

Metals Company

Utilizing Refining Technology to Devise New Waste Treatment Methods

Copper is an indispensable metal for modern times. It is used in a wide range of applications, from electric wires to household appliances, such as air conditioners, and further to building components and materials, semiconductor lead frames and automotive terminals and connectors.

Mitsubishi Materials' history in the metals business began in 1873, with the purchase of the Yoshioka Mine, in Okayama Prefecture, by the Company's predecessor. More than a century has passed since then, and the business has undergone many changes.

The development of mass production technology for oxygen-free copper and copper alloys—with ultimate electrical conductivity—in 1966 marked the beginning of our contribution to the dramatic growth posted by the semiconductor industry.

In 1991, we started to invest in overseas copper mines and established a structure to support the stable, long-term and economical supply of copper concentrate from sources around the world.

Today, in addition to our global presence in procuring ore, refining it and processing it, we devote energy toward recycling operations that underpin the formation of a resource-recycling society.



Toshinori Kato
President,
Metals Company

Particularly, we apply refining expertise to extract reusable materials from automotive shredder residue. We also draw on our strength as the only metals company with an in-house cement division to give copper slag, gypsum and other waste from metals operations another use as raw materials for cement produc-



Full view of Naoshima Smelter & Refinery

tion. We have a proprietary system to handle this waste and reuse it.

Mitsubishi Continuous Smelting and Converting Process

In a resource-recycling society, manufacturers must strive for higher production efficiency and reduce the impact of operations on the environment.

Mitsubishi Materials has done exactly this in its metals business with the Mitsubishi Continuous Smelting and Converting Process—the Mitsubishi Process. This is the world's first continuous-smelting method for copper. It is highly efficient and nonpolluting. The Company has extended the technology to smelters in Japan and around the world, including operations in Canada, India, Indonesia and South Korea.

We confirmed the practicality of this process at the Gresik Smelter & Refinery of PT. Smelting in Indonesia, and by promoting its environment-friendly quality, we expect to see the technology embraced more fully around the world.

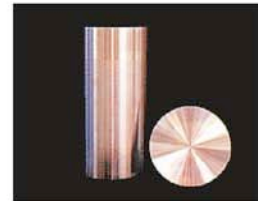
In cooperation with Dowa Mining Co., Ltd., we will install a Mitsubishi Process S (Smelting) Furnace at the Onahama Smelting & Refining Co., Ltd., a Mitsubishi Materials subsidiary in which Dowa Mining has a stake, in 2007. This investment will lessen fuel consumption while raising the volume of ore processed and the amount of recycled materials accepted for use as raw materials.

We will emphasize environmental protection, and as a leading company and a member of ICCM* we will strive to reduce environmental impact from our operations through the promotion of greening activities and maintenance and strict management of closed mines.

*ICCM: International Council on Mining & Metals
An organization, comprising 15 of the world's top mining and refining companies.



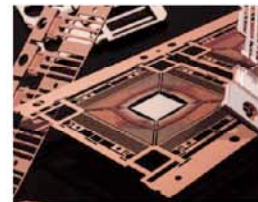
1. Electrolytic copper



2. Oxygen-free copper



3. Precious metal ingots



4. Lead frame materials

1. Electrolytic copper

Electrolytic copper is produced from smelting by electrolytic refining at the Naoshima Smelter & Refinery, in Kagawa Prefecture, and Onahama Smelting & Refining, in Iwaki, Fukushima Prefecture, and overseas, at PT. Smelting in Indonesia.

2. Oxygen-free copper

Oxygen-free copper from Mitsubishi Materials meets the world's highest standard and enjoys a global share of 30%. High-performance alloys, featuring oxygen-free copper, are used by Mitsubishi Shindoh Co., Ltd., a Group company, to make semiconductor lead frames and automotive terminals and connectors.

3. Precious metal ingots

The Naoshima Smelter & Refinery processes and refines scrap, rough metal and electrolytic slime generated through copper smelting to harvest precious metals, such as gold, silver, platinum and palladium. Gold is formed into ingots of at least 99.99% purity and sold for industrial use or jewelry-making applications.

4. Lead frame materials

Mitsubishi Materials' high-performance copper alloys, used extensively as materials for semiconductor lead frames, have earned high marks as a key material for raising the reliability of semiconductors, facilitating higher density and cutting costs.

Naoshima Eco Town (Naoshima Smelter & Refinery)

The Naoshima Eco Town Project is recognized by the national government as a community effort to originate and cultivate progressive recycling industries that will help to realize the formation of a sustainable resource-recycling society.

Through the Naoshima Smelter & Refinery, which was established in 1917, Mitsubishi Materials enjoys a relationship with the town of Naoshima that runs historically deep. In 1999, this relationship was reinforced with a request from the prefecture to install equipment at the smelter/refinery for intermediate processing of materials from the site of illegal dumping on Teshima, another island in the Naoshima chain. Since then, the smelter/refinery has been active in resource recovery using on-site facilities as the Naoshima Eco Town recycling project.

Mitsubishi Materials sees waste with recycling potential as an "urban mine" in Japan. The Naoshima Smelter & Refinery's efforts to recover metals contained in waste include the use of equipment that turns molten fly ash into new raw materials and the operation of recycling facilities that extract valuable metals by preprocessing

shredder dust and other industrial waste.

Currently, processing volume is expanding at a pace that exceeds original plans. The smelter/refinery will continue to work with the local government and with citizens to achieve eco town objectives.

As an offshoot of the eco town initiative, the Naoshima Smelter & Refinery welcomes the general public to its recycling facilities for tours, which not only contributes to environmental learning but also opens lines of communication with the community, which helps promote understanding of the operations.



Naoshima island chain



Environmental learning plant tour of recycling equipment for valuable metals

Turning Shredder Dust into New Resources

Shredder dust is what remains when old cars and consumer electronics, devoid of recyclable components, have been crushed in a shredder. Typically, shredder dust is dumped in landfills, but with equipment and technology gained through copper smelting and refining, Mitsubishi Materials is able to recover valuable metals (material recycling) and heat (thermal recycling) by taking shredder dust through further processing. The Company can also produce copper slag from shredder dust. These efforts exemplify our commitment to resource-recycling.

The Naoshima Smelter & Refinery and Onahama Smelting & Refining are both involved in recycling. Of note, the Onahama facility began processing shredder dust before any other domestic company and boasts the largest processing capacity as well as the best results in Japan.

A vehicle recycling law, effective from January 2005, has made automakers responsible for disposal and recycling of shredded

scraps from dismantled cars. This requirement has fostered a rapidly growing need for businesses that handle automotive shredder dust. Our part in satisfying this need is gaining greater attention.

We will continue to promote technological innovations that lead to expanded processing, which will, at least to some degree, reduce the amount of waste buried in landfills.



Valuable metals recycling facility

Energizing the Indonesian Economy

When undertaking operations overseas where economic conditions are not necessarily opportune, local job creation and continuous employment are extremely pressing concerns. PT. Smelting, a Mitsubishi Materials subsidiary in Indonesia, employs 500 full-time staff, about 95% of whom are hired locally, as are nearly 100% of the 800 staff from partner companies who are employed at Pt.Smelting Through PT. Smelting, we support development of the local economy through job opportunities.

PT. Smelting offers youth groups from neighboring villages suggestions for establishing and running businesses and provides assistance for launching projects to pick up and dispose of solid waste—lumber and paper—from the company's own operations.

These efforts are not a form of temporary economic support but rather a means toward amicable, long-lasting partnerships. This community commitment has earned high marks from vil-

lage leaders and citizens and has fostered a recognizable presence in the area.

PT. Smelting also undertakes conventional philanthropy, with clear-cut objectives, such as expanding schools, donating books and organizing foreign language courses.



General solid waste pickup and disposal operations by neighborhood youth groups, wearing masks to prevent inhalation of dust



PT. Smelting in Indonesia

Energy Business Division

Safe, Stable Supply of Environment-Friendly Energy

Mitsubishi Materials has helped ensure a stable supply of energy in Japan for many years. Today, the Company emphasizes three energy businesses: nuclear energy-related services, which focus on R&D, design and construction of nuclear fuel cycle facilities; geothermal and hydroelectric power production; and fuels, to supply coal and other fossil fuels. Our main customers are members of the electric power industry.

Our mission is to be an eco-friendly energy provider, so the type of coal primarily handled by the fuel department is "Envirocoal," which generates less post combustion ash. In geothermal and hydroelectric power production, we utilize renewable energy of geothermal and water sources. In nuclear energy-related services, we strive to recycle nuclear fuel and oversee everything from the design and construction of key processes to operational support for the reprocessing plant of Japan Nuclear Fuel Ltd at Rokkasho, a village in Aomori Prefecture.

All members of the Mitsubishi Materials Group work as one to observe laws and reinforce safety measures while preventing global warming and reducing environmental impact from operations. And as one, we support the energy policy of Japan.



Yukio Ono
General Manager, Energy Business Division



Nuclear Fuel Assemblies

Mitsubishi Nuclear Fuel Co., Ltd., in Tokai, a village in Ibaraki Prefecture, has consistently produced nuclear fuel for nuclear power plants since operations went on line in 1972, and today, output represents about 10% of all power generated in Japan. The company observes rules and regulations and works to reinforce safety measures while responding to requests from electric power utilities—its main customer group—by maintaining stable production and high quality. The company also aggressively embraces measures to deal with waste from its production processes.

Precious Metals Division

Market-Oriented Approach Underpins Customer-Oriented Business

Mitsubishi Materials' history in the gold business spans more than a century. During this time, the Company expanded its activities and is now involved in a wide range of precious metals business, including retail sales of gold bars and jewelry, the creation of commemorative products, and direct sales and dealing with buyers of precious metals. Naturally, we offer products for industrial applications, but we also sell precious metals and jewelry to individuals.

We achieved particularly rapid growth in the jewelry business with a customer-oriented sales strategy that is way ahead of conventional industry practices. That is, we utilize mail order and jewelry fairs to facilitate access to our products.

Mitsubishi Gold is widely regarded as the top gold brand. We do not remain complacent with this competitive advantage, however, as we consistently give top priority to customer satisfaction in merchandising and improving products. To this end, we objectively analyze data accumulated from conversations with customers at retail stores and through questionnaires, and make every effort to enhance employee education in terms of customer satisfaction.



Satoshi Terashita
General Manager, Precious Metals Division



Mail Order, Jewelry Fairs

Sales of jewelry by mail order began in 1978, and since then, the MJC brand has become firmly ingrained in the minds of jewelry-buying customers. Our jewelry fairs, the largest in Japan, are held in eight major cities.

Mitsubishi Gold

We offer Mitsubishi Gold through several popular channels. We sell gold bars directly to the public at six locations in Japan and also provide the convenience of telephone order. We maintain "My Gold Plan," which facilitates gold purchases in monthly installments of ¥3,000 and up, and "My Gold Bank," which enables individuals to acquire gold but entrust it to us for safekeeping.

Environmental Conservation

Mitsubishi Materials provides a host of products for every facet of today's world, including cement, fabricated metal products and electronic materials. We are aware that the negative impact of our business activities on the environment is relatively significant. To ameliorate this situation, we apply Green Productivity Management (GPM), a program to reduce environmental impact and enhance information disclosure practices, in our efforts to raise corporate value and contribute to sustainable development.

Mitsubishi Materials' Environment Policy

Mitsubishi Materials' Environment Policy

Mitsubishi Materials is committed to sustainable social development through the supply and recycling of basic materials essential to modern lifestyles, and toward this end tackles key issues, such as steps to promote environmental protection and the establishment of a sophisticated resource-recycling society.

As a comprehensive maker of materials, our operations are diverse, with cement, aluminum, metals and fabricated metal products businesses. We supply many of the basic materials indispensable to industrialized society. Indeed, our materials and products are used widely in many aspects of daily life.

The manufacturing operations undertaken by all makers of basic materials, not only Mitsubishi Materials, are environmentally high impact. And yet, those operations also present opportunities to recycle resources through waste processing.

By working to protect the environment and utilize resources more efficiently in our operations, we will play a key role in laying the foundation for an environmentally harmonious resource-recycling society.

To reach this objective, we will emphasize GPM to:

1. conserve energy and resources, eliminate waste and curb release of harmful substances, and thereby ensure clean production processes and reduced environmental impact;
2. utilize waste in new applications and expand waste-processing operations, and thereby boost resource reuse and recycling;
3. develop eco-friendly products;
4. widen green procurement targets; and
5. implement an environmental management system that ensures the following:
 - i) respect for environment-related laws and regulations, and dedicated efforts to prevent pollution;

- ii) regular review of themes and targets to achieve ongoing improvement in responses to environmental concerns;
- iii) broader communication channels to communities on environmental issues; and
- iv) solid awareness of environmental policy among all employees and a deeper understanding of environmental issues gained through in-house programs.

September 1, 2006

Yoichi Taguchi
Managing Director & CGO
Mitsubishi Materials Corporation

GPM Structure

In 1998, Mitsubishi Materials set up the GPM Committee, chaired by the Chief Green Officer (CGO), and under the committee's direction has actively worked to reduce the impact of its operations on the environment through such approaches as waste reduction and energy-saving processes as well as the introduction of an environmental management system.

The GPM Committee discusses a direction that activities will follow over the next year and promotes the policy throughout the Company and the Group. To complement these efforts, we establish technical committees, comprising in-house staff with expertise in certain fields, to study

GPM themes that require expert input or selective responses, and each committee determines concrete measures for tackling individual issues. Currently, we have three active technical committees, dedicated to environmental management, energy conservation and global warming countermeasures.

All plants and facilities strive to reduce environmental impact and independently draft objectives and numerical targets reflecting Companywide goals set by the GPM Committee as well as factors characteristic to geographical location.

To pinpoint the status of implementation efforts, we rely on regular audits by the Green Action Team, which is made up of staff with expertise in such fields as energy and the environment. The team also extends guidance for

Prudent Use of Resources While Contributing to Protection of the Natural Environment

Resources are assets in limited supply yet vital to the way we live today. Therefore, the development of applications to derive maximize benefit from these limited resources for society while ensuring a sufficient supply to sustain the next generation has become a pressing concern worldwide. As a maker of basic materials, Mitsubishi Materials aims to use nonrenewable resources wisely.



Total Energy Consumption

45.4 billion kilojoules
(Crude oil equivalent: 1.17 million kiloliters)

Mitsubishi Materials has pursued strategies targeting improved energy consumption per unit by an average of 1% per year. From fiscal 2007, however, the Company will be redirecting efforts toward energy-saving measures to achieve its newly highlighted greenhouse gas target. See page 43 for details.

Energy consumption, primarily in cement production and copper smelting and refining operations, reached 45.4 billion kilojoules, equivalent to 1.17 million kiloliters of crude oil, in fiscal 2006. As for major energy source usage by volume, we consumed 920 million kilowatt-hours of purchased electricity, 626,000 tons of coal and 484,000 tons of petroleum coke.

By switching to different types of fuels and utilizing alternative sources, such as waste oil and waste plastics, we have compensated for the causes of increased energy use, chiefly higher production output, and held energy consumption to around the fiscal 2005 level.



Raw Material Input

17.45 million tons

The cornerstone of our operating foundation is the production of basic materials. Consequently, we consume considerable amounts of natural resources. Basic materials are indispensable to the way we live today, so to satisfy market demand while using as little of the world's limited natural resources as possible, we aggressively turn to recycled raw materials as key resources.

Recycled raw materials from waste and by-products accounted for 18%, or 3.07 million tons, of raw material input in fiscal 2006. Had the waste—1.89 million tons—not been recycled, it probably would have gone into landfills.



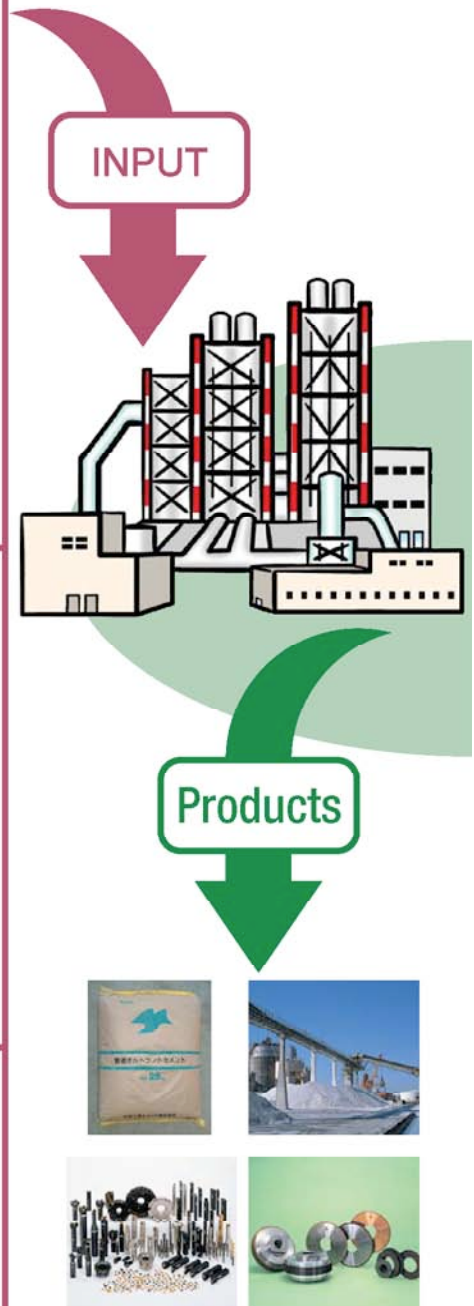
Water Use

95.96 million cubic meters

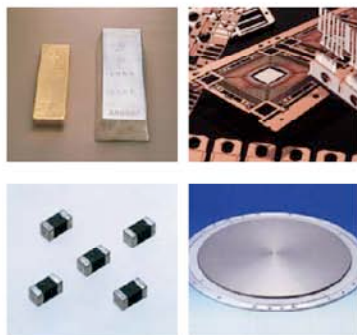
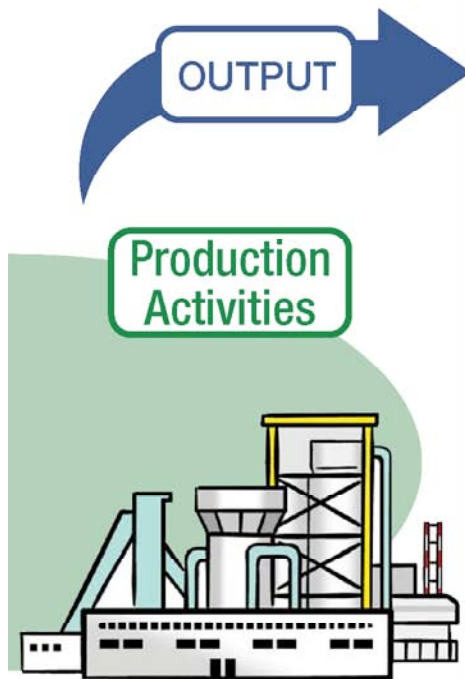
The primary use of water is for cooling during production processes.

In fiscal 2006, we used 95.96 million cubic meters of water. Seawater accounted for 80% of this amount, and fresh water, such as industrial-use water and groundwater, accounted for the remaining 20%.

To prevent any waste of water, we encourage the use of recirculated water and promote installation of more closed systems.



The scope of resource consumption covers 16 plants and research facilities of the parent company, Mitsubishi Materials. We provide details on our practices and three years' worth of data on our web site.



Emissions into the Air and Bodies of Water

SOx: 240,000 cubic meters	BOD: 35 tons
NOx: 5.07 million cubic meters	COD: 129 tons
Soot and Dust: 371 tons	Nitrogen: 298 tons
	Phosphorous: 4 tons

Sulfur oxides (SOx) and nitrogen oxides (NOx), two of the main components of air pollution, are produced through the combustion of fuels. We curb the amount of air-polluting substances that are generated at our manufacturing plants by reducing fuel consumption. We have also trimmed the amount of air-polluting substances that are actually emitted into the atmosphere by installing desulfurizing equipment* and other devices.

The key culprits of water pollution are chemical oxygen demand (COD) and biochemical oxygen demand (BOD) discharge as well as nitrogen and phosphorous. At our manufacturing plants, we have installed wastewater treatment facilities to prevent discharge of these substances into public bodies of water.

*Desulfurizing equipment eliminates SOx in waste gas generated through the combustion of fossil fuels.



Volume of Industrial Waste

29,000 tons

Reducing the amount of waste produced through operations is equally as important as turning waste into reusable raw materials. Therefore, Mitsubishi Materials has directed concerted efforts to reducing waste from its operations since 1997.

In fiscal 2006, the volume of industrial waste from our operations reached 29,000 tons, and of this amount, 71% was recycled for use as a new raw material in another application.



Volume of Hazardous Chemical Substance Emissions

125 tons

While we are working to cut the amount of hazardous chemical substances we use and actively switching to alternatives, the alternatives present challenges of their own. We are doing all we can to prevent hazardous chemical substances from entering the environment.

In fiscal 2006, the volume of chemical substances designated under the Pollutant Release and Transfer Register (PRTR) Law* comprised 125 tons in the amount released and 88 tons in the amount transferred.

*PRTR is a program to identify, calculate and disclose data on 1) the level of emissions released into the environment from various kinds of chemical substances with toxic properties, and 2) the amount of such chemical substances contained in waste that is transported away from the plant or facility where it was produced.

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