tem Corporation

# Eco-products Directory 2009 Working Group

(as of 1 February 2009)

## ■ Chairperson

Dr. Norihiro Itsubo	Associate Professor Faculty of Environmental and Information Studies, Musashi Institute of Technology
---------------------	---

## ■ Members

Mr. Gakuji Fukatsu	Secretariat Green Purchasing Network (GPN)
Mr. Masayuki Kanzaki	Ecoleaf Office Japan Environmental Management Association for Industry (JEMAI)
Mr. Yoshikazu Kihira	Program Officer Industry Department Asian Productivity Organization (APO)
Dr. Keijiro Masui	Senior Research Scientist, Environmentally Conscious Design and Manufacturing Group Advanced Manufacturing Research Institute National Institute of Advanced Industrial Science and Technology (AIST)
Dr. Tateki Mizuno	Special Researcher Society of Non-Traditional Technology (SNTT)
Mr. Katsuyuki Nakano	LCA Development Office Japan Environmental Management Association for Industry (JEMAI)
Ms. Miho Oshima	Manager, Eco Mark Office, Promotion & International Cooperation Section Japan Environment Association (JEA)
Ms. Wakako Suetsugu	Society of Non-Traditional Technology (SNTT)
Ms. Shoko Tsuda	General Manager Society of Non-Traditional Technology (SNTT)

## Related organizations

(as of 1 February 2009)

### ■ Eco Mark Office, Japan Environment Association (JEA)

Eco Mark Office, Japan Environment Association (JEA)  
Bakurocho Daiichi BLDG., 1-4-16 Nihonbashi Bakurocho, Chuo-ku, Tokyo, 103-0002 JAPAN  
Tel: +81-3-5643-6255 Fax: +81-3-5643-6257  
E-mail: [ecomark@japan.email.ne.jp](mailto:ecomark@japan.email.ne.jp)  
<http://www.ecomark.jp/english/index.html>

### ■ Ecomaterials Forum, The Society of Non-Traditional Technology (SNTT)

Shinbashi-Amano Bldg. 6F, 1-5-10 Nishishinbashi, Minato-ku, Tokyo, 105-0003 JAPAN  
Tel: +81-3-3503-4681 Fax: +81-3-3597-0535  
E-mail: [ecomat@sntt.or.jp](mailto:ecomat@sntt.or.jp)  
<http://www.sntt.or.jp/Eng.html>

### ■ Green Purchasing Network (GPN)

Cosmos Aoyama, 5-53-67, Jingumae, Shibuya-ku, Tokyo, 150-0001 JAPAN  
Tel: +81-3-3406-5155 Fax: +81-3-3406-5190  
E-mail: [gpn@net.email.ne.jp](mailto:gpn@net.email.ne.jp)  
<http://www.gpn.jp/English/index.html>

### ■ Japan Environmental Management Association for Industry (JEMAI)

Mitsui-sumitomo Building 6F/7F, 2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo, 101-0044 JAPAN  
E-mail: [webmaster@jemai.or.jp](mailto:webmaster@jemai.or.jp)  
<http://www.jemai.or.jp/english/index.cfm>

### ■ National Institute of Advanced Industrial Science and Technology (AIST)

1-2-1 Namiki, Tsukuba, Ibaraki, 305-8564 JAPAN  
[http://www.aist.go.jp/index\\_en.html](http://www.aist.go.jp/index_en.html)

### ■ Special Project on Eco Efficiency and Eco Design (SPEED)

Fe-209, 4-6-1, Komaba, Meguro-ku, Tokyo, 153-8904 JAPAN  
Tel: +81-3-5452-6098 (ext. 57780) Fax: +81-3-5452-6305  
E-mail: [speed17@iis.u-tokyo.ac.jp](mailto:speed17@iis.u-tokyo.ac.jp)  
<http://www.speed.org/index.htm>

### ■ The Institute of Life Cycle Assessment, Japan (ILCAJ)

Shinbashi-Amano Bldg. 6F, 1-5-10 Nishishinbashi, Minato-ku, Tokyo, 105-0003 JAPAN  
Tel: +81-3-3503-4681 Fax: +81-3-3597-0535  
E-mail: [ilcaj@sntt.or.jp](mailto:ilcaj@sntt.or.jp)



# **PR space for environmental programs**



**Mitsubishi Electric Co., Ltd.**

**Nano-ionics Materials Group,  
Fuel Cell Materials Center,  
National Institute for Materials Science**

**Saraya Co., Ltd.**



**Nihon Mizusyori Kougyou Co., Ltd.**

**Pripress Center Co., Ltd.**

**Nikken Sekkei Ltd.**



**Hitachi Co., Ltd.**



**Mitsubishi Electric Group**

# Environmental Vision 2021

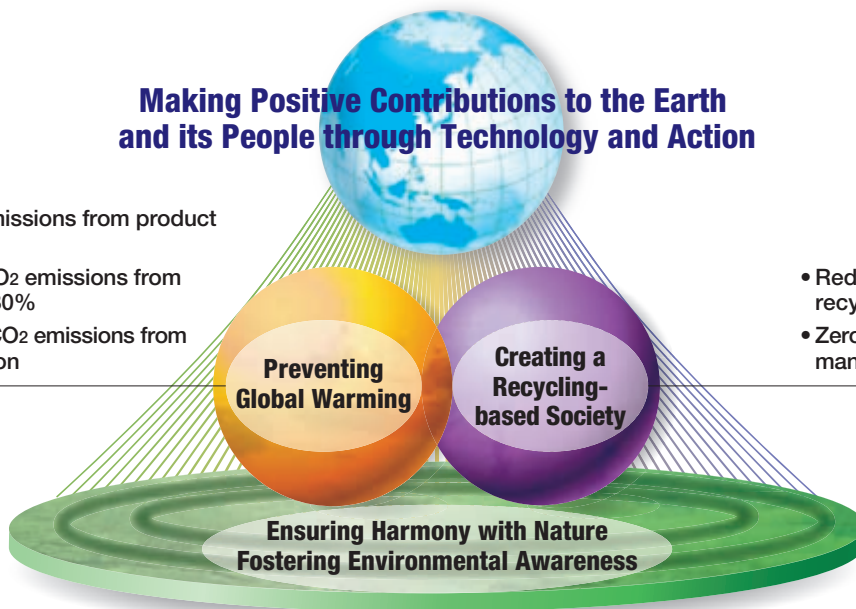


Environmental Vision 2021 is the long-term environmental management vision of the Mitsubishi Electric Group. It establishes a framework for realizing a sustainable planet, and defines long-term initiatives to prevent global warming and to create a recycling-based society

## Making Positive Contributions to the Earth and its People through Technology and Action

- Reduce CO<sub>2</sub> emissions from product usage by 30%
- Reduce total CO<sub>2</sub> emissions from production by 30%
- Aim to reduce CO<sub>2</sub> emissions from power generation

- Reduce, reuse and recycle products (3Rs)
- Zero emissions from manufacturing



### Vision Progress

#### Preventing Global Warming

The Mitsubishi Electric Group intends to expand its global warming prevention-related business to achieve sales of 1,300 billion yen in fiscal 2016 (ending March 31, 2016) and reduce over 5.1 million tons of annual carbon dioxide (CO<sub>2</sub>) emissions.

- **Photovoltaic Power Generation System Business**

Achieve global sales of 250 billion yen in fiscal 2016 from a 50 billion-yen sales in fiscal 2008 (ended March 31, 2008), and to reduce 350,000 tons<sup>1</sup> of annual CO<sub>2</sub> emissions.



Photovoltaic Modules  
(PV-TD190MF5)

- **Heat Pump-related Business**

Reduce 750,000 tons<sup>2</sup> of annual CO<sub>2</sub> emissions in fiscal 2016.

- **Power Device Business**

Reduce 4,000,000 tons<sup>3</sup> of annual CO<sub>2</sub> emissions in fiscal 2016.

<sup>1</sup> The amount of CO<sub>2</sub> reduction is calculated from annual electricity generated by PV cells expected to be sold in fiscal 2016.

<sup>2</sup> The amount of CO<sub>2</sub> reduction is based on the estimated total number of heat pump related products sold in fiscal 2016.

<sup>3</sup> The amount of CO<sub>2</sub> reduction is based on the estimated total number of power devices sold in fiscal 2016.

#### Creating a Recycling-based Society

Autumn 2009 will see a large-scale, high-purity, recycling of mixed plastics from used home appliances and the three main plastics through Mitsubishi Electric's "closed-loop recycling system." (Japan only)



#### Environmental Awareness

Mitsubishi Electric is promoting outdoor classroom, woodland preservation, and forest nurturing activities among children in Japan.



Mitsubishi Electric  
Outdoor Classroom



Woodland Preservation  
Activities



Mt. Fuji Afforestation  
Activities

# Nano-structured electrolytes and electrodes

Key Word : Fuel cell, micro-analysis, nano-ionics materials



独立行政法人 物質・材料研究機構

## Background

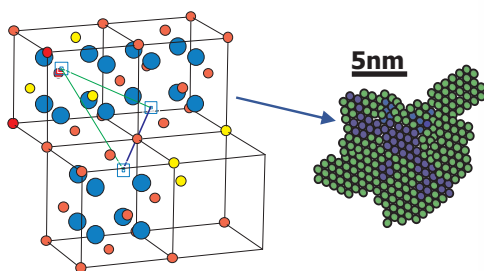
Fuel cells have been developed as a clean and efficient power source for generating electricity from a variety of fuels. Solid electrolytes and electrodes are key materials in fuel cell devices. High quality electrolytes and electrodes have to be designed for development of our sustainable society.

## Current Issues

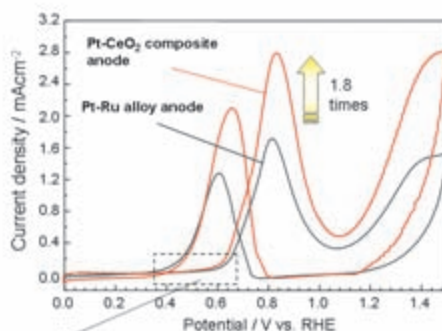
To use fuel cells in our society, the quality and stability of fuel cell materials should be improved. For a design of high quality fuel cell materials, the nano-structural feature in fuel cell materials has to be designed at atomic scale.

## Advanced Research Topics

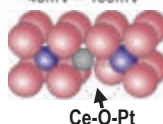
Electrolyte and electrode performance was conspicuously improved by a design of micro-structure of electrolytes and interfacial layer of electrodes at atomic scale.



We successfully improved the conductivity and reduction resistance of doped  $\text{CeO}_2$  solid electrolytes by a design of nano-domain structures.



A lowering of on-set potential of methanol oxidation:  
40mV – 100mV



The electrode performance was improved by a formation of Ce-O-Pt clusters into the interfacial layer of electrodes.

## Publications

- Ou D R, Mori T, Ye F, Zou J, and Drennan J, Physical Review B 77, (2008).
- Takahashi M, Mori T, Ye F, Vinu A, Kobayashi H, and Drennan J, J. Am. Ceram. Soc., Vol. 90(4), pp. 1291-1294 (2007).
- Australia Academy of Science Award (August, 1999)
- Ministry of Education, Culture, Sports, Science and Technology (MEXT) Award, Prospective patent, 2001

## Awards

## Summary

- Nano-domain structure design of electrolytes
- Nano-cluster interface design of electrodes
- Long time durability vs. nano-structure change
- Combination of processing route design and microanalysis

## Research outcome

- A design of high quality doped  $\text{CeO}_2$  solid electrolytes
- A design of nano-structured electrodes



燃料電池材料センター ナノイオニクス材料グループ (モリ トシユキ)

E-mail : MORI.Toshiyuki @ nims.go.jp

URL : <http://fuelcellmaterials.jp/en/modules/myinfo3/index.php?uid=3>





SARAYA is working to create the Green Corridor to connect divided habitats and save the local wildlife from extinction along the Kinabatangan River in Malaysia on the island of Borneo, an area that provides SARAYA with raw ingredients.

## Protecting the Environments of Our Supply Centers

Saraya donates 1% of Yashinomi Detergent sales to the Borneo Conservation Trust

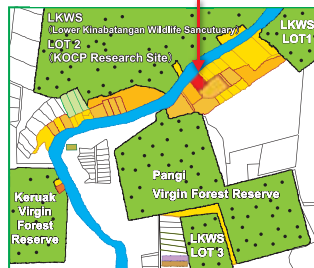
In Borneo, the expansion of oil palm plantations has led to the loss of precious rainforest that supports the livelihood of many unique and threatened species.

It is here, where Saraya acquires palm oil to make the popular Yashinomi Detergent, we exercise environmental conservation efforts.



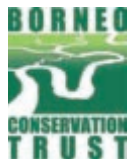
Oil Palm Fruit

Kinabatangan River along the first Green Corridor lands (5.3 acres)



Virgin Forest Reserve

**The Borneo Conservation Trust** is the official trust authorized by Sabah, Malaysia which focuses on creating a Green Corridor by obtaining the rights to precious land along the rivers and protecting them from plantation development so wild animals can migrate freely across the island.

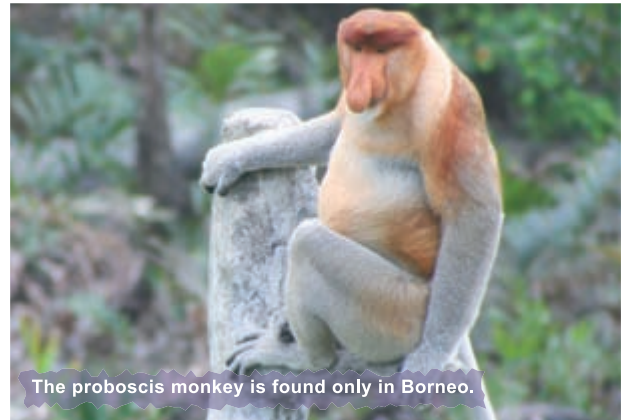


### Wildlife of Borneo Island on the IUCN Red List of Endangered Species

※ International Union for Conservation of Nature and Natural Resources



Deforestation leaves many orangutans orphaned. This rescued orangutan will be released to the wild after maturing.



The proboscis monkey is found only in Borneo.



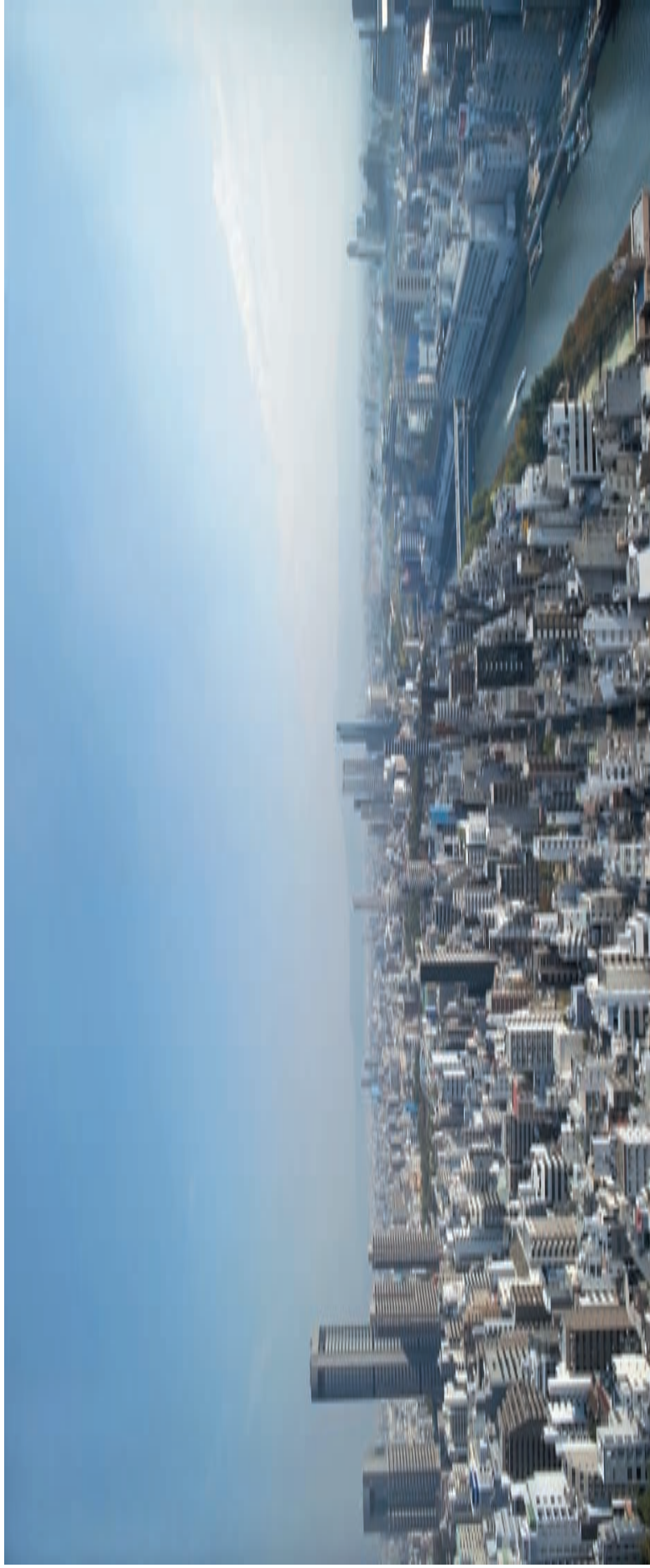
The Borneo elephant is an affectionate animal and has strong family bonds. They would surround their young to protect them from any sign of danger.

**SARAYA** <http://www.saraya.com/>



**Borneo Conservation Trust**

<http://www.borneoconservationtrust.org.my/>  
info@borneoconservationtrust.org.my



## ***Sciencing Services***

To be a company serving to our community by seeking into air and water scientifically... Water and Air bring us a plenty of blessings and profits. Through unique activities of our business, "General Maintenance of Air and Water" of various facilities, we, Nihon Mizu-shori Kougyou, are committed to contribute to make working and living environment clean and comfortable for people in our society.

"General Maintenance of Air and Water"  
NIHON MIZU-SHORI KOUGYOU CO., LTD.  
 日本水処理工業株式会社  
<http://www.mizu-shori.com/>

# Compatibility between environmental conservation and economic development

## 1. Halving CO<sub>2</sub> emissions

We are committed to working together with our customers, employees, their families and other stakeholders toward halving CO<sub>2</sub> emissions by 2020 to help fight global warming.

## 2. Paper - a finite resource

As a printing company, we provide our customers with large amounts of paper. To offset this, we also engage in philanthropic activities such as forest development and paper recycling to help reduce the burden on society as a whole.

## 3. Compatibility between environmental conservation and economic development

As a supplier, we aspire to provide reasonably priced products at low cost while maintaining appropriate profit levels by manufacturing the best possible products using environmentally friendly manufacturing methods.

### Environmentally friendly printing

Pripress Center Corporation promotes environmentally friendly eco printing.



#### Waterless printing

Unlike the conventional method of offset printing, no dampening solution is used in this process. This enables printing without waste water and the adverse environmental effects associated with it.



#### Soy ink

Soy ink is produced by replacing 20% or more of the petroleum solvents contained in conventional ink with a natural material extracted from soybeans.



#### VOC-free ink

Non-VOC ink exerts a lower burden on the environment, as all petroleum solvents that evaporate into the air are replaced with vegetable-derived alternatives.



#### Use of thinned wood

Identification marking for products made using thinned wood is performed for goods certified as contributing to the effective utilization of this material.



#### Use of thinned wood generated in Hokkaido

Efforts to protect forests in Hokkaido are promoted by using products that carry the mark for thinned wood generated in Hokkaido.



#### Green Purchasing Network printing services

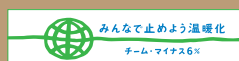
Systematic activities are underway based on the Purchasing Guidelines for Offset Printing Service established by the Green Purchasing Network (GPN).

Pripress Center Corporation was awarded Forest Stewardship Council (FSC) Certification in January 2009.

#### ■Inquiries

# PRIPRESS CENTER

Pripress Center Corporation  
<http://www.pripress.co.jp>



Headquarters 2-3, N2 W14, Chuo-ku, Sapporo, Hokkaido, 060-0002, Japan  
Tel.011-272-6670 Fax.011-272-6680

Tokyo Office 3-5, 4Chome, Kuramae, Taitou-ku, Tokyo, 111-0051, Japan  
Tel.03-3863-1661 Fax.03-3863-1662



## GREEN



Our aim is to ensure user comfort and achieve net-zero energy consumption for a sustainable future.

## ICONIC



We create iconic designs that in the course of time become scenic landmarks. It's a timeless architecture.

## HIGH-TECH



We pursue the creation of attractive architectural spaces through innovative technologies.

## INTEGRATIVE



In our exploration of design potential, we create new values through the active integration of diverse concepts.

NIKKEN  
SEKKEI

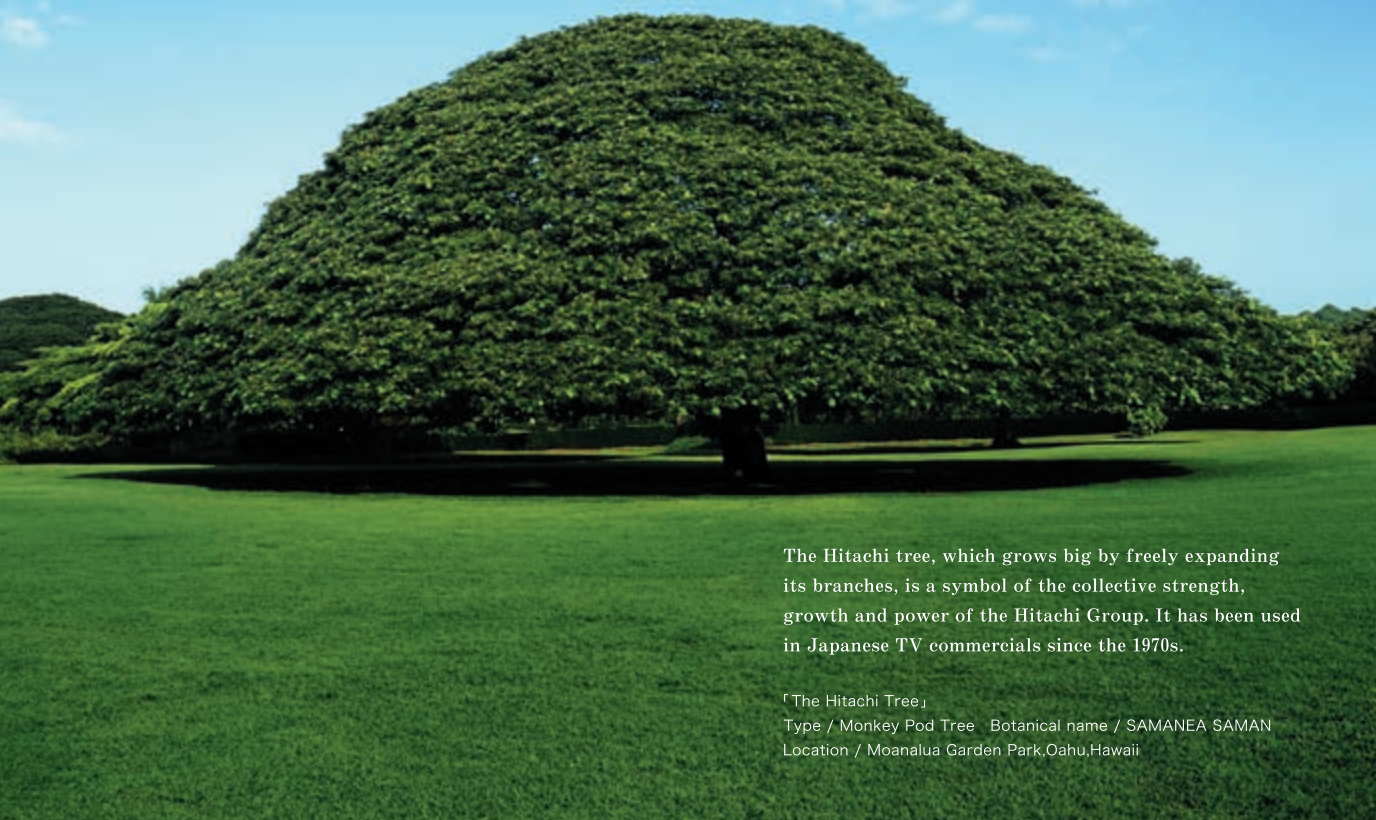
Nikken Sekkei is a Japan-based comprehensive consulting firm providing city and urban planning, architectural design, structural engineering, mechanical & electrical engineering and landscape design as well as peer review services.

- One stop services
- Approximately 2,300 specialist staff
- Established in 1900
- 109 years in business
- Accomplishment of over 20,000 projects
- Global activities in more than 40 countries

<http://www.nikken.co.jp>

For the future of our irreplaceable planet,  
the Hitachi Group established a long-term plan, "Environmental Vision 2025,"  
to contribute to an annual reduction in CO<sub>2</sub> emissions of  
100 million tons through Hitachi products and services by FY2025.

The Hitachi Group promotes environmental management based on  
the Vision featuring three important pillars,  
"Prevention of Global Warming," "Resource Recycling," and  
"Ecosystem Conservation," to realize an environmentally  
sound and sustainable society.



The Hitachi tree, which grows big by freely expanding its branches, is a symbol of the collective strength, growth and power of the Hitachi Group. It has been used in Japanese TV commercials since the 1970s.

「The Hitachi Tree」

Type / Monkey Pod Tree Botanical name / SAMANEA SAMAN

Location / Moanalua Garden Park, Oahu, Hawaii