

# Mineral Resources Business



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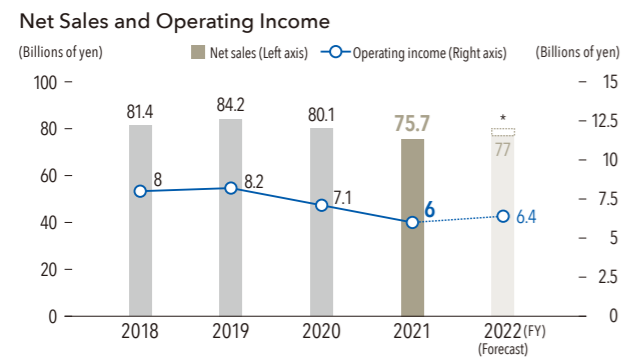
## Establishing Our Earnings Foundation via Mine and Quarry Development with the Next 100 Years in View

In addition to selling limestone as a raw material for cement and aggregates for ready-mixed concrete, the Mineral Resources Business sells mineral products to a wide range of industries, including the construction, civil engineering, steel and chemical industries. The natural resources that form our business base are mainly extracted from our own mines and quarries, but factors such as environmental regulations make it harder each year to develop mines and quarries. Given the circumstances, we are developing mines and quarries with a medium- to long-term perspective, for example by devising a plan to invest 100 billion yen in enhancing mines and quarries during the ten-year period that includes the 23 Medium-Term Management Plan. In addition, we aim to make optimal use of those precious natural resources by supplying them for the optimum purpose, depending on the quality and characteristics of each mine or quarry, and by enhancing our transport system. Meanwhile, our geo-solutions business will contribute to the creation of a recycling-based society via the appropriate treatment of construction soil and surplus soil, and we aim to expand sales of heavy metal immobilizer, which makes it possible to treat contaminated soil on construction sites. Furthermore, our mineral expertise is made fully manifest in our functional materials business, where we are developing versatile products that accurately respond to customer needs and which we aim to commercialize before very long.

## 23 Medium-Term Management Plan Strategies

- **Enhance mines and quarries**
  - Enhance mines and quarries to establish infrastructure that will ensure a long-term stable supply of mineral resources
- **Strengthen our earnings foundation**
  - Strengthen and promote limestone aggregate production and distribution facilities
  - Reconstruct our production and sales system targeting steel and paper manufacturing
  - Open up new markets for our heavy metal immobilizer (DENITE)
  - Accelerate commercialization of our functional hollow particles (CellSpheres)
- **Sustained growth investment**
  - Implement growth investment in the Southeast Asia region

## FY2021 Achievements



\* The adoption of the Accounting Standard for Revenue Recognition has had a downside impact of -3 billion yen.

## Key Strategies for FY2022

### 1. Establish the foundations to ensure a long-term stable supply of our mineral resources

- Review, plan and implement mine and quarry redevelopment
- Appropriately utilize our mineral resources

### 2. Expand the earnings of our existing core businesses that demonstrate the group's overall capabilities

- <Aggregates business>
- Establish an aggregate classification plant at Shin-Tsukumi Quarry and carry out sales promotions
  - Construct an aggregates yard with the aim of ensuring a stable supply of aggregates in the Kanto region and creating a system to promote sales there

| Net sales*       |                | Operating income |                 |
|------------------|----------------|------------------|-----------------|
| FY2021 Results   | FY2024 Plan    | FY2021 Results   | FY2024 Plan     |
| 75.7 billion yen | 82 billion yen | 6 billion yen    | 9.5 billion yen |

\*Since we have adopted the Accounting Standard for Revenue Recognition (ASBJ Standard No. 29) etc. from FY2022, the net sales in the FY2024 plan show the amount after adoption of the new standard. (The adoption of the new standard has a downside impact of -4 billion yen.)

In our aggregates business, sales of limestone aggregate for ready-mixed concrete for high-rise buildings declined due to redevelopment projects in urban areas being delayed by factors such as the COVID-19 pandemic. Limestone for steel, the mainstay of our mineral products business, saw a decline in sales due to decreased volumes of crude steel in Japan and overseas. Our geo-solutions business ran sales promotions for our heavy metal immobilizer for highway construction projects but, due to factors such as the impact of construction site cave-ins, sales remained at the same level as last year. As a result of all that, we posted net sales of 75.7 billion yen (a decrease of 4.3 billion yen on the previous fiscal year) and operating income of 6 billion yen (a decrease of 1.1 billion yen on the previous fiscal year).

Under those business circumstances, we have finished the development work on Horoshiyama (Sumita Town, Iwate Prefecture), a new mining area for Ofunato Quarry, and completed the environmental assessments for the Yato area of Shin-Tsukumi Quarry (Tsukumi City and Usuki City, Oita Prefecture), which will be the next source of raw materials for the Oita Plant. We also successfully developed Nanolitia, our lithium-ion battery cathode material.

#### <Mineral products business>

- Develop optimal production systems that match changes in the production systems of our limestone for steelmaking customers

#### <Geo-solutions business>

- Expand our sales volume by boosting the inclusion of heavy metal immobilizer in the planning for major projects, and securing fixed openings

### 3. Nurture future key businesses that enable sustainable growth

- Commercialize our functional hollow particles, and create new businesses
- Secure stable income sources for our local subsidiary in Vietnam, and implement growth investment in the Southeast Asia region

## Efforts to Address Social Issues

- Stable provision of mineral resource products
- Further contributions to a recycling-based society
- Provision of environmentally sound products

## Relevant SDGs



## Risks

- Quarries subject to large-scale natural disasters associated with climate change
- Triggering the deterioration of concrete by alkali-aggregate reaction

## Opportunities

- Reinforcement of our supply chain, leveraging our abundant mineral resources from mines and quarries
- Development of more sophisticated mining technology

## Some of Our Initiatives

### Initiatives Aimed at Ensuring a Long-term Supply of Limestone Products, and the Development of New Materials

#### Development of a new mining area at Shin-Tsukumi Quarry and construction of the Minamisode Yard

We plan to develop the Yato area, a new site at Shin-Tsukumi Quarry, to ensure a long-term supply of limestone products on into the future. The development will match the characteristics of the mining zone, and we will switch to a production system that is based around limestone products for cement and aggregate. Production and shipment of limestone for steelmaking will be transferred to other quarries in the group and we will take steps to optimize our production structure, for example by installing a new aggregate classification plant at Shin-Tsukumi Quarry. Of the aggregate produced by that plant, we plan to sell the fine aggregate in coastal areas of the Greater Tokyo Area, and to create a stable supply system by constructing a new shipment yard in Sodegaura, Chiba Prefecture.

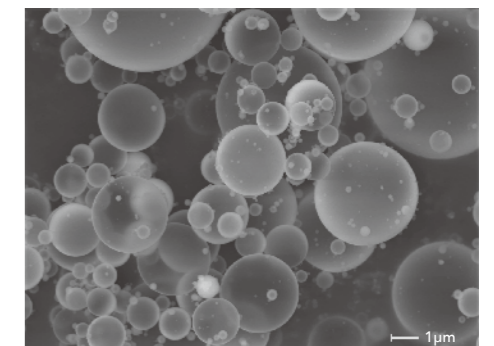


Panorama of the Gomagara area of Shin-Tsukumi Quarry

#### Commercialization of our functional hollow particles

Hollow particles have been applied as a material that make things lighter or more adiabatic, due to their balloon-like structure with an internal cavity.

We have developed CellSpheres, which have an average diameter of 5µm or less, which means they are a tenth of the size of conventional hollow particles. They also have a 70% higher hollowness ratio, making them the ideal material to meet the lightness and insulation needs of products such as painting materials, which have shifted to thin film in recent years, and plastic products, which have become increasingly compact. In addition, we will develop products with better dielectric characteristics and heat-resisting properties, while maintaining the high hollowness ratio, and will grow materials that contribute to the development of areas such as 5G and 6G high-speed communication technologies into a future core business.



Magnified photograph of CellSpheres