

Thinking about the Model for Future Business

While revenue from our organic chemicals business is steadily increasing, our inorganic chemicals business is struggling due to factors such as rising raw material and fuel costs, indicating that the time has come to reconsider the model for our business. However, despite these challenges, we remain a company possessed of real ability and strength. “Purpose” will be the guiding compass in determining our future direction, and we will leverage our technological strength, which is our greatest strength, to continue providing the world with products which improve people’s lives.

Executive Director and President
Hideo Takahashi



Our Aims

Organic chemicals business	Efficiently scale up production to achieve cost-competitiveness
Inorganic chemicals business	Perform a ground-up reconsideration of the ideal state for the Yokkaichi Plant
New business	Realize new business led by the Business Creation Committee
Environment	Reduce Group CO ₂ emissions (Scope 1 and Scope 2) 30% by 2030 compared to fiscal 2019

Our Efforts

Ongoing Consideration of Our Future Direction for the Sake of Realizing Better Living Environments

It has been three years since my appointment as president. In that time, ISK Group has undertaken a variety of efforts aimed at achieving our long-term vision, Vision 2030, and medium-term business plan, Vision 2030 Stage I (fiscal 2021–2023). Instead of a traditional, “defensive management” approach, I continue to encourage employees to be proactive, welcoming their ideas and suggestions. Also, in order to promote widespread awareness of Vision 2030, I visited each of our business sites in Japan where I held employee orientations. Perhaps as a result of this, I have noticed an increasingly positive and proactive mood taking hold in the company.

I have also worked to instill a widespread importance of “Purpose.” I am continually reminding employees to stay focused on why our company exists and what we are contributing. This mindset helps us, when they run up against a wall, to stay aware of, and focused on, the direction forward. We are not just about making and selling things for profit. I want us to always be thinking seriously about what direction we can take in order to improve people’s living environments through chemical technology.

And by spreading to those outside the company that this is the sort of company we are, it will help us in securing higher quality human resources and to being seen as an attractive investment choice amongst investors.

Business Environment

Business Management Affected by the Weight of Global Changes

The business landscape for the ISK Group has changed significantly over the past three years. Fiscal 2021 saw the start of a recovery from the stagnation caused by the COVID-19 pandemic, with demand for titanium dioxide recovering particularly in the automotive and construction sectors. While we hoped this situation would last for a while longer, starting in fiscal 2022/ various factors appeared which continue to create an extremely difficult business environment; these include a tightening of supply and demand for semiconductors, production adjustments among automakers, who are major customers of titanium dioxide for paint, China and Asia’s worsening economic conditions, and rising resource prices caused by the prolonged Russia-Ukraine conflict. In the midst of all this, other challenges, such as competition with titanium metal manufacturers, have caused raw titanium ore prices to soar. Although we have raised product prices, this has not been enough to fully absorb the increase in raw material and fuel costs, thus putting pressure on profits. In contrast to this, our organic chemicals business has been growing, particularly in sales of fungicides and other flagship agrochemicals to the South American market as grain production centered on the Americas continues to grow due to stable food demand. As for our highly anticipated upcoming flagship products also, sales of our new herbicide expanded in the Americas, while sales of our new insecticide were strong in all countries. Thanks in part to favorable weather conditions and a weaker yen over the past few years, we have been able to generate significant profits which have allowed our organic chemicals business to fundamentally support our overall performance. However, I believe that achievement of Vision 2030 will require a fundamental rethinking of our business structure which includes new business.



Medium-term Business Plan, Vision 2030 Stage I

Expected Failure to Meet Profit Targets Due to Business Environmental Changes, Despite Achievement of Sales Targets

In the midst of all this, the ISK Group arrives at the last year of Stage I in fiscal 2023. In the first year, fiscal 2021, we achieved our target values in net sales, operating income, ROE and other metrics, but, due to business environmental changes discussed earlier, we did not meet our profit targets for fiscal 2022. We expect that the business environment will continue to be severe throughout fiscal 2023 as well; nevertheless, we are doing all we can to reach our performance targets.

Organic Chemicals Business

The Americas Tops Regional Sales of Agrochemicals

During this time, ISK Group has been focused on priority measures in each of our businesses. For example, in agrochemicals business our priority is cost reduction. Due to the nature of this business, it is not possible to continuously bring new agrochemicals to market within a short period of time. In fact, because new agrochemicals are expected to be released to the market in several years' time, we must work to maintain and grow our market share by creating mixed formulations of existing agrochemicals or changing them to new, easy-to-use dosage forms, or by expanding the scope of applicable crops or the sales regions. The key to achieving all of this is cost-competitiveness. Even newly developed agrochemicals will eventually face price competition from generic products; hence, cost direction will be fundamentally affected by advancement in production technology and how smoothly you can scale up production. One measure we have decided upon in order to achieve production innovation is the establishment of the Organic Production Technology Research Institute (provisional name) in Ono City, Hyogo Prefecture. We are currently preparing for the start of full-scale operations in the fall of 2025.

In addition, significant changes in regional sales have had an epoch-making impact on our agrochemicals business. Until last year, Europe had been the region which accounted for the majority of our sales, but, for this fiscal year, there has been an expansion in sales centered on new products, namely herbicides in the North American market and fungicides in the South American market, which has put the Americas at the top for regional sales. To achieve this reversal while still increasing sales in Europe is, in my opinion, a significant accomplishment.

For animal health products, our anti-inflammatory agent for acute canine pancreatitis, BRENDA™, which is well-received in Japan, obtained conditional approval* from the United States' Food and Drug Administration (FDA) in the fall of 2022 and was released to market in America in April 2023 as PANOQUELL™-CA1. It has been well-received since its release and has been steadily growing in sales. If the ongoing clinical trials confirm the drug's effectiveness and it becomes fully approved, we can expect to see even greater market penetration. In addition, we are moving forward with securing approval and pursuing commercialization in Europe and other major countries and territories; so, looking ahead to the future, we can expect to see billions of yen in sales. I believe this is a great opportunity.

*A system whereby new drug candidates for serious diseases for which no effective treatment exists can be approved without waiting for the results of clinical trials if they meet indicators of predicted therapeutic efficacy.

Inorganic Chemicals Business

Struggling with Rising Raw Material and Fuel Costs and Tackling the Challenge of Switching to Highly Functional, High-Value-Added Products

In our inorganic chemicals business, the primary challenge we have is to shift our product lineup from general-purpose products to highly functional, high-value-added products. To achieve this, we are focusing on establishing a mass production system and on developing new products. Our target is for 40% of sales to come from highly functional, high-value-added products. We have been unable to reach this target because price revisions caused by the weaker yen and higher cost of raw materials have expanded sales of general-purpose products. Also, despite an increase in sales, we had negative profit due to soaring raw material and fuel prices which caused cost increases to exceed price increases.

Electronic component materials including barium titanate and its raw material, high-purity titanium dioxide, are currently undergoing inventory adjustment.

However, as the market for multilayer ceramic capacitors (MLCC), which are the main application for them, is expected to grow steadily with the anticipated shift to electric vehicles, so that demand for our electronic component materials is expected to steadily increase.

For the manufacture of barium titanate, we have established MF Material (Nobeoka City, Miyazaki Prefecture) as a joint venture among three companies: Murata Manufacturing Co., Ltd., which is the largest manufacturer of MLCC, ISK and subsidiary of ISK, Fuji Titanium Industry, barium titanate manufacturer. The new plant is scheduled to start operation in 2027, with the main goals being quality stabilization and manufacturing cost reduction. We would like to tackle the challenge of process improvement while sharing the know-how that have been cultivated in each company up to date.

Yokkaichi Plant

A Plant with a High Profit Margin Which is Capable of Adapting to Market Changes

I do not believe that the current rise in raw material and fuel prices is a temporary phenomenon. Neither do I believe that titanium ore will return to its previous price, given the structure of the market, which is dominated by major ore companies. In order to ensure stable profits within a business environment subject to exchange rate and supply and demand trends, we must reconsider the very model that we use for inorganic chemicals business, which has been focused on general-purpose products. Thus, in May 2023, we established the Committee for Inorganic Business Restructuring to begin an unrestricted discussion that left no option off the table about how to transform our inorganic chemicals business model and reorganize our mainstay Yokkaichi Plant from the ground up. It just so happens that the Yokkaichi Plant has been in operation for more than 80 years and is at a point where it will need updates to its buildings and production equipment. I want to make sure that the plant is ready for these changes.

At ISK, we have technology which allows us to change the size and shape of titanium dioxide particles, and this has led to the creation numerous products which only we can manufacture. One example is a paint that achieves a glossy, pearly white color by changing the shape of the particles into a plate-like form. Only ISK is able to utilize titanium dioxide to produce such metallic or pearl colors. In addition,

we successfully manufacture conductive materials necessary for antistatic property and heat shielding pigments that contributes to energy savings by our proprietary technology to make titanium dioxide in rod-like form. The profit margin for these products is high.

Some are of the opinion that we should also be producing high-value-added products alongside general products, but I think we are at a serious crossroads in terms of deciding whether we can continue to do both while raw material and fuel prices continue to climb. If that the plant does not have the strength to produce at least somewhat profitable products, it will be difficult to achieve stable growth in profits moving forward. The production equipment required at the processing and finishing stages differs between general-purpose products and high-value-added products. We are working to reach a decision within the next six months or so and will incorporate this direction into Vision 2030 Stage II, the next medium-term business plan (fiscal 2024 to 2026).

ESG

Considering Joint Action with the Companies of the Yokkaichi Industrial Complex

CO₂ emissions reduction will be a major challenge for restructuring of the Yokkaichi Plant. ISK has announced that it will reduce CO₂ emissions 30% by 2030 compared to fiscal 2019, and we are proceeding with installation of backup boilers as we look to switch our fuel source from coal to LNG. Further, we are monitoring technological trends as we explore options for equipment which emits less CO₂ and develop materials capable of CO₂ fixation.

Also, at the Yokkaichi Industrial Complex, where the Yokkaichi Plant is located, a proposal has been put forward for joint action to achieve carbon neutrality among the companies there. Starting this fiscal year, the Yokkaichi Petrochemical Complex Carbon Neutrality Promotion Committee was established to work on facilitating cooperation between the industrial complex companies and the government to address issues that are difficult for companies to address on their own. ISK is also participating in relevant subcommittees and contributing to discussions about new fuel sources and infrastructure development.

In addition, with regard to ESG, we are moving forward in stages with initiatives related to human rights due diligence and human capital management. In March 2023, ISK received certification as a Health & Productivity Management Outstanding Organization (large enterprise category) from the Ministry of Economy, Trade and Industry. We will continue to maintain a grounded approach as we work to enhance and expand our efforts.

New Businesses

Goals for Realization in Fiscal 2027 and Beyond

In the previous Integrated Report, I announced that the key priorities during my term as president, in addition to the restructuring of the Yokkaichi Plant, the launching of new business. It is common practice when launching new business to take stock of company's strengths; however, the Business Creation Committee, which I directly oversee, has been tasked with finding business seeds in, from

the perspective of our current business, "enclaves" in completely new areas. What problems does the world face, and what problems people think would be worth paying money to solve? We are out in the field investigating, coming up with hypotheses and then trying to verify those hypotheses.

Although we have been doing this for a year now, and although we have come up with a number of proposals, the fact is we have not yet been able to evaluate their commercial feasibility. During the Stage II period we will examine how to achieve the proposals and will then work to realize them during the subsequent medium-term business plan, Vision 2030 Stage III (fiscal 2027 to 2029). And, looking ahead, We will strengthen our activity by inviting new employees and mid-career hires with a wide range of backgrounds, both organic and inorganic chemistry, to participate.

Value of ISK

Fostering Expectations about the Future Potential to Increase Share Price

Looking at the world in recent years often makes me wonder if we have reached a turning point. There may be ups and down, but things return to normal eventually; however, when fundamental changes occur, there is no going back to normal. So, what do you do when things do not go according to plan? Certainly, it is important to anticipate and prepare for the worst-case scenario.

But I believe our company has the underlying strength to overcome such a scenario. In our organic chemicals business, we have the ability to develop environmentally conscious agrochemicals, as well as the ability to adapt them to different countries' administrative and regulatory requirements so that they can be successfully licensed and brought to market. In our inorganic chemicals business, we have the ability to develop materials which perform a variety of different functions. The value of the ISK Group is found in its technological capacity for producing things that people want in order to create better living environments. I want all of our employees and stakeholders to recognize us a company possessed of real ability and strength, no matter the challenge.

The Tokyo Stock Exchange is asking all companies with a PBR (price book-value ratio) of less than 1x to disclose what improvement measures they are taking, and, while our PBR is holding at just above 0.5x, I feel that a challenge for us will be fostering expectations about the future potential of ISK, as a company possessed of real ability and strength, which will lead to a higher share price.

Therefore, as we work to increase our operating margin, I would like to focus more on communicating the growth scenario already laid out in Vision 2030. In addition, we changed our shareholder return policy in November of last year. Aiming for a consolidated payout ratio of 30%, and with a year-end dividend forecast of 50 yen for fiscal 2023, our policy is to utilize flexible share buybacks and other means of achieving a further increase in the total return ratio.

Thank you to everyone for your continued support and understanding.

To Realize Our Corporate Purpose

Our long-term vision, Vision 2030, has the dual aims of raising our corporate value through business activities and realizing a sustainable society. In line with the ISK Group's corporate purpose, we will continue to bring the world products that make people's lives better.

Vision 2030 Management Targets

- Net sales of greater than 200 billion yen
- Operating margin of 15% or more
- ROE 10% or more
- Continued stable return for shareholders

Contributing to realization of a sustainable society together with improving our corporate value through such business activities.

Originality. Acceleration. Global Reach.
Transforming Lives Through
the Power of Chemistry.

Preconditions: Megatrends and Stakeholders

Vision 2030 presupposes numerous worldwide changes that will likely arise by 2030, including climate change and food problems. How will these changes affect our stakeholders such as customers, shareholders, and investors? How can we contribute to our stakeholders in the face of these changes? After much debate in-house, we have summarized the initiatives that must be taken in our various businesses.

Value Provided by ISK and Our Initiatives

Inorganic chemicals business

Create new value based on the technologies developed for titanium dioxide products, to support the environment and digital society, and contribute to realizing a sustainable society.

Titanium dioxide	Providing a variety of colors and hues
Functional materials	Creating a range of comfort
Environmental products	Achieving both innovation and environmental protection

- > Diversifying the optical properties of titanium dioxide to realize new value creation
- > Contributing to the resolution of social issues such as the adoption of information and communications technologies and the electrification of automobiles through functional materials
- > Reducing environmental impacts while streamlining production through a revolution in production structures

New businesses, others

- > Building a new business portfolio
- > Strengthening development of environmentally friendly products by investing resources (people and money) with an awareness of environmental, social, and corporate governance (ESG) considerations in areas other than titanium dioxide or agrochemicals
- > Establishing structures to pursue carbon neutrality by 2050

Megatrends

- Climate change
- Resource shortages and food problems
- Urbanization
- Rapid development of IT
- Growth and aging of the global population

Stakeholders

- Shareholders and investors
- Local communities
- Customers and business partners
- Employees

Organic chemicals business

Supply unique products that directly enhance customer value across the world, and support people's nutrition, health and life to contribute to realizing a sustainable society.

Agrochemicals	Improving agricultural production stability and quality
Animal health products	Protecting the lives and health of pets
Pharmaceuticals	Contributing to medical care

- > Pursuing development and commercialization in a way that's aware of the value chain
- > Accelerating the creation of value and restoring our growth trajectory by improving and evolving in-house technologies
- > Manufacturing flagship products at the lowest cost in the world and supplying them in a stable manner to customers

To Realize Our Corporate Purpose

We are pursuing numerous initiatives under Vision 2030 Stage I (fiscal 2021 to 2023), the basic policy of which is the creation of sustainable corporate value.

Below are our priority goals and the current state of each.

Inorganic Chemicals Business

Priority goals	Main initiatives
Increasing the sales ratio for highly functional, high-value-added products	The increased sales ratio for these products, stated in the goals of the medium-term business plan, was not achieved due to expanded sales of general products. However, sales of highly functional, high-value-added products are steadily increasing with each year.
Expanding sales of high-purity materials for electronic components, and electro-conductive materials	(Electronic component materials) Sales are increasing for in-vehicle and telecommunications products. (Electro-conductive materials) Performance has been robust, and sales are expected to increase in automotive applications and specialty inks.
Accelerating development of new products that will serve as drivers of further growth	(High-refractive-index material) We are in the process of providing samples in Japan and having them evaluated. (Bismuth sulfide pigments) There are increasing requests for samples to use in optical elements, and we are studying how to scale up production.
Procuring feedstock ore in stable and favorable terms	We are making progress in favorable procurement of numerous types and quantities of ore while maintaining product quality.
Reducing waste, reducing equipment maintenance costs	We are in the process of achieving materiality KPIs.
Launching a master plan to optimize manufacturing sites	We are studying a reform of production structure, which includes scrap and build, with the aim of achieving sustainable plants that save energy, resources, and labor.
Creating a roadmap to reduce greenhouse gases	We are drawing a roadmap towards carbon neutrality.

Organic Chemicals Business

Priority goals	Main initiatives
Increasing our share of the global market by manufacturing agrochemical active ingredients at the lowest cost in the world and supplying them in a stable manner	The new factory of a subcontractor in India (agrochemical active ingredients) has started operation. The Americas has dramatically improved its sales composition ratio and has overtaken Europe to become top in the ISK Group.
Reducing costs and increasing demand for upcoming flagship agrochemical products	Sales are growing steadily, mainly in the Americas.
Implementing strategic, innovative sales measures, for example by utilizing multiple sales companies	Good progress is being made in the Americas and Europe, for example.
Acquiring and maintaining agrochemical registrations in various countries worldwide	We are in the process of acquiring agrochemicals registration for upcoming flagship agrochemical products in various countries.
Developing and commercializing biorational products	Swaru-banker™ Long, a new natural enemies biopesticide, was launched. ISK's first biostimulant product (plant-based) went on sale.
Refining and passing on chemical synthesis technologies	We purchased land for a new ISK pilot plant in Ono City, Hyogo Prefecture.
Introducing anti-pancreatitis drug for dogs to worldwide markets	Our anti-pancreatitis drug for dogs received conditional approval from the Food and Drug Administration (FDA), in the U.S. and went on sale there.

Organic and Inorganic Chemicals Businesses

Priority goals	Main initiatives
Growing our top line (sales)	Sales are exceeding our initial plan.
Strengthening creation of new businesses and new products	A Business Creation Committee, which reports directly to the president, was established. Blue phalaenopsis went on sale in Japan.
Carrying out internal structural and awareness reforms to achieve the Vision 2030 goals	We established our corporate purpose and are raising awareness of it company-wide. Top management is communicating through president briefings and media such as the Integrated Report and in-house magazine.

Capital policy

Priority goals	Main initiatives
Strengthening shareholder return (continuing to pay stable dividends)	In November 2022, we changed our shareholder return policy in consideration of the total return ratio.
Aggressively pursuing capital cost management Realizing improvements throughout the cash conversion cycle, etc.	By improving our long-term issuer rating, we are improving the environment for procuring capital.

Overall management

Priority goals	Main initiatives
Expanding the business opportunities available to us through management from the perspective of ESG and the SDGs	We are steadily implementing initiatives, centering on KPIs, that we have planned relating to what we consider the most important issues (materiality), such as climate change and human capital.
Identifying materialities (SDGs) and strengthening initiatives to address them	
Reforming workstyles by pursuing the digital transformation (DX) and streamlining operations	
Continuing and strengthening compliance management	
Strengthening risk management	

Reducing Volatility and Increasing Earning Capacity through Structural Reforms



Market Conditions and Performance Results for Fiscal 2022

Strong Organic Business While Inorganic Chemicals Business Struggled

Sales were extremely strong for our organic chemicals business. In particular, sales of fungicides and herbicides grew significantly in the Americas, notably becoming the top sales region for these products for the ISK Group. Sales within Europe, which has previously been the top region, remained strong, but sales in the Americas exceeded even that. Sales increased by 15.4 billion yen, boosted in no small part by the weaker yen.

Sales in our healthcare business also grew year-on-year. Additionally, PANOQUELL™-CA1, our anti-pancreatitis drug for dogs, received conditional approval and went on sale in America at the end of fiscal 2022. We can expect sales to grow moving forward. On the other hand, however, our inorganic chemicals business struggled due to rising raw material and fuel costs, particularly the cost of coal used for fuel. Despite taking

the unusual step of raising product prices twice in a year for two consecutive years, this was not enough to pass on the rising raw material and fuel costs, resulting in negative operating income.

Market conditions also worsened. The domestic market was affected by production adjustments in the automobile industry which were implemented because of a shortage of semiconductors. In the overseas market as well, the slowdown in the Chinese economy, particularly the declining demand for construction due to a slump in the real estate industry, has driven down prices for titanium dioxide used in architectural paints, and, with surplus inventory flowing into the Southeast Asian market, the overseas market as a whole fallen into a low-price war. The ISK Group tried to adapt to this, but was not at a price level that would allow it to compete.

As a result of all of the preceding factors, our consolidated performance for fiscal 2022 shows an increase in revenue but a drop in profit.

Rising raw material prices are also negatively impacting cash flow through increased inventory burdens. The 40 - 60% increase in raw material prices has been accompanied by an increase in the inventory amount recorded on the balance sheet. This was a large burden which resulted in negative operating cash flow for fiscal 2022.

Outlook for Fiscal 2023

Failure to Meet Medium-term Business Plan Profit Targets

In fiscal 2023, our organic chemicals business, in particular agrochemicals, is continuing to perform well thanks to ongoing market vitality. In Europe, we have also received a tailwind boost from the expiration of registration of a competing agrochemicals .

However, in our inorganic chemicals business, despite coal prices dropping from what they were, titanium ore prices continue to rise, with the result being net zero in terms of profit and loss. Domestically, automakers are making a recovery as a result of easing semiconductor supply and demand, thus helping ensure a stable shipping volume of

titanium dioxide for ISK; however, exports to the Chinese market continue to be sluggish. It is likely that we will struggle for the remainder of this year. There is talk of economic stimulus measures being enacted, but the details and scope of such measures are unknown, so it is unclear how much we can expect from them.

This situation is reflected in the forecast consolidated performance of 147.0 billion yen in net sales, 11.0 billion yen in operating income and 7.5 billion yen in net income announced in May 2023. If nothing tangible is seen with regard to China's economic stimulus measures by the end of the year, a downward revision is possible.

Fiscal 2023 is the final year of medium-term business plan, Vision 2030 Stage I (fiscal 2021 to 2023), and, although consolidated sales are expected to surpass the target of 125.0 billion yen, it is not expected that we will meet any of our profit targets, including our 16.6 billion yen consolidated operating income target. ROE is also expected to be 7.5%, which will unfortunately fall short of the target of 10% or more. However, given that our organic chemicals business is currently doing well, and given that the yen has weakened more than expected against the dollar and the euro, we can expect to see some degree of improvement.

Profit Emphasis and Structural Reform

Prioritizing ROE Improvement and Pursuing “Selection and Concentration” with the Next Medium-term Business Plan

I believe that the continued growth of the ISK Group will require greater earning capacity, and this is the direction of discussion among the Board of Directors. Rather than net sales, the indicator to focus on is the absolute value of operating income. Our long-term vision, Vision 2030, has as a target net sales of more than 200.0 billion yen, but there is a shared view by the president and every employee within the Group that we should emphasize profits.

Coincidentally, the Tokyo Stock Exchange issued a request this spring to low PBR companies that they make improvements. PBR (price book-value ratio) is found by

multiplying ROE (return on equity) with PER (price earnings ratio), in other words, past profits multiplied by future value. Of these, I believe our first priority should be improving ROE, which is an indicator of management efficiency.

What is required to achieve this is structural reform which lowers the volatility of our inorganic chemicals business, raises earning capacity and increases business value. Up until now, the discussion has been limited to how to switch to highly functional and high-value-added products, but we are now working from the ground up on measures that will realize a firmly future-focused strategy. We will summarize the results of discussion over the next six months into the next medium-term business plan, Vision 2030 Stage II (fiscal 2024 to 2026), and I believe that the next three years will serve as a touchstone of the extent to which structure reform can feasibly be carried out.

At just above 0.5x, our PBR is low, but whether we can get above the 1x level will depend on our structural reform.

The Tokyo Stock Exchange has further issued requests relating to “capital cost and share value-minded management”. At ISK, as well, we perform an internal comparison of measured capital costs and ROE, and there are some question marks with regard to fiscal 2022 performance and the forecast fiscal 2023 ROE. In general, the target given for ROE is 8%, but we are still a bit short of that.

With regard to PER, we get into a discussion of future value, and this all depends on how high we can raise the future potential of our inorganic chemical business through structural reform. Stage II will show everyone how we have answered the question of structural reform and will invite assessment.

Allocation and Funding

Active Investment in New Research Facilities and Joint Ventures

In the Integrated Report 2022, I stated that we anticipate the amount of investment will be 100 billion yen over five years, of which 65 billion yen is expected to be new investment. However, the situation has changed since then, and, given the negative operating cash flow for fiscal 2022, we do not anticipate that the amount of future investment will reach this level. This amount was originally calculated in anticipation of a restructuring of the Yokkaichi Plant; however, business-related structural reforms have

caused a change in our fundamental assumptions. At present, we do not know exactly how much will be needed to carry out a restructuring of the Yokkaichi Plant.

At the same time, however, we are deciding on new investments to be made in our organic chemicals business. In addition to several billion yen for the construction of an Organic Production Technology Research Institute (provisional name) in Ono City, Hyogo Prefecture, we have established a barium titanate manufacturing joint venture together with Murata Manufacturing Co., Ltd. and our subsidiary, Fuji Titanium Industry.

To raise funding for these, our policy is to utilize “general syndicated loans,” which are financing arrangements made by a syndicated group comprised of a wide range of financial institutions, including new financial institutions. As of September 2023, we have already raised 13 billion yen under this framework. Fortuitously, in July, the long-term issuer rating from the Japan Credit Rating Agency, Ltd. was raised to “BBB+” (stable), creating an environment in which funding is easier to procure.

In addition, we will monitor operating cash flow in the latter half of fiscal 2023 as we consider funding procurement for the year. In our organic chemicals business, as sales of agrochemicals based on a long-term account receivable turnover period have increased, the amount of working capital needed has also increased, thus requiring us to have a certain level of cash on hand. Also, although it will depend on how much titanium dioxide inventory in our inorganic chemicals business can be cleared, it is difficult from the standpoint of those in charge of fundraising to make a prediction due to large, market condition-related gaps, such as the rapid accumulation of inventory after being depleted in fiscal 2022.

Shareholder Returns

Dividend Increase Aimed at a Consolidated Payout Ratio of 30%

In the fall of 2022, we changed our shareholder return policy. We aim to increase the consolidated payout ratio to 30% by fiscal 2023, which is the final year of Stage I. In line with this, we increased dividends by six yen for fiscal 2022, which ultimately had increased revenue but decreased profits. We did this because, as we aim for a consolidated payout ratio of 30%, we wanted to first get something close to it. In addition, we will pursue flexible share buybacks along with soliciting feedback from investors, which we will reflect within Stage II.

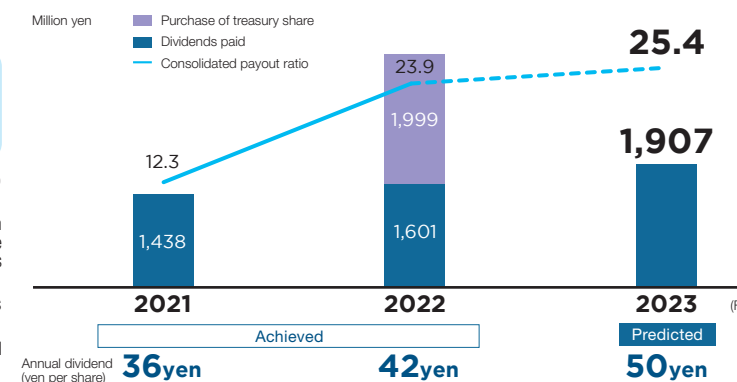
Some companies are taking measures, even in the midst of their medium-term business plans, to get their PBR above 1x; in the case of the ISK Group, we are planning structural reform of our inorganic chemicals business. In other words, the largest puzzle piece has not been fit yet, so we have to have everyone waiting.

This in no way means that we are not focused on PBR. Even amongst the Board of Directors there is an awareness of share price trends, Tokyo Stock Exchange requests and other factors that has made “sub-1x PBR” a common phrase used among the directors. Stage II is scheduled to be announced in May of next year, at which time the results of discussions amongst the Board of Directors will be made known.

Shareholder Returns

Dividends for FY2022
42 yen per share

- Increasing corporate value along with returning profits to shareholders are our top management priorities.
- Regarding dividends, our basic policy is to continue paying stable dividends in line with business performance while comprehensively considering such factors as performance trends, financial conditions and the sufficiency of internal reserves for future business development.
- We will utilize flexible share buybacks and provide shareholder returns with an awareness of the total return ratio.
- For Vision 2030 Stage I, the medium-term business plan, our aim is to achieve a consolidated payout ratio of 30% by the final year of the plan (fiscal 2023).





Director of Yokkaichi Plant
Yoshiyuki Shimmyo

A Manufacturer's Responsibility To Make Exactly What the Market Needs

The Yokkaichi Plant is the flagship production base of our inorganic chemicals business. It has been the foundation of ISK manufacturing for a great many years going all the way back to its establishment in 1941. What is the plant currently committed to, what is it working on? We put these questions to Yoshiyuki Shimmyo, who, as Director of the Yokkaichi Plant, is the person responsible for its overall operation.

Yokkaichi Plant's Commitment

Realizing Stable Supply and Stable Operation

—In terms of manufacturing, what is it that the Yokkaichi Plant is committed to?

A stable supply. Our top priority is to stably provide users what they need, when they need it, and of the quality they need. To do this, it is important that you emphasize a smooth, speedy flow of operations, like a baton pass in track and field, from acquiring information about 'needs and seeds' to product development and production. I believe that an outstanding plant is a plant that can do this. Naturally, I am talking about plants that work to prevent workplace accidents, disasters and other occupational hazards. Without this, we cannot say we are providing a stable supply. With the exception of an annual maintenance shutdown, the Yokkaichi Plant operates around the clock every day, including the New Year and summer Obon holidays. Plant shutdowns lead directly to increased costs. Our ability to keep production going is where we shine.

Last year, when the COVID-19 pandemic was spreading at one of our workplaces, we faced the threat of a complete production stoppage, but we were able to keep the production line running by reducing the production facility utilization rate by half and entrusting each operator to contribute through his or her own roles and knowledge. I'm proud of this major accomplishment that, thanks to the cooperative efforts of everyone, we were able to ensure a stable supply even during the COVID-19 pandemic.

—What are the concerns facing manufacturing currently?

The titanium ore which the Yokkaichi Plant uses as the main raw ingredient in producing white pigment titanium dioxide is becoming harder to obtain due to decreasing titanium content at the ore extraction source, as well as due to overseas factors, such as conflict. The ore is not found in Japan and must be procured entirely from overseas. Furthermore, there is tight demand for the ships that carry the ore, resulting in delays; there was a three-month delay between March and May of last year, forcing us to make temporary production adjustments.

When this happens, we have no choice but to consider various ores that are more easily obtainable. These raw materials are

Yokkaichi Plant

difficult to use, tending to get stuck to, or clog up, our equipment. They also affect the white coloration which is so important to the product.

—So how do you address this?

We do the best with what we have, even if it is a low titanium content ore. Leucoxene, for example. When performing the chloride process of titanium dioxide manufacturing, a natural rutile with higher titanium content is the raw material typically used, and leucoxene is a natural rutile with a somewhat low titanium content which we have not used previously. However, by changing the ore reaction temperature conditions, experimenting with additives or by making improvements to our equipment, such as changing the shape of pipes to make it harder for material adhesion when handling powdered ore, we have mastered using the material in order to ensure that we are able to continue providing a stable product supply. As we identify problems, we steadily make improvements while continuing manufacturing. This, I believe, is the most important aspect of plant management.

Becoming a Plant Which Has Mastered the Use of Ore



I am in charge of the analysis operations connected with mastering the use of new titanium ore. Titanium ore has different properties depending on where it is mined, meaning properties such as reactivity and frangibility are not the same. Because some varieties can have yield and operations-related negative impacts, we use laboratory analysis to predict what phenomena will occur when they are actually used in production. However, when it is difficult to make a determination based on lab results alone, we need to verify the impact on quality and operations through actual use in production. It is important to exchange detailed information with operators, such as whether the reaction is progressing normally. I feel rewarding sense of fulfillment whenever we are able to get through production without any problems and I see how all the successive tests and experiments we conducted have paid off.

R&D Strategy Headquarters
Production Technology R&D Division
Process Development Group Chief

Shogo Iseya

Yokkaichi Plant's Strengths

A Diversity Array of Quality Products and the Capacity to Change Is Also Necessary

—What are the Yokkaichi Plant's strengths?

We are able to supply a lineup of products tailored for different applications with a lead time significantly shorter than our competitors. Another strength is our ability to continuously provide products of consistent quality which meets the quality needs of our customers. We offer a wide variety of quality products. This is because we believe it is incumbent upon manufacturers to produce exactly what the market needs. Our ability to perform multi-product production is the cumulative result of the operators directly responsible for production demonstrating a commitment to ensuring that the baton passes from the first half of the production process to the latter half, and from one shift's operator to the next shift's operator without interruption over the course of a 24-hour day, every day.

Our titanium dioxide business has been manufacturing primarily commodities for pigment application for many years, but, moving forward, we will expand into functional materials and other products in order to meet the changing needs of the market and our customers. It is important to stay abreast of what the market is demanding in order to provide the exact products that the user is looking for; it is no good manufacturing the same old products in the same old way. It is essential that we, too, change.

—What organizational structure have you adopted to capitalize on your strengths?

We have all the necessary departments, staff and equipment together in the Yokkaichi Plant, where everyone can collaborate and share knowledge together.

When producing a new product, we scale up gradually from laboratory to implementation level, but as the scale gets larger, variations in quality can often emerge. Figuring out how to solve the problem in the actual production equipment is not an easy task. So, at the Yokkaichi Plant, the Development Division and Production Technologies Division work together to create a prototype on the actual equipment, and, when issues manifest themselves, each division works on them, changing different parameters and production equipment operating conditions in a process of trial and error until the new product is on track for mass production.



GMP-compliant plant for pharmaceutical manufacturing

Yokkaichi Plant

Looking Ahead for the Yokkaichi Plant

Using Equipment Replacement as an Opportunity to Bring Widely Sought-after Products to Market

—How do you incorporate environmental responsiveness?

We are in an industry which produces a lot of by-products, so we try to think up ways that they can be reduced. Looking ahead to 2030, which is the culminating year of Vision 2030, we are primarily focused on waste recovery and recycling. Specifically, we are pursuing research and development into the collection and recycling of materials with recoverable value, such as titanium oxide, that mix with by-products and waste and leave the production line, as well as the collection and product application of rare metals, such as vanadium.

Also, with regard to greenhouse gases, there is no doubt that we need to reduce our use of coal as a boiler fuel. To address this, the first measure we are taking is switching to LNG, and we have started introducing new boilers and taking other initial steps; however, this is costly and will not serve as a real solution. In terms of CO₂ emissions reduction, we are working towards a 30% reduction by 2030 (compared with fiscal 2019), with the challenge of achieving carbon neutrality by 2050. It is important that we pursue this goal in cooperation with the local community. Thus, since last year, we have participated in a study committee of the Yokkaichi Chamber of Commerce and Industry, and from this year we have taken part in the discussions of the Yokkaichi Petrochemical Complex Carbon Neutrality Promotion Committee. The governor of Mie Prefecture serves as chair, with the mayor of Yokkaichi as vice-chair, while the other committee participants are comprised of the various companies within the industrial complex. Although it is still in the initial examination phase, discussion is becoming increasingly active.

—What does the Yokkaichi Plant of the future look like?

In order to secure the foundation for our inorganic chemicals business amidst worsening profits caused by rising raw material and fuel prices, the Committee for Inorganic Business Restructuring comprised of representatives from sales, development, technology and back office departments, is examining our future direction and business model. Also, given that it has been 70 years since the installation of our titanium dioxide sulfate processing equipment, and 50 years in the case of chloride process equipment, we also need to address the issue of aging equipment and updating earthquake resistance.

What we need to be doing is anticipating how our products will be used in the world in the future so that we can be one step ahead in our manufacturing. While recognizing that there are many angles from which to consider this, such as sales strategy, technology and finance, which means that this discussion cannot be limited to only the Yokkaichi Plant, we should seek to put in place a system which produces products that appeal to a wider market, rather than simply what customers ask for.

To do this, we need the ability to anticipate the needs of society. This will put our marketing, development and production technol-

ogy capabilities to the test to ensure we do not fall to second or third in line behind our competitors. It is important that we keep updating our products with an eye towards, for example, the automobile manufacturers and packaging materials manufacturers who are end users of titanium dioxide, as well as in view of the increasingly rapid changes in the market.

I personally think this will mean we move in the direction of highly functional and high-value-added products which, I feel, means the equipment and facilities updates we will make to the Yokkaichi Plant represent an opportunity for us.

I also hope to increase employee engagement in their work. Just like we endeavor to keep our homes clean and to improve them, I want us to take the initiative to improve this plant, where we spend so much of our lives, making it a safe and rewarding place to work.



Manufacturing Centered on Overseas Subcontractors

ISK will establish an Organic Production Technology Research Institute (provisional name; hereafter, “Ono Research Institute”) in Ono City, Hyogo Prefecture. The aim is to achieve, via advancements in manufacturing technology, the world's lowest cost manufacturing and stable supply. We spoke with three Biosciences Business Headquarters members who are part of the team working to establish the Ono Research Institute about the aims and future vision for it.

What is the Ono Research Institute?

A Production Technology Research Facility Equipped with Small-scale Production Equipment

Ueda The focus of the Ono Research Institute will be on scaling up new products, such as agrochemicals developed at the Central Research Institute (in Kusatsu, Shiga Prefecture), and on improving the manufacturing process for existing products in order to reduce costs. In manufacturing, various conditions change depending on the scale of manufacturing, and this affects the relative ease and cost of production. A chemical reaction which is easy to achieve in a laboratory may not be able to be scaled up as straightforwardly as you anticipated. Around 2006, we began outsourcing manufacturing overseas, and it was after we had already completed some degree of investigation into how to scale up production that we brought the basic production data to the subcontractors production site. Currently, because we do not have our own process verification facility, we are not able to perform simulations in Japan and have run into situations where problems at the subcontractors site forced manufacturing to be halted and where we were forced to borrow a subcontractors small-scale production facilities to perform tests on short notice.

Nakamura When scaling up the manufacturing process, we start at the scale of a normal laboratory, move to the “kilo-laboratory scale,” which is tens of liters, then to “bench scale,” which is hundreds of liters, and then to “pilot scale,” which is thousands of liters, closer to full plant scale. These are the stages commonly used to verify the safety, consistency and cost-efficiency of the developed manufacturing process.

At the Ono Research Institute, we plan to construct two buildings. The first is the Technology Research Building, which will have regular laboratory and kilo-laboratory scale equipment, and the second is the Synthesis Research Building, which will have equipment for performing verification of the upscaling process.

One of the aims for the Ono Research Institute is to use its aggregated testing data to facilitate a smooth establishment of new product manufacturing system at commercial production facilities. Also, for existing products, this facility will be used to help with cost reduction through the development of new manufacturing processes and the acceleration of technology transfer to contractors.



Biosciences Business Headquarters
Production Technology Division
Engineering Group Leader
Hiroaki Tomita

Biosciences Business Headquarters
Deputy Supply Chain Division
General Manager
Takafumi Ueda

Biosciences Business Headquarters
Deputy Production Technology Division
General Manager
Tadashi Nakamura

Agrochemicals Business

Areas for ISK to Prioritize

Production Technology and Data Accumulation, as Well as Human Resources Development

Tomita In the past, our approach has been to nail down initial production in-house and to hand over manufacturing to a contractor only after we have finished troubleshooting. Our adoption of contract manufacturing was not because that is what we preferred, but, due to factors such as the strict restrictions of the industrial complex, we were unable to flexibly deal with issues, including testing and research, at our own plant.

Nakamura After the ferosilt scandal, there was a period where we were unable to secure sufficient new capital investment for our plant and, ultimately, gave up on in-house manufacturing in favor of outsourcing. Looking back on the circumstances and situation at the time, I feel that we had no choice but to adopt such a system.

Tomita The biggest problem with this situation is that young employees do not gain experience with actual manufacturing. Those like me in our forties are the last generation to have experience with manufacturing at actual production scale. Employees who joined the company after my generation were focused primarily on process development in the laboratory and did not gain experience in the use of large-scale equipment. This makes it impossible to build up production technology in-house under conditions close to those of commercial production.

Ueda Once the Ono Research Institute is established, young employees will be able to experience manufacturing on a large scale. Human resources development is a major aim of the Ono Research Institute. It is scheduled to launch with around 30 employees, but we hope to expand the facility over time, increasing the number of employees to around 100. We will also promote human resources exchange with the Central Research Institute and the Yokkaichi Plant, and I expect that the human resources we develop will go on to work in sales, procurement and other departments throughout ISK.



On-site guidance at the manufacturing contractor

Nakamura Safety is another priority. When you apply the same approach to the commercial scale as the laboratory level without considering well, unforeseen problems can arise. This is something which happened a long time ago, but a chemical reaction during the manufacturing process of a certain fungicide caused an uncontrollable temperature increase on the bench scale, whereas it was had been a mild temperature increase on the laboratory scale. We were somehow able to get it under control, but, if it had happened in a larger facility, it would have resulted in a major accident. At the Ono Research Institute,

we can perform cumulative verification testing to prevent these sorts of problems as well.

Tomita When we work with subcontractors, small problems which occur on-site must, by necessity, be primarily handled by the subcontractor, thus keeping us from accumulating sufficient information. When we want to, for example, outsource manufacturing among different subcontractor in order to increase production, under the current system, the new subcontractor must start from square one accumulating data. The Ono Research Institute will consolidate these technical specifications, thereby speeding up production startup, as well as facilitating improved product quality and productivity.



Planned site of the Ono Research Institute

Future Prospects

Envisioning a Flagship Production Base and Information Hub

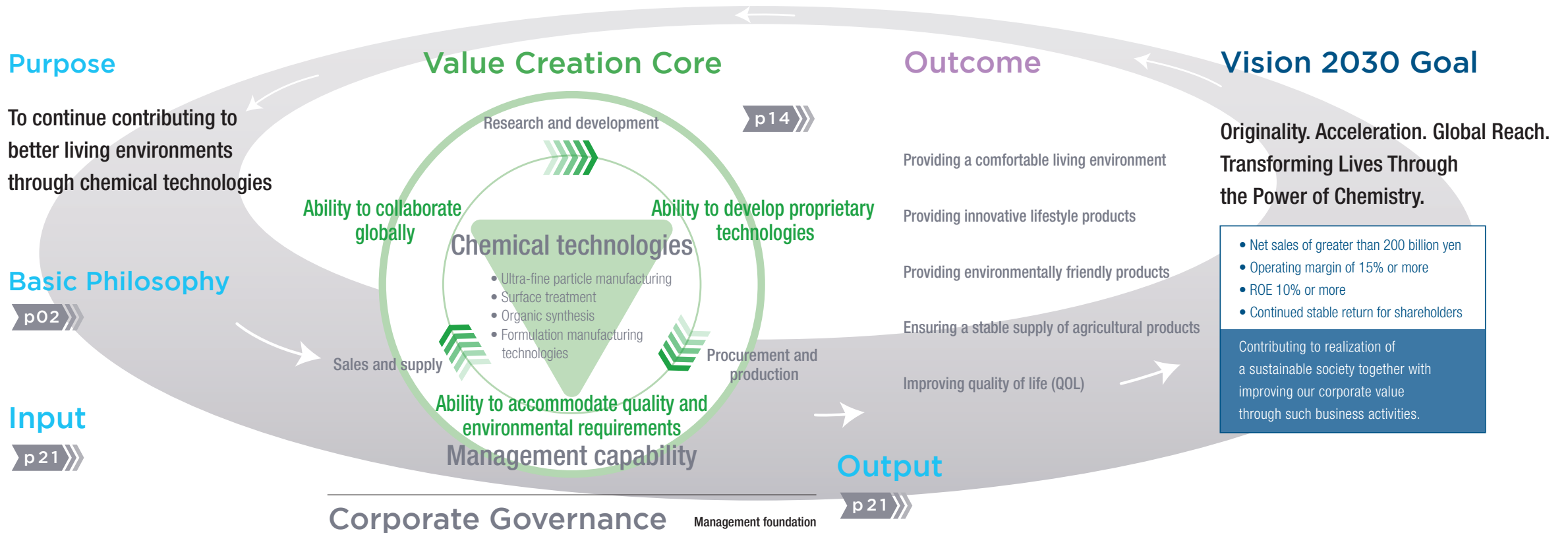
Ueda For the time being, our main research focus will be the active ingredients in agrochemicals; however, we hope to grow this research facility over the next several years to the point where it can handle formulation manufacturing and animal health products' active pharmaceutical ingredients, as well as organic intermediate products and all of ISK's organic chemical products. For animal health products manufacturing includes small-scale manufacturing ranging from tens of liters to hundreds of liters; thus, we are also envisioning the possibility of developing the research institute into a GMP-compliant manufacturing base which is capable of manufacturing active pharmaceutical ingredients.

Nakamura In terms of transferring manufacturing technology overseas, it would also increase the efficiency of technology transfer if, instead of our employees going to the contractor's site, their employees came here and worked together with us on the scaling-up process at the Ono Research Institute. I would like for us to put a system in place to facilitate that. In addition to cross-border exchange, I would also like the research institute to take on the role of technology information hub, disseminating and relaying information to our production sites around the world.

Tomita Ten to twenty years from now, securing human resources will likely be more of a challenge. In anticipation of that, I would like us to pursue tie-ups with other research institutes, such as universities. My dream is that we would collaborate on everything from basic research to market launch, which would also lead to being better able to secure human resources. I want us to become the hub Mr. Nakamura describes and to develop it into a hub which builds organic connections not only with universities but other companies in the same industry as us.

Creating value through our purpose to achieve Vision 2030

The ISK Group will be continuing to expand its business by taking its corporate purpose as a starting point and leveraging its core competence of chemical technologies; its three principal strengths, in the form of its ability to develop proprietary technologies, accommodate quality and environmental requirements, and collaborate globally; and its management capability, which underpin those strengths. In this way, we're striving to achieve Vision 2030, which seeks to balance economic value with sustainability value.



- Net sales of greater than 200 billion yen
 - Operating margin of 15% or more
 - ROE 10% or more
 - Continued stable return for shareholders
- Contributing to realization of a sustainable society together with improving our corporate value through such business activities.





An era characterized by VUCA (volatility, uncertainty, complexity, ambiguity) in which the future is unpredictable



Megatrends

Climate change Urbanization Resource shortages and food problems Growth and aging of the global population Rapid development of IT

Promote Value Creation through Continuous Input

ISK Group's definitions of the inputs and outputs of the six capitals of value creation are given below. We will realize Vision 2030 through ongoing enhancement of inputs.

Financial Capital	Input	Role in Value Creation	Output
	<ul style="list-style-type: none"> Total assets (FY2022 consolidated) 201.9 billion yen Interest-bearing debt (end of FY2022) 56.0 billion yen Shareholders' equity (FY2022 consolidated) 95.4 billion yen 	Total assets from which revenue is generated, as well as interest-bearing debt and shareholders' equity, which serve as the primary means of raising capital in establishing these assets, are set as our main financial inputs. To realize Vision 2030, our long-term vision, we will efficiently utilize total assets in order to secure market share and thereby increase consolidated net sales. Also, adjusting a balance between interest-bearing debt and shareholders' equity will facilitate improved ROE along with greater capacity for future investment.	<ul style="list-style-type: none"> Forecast performance for FY2023 <ul style="list-style-type: none"> Consolidated net sales 147 billion yen Consolidated operating income 11 billion yen ROE 7.5%
Manufacturing Capital			
	<ul style="list-style-type: none"> Capital investment (FY2022 consolidated) 5.9 billion yen Titanium dioxide production capacity (No. 1 in Japan) 168,000 tons Expertise cultivated over many years, essential to high-quality and stable manufacturing 	The key manufacturing inputs are production capacity, which underpins our top share of the domestic titanium dioxide market, and capital investment sufficient to increase production of highly functional, high-value-added products. We achieve efficient facility operation sufficient to meet demand through the application of our unique expertise coupled with timely replacement investment in production equipment and facilities. We will take advantage of a new production line for highly functional products to increase the share of inorganic chemicals business sales accounted for by highly functional, high-value-added products.	<ul style="list-style-type: none"> Change in the titanium dioxide production facility utilization rate (FY2021 consolidated -> FY2022 consolidated) 5.5% decrease Highly functional, high-value-added products as a percentage of inorganic chemicals business sales (FY2022 consolidated) 32%
Human Capital			
	<ul style="list-style-type: none"> Employees (FY2022 consolidated) 1,768 people New graduate hires (FY2022 non-consolidated) 23 men, 4 women Mid-career hires (FY2022 non-consolidated) 44 men, 5 women 	Securing and making the most of a diverse group of human resources is one of the key priorities of the ISK Group. We strive to secure human resources with a challenging spirit and a global mindset, regardless of their gender or nationality, as newly hired graduates or mid-career hires. We also help newly hired employees develop their careers in order to strengthen their basic skills as working members of society, raise the awareness of employees at all levels of their roles, and prepare promising candidates for executive roles. This new system provides all employees with the opportunity to take on high-level job challenges and to get various kinds of training. Through these procedures, we draw out greater value from our human resources.	<ul style="list-style-type: none"> Training time per person (FY2022 non-consolidated) 24 hours per person/year Employees who took childcare leave (FY2022 non-consolidated) 13 people Female manager ratio (FY2022 non-consolidated) 7.6% Paid leave acquisition rate (FY2022 non-consolidated) 81.9%
Social and Relationship Capital			
	<ul style="list-style-type: none"> Transparency in business activities abiding by laws and regulations Number of countries where we sell our products 78 countries 	In keeping with the Group's corporate philosophy, we strive for the sustained growth of our business and growth in our corporate value through a commitment to compliance and management that is transparent, trustworthy, and sound. We promote two-way communication to earn the trust of local residents, for example through efforts to ensure safety and disaster prevention, environmental activities, and active communication of information. In addition to undertaking human rights initiatives, we observe the laws and regulations in every country and region in which we operate, and we ensure our purchasing activities are characterized by decency and adherence to social ethics.	<ul style="list-style-type: none"> Coexistence with local communities Sustainable procurement: Establishment of ISK Group Policy on Procurement and guidelines governing procurement, pursuit of human rights due diligence External honors: ISK's HASClay™ was awarded in the outstanding energy-saving/low-carbon machinery and systems category in 2022 commendations by the Japan Machinery Federation. Our Blue Gene™ won a 2022 Flower of the Year prize in the Japan Flower Selections competition organized by the Japan Flower Selections Association.

Natural Capital		Input		Output
	Yokkaichi Plant FY2022		We treat energy, water, and titanium ore consumption at Yokkaichi Plant and our subsidiary, Fuji Titanium Industry, as key indicators so that we work to reduce the volume of our CO ₂ emissions, water usage, and industrial waste disposal. By reducing coal-fired boiler CO ₂ emissions as part of our efforts to address global warming, we aim to preserve a comfortable living environment. Through more thorough chemical substances management, we are reducing the amount, and amount transferred of, our emissions, with the goal of reducing the impact on humans and the ecosystem to as close to zero as possible.	Yokkaichi Plant FY2022
	<ul style="list-style-type: none"> • Energy (heavy fuel oil equivalent) 140,000 kiloliters • Industrial water 16 million m³ • Seawater 10 million m³ • Titanium ore 150,000 tons 			<ul style="list-style-type: none"> • CO₂ emissions 400,000 tons • Wastewater emissions into public water areas 26 million m³ • Industrial waste 95,000 tons PRTR-listed substances 1,500 tons
Intellectual Capital				
	R&D expenses (FY2022 consolidated)		Research and development have long been a priority for ISK Group. We ensure that a certain threshold for R&D expenses is met regardless of fluctuations in business performance. R&D activities at the Central Research Institute and Yokkaichi Plant account for the majority of R&D expenses, while some are used for the registration of agrochemicals in various countries. Drive the development and patenting, both in Japan and overseas, of new agrochemicals and drugs, highly functional titanium dioxide materials and more, as well as facilitate the creation of new business associated with them.	<ul style="list-style-type: none"> • Number of patents held (end of FY2022 non-consolidated) 2,502
	<ul style="list-style-type: none"> (Inorganic chemicals) 1.5 billion yen (Organic chemicals) 7.6 billion yen 			<ul style="list-style-type: none"> (Japan) 242 (Overseas) 2,260
	<ul style="list-style-type: none"> • Percentage of R&D employees (FY2022 non-consolidated) 22.2 % 			<ul style="list-style-type: none"> • Products developed in-house as a percentage of organic chemicals business sales (FY2022 consolidated) 88.6 %

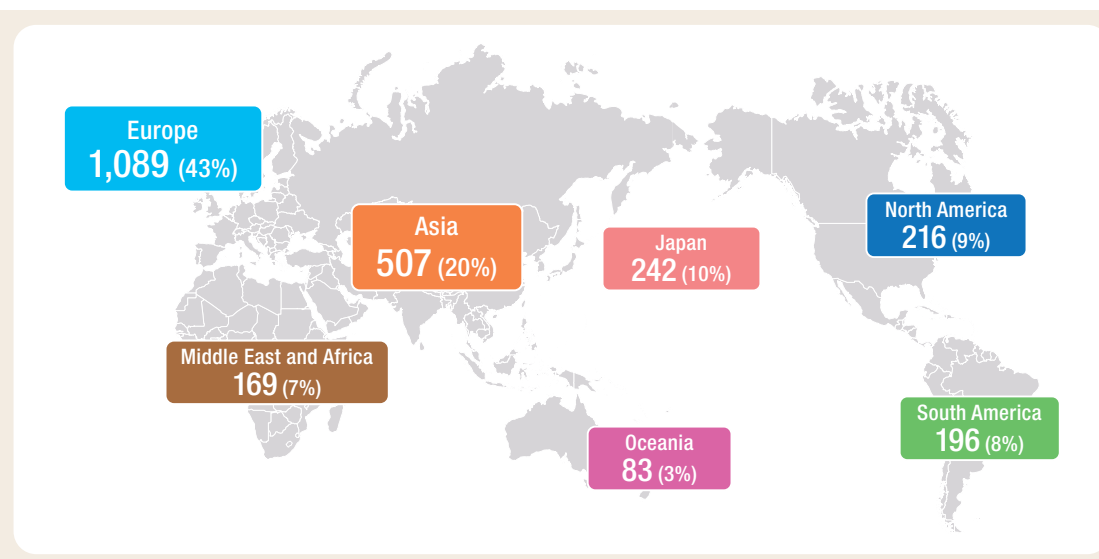
Topics

Global Intellectual Property Offensive

The illustration on the right shows the number of patents ISK holds, by region.

We hold patents throughout the world, including in Japan, the U.S., Europe, South America, and Africa. In order to support ISK's global business through intellectual property, Intellectual Property division collaborate our business divisions to acquire patents for products in the regions where we plan to market them.

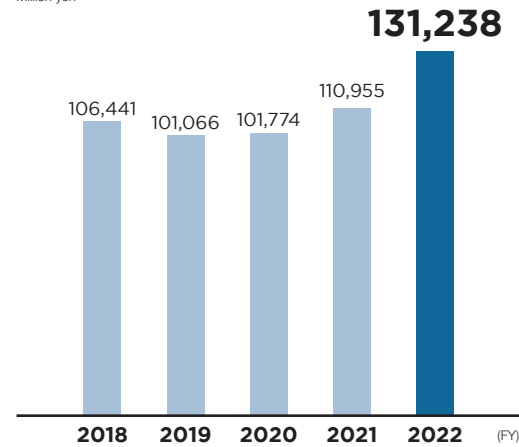
Patent acquisition efforts are conducted based on the laws of the target countries and the embodiment and timing of the patent. In the field of agrochemicals, for example, in addition to substance patents for active ingredients, we are studying moving on to patent applications related to manufacture process, formulation, and mixed formulations, as well as patent extension registration and trademark registration application. Such efforts will expand our portfolio and maintain our business advantage.



Financial Highlights (Consolidated)

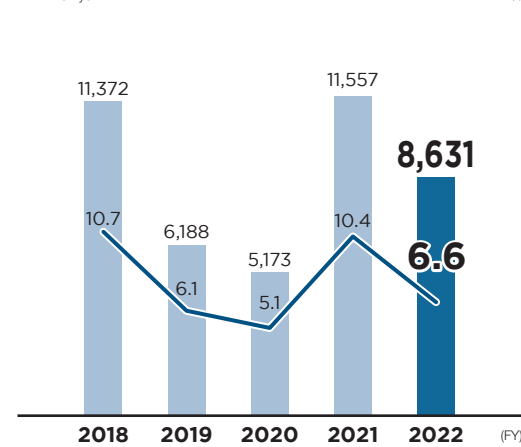
Net Sales

Million yen



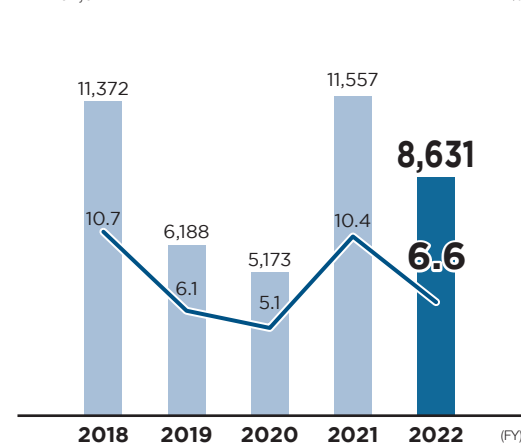
Operating Income

Million yen



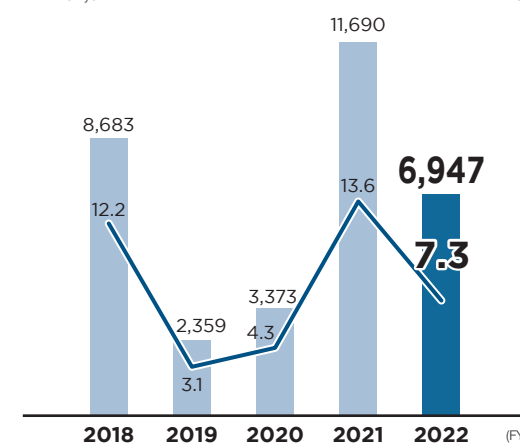
Operating margin

%



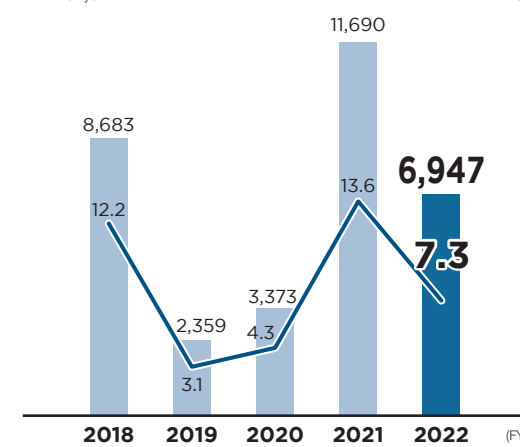
Net Income Attributable to Owners of Parent

Million yen



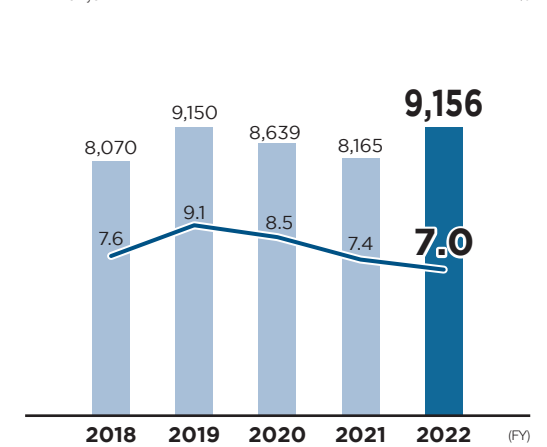
ROE

%



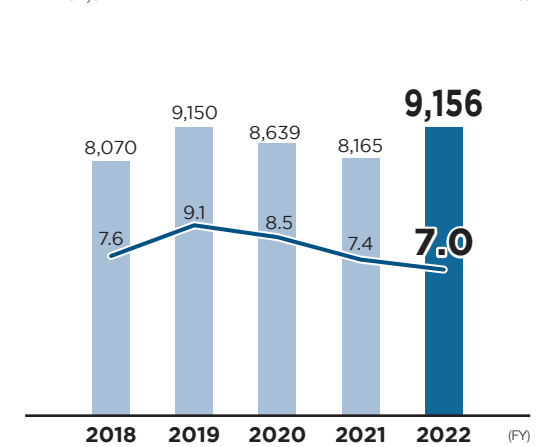
R&D Expenses

Million yen



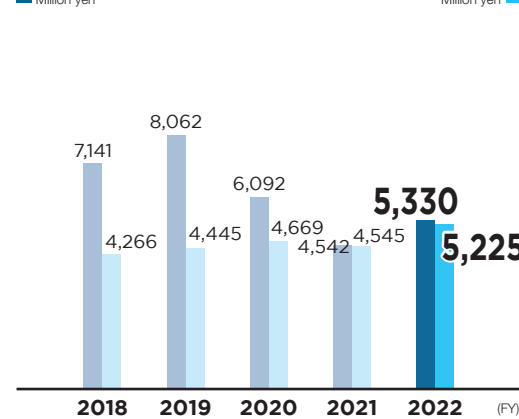
Ratio of R&D Expenses to net sales

%



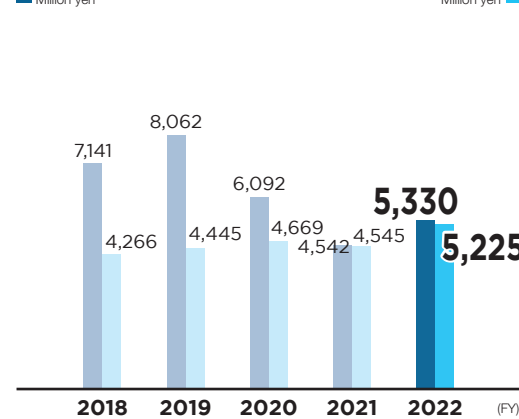
Capital Investment

Million yen



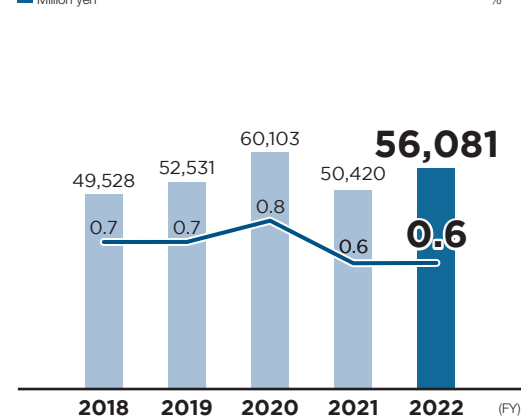
Depreciation expense

Million yen



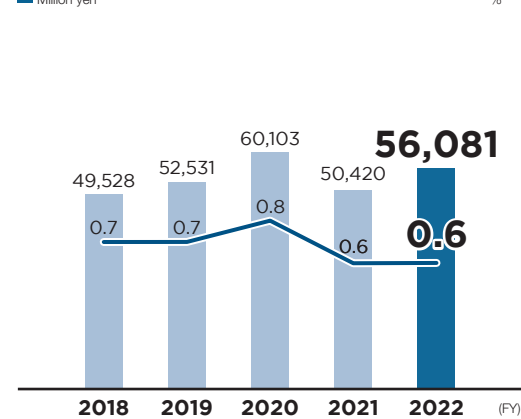
Interest-Bearing Debt

Million yen



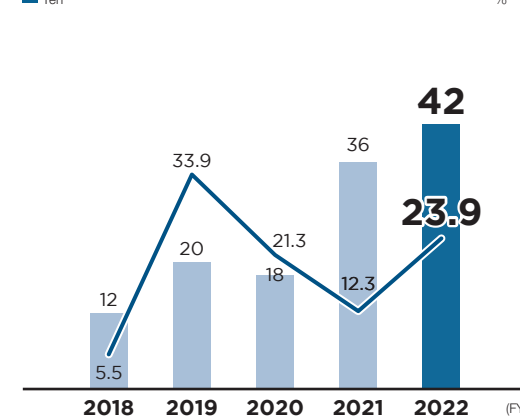
D/E ratio

%



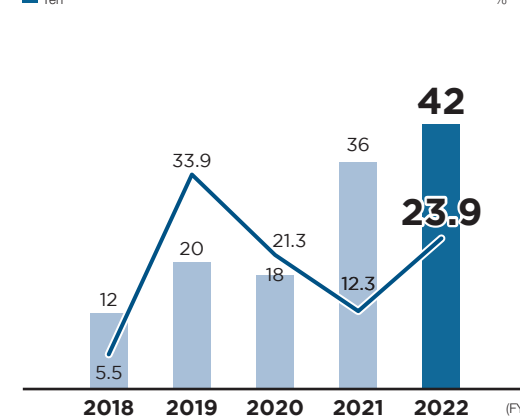
Dividends per Share

Yen



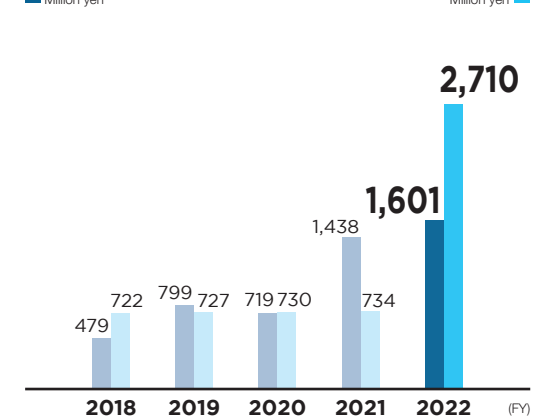
Payout ratio

%



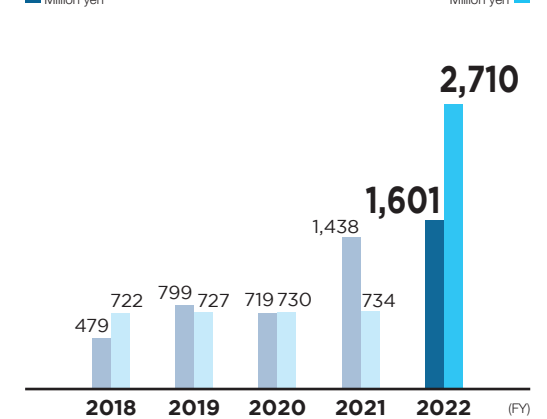
Total Dividends Amount

Million yen



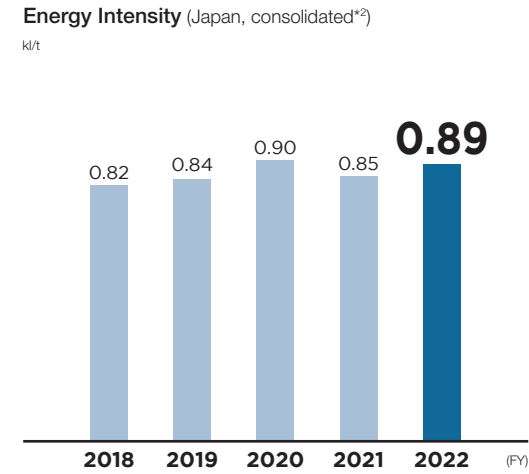
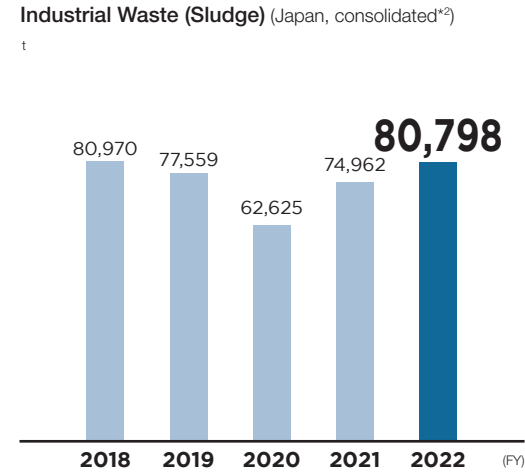
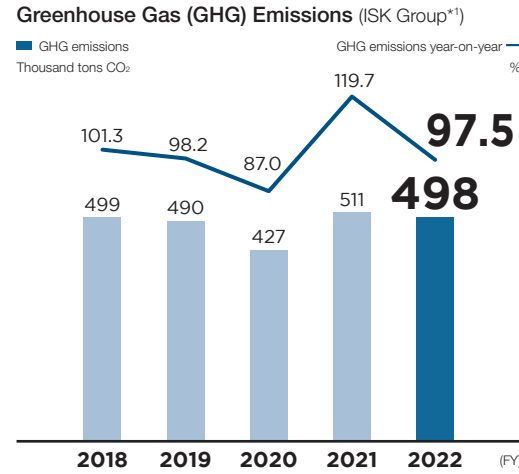
Purchase of treasury share

Million yen

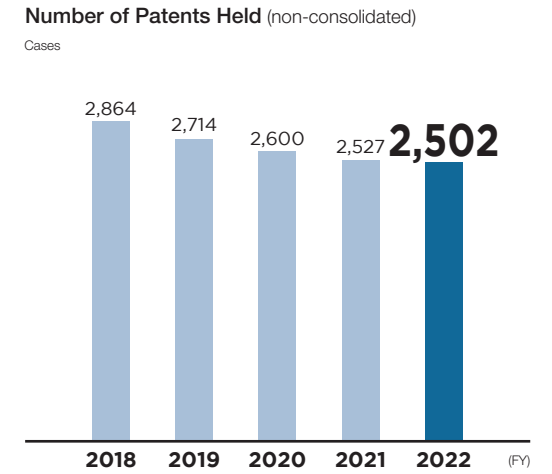


Non-Financial Highlights

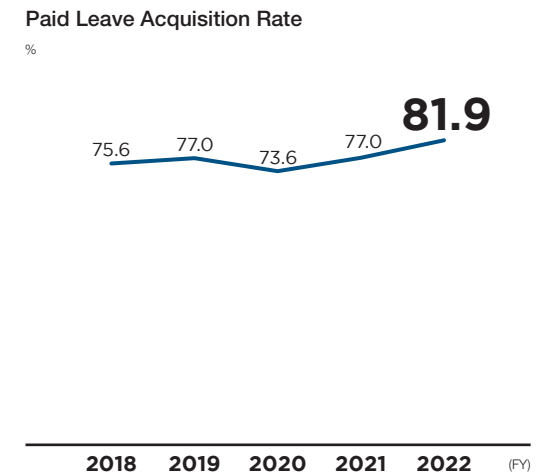
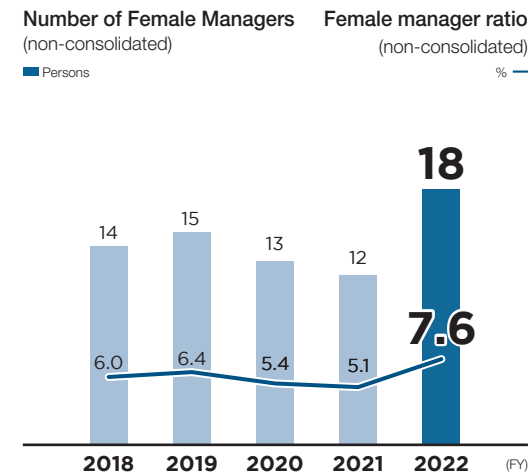
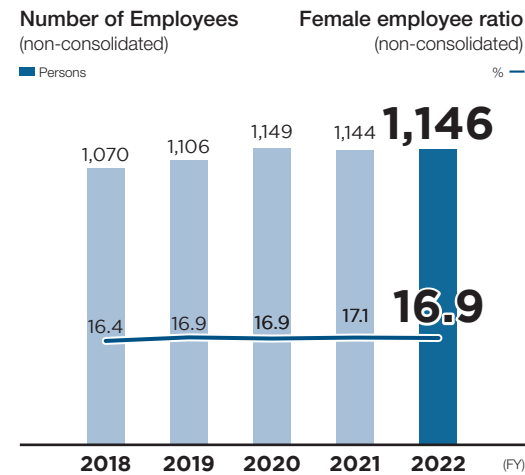
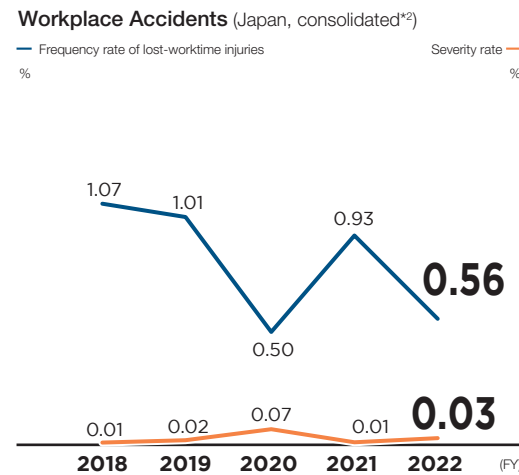
Environmental



Others



Social



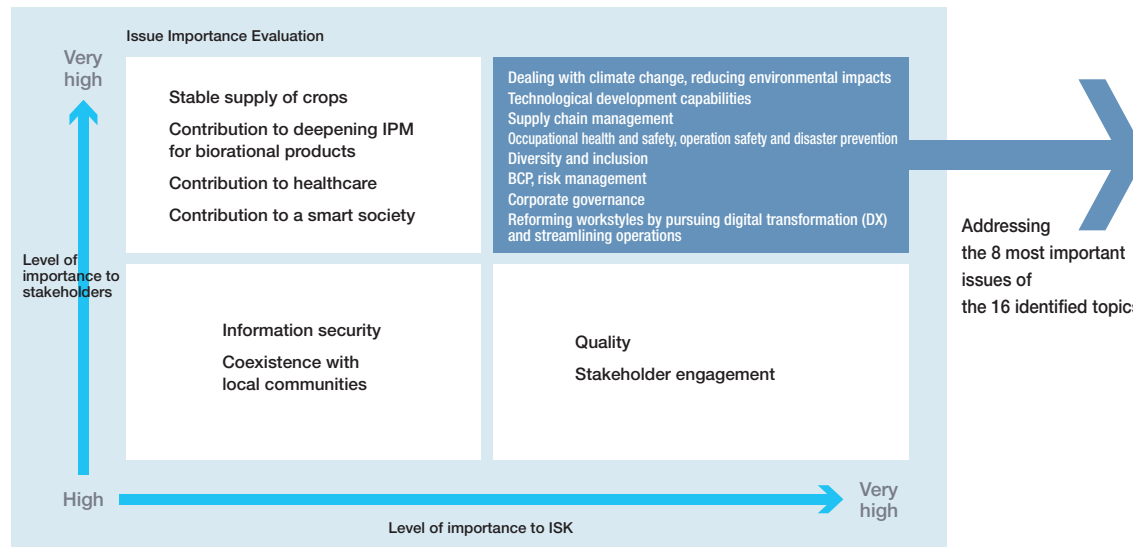
*1 Entire ISK Group

*2 Operated by ISK and Fuji Titanium Industry Co., Ltd. Production facilities only.

Materiality for the ISK Group

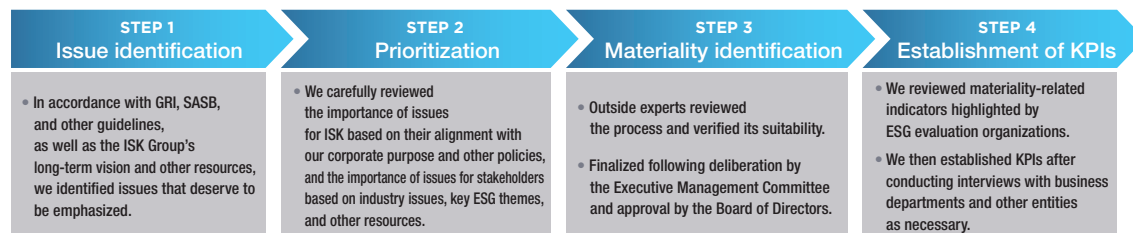
The Group has identified materiality (key issues) with the potential to impact its medium- and long-term corporate value. We've established medium- and long-term key performance indicators (KPIs) for eight key issues with an extremely high level of importance for both stakeholders and the ISK Group, which we've determined comprise the most important issues, and will undertake specific initiatives to address them. By addressing these issues, we strive for the sustained development of society and the creation of sustainable corporate value.

Identified Materiality



Materiality	Outline
Dealing with climate change, reducing environmental impacts	<ul style="list-style-type: none"> In carrying out business activities, we implement load reduction initiatives in the following environmental domains, including climate change, energy use, and pollutant emissions reduction Set mitigation targets and take action in response to climate change Preserve biodiversity Recycle and reuse water Reduce energy usage Reduce greenhouse gas emissions and other initiatives for atmospheric emissions Reduce industrial waste and pollutants emissions Procure environmentally friendly resources, improve resource efficiency Pollution prevention and chemical management
Technological development capabilities	<ul style="list-style-type: none"> Work to further improve ISK Group's technological development capabilities, which represent one of the Group's strengths, through advancement of core technologies and the pursuit of innovation
Supply chain management	<ul style="list-style-type: none"> Address the environmental, social, and human rights-related issues in the supply chain and implement fair and impartial procurement Preserve the quality, cost, and supply stability in order to meet the market need
Occupational health and safety, operation safety and disaster prevention	<ul style="list-style-type: none"> Ensure the health and safety of labors at workplace, and make sure operation safety and disaster prevention
Diversity and inclusion	<ul style="list-style-type: none"> Create workplaces that value the individual, foster mutual respect, and empower all employees, regardless of gender, age, disability, nationality, lifestyle, work backgrounds, values, or other attributes Accommodate individual differences in experience, ability, and thinking, and facilitate skills development and improvement to help all employees achieve maximum performance
BCP, risk management	<ul style="list-style-type: none"> Ensure the thoroughness of risk management and BCP (Business Continuity Plan) in order to minimize the impact from external risks
Corporate governance	<ul style="list-style-type: none"> Strengthen governance to improve organizational operation and performance Ensure compliance and corporate ethics, foster operational transparency
Reforming workstyles by pursuing digital transformation (DX) and streamlining operations	<ul style="list-style-type: none"> Pursue DX to streamline operations and implement work style reform

Process for Identifying Materiality and Establishing KPIs



Eight Most Important Issues and KPIs

Materiality	Outline	KPI	FY2022		FY2023	Scope
			Target/FY	Achievements	Target updated/FY	
Dealing with climate change, reducing environmental impacts	Set mitigation targets and take action in response to climate change	CO ₂ emission reduction rate (Scope 1+2, vs. FY2019)	30% or more/2030	1.7% increase (FY2019 levels)	30% or more/2030	ISK Group
	Reduce energy usage	Reduction in energy intensity	1% or more/Every year	0.3% decrease (Year-on-year)	1% or more/Every year	Japan, consolidated
	Reduce industrial waste and pollutants emissions	Industrial waste emission reduction rate (vs. FY2019)	50% or more/2030	22.1% reduction (FY2019 levels)	50% or more/2030	ISK
	Pollution prevention and chemical management	Adherence to voluntary control standard values that are stricter than environmental laws (wastewater, waste gas)	Continue/2030	Achieved	Continuing/2023	Japan, consolidated
Technological development capabilities	Work to further improve ISK Group's technological development capabilities, which represent one of the Group's strengths, through advancement of core technologies and the pursuit of innovation	Creation of new products and technologies in each business segment	Establish on a per-department basis/2023	Working according to the plans	Establish on per-department basis/2023	Japan, consolidated
Supply chain management	Address the environmental, social, and human rights-related issues in the supply chain and implement fair and impartial procurement	Establishment of ISK Group Policy on Procurement and guidelines governing procurement	Announcement/2023	ISK Group Policy on Procurement has announced and guidelines under review.	Establish guidelines/2023	ISK Group
Occupational health and safety, operation safety and disaster prevention	Ensure the health and safety of labors at workplace, and make sure operation safety and disaster prevention	Frequency rate of worktime injuries, severity rate*	0 accidents/2023	Frequency rate: 0.56 Severity rate: 0.03	0 accidents/2023	ISK, Fuji Titanium Industry
		Percentage of employees undergoing health checkups and stress checks	100%/2022 Continue/2030	100%	100%, continuing/2030	ISK
		Paid leave acquisition rate	75% or more/2022 80% or more/2030	81.9%	80% or more/2030	ISK
Diversity and inclusion	Create workplaces that value the individual, foster mutual respect, and empower all employees, regardless of gender, age, disability, nationality, lifestyle, work backgrounds, values, or other attributes	Female manager ratio	10% or more/2030	7.6%	10% or more/2030	ISK
		Mid-career hires as percentage of managers (average for last three years)	30% or more/2022	29.3%	30% or more/2023	ISK
	Accommodate individual differences in experience, ability, and thinking, and facilitate skills development and improvement to help all employees achieve maximum performance	Time spent in training and/or classes per employee	20 hours or more/2022	24 hours	20 hours or more/2023	ISK
		Cost of training sessions and/or classes per employee	50,000 yen or more/2022	50,000 yen	50,000 yen or more/2023	ISK
BCP, risk management	Ensure the thoroughness of risk management and BCP (Business Continuity Plan) in order to minimize the impact from external risks	Implemented through Corporate Risk Management Committee initiatives	Achieve plan/2023	Progressing according to the plans	Achieve plan/2023	ISK Group
Corporate governance	Ensure compliance and corporate ethics, foster operational transparency	Participation in at least 1 compliance training session	100%, continuing/2022	100%	100%, continuing/2023	Japan, consolidated
Reforming workstyles by pursuing digital transformation (DX) and streamlining operations	Pursue DX to streamline operations and implement work style reform	Effective contribution to operational streamlining	3 or more/2022	3	3 or more/2023	ISK
		DX certification	Acquire/2023	Progressing according to the plans	Acquire/2023	ISK

Frequency rate of worktime injuries: Number of employees injured or killed in occupational accidents per 1 million total working hours; indicates the frequency of occupational accidents.
Severity rate: Number of working days lost per 1 thousand total working hours; indicates the severity of occupational accidents.

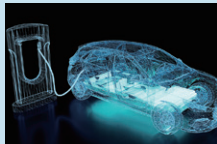


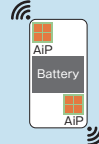
Inorganic Chemicals Business

Titanium dioxide is the flagship product of our inorganic chemicals business. In addition to white pigment used in paints, industrial products and other applications, we are global suppliers of an electronic component material for ceramic electronic devices, an electronic component material for ceramic electronic devices, and high-value-added titanium dioxide used as, among other things, such as in automobiles, and as a pollution prevention catalyst.

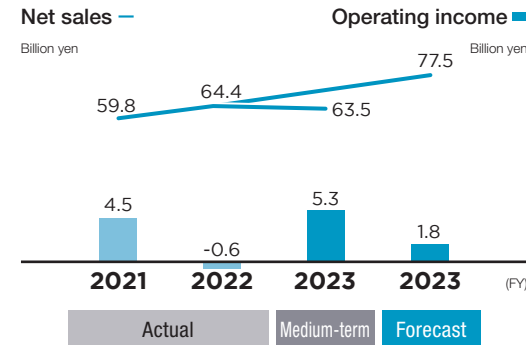
Social Issues and Environment

- We are tackling the challenge of developing materials intended for devices that will support the next-generation infrastructure essential to a smart society adapted to an aging population, declining workforce and changing lifestyles.
- We continue contributing to better living environments by providing materials and solutions that lead to self-driving technology and remote control technology.
- We are strengthening to develop our environmentally friendly product and to develop manufacturing processes that reduce environmental impacts. (energy conservation, heat recovery/reuse, waste reduction, recycling)

Contributing to Devices Supporting Next-generation Infrastructure

<p>EV (electric vehicles)</p>  <p>Copper particles (sintering material for use in power semiconductors bonding)</p>	<p>Smart glass</p>  <p>Organic solvent dispersion of TiO₂ (highly refractive material)</p>
<p>Camera module</p>  <p>LUSHADE™ BLACK (super black light absorption material)</p>	<p>High-speed communication equipment</p>  <p>Acicular type titanium dioxide (high dielectric/low dielectric loss tangent material)</p>

Revenue Trends for Inorganic Chemicals Business



Risks and Opportunities

Risks	Opportunities
<ul style="list-style-type: none"> • Reduced earnings due to rising costs for energy and raw materials, such as titanium ores 	<ul style="list-style-type: none"> • While continuing to monitor market trends, pass costs on to product prices and increase the sales percentage for high-value-added products. Also, including technological improvement, diversify raw materials used to expand the range of options
<ul style="list-style-type: none"> • Accidents and other problems due to aging production facilities and equipment 	<ul style="list-style-type: none"> • Carry out preventative maintenance and study the appropriate timing for replacing equipment and facilities
<ul style="list-style-type: none"> • Drop in market price and ISK market share as a result of growth among Chinese titanium dioxide manufacturers 	<ul style="list-style-type: none"> • Work towards increased and stable revenue by continuing to provide the market with high-value-added products based on ISK's unique technology

Strengths and Competitive Differentiation from Competitors

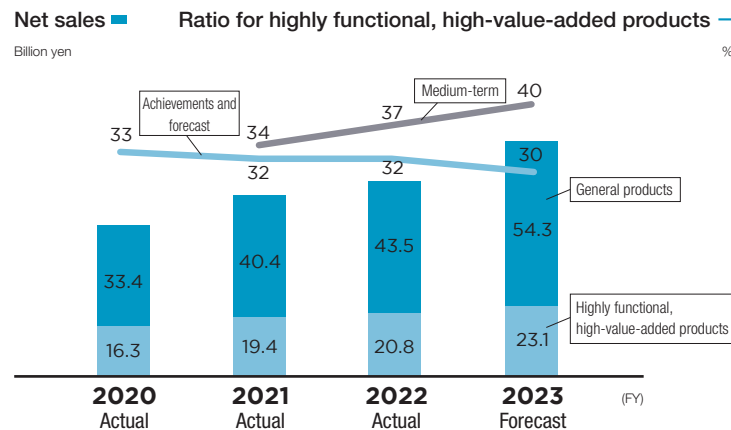
- Our technological strength cultivated over many years, along with our meticulous customer service, allow us to stably bring high-quality products to market that meet customer needs.
- Our titanium dioxide business has held the top market share in Japan for many years. We are the only company in Japan with manufacturing facilities for both sulfate and chloride processing, allowing us to provide a diverse range of products.
- Super-weatherable titanium dioxide, black heat-shielding pigment, acicular white electro-conductive materials... We've been venturing into a diverse range of applications with these unique product lineups that no other company offers.

Strategies

In our inorganic chemicals business, one of the business strategies and initiatives we are pursuing is “increasing the sales ratio for highly functional, high-value-added products.” However, in Stage I, we did not reach our target sales ratios for each fiscal year. This was due to an increase in sales of general products, and, while the sales ratio for highly functional and high-value-added products may have declined, their sales are steadily increasing, even with a softening global market.

In preparation for Vision 2030 Stage II, we are steadily pursuing development and marketing for new highly functional and high-value-added products. Our target market is devices which support next-generation infrastructure through self-driving technology and remote control technology, and we are planning to introduce a succession of products to that market, including a highly refractive material for smart glass, LUSHADE™ BLACK (super black light absorption material) for camera modules and copper particles for use in power semiconductor bonding. During the Stage II period, our aim is to achieve sales of several billion yen for these new materials collectively.

Sales Ratio for Highly Functional, High-value-Added Products



Environmentally and Socially Beneficial Materials



SDGs Goal 9

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Provide highly functional and high-value-added products which contribute to devices that support next-generation infrastructure

The copper particles and organic solvent dispersion of TiO₂ currently in development are new materials for use in EV (electric vehicle) power semiconductor bonding, AR (augmented reality) device sensors and other applications. Through these, we will offer new possibilities in the areas of the environment, labor efficiency, education, communication and advanced information communications.

Bonding Material for Use in Power Semiconductors (copper particles)



Powder

Paste

Use: High heat-resistant bonding for power semiconductors used in EVs

Highly Refractive Material (organic solvent dispersion of TiO₂)



Applied to glass

Use: AR device sensors, optical filter/anti-reflection coating



SDGs Goal 13

Take urgent action to combat climate change and its impacts

Supply new heat storage materials which contribute to energy conservation and CO₂ reduction

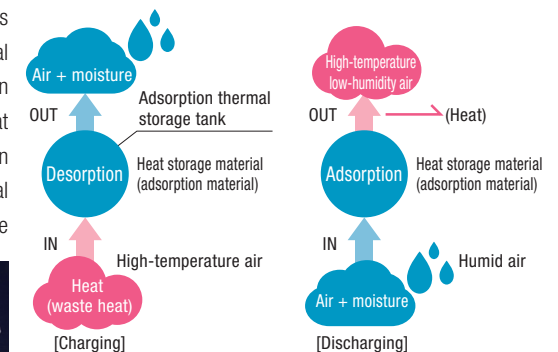
Our HASClay™ high-performance heat storage material can store low-temperature waste heat of around 100°C and has more than twice the heat storage capacity of conventional materials. Additionally, there is no need for heat insulation when storing heat for a long period of time. Because the heat storage tank can be transported so that the waste heat can be used in another location, it is expected that this material will be used as a “heat battery” which contributes to effective energy utilization and CO₂ reduction.

High-performance heat storage material (HASClay™)

Use: Effective utilization of waste heat from plants for heating, pool heating, etc.



[Overview of Adsorption Thermal Storage System]



Organic Chemicals Business (Agrochemicals)

In our agrochemicals business, we manufacture and distribute agrochemicals such as herbicides, fungicides, and insecticides. As the industry pioneer that first introduced chemical pesticide technology, we're currently one of the leading exporters by value in Japan. We've made solid progress in gaining a foothold in the European and U.S. markets.

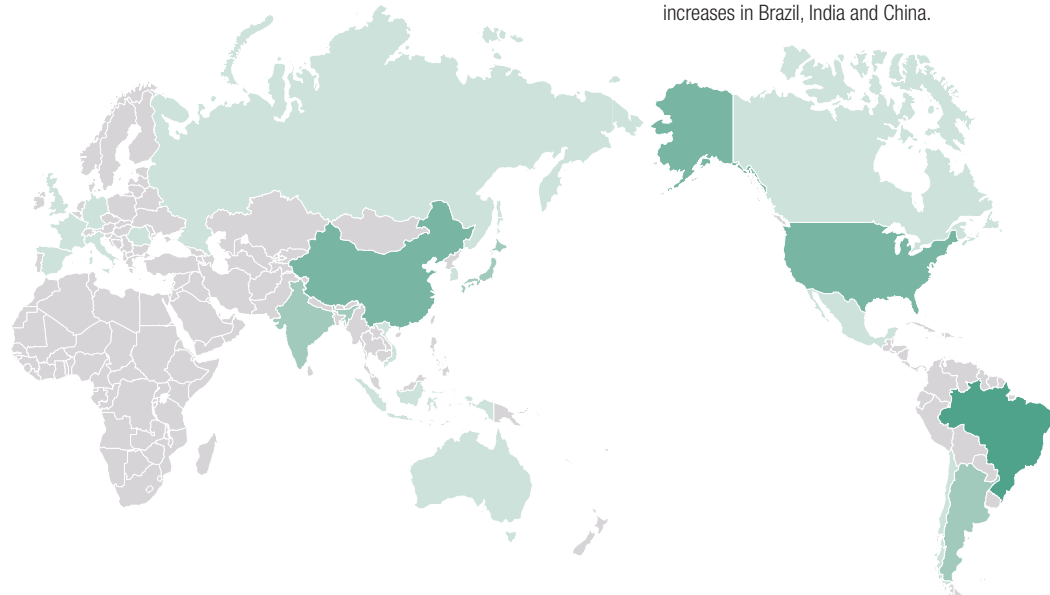
Social Issues and Environment

- There is a need for agrochemicals in order to produce food for the world's ever-growing population.
- We provide safe agrochemicals which satisfy the increasing physical and mental health-consciousness that is being seen worldwide.
- We incorporate environmental considerations for the sake of protecting biodiversity.
- We provide agrochemicals adapted to the climate change-induced changes in the crop production environment.

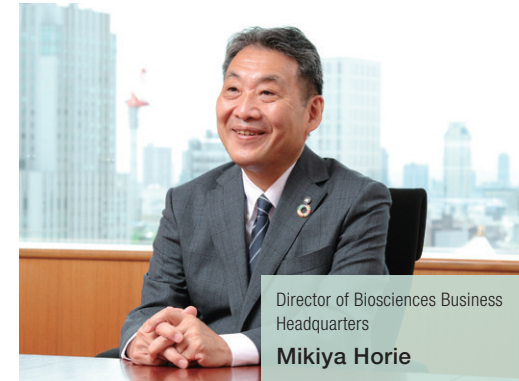
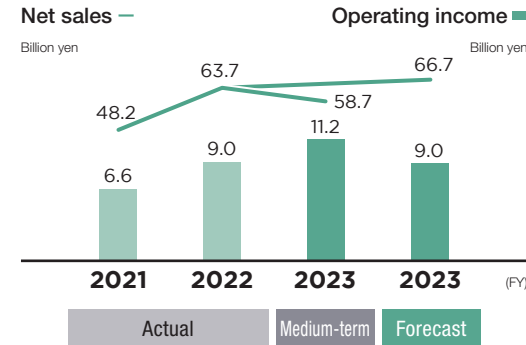
Global Agrochemical Market (Agbio Crop 2022)

Billion US \$  14.3

Sales of agrochemicals have steadily increased over the past five years due to such factors as expanding acreage for crops like soybean, with particularly notable increases in Brazil, India and China.



Revenue Trends for Organic Chemicals Business



Risks and Opportunities

Risks	Opportunities
• Delay in, or failure to achieve, product approval or registration	Take proper approach to countries' registration agencies and authorities; assess other companies' agrochemicals registration and survey their registration status; secure personnel with expertise in highly specialized fields, ensure handover of registration know-how
• Revised and stricter laws and regulations	Appropriately gather information relating to laws and regulations and registration requirements
• New entries and intensifying competition	Lower production costs to strengthen competitiveness; develop new molecule and mixed formulations that will enable ISK to stand out in the agrochemicals market
• Crop injury by agrochemical products	Strengthen safety confirmation by performing growing tests in fields; promote and disseminate appropriate methods for using agrochemical products

Strengths and Competitive Differentiation from Competitors

- Expand market share and improve profitability by launching new formulations and mixed formulations of existing products and by lowering production costs
- Ensure a stable supply and cost reduction by having flexibility in procuring active ingredients through integrated manufacturing that encompasses key raw materials or intermediates and active ingredients, purchasing of active ingredients from other companies, and joint procurement with other companies
- Leverage ISK manufacturing technology to actively sell organic intermediate products
- Shorten the registration schedule (initial registration, label expansion, change of manufacturing site, etc.)
- Add other species of blue flowering plants (blue dahlia, large-flowered blue phalaenopsis)

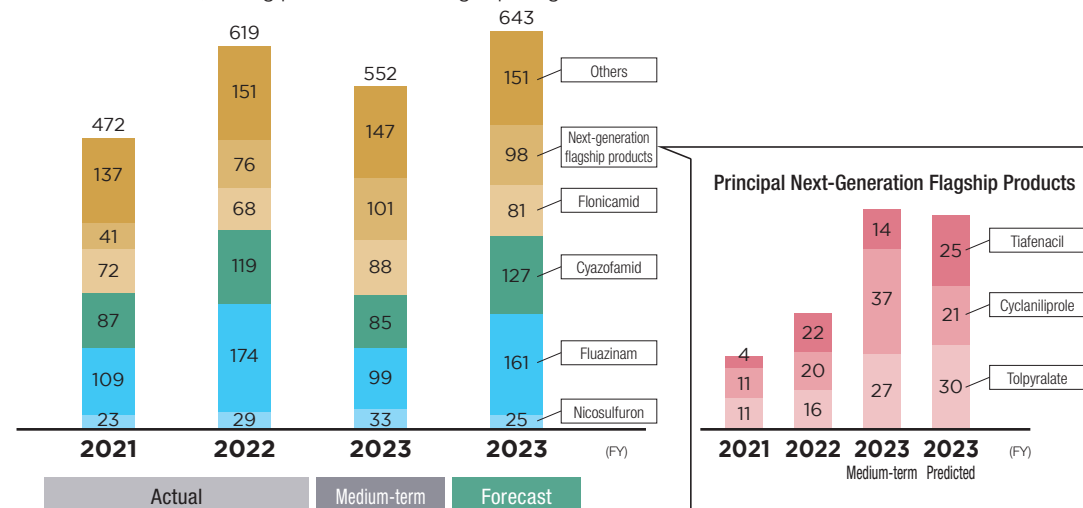
Strategies

Reducing the Manufacturing Cost of Next-Generation Flagship Agrochemicals and Increasing Demand

Tiafenacil is an herbicide jointly developed by ISK and FarmHannong Co., Ltd. (Korea) which is being sold worldwide. Thus far it has been released to market in South Korea, the U.S., Canada, Brazil and various other countries and has been well received by farmers. Since it quickly decomposes and becomes ineffective in the soil, it is used for weeding before crops are planted. This sort of usage is called “burndown.” Compared to previous burndown herbicides, this product stands out for its herbicidal effect on a wide range of weed species. The size of the burndown herbicide market in the U.S. is approximately 200 billion yen, with inexpensive herbicides being used. Given that this product is inexpensive to manufacture, it was able to be introduced into the U.S.’ large market for cheap herbicides as a functional and cost-competitive option. This is an example of how reducing manufacturing costs led to increased demand. In addition to burndown, this product is also used as a withering agent. Harvesting takes longer if there are leaves left on plants like potatoes and grains. Therefore, certain types of herbicides are used to kill the above-ground parts of the crop to make harvesting more efficient. Such herbicides are known as “withering agents.” Another notable feature of this product is that it exhibits a fast-acting herbicidal effect. This fast-acting effect makes it suited for use as a withering agent. We are aiming to further expand sales of this product by widely marketing as a withering agent in addition to being a burndown herbicide.

Agrochemical Sales Plan by Product

- Americas steady expansion of upcoming flagship agrochemical products
- Continued, strong performance of flagship fungicides



Agrochemical Products Developed with Food Problems and Biodiversity in Mind



SDGs Goal 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Agrochemicals contribute to the stability of food production, which helps in achieving a society without hunger.

Agrochemicals contribute to the stability of food production, which helps in achieving a society without hunger. Farms with large cultivated areas and the same crops cultivated over long periods of time are more likely to suffer major damage from pests and diseases. By using agrochemicals, it is possible to control pest and disease damage, thereby helping to ensure harvest yield and quality which, in turn, helps ensure the people of the world are supplied with essential food at a reasonable price.



In order to put an agrochemical on the market, it must be registered in accordance with the laws and regulations of each country. If it cannot be shown, using various data, that it is safe for humans and the environment, that agrochemical will not be registered. Thus, all of the agrochemicals we sell meet the safety standards of each country.



SDGs Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Providing agrochemical products that are developed with biodiversity in mind.

The ISK Group sells a variety of agrochemical products. For example, we sell the agrochemical fluazinam, which is a highly active fungicide used to control various diseases in a wide range of crops. It is not easily taken in by the plant body, has excellent residual effectiveness and rain resistance, and has a strong preventive effect.



Fluazinam has been confirmed to be highly safe for the natural enemies of pests and for beneficial organisms. It is used with a variety of crops in a wide range of areas, including to control soybean Sclerotinia stem rot in Brazil, diseases in turfs in the U.S., and potato late blight and wheat snow mold in Japan. This agent is difficult for fungi to develop resistance to and is effective against fungi which have developed resistance to other fungicides.

Organic Chemicals Business (Healthcare)

The vision for our healthcare business is to sustainably contribute to people's quality of life through our fine chemical technologies and marketing capabilities, and, by capitalizing on the technological strengths which we have cultivated in our organic chemicals business to manufacture and sell animal health products and to perform contract manufacturing of active pharmaceutical ingredients, we are protecting the health of people and animals and contributing to the realization of a fulfilling life both physically and mentally. We bring to market products that address unmet latent needs in human and veterinary medicine, and, moving forward, will promote global expansion not only in Japan but also mainly in Europe and the U.S.

Social Issues and Environment

As the global pet-related market expands, medical need for companion animals (CA) is also expanding. However, the supply of therapeutic agents is not sufficient to meet this need.



Markets

- Animal health products markets in Japan (2021) 123.7 billion yen*1 [including production animals (PA) and CA]
- Health products for CA markets in Japan (2021) About 50 billion yen*2
- Health products for CA markets worldwide (2021) About 2 trillion yen*2

*1 Source: Ministry of Agriculture, Forestry and Fisheries "Annual Report of Sales Amount and Sales Volume of Veterinary drugs, Quasi-drugs, Medical Devices and Regenerative Medicine Products (2021)"

*2 Based on in-house research

Risks and Opportunities

Risks

- The pharmaceutical regulatory data protection period (i.e., the re-examination period) *, which guarantees exclusive sales, is extremely short

Opportunities

Improve formulations and dosage forms and expand target diseases in order to strengthen the intellectual property protection network and diversify opportunities for use

*Japan = six years after approval; U.S. = five years after approval; Europe = ten years after approval

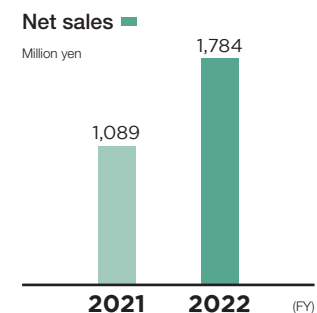
- The more appealing the product, the greater the risk of competitors entering the market

Create business opportunities by matching excellent existing seed ideas with the plethora of unmet needs in the veterinary medicine market

Strengths and Competitive Differentiation from Competitors

- Business development that integrate the various functions of R&D, marketing, and pharmaceutical regulatory affairs management
- Access to a global market centered on the U.S. and Europe
- Able to develop related products for product lifecycle management; a wealth of seed ideas for new product development

Revenue Trends for Organic Chemicals Business (Healthcare)



Director of Healthcare Business Headquarters
Hiroyuki Watanabe



SDGs Goal 3 Ensure healthy lives and promote well-being for all at all ages

Use healthcare business to sustainably contribute to improvement in people's quality of life.

Strategies

- Goal: Global expansion of animal health products
Focus on technological development and marketing which leverages ISK assets and strengths to maximize added value. Accurately tie research and development results with the needs of the end-user market in order to create value

<Management resources>

- Allocate human resources to ensure effective business development via a synergistic merger of R&D strengths with sales functions.
- Utilize U.S. and European business network-based product development to quickly supply each market.
- Build global alliances with highly specialized partner companies, such as CMOs/CROs and intellectual services companies.
- Utilize our expertise in pharmaceutical manufacturing that conforms to global cGMP (current Good Manufacturing Practices; U.S. pharmaceutical manufacturing quality standards) to build and expand manufacturing collaborations with CMOs in each market.

<Current>

PANOQUELL™-CA1 obtained conditional approval from the FDA in November 2022 as an anti-pancreatitis drug for dogs. We put this drug on the U.S. market in May 2023 through Ceva Animal Health, LLC, a leading animal drug manufacturer.

<Future>

While we have multiple development focuses for animal health products, human pharmaceuticals products and medical devices which we are pursuing commercialization of, our first focus is on developing and expanding the global market for PANOQUELL™-CA1.