Review of Operations:
At a Glance

Net Sales by Segment (Consolidated)

<table>
<thead>
<tr>
<th>Segment</th>
<th>FY 2002 Net Sales: ¥355 Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral resources</td>
<td>4.4%</td>
</tr>
<tr>
<td>Metallurgy</td>
<td>52.5%</td>
</tr>
<tr>
<td>Electronics &amp; advanced materials</td>
<td>36.0%</td>
</tr>
<tr>
<td>Construction materials &amp; housing</td>
<td>4.6%</td>
</tr>
<tr>
<td>Others</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Note: Proportion is calculated by net sales of each segment which does not include inter-segment transactions.

Operating Income and Net Cash Provided by Operating Activities

<table>
<thead>
<tr>
<th>Years ended March 31</th>
<th>Billions of yen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral resources</td>
<td>0</td>
</tr>
<tr>
<td>Metallurgy</td>
<td>0</td>
</tr>
<tr>
<td>Electronics &amp; advanced materials</td>
<td>0</td>
</tr>
<tr>
<td>Construction materials &amp; housing</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
</tr>
</tbody>
</table>

Net cash provided by operating activities (right)

Capital Expenditures (left) and Depreciation (right)

Business Profile

<table>
<thead>
<tr>
<th>Segment</th>
<th>Business Content</th>
<th>Main Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Resources</td>
<td>• Exploration, development, production, and sales of non-ferrous metal resources, domestically and overseas</td>
<td>Gold and silver ores, Copper concentrates</td>
</tr>
<tr>
<td></td>
<td>• Geological consulting utilizing mineral resource developing techniques</td>
<td></td>
</tr>
<tr>
<td>Metallurgy</td>
<td>• Refining and sales of base metals such as copper, nickel, and precious metals</td>
<td>Copper, Nickel, Zinc, Lead, Precious metals such as gold, silver, platinum, etc.</td>
</tr>
<tr>
<td>Electronics Materials</td>
<td>• Manufacturing, processing and sales of IC packaging materials, electronics materials, crystal materials, etc.</td>
<td>Lead frame, Tape material, Bonding wire, Paste, Crystal material (GaP, Gallium Phosphide, LN, Lithium Niobate, LT: Lithium Tantalate), Printed Wiring Board (PWB), Optical components (Faraday Rotator, Optical Isolator and High frequency device).</td>
</tr>
<tr>
<td></td>
<td>• Manufacturing and sales of optical communication materials and components, devices, connectors, switches, photo conductive cells, silicon photodiode, TV frames, etc.</td>
<td></td>
</tr>
<tr>
<td>Advanced Materials</td>
<td>• Manufacturing, processing, and sales of metal powders (nickel, palladium), circuit board materials, battery materials, magnet materials, etc.</td>
<td>Nickel powder, Copper-clad polyimide film, Materials for rechargeable batteries (nickel hydroxide, lithium cobaltate), Rare earth metal bonded magnets</td>
</tr>
</tbody>
</table>
Review of Operations:
Mineral Resources and Metallurgy

Results for Fiscal Year 2002

The Mineral Resources segment posted net sales of ¥24.7 billion, a 5.9% increase from the previous term. Operating income increased 220.0% (¥1.8 billion) compared with the previous term to ¥2.7 billion, recovering to fiscal year 2000’s level. This is attributable to growth in sales and profit at the Hishikari Mine supported by higher gold prices and to the increase in sales accompanying the complete switchover in fiscal year 2002 by Sumitomo Metal Mining Arizona, Inc. to sales of copper metal produced by the SX-EW method (solvent extraction/electrowinning, a low-cost hydro-metallurgical method for producing copper at the mine site).

The Metallurgy and Metal Processing segment posted net sales of ¥226.3 billion, a 14.8% increase from the previous term. Operating income grew 135.7% to ¥8.3 billion, sharply recovering from the previous term’s slump. Major factors behind this were the rise of LME nickel prices, the continued strength of nickel demand for stainless and other special steels, and increased sales due to the recovery in nickel for semiconductor-related electronics materials.

Basic Business Strategy

Having long been core businesses of SMM, the Mineral Resources and Metallurgy segments account for approximately 60% of overall sales. Under our “Mid-Term Management Plan,” we position three businesses as core: nickel, where we aim to take the initiative in the industry by establishing low-grade nickel oxide ore refining technology; copper, demand for which is expected to grow steadily, particularly in the Chinese market; and precious metals, including gold from the Hishikari Mine, which is one of the world’s few high-grade mines.

In order to provide cost-competitive products on a stable basis amid the ongoing global reorganization of mining companies and increasing oligopolization of markets, it is vital for us to secure our own resources through direct investment in overseas mines. To that end, we are aiming for an integrated production system that handles everything from mineral resources development to refining for the three core businesses by globally developing mineral resources, improving refining technology, and endeavoring to expand production capacity.
Review of Operations

SMM’s Worldwide Mines and Refineries

- Mine / SMM’s interest (%)
- Refinery / Production capacity per year (tonne)

* Please see Production Capacity Expansion Plan in page 10

SMM’s Metal Share and Value by Mine

<table>
<thead>
<tr>
<th>Mine</th>
<th>SMM’s Metal Share (left)</th>
<th>Estimated Value (right)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morenci (Copper)</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>La Candelaria (Copper)</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Batu Hijau (Copper, Gold)</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Figesbal (Nickel)</td>
<td>25.5%</td>
<td></td>
</tr>
<tr>
<td>Soroako (Nickel)</td>
<td>20.1%</td>
<td></td>
</tr>
<tr>
<td>Coral Bay (Nickel/Cobalt mixed sulfide – under construction)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jinglong Copper Co., Ltd. (Copper)</td>
<td>13.3%</td>
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<tr>
<td>Northparks (Copper)</td>
<td>13.3%</td>
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<tr>
<td>Pogo (Gold – under exploration)</td>
<td>51% (currently 85%)</td>
<td></td>
</tr>
<tr>
<td>Hishikari Mine Dept. (Gold)</td>
<td>100%</td>
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SMM’s Metal Share and Value by Metal

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<th>Metal</th>
<th>Thousands of tonne</th>
<th>Millions of U.S. Dollars</th>
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<td>Gold</td>
<td>1,000 - 4,000</td>
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<td>0 - 2,000</td>
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</tr>
<tr>
<td>Cobalt</td>
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<td>0 - 4,000</td>
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Notes: 1. Only the Company’s own mines are covered.
2. SMM’s metal share = Ore reserves (tonne) x Metal grade x SMM’s interest of mine (%)
3. Estimated value = SMM’s metal share (tonne) x Standard metal price

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Strategy for Metal Business

Nickel

Demand for nickel, which is used in stainless steel and electronic materials, is expected to steadily grow over the medium to long term. SMM offers a variety of nickel products, including electrolytic nickel and ferro-nickel, and is the only domestic producer of electrolytic nickel.

Under our “Mid-term Management Plan,” we seek to establish stable overseas supplies of raw materials in order to expand annual production capacity of electrolytic nickel from 36,000 tonnes to 60,000 tonnes and of ferro-nickel from 21,000 tonnes to 24,000 tonnes over the long term. For assuring stable procurement of raw materials, in addition to our capital participation in vendor P.T. Inco (Indonesia) and FIGESBAL (New Caledonia), we are promoting the Coral Bay Project.

Coral Bay Project

The Coral Bay Project (formerly the Rio Tuba Project) is the project to establish a low-grade nickel oxide ore processing plant at Rio Tuba in the southern part of Palawan Island, the Philippines, and to produce nickel/cobalt mixed sulfide, an intermediary product in the nickel refining process (nickel: 10,000 tonnes per year; cobalt: 700 tonnes per year). To advance the project, in July 2002, SMM established Coral Bay Nickel Corporation in the Philippines in conjunction with Mitsui & Co., Ltd., Nissho Iwai Corporation, and Rio Tuba Nickel Mining Corporation (the Philippines).

Total investment in the project, which is expected to operate for approximately 20 years, is estimated at US$180 million. A stock of approximately 16 million tonnes of raw material has already been mined locally and the use of existing infrastructure of harbors, roads, and other facilities will enable low-cost development. The project is progressing smoothly and is scheduled to start operations in fiscal year 2004. This is an overseas project in which SMM holds a majority interest. By establishing low-grade oxide ore refining technology, we aim to take the initiative in the global nickel refining business.

Establishment of the HPAL Method

Previously, the global development of nickel resources has mainly focused on nickel sulfide ore and garnierite, the high-grade nickel oxide ore. The recent development, however, of the HPAL (high pressure acid leach) method has made possible the low-cost recovery of nickel from laterite, the low-grade oxide ore. Laterite ore exists in large quantities in many regions including the Philippines, Indonesia, Australia, Central America, South America, and Africa and establishing laterite ore processing technology is of great significance from the standpoint of securing a stable nickel supply for the future. It is also the beginning of the strategy for the challenge of yet larger nickel refining projects going forward.

Reinforcing Domestic Nickel Plant Facilities

SMM will purchase all of the intermediary product produced by the Coral Bay Project and transform it into the final electrolytic nickel product at its own nickel plant. This plant is highly cost-competitive as it uses the MCLE (matte chlorine leach electrowinning) process, a high-quality, high-productivity hydrometallurgical refining process. In line with this project’s progress and demand growth, we will gradually expand annual electrolytic nickel production capacity from 36,000 tonnes to 60,000.

Copper

In China, Taiwan, South Korea and other parts of Asia where economic development is ongoing, demand for copper is strong. In particular, in China, which will host the Beijing Olympics in 2008 and the Shanghai International Expo in 2010, the infrastructure is being improved at a fever pitch and demand for copper for wire, electronics materials, and construction materials is growing rapidly. Chinese demand for copper is expected to reach 5.0 million tonnes in fiscal year 2010, compared with the current 2.5 million tonnes. However, the production capacity of
local smelters in China cannot handle the growth in demand so that the supply and demand gap will continue to expand. It is estimated that by fiscal year 2010, more than half of Chinese demand will have to be fulfilled with imports.

Securing 50% of our copper from our own mines stabilizes our supply and we have extensive business experience in China. For these reasons, we are confident of being able to establish a dominant position in the Chinese market.

In order to respond to trends like this in Asian markets, in addition to advancing plans to increase copper production, we are endeavoring to secure our own resources.

With regard to the Tropico Copper-Platinum Group Metal Project in Sinaloa, Mexico in which we have been engaged in exploration since 2001, we decided in March 2003 to withdraw from the entire project based on exploration results that showed that copper content did not meet our initial expectations.

Nevertheless, our proactive stance toward mine development remains unchanged. That said, however, we are fully aware that we need to reduce the risks associated with the mine development by speeding up the development projects as much as possible.

Expansion Plans

At the Toyo Smelter & Refinery, our domestic copper production site, we are expanding production facilities to boost annual capacity to 450,000 tonnes. In July 2003, we completed an increase in annual capacity from 270,000 tonnes to 300,000 tonnes. This plant is located on a site which is large enough to carry out the expansion in capacity in an efficient manner. Going forward we will gradually expand capacity in line with market growth. Total investment in this capacity expansion plan is estimated at ¥28.0 billion.

In addition, last year we established a system for annual electrolytic copper production capacity of 150,000 tonnes at Jinlong Copper Co., Ltd., our joint venture in Anhui Province, China. We are targeting annual capacity of 300,000 tonnes down the road in order to respond to vigorous demand.

Reinforcing the Sulfuric Acid Business

The copper refining process yields a large amount of sulfuric acid as a by-product. The Toyo Smelter & Refinery currently produces approximately 700,000 tonnes of sulfuric acid annually. As the profitability of sulfuric acid sales has an impact on the competitiveness of the copper business, the sulfuric acid business becomes a vital issue when copper production is expanded.

SMM formed an alliance with Dowa Mining Co., Ltd. in the sulfuric acid business and in February 2003 established the sulfuric acid manufacturing and sales company Acids Co., Ltd. as a joint venture. Through this alliance, we aim to cut more than one billion yen in annual costs at both companies in total by enhancing transportation efficiency, cutting sales, general and administrative expenses, and enhancing productivity.

In addition, we have secured a purchaser within the Group as the Coral Bay Project’s nickel oxide ore processing plant plans to use 260,000 tonnes of sulfuric acid annually.

Precious Metals

In addition to maintaining annual gold production of 7 to 8 tonnes thanks to the stable operations of the Hishikari Mine, one of the world’s few high-grade gold mines, we are involved in the Pogo Gold Project in Alaska, the U.S. Furthermore, we are enhancing the efficiency of precious metal recovery and refining with the introduction of a new process for precious metals refining that we developed in-house.

The Superiority of the Hishikari Mine

While the average grade of the world’s gold mines is approximately 5g of gold per tonne of ore, the average grade of the Hishikari Mine is 45g to 50g, making it one of the world’s few high-grade mines. We are using the mining technology that we cultivated at this mine in mine development projects that we are currently promoting overseas. Having begun operations in 1985, the Hishikari Mine’s total gold production reached 100 tonnes in 1999. With estimated gold reserves of 150 tonnes (as
of December 2002), stable operations will continue going forward.

**Pogo Gold Project**

This is a gold mine development project in Alaska and is a joint venture with Teck Cominco (Canada) and SC Minerals (a U.S. subsidiary of Sumitomo Corporation) in which we hold a majority interest. The Liese deposit, which is the Pogo region’s principal ore deposit, is promising, with estimated ore reserves of 9.7 million tonnes, average gold grade of 18.0g per tonne, gold reserves of 174 tonnes, and annual gold production of 12.5 tonnes.

This project is currently in the review process for obtaining permission to develop the mine. We expect to get permission within fiscal year 2003. If this is the case, we will be able to begin operations in fiscal year 2005 as construction requires approximately two years.

**Introduction of New Process for Precious Metals Refining**

After being separated and recovered in the copper refining process, precious metals—gold, silver, and platinum—are refined. In order to increase precious metal refining capacity and efficiency in conjunction with the copper production expansion at the Toyo Smelter & Refinery, we are introducing a new process for precious metals refining during the period from fiscal year 2003 to 2004. Total investment of ¥3.6 billion is expected to expand annual refining capacity from 36 tonnes to 60 tonnes for gold and from 300 tonnes to 360 tonnes for silver.

Unlike conventional processes, the new process enables recovery of greater value metals first. This shortens the gold recovery time from one month to eight days, which should have the effect of lowering costs by lightening the interest burden. In addition to gold, silver, platinum, palladium, and rhodium, other platinum-group metals such as iridium and ruthenium are also recovered, which was difficult with conventional processes. Introduction of the new process is expected to add ¥700 million to profit per year.

**Gold Price (COMEX)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Price (in $/oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>350</td>
</tr>
<tr>
<td>2003</td>
<td>400</td>
</tr>
</tbody>
</table>

**Zinc Price (LME)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Price (in $/t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>500</td>
</tr>
<tr>
<td>2003</td>
<td>600</td>
</tr>
</tbody>
</table>

**Zinc Business Joint Venture**

The domestic zinc business is under severe pressure from imports from neighboring countries such as China and South Korea. In July 2002, SMM established MS Zinc Co., Ltd. as a joint venture with Mitsui Mining & Smelting Co., Ltd. The joint venture is expected to contribute to integration effects of ¥1.5 billion annually at both companies by implementing a broad range of business cooperation from materials procurement to product distribution, sales, and technology development. As part of this cooperation, in July 2003 we integrated production of zinc alloy for galvanizing.

**Recycling from Iron Scrap**

As zinc is used as a surface treatment material on steel sheets to prevent rust, large amounts of zinc are contained in the electric arc furnace (EAF) dust produced when iron scraps are recycled to make steel. At our Shisaka plant, we process this EAF dust from steel production to recover and recycle the zinc. As part of our business cooperation, we aim to enhance the operating rate of the Shisaka Plant by promoting the transfer of a portion of the EAF dust from Mitsui Mining & Smelting.
Review of Operations: Electronics Materials and Advanced Materials

Results for Fiscal Year 2002

In the first half of fiscal year 2002, there was temporary briskness in the global semiconductor markets, particularly in Asia, and net sales in this business segment increased 19.8% (¥21.9 billion) over the previous term, to ¥132.9 billion.

Electronics materials sales increased, supported by increased exports of bonding wire and electric paste to Taiwan and by the recovery in demand for crystal materials. Advanced Materials sales also increased overall, driven by completion of user inventory adjustments and by recovery in electronic device-related demand for metal powders and copper-clad polyimide films. Net sales at subsidiaries also increased overall, as the domestic and Asian package material-related business and electronic part-related business similarly saw a revival in sales.

On the back of the recovery in net sales, operating income recovered sharply to ¥4.1 billion, from a ¥4.4 billion loss in the previous term.

Basic Business Strategy

1) Executing the Mid-term Management Plan
Under our Mid-term Management Plan we aim to further reinforce our business structure by positioning the Electronics Materials and Advanced Materials segment as a core business and applying to them the “select and focus” strategy.

In the Electronics Materials business, we are concentrating on areas that make the most of the material technologies in which we specialize. Specifically, we are reinforcing the areas of electric paste, a material used in chip components such as resistors and multilayer ceramic capacitors, and bonding wire, which is used to connect semiconductor chips to external leads. In the Advanced Materials business, the key areas are copper-clad polyimide films for liquid crystal drivers and metal powders such as nickel powder for multilayer ceramic capacitors.

In April 2002, we spun off our IC packaging materials business, which included lead frames and tape materials, and established Sumitomo Metal Mining Package Materials Co., Ltd. We have built a system in which the new company is comprehensively responsible for operations at eight domestic and overseas production sites.

In addition, we are promoting a transition to a business structure with less vulnerability to changes in environments. As a result of preferential treatment we offered employees taking early retirement in 2002, the number of employees in the Electronics Materials segment was reduced by 130, or 20%.

2) Key Strategies
Our key strategies going forward are development of operations in China and research and development.

Based on the rapid growth in IT-related markets in China, we are developing China strategies for each of our businesses. In bonding wire, we are reinforcing our production site in Malaysia and considering adding a production line in China. In electric paste, we are targeting a large market share in China by strategically positioning our Shanghai production site. In lead frames, in addition to the business we are already developing in Chengdu, Sichuan, we are building a new plant in Suzhou, Jiangsu, as our second production site in China. It is scheduled to start operations in 2004.

In research and development, we are endeavoring to restructure our R&D system for the most efficient development of the next generation of new products. In addition to building a system whose highest priority is to meet customer needs, we aim for timely and speedy achievements from development by focusing projects on core technologies such as fine powder technology and surface treatment technology.
SMM's Worldwide Production Facilities for Electronics Materials and Advanced Materials

- **Kunitomi District Div.**
  - Crystal materials, Magnet materials

- **SMM Precision Co., Ltd.**
  - Optical components

- **Ajimu Electronics Co., Ltd.**
  - Solder plating of IC

- **Shinko Co., Ltd.**
  - Printed Wiring Board

- **Electronics Division**
  - Bonding wire, Paste, Crystal materials, etc.

- **Sumitomo Metal Mining Package Materials Co., Ltd.**
  - Lead frame, Tape materials

- **Isoua Plant**
  - Metal powder, Circuit board materials, Battery materials, etc.

- **Nihalma Electronics Co., Ltd.**
  - Lead frame

- **Ohkuchi Electronics Co., Ltd.**
  - Lead frame, Tape materials, Bonding wire, Recovery and recycling of precious metals

- **Sumiko Electronics Suzhou Co., Ltd.**
  - Lead frame – under construction

- **Shanghai Sumiko Electronic Paste Co., Ltd.**
  - Paste

- **Sumiko Leadframe Chengdu Co., Ltd.**
  - Lead frame

- **Sumiko Leadframe (Thailand) Co., Ltd.**
  - Lead frame

- **Sumiko Electronics Taiwan Co., Ltd.**
  - Lead frame

- **Taiwan Sumiko Materials Co., Ltd.**
  - Bonding wire

- **P.T. SUMIKO LEADFRAME BINTAN**
  - Lead frame

- **Sumitomo Metal Mining Asia Pacific Pte. Ltd.**
  - (Regional Headquarters of overseas lead frame operations)

- **Sumiko Leadframe Singapore Pte. Ltd.**
  - Lead frame

- **SMMEP Pte. Ltd.**
  - TV frame

- **M-SMM Electronics SDN. BHD.**
  - Lead frame

- **Malaysian Electronics Materials SDN. BHD.**
  - Bonding wire, Paste

- **SMM USA, Inc.**
  - TV frame

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16 | Review of Operations
Strategy for Electronics Materials Business

**Electric Paste**

Electric paste is used in chip components such as conductive materials, resistors, and protective film for circuits that are installed in a wide variety of electronic equipment, including mobile phones, personal computers, and home electric appliances. Among our various electric pastes, the nickel paste for multilayer ceramic capacitors that we developed ahead of the rest of the industry has been especially well received by the market and has secured a high global share. To respond to worldwide growth in demand for mobile phones and other electronic equipment, we reinforced our production line for this product in 2001. We are also promoting business in China where we expect demand to expand quickly using our Shanghai sales and production site established in 1996 as a strategic base.

**Bonding Wire**

Bonding wire is used to connect the electrodes of semiconductor chips to lead frames. In high-density ICs, gold wire is generally used because of its superior workability and conductivity. While taking advantage of our ability to procure gold in-house, in addition to lowering costs by reducing the gold usage with fine processing, we are achieving the high level of strength in the high pin and narrow pitch bonding requirements.

While the market for bonding wire is expected to maintain an annual growth rate of around 10%, prices are likely to fall due to the impact of worldwide price competition. To reinforce our cost competitiveness, we are transferring domestic production to Malaysia and will increase production capacity there by 1.6 times in fiscal year 2004, compared with fiscal year 2002. To achieve a top global market share, we are also considering building a new production line in China.

**Lead Frames**

Lead frames are metal frames that form the external leads for semiconductor devices such as ICs and transistors. Our IC packaging materials, including lead frames and tape materials, boast a top share of 12% of the global market. In April 2002, we spun off our IC packaging materials business and established Sumitomo Metal Mining Package Materials Co., Ltd. We have established a system in which the new company is comprehensively responsible for operations at eight domestic and overseas production sites.

In China in particular, with a tripling of the market expected in recent years, semiconductor assembly-related businesses have, one after the other, advanced into Shanghai and other parts of the Huadong region. To handle this demand, we are building our second production site in China in Suzhou, Jiangsu, which is near Shanghai. While it is scheduled to start operations in fiscal year 2004, we plan to gradually build an integrated production system that will include plating and stamping facilities by investing a total of ¥3.6 billion by fiscal year 2007.
Strategy for Advanced Materials Business

Copper-clad Polyimide Film

Copper-clad polyimide film is a flexible board material. As telecommunications devices have become smaller and offered more functions, the chip-on-film (COF) method, which uses copper-clad polyimide film, has become standard for the LCD driver IC packaging in mobile phones. Recently, the transition to the COF method has also extended to the large thin film transistors (TFTs) used in notebook computers and monitors, resulting in a rapid growth in demand for copper-clad polyimide film.

SMM’s share of the market for COF copper-clad polyimide film used in large TFTs already exceeds 90% worldwide. In order to handle the rapid growth in orders, in fiscal year 2003 we plan to invest ¥1.0 billion to build a new production line in the Isoura Plant, which will double production capacity from the fiscal year 2002 level, to 1.2 million square meters.

Nickel Powder

Nickel powder is used for the internal electrodes of multilayer ceramic capacitors (MLCCs), which are indispensable in all types of electronic equipment. Although MLCCs formerly used palladium and other precious metals, they were replaced by nickel as precious metal prices soared. Nickel powder is the raw material for nickel paste, one of our electronics materials, and we take advantage of our integrated production system that covers everything from raw nickel material to paste. Our nickel paste has been well received by the market and is used by most of the world’s MLCC manufacturers.

We aim to expand our market share in this area by introducing new highly functional products.

Battery Materials

Our materials for batteries include nickel hydroxide for nickel hydrogen batteries and lithium cobaltate and lithium nickel oxide for lithium batteries. Both nickel hydrogen and lithium batteries are so-called rechargeable batteries. SMM products are used for the positive electrodes of these batteries. Our strength lies in the ability to respond to customer needs through quality products and an integrated production system from raw materials.

Our nickel hydroxide was adopted in batteries for the Hybrid Electric Vehicle (HEV) of Toyota Motor Corporation and sales are expanding substantially. We aim to secure orders of this product in tandem with Toyota’s plan to increase HEV production to 300,000 vehicles by fiscal year 2005, seven times production volume in fiscal year 2001.

Our lithium nickel oxide was also adopted in the world’s first vehicle equipped with light-weight and high-volume lithium rechargeable batteries. We will be engaged in developing highly functional lithium batteries to meet expected growth in demand for vehicle and mobile phone applications.

Magnet Materials

Samarium Ferrous Nitrogen (Sm-Fe-N) is a functional magnet material that we developed and for which we started full-fledged sales in the domestic market in fiscal year 2000. Applications of Sm-Fe-N are expanding for light and small-sized devices due to its stronger magnetism compared with other magnets of the same weight. We are increasing sales volume of the product as its properties are widely known.

Applications of Sm-Fe-N will be further broadened when it is used for flexible magnets (rubber magnets) and compounded with ferrite magnets. We will focus on developing new markets for the product, and specifically aim to enter the automotive industry by enhancing its heat resistance. In conjunction with the increase in sales of this product, we will reinforce capacity at our production base, the Kunitomi District Division, where we currently have annual production capacity of one hundred tonnes.

In addition to this, demand for small-size molded magnets for digital camera shutters is expanding and the products will also be applied for camera shutters of mobile phone. We will expand sales in this area based on our superior small-size molding technologies.
Review of Operations:
Environmental Business

Basic Business Strategy

Our “Mid-term Management Plan” positions our environmental business as an area of concentration. Worth an estimated ¥30 trillion, the domestic environmental market is expected to expand going forward. As many types of businesses enter it one after the other, however, competition is becoming increasingly harsh.

We are securing a superior position by focusing on environmental businesses that take full advantage of our strengths. These include the recycling business centered on recovering valuable metals and the environmental improvement business such as soil and groundwater contamination where we leverage the wealth of technology we have developed through our mineral resources and metallurgy businesses.

Recycling Business

The recycling business recovers zinc from electric arc furnace (EAF) dust, copper and nickel from the effluent in the plating process, and precious metals from electronics materials scrap. In addition, our subsidiary Nippon Catalyst Cycle Co., Ltd. recovers valuable metals such as molybdenum and vanadium from the used desulfured catalyst generated when oil is refined. In fiscal year 2003, we increased annual processing capacity from 12,000 tonnes to 15,000 tonnes, thereby securing processing capacity equivalent to approximately 50% of the desulfured catalyst disposed of domestically.

Environmental Improvement Business

Our environmental improvement business is pursued by group companies under the centralized control of our Energy & Environment Business Division, in collaboration with our research laboratories. These group companies include Sumicon Certech Co., Ltd., providing environmental assessment and remediation services for soil and groundwater contamination; Sumiko Eco-engineering Co., Ltd., involved in environment-related engineering for electronic dust collectors and fuel-gas treatment equipment and corrosion prevention for harbor facilities; Sumiko Techno-Research Co., Ltd., focusing on environmental research and analysis; and Japan Irradiation Service Co., Ltd., working in radiation processing for sterilization of food packaging materials and medical devices and for use in modification of industrial materials.

Also, using our catalyst technology, we developed technology for making the high concentration of nitrate in plant effluents harmless. The technology is now commercialized as “N-Free,” our processing equipment for removing highly concentrated nitrate. We have also established technology for treating municipal incinerator fly ash, which is also used by our existing product “SFAT (Sumitomo Fly Ash Treatment).” Orders for both promise to expand going forward.

<table>
<thead>
<tr>
<th>Division, Company Name</th>
<th>Business Content</th>
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</thead>
<tbody>
<tr>
<td>Energy &amp; Environment Business Division (SMM)</td>
<td>Coordination of divisions, related companies; SFAT/N-Free businesses; Development of other new businesses</td>
</tr>
<tr>
<td>Sumicon Certech Co., Ltd.</td>
<td>Environmental assessment, remediation services for soil, groundwater contamination; Environmental remediation equipment sales</td>
</tr>
<tr>
<td>Sumiko Techno-Research Co., Ltd.</td>
<td>Environmental assessment and research for ground, air, water; Research and analysis for metal etc.</td>
</tr>
<tr>
<td>Sumiko Eco-engineering Co., Ltd.</td>
<td>Environment-related engineering (electrostatic precipitator, exhaust gas treatment, deodorizer and water treatment system); Corrosion control for harbor steel structures, industrial facilities on land, and underground pipelines</td>
</tr>
<tr>
<td>Japan Irradiation Service Co., Ltd.</td>
<td>Radiation processing for sterilization of food packaging materials and medical devices as well as for use in modification of industrial materials</td>
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Launch of New “N-Free” Processing Equipment for Removing Highly Concentrated Nitrate

The nitrogen contained in effluents from factories causes eutrophication in oceans and lakes and is a serious cause of water pollution. In 2001, a revised ministerial ordinance related to the Water Pollution Control Law was enforced, in which nitrate nitrogen was added to the effluent standards as a toxic substance. Furthermore, in April 2004, the regulation of total emissions is scheduled to be enforced for three enclosed water areas in Japan. Under these circumstances, there is a pressing need to reduce nitrogen contained in the effluents at factories.

In September 2002, SMM entered the nitrate removal business by launching processing equipment under the product name “N-Free.” The N-Free process, based on our catalyst technology, reduces nitrate/nitrite nitrogen into harmless nitrogen gas.

The conventional type of this equipment does not work well if concentration of the nitrate exceeds 1000mg/liter. N-Free, however, can process the nitrate regardless of the degree of concentration thanks to the new catalyst technology for denitrification used in N-Free.

We offer the N-Free process/equipment together with our group companies Sumiko Techno-Research Co., Ltd. (environmental research and analysis) and Sumiko Eco-engineering Co., Ltd. (environment-related engineering).