

INTEGRATED REPORT 2018

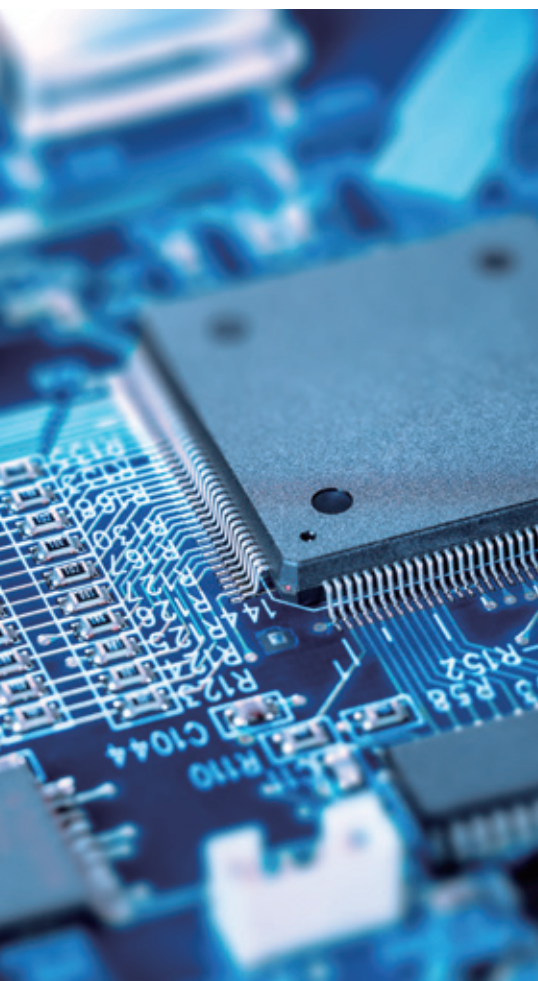
Fiscal Year Ended December 31, 2018



Control the Fluid Change the World



Since our founding in 1953, Nikkiso has successively created products that previously did not exist in Japan thanks to our core competence in technology for controlling fluids such as gas and liquid. Furthermore, these products have played a significant role in solving the various challenges of society. For example, our specialized petrochemical pumps supported the rapid rise of the petrochemical industry in Japan, while our Japan's first dialysis machines became indispensable to treating chronic renal failure. Even now, we continue to hone our technology and ideas in ways only Nikkiso can and embrace the challenge of solving new problems. We will continue to generate new value for the international community with our original technologies.





■ Editorial Policy

Nikkiso Co., Ltd. publishes this integrated report containing financial and non-financial information so that shareholders, investors, and all other stakeholders can gain a deeper understanding of the Nikkiso Group's medium- to long-term value creation. For more information about Nikkiso's products and services, please visit our website.

■ Reporting Period

January 1, 2018 – December 31, 2018 (some sections include information after January 1, 2019)

■ Reporting Scope

This report contains information about Nikkiso Co., Ltd. and its Group companies (84 consolidated subsidiaries).

Forward-Looking Statements

The forward-looking statements provided in this integrated report are estimates based on data available at the time of publishing. These forward-looking statements involve known and unknown risks and uncertainties. Accordingly, investors are asked not to place undue reliance on these forecasts in making investment decisions. Key factors that have the potential to change these statements include, but are not limited to, changes in the business environment that could significantly affect the Company's operating conditions, major fluctuations in the JPY/USD, JPY/EUR, or other currency pairs involving the Japanese yen, and Japanese stock market volatility. Under no circumstances does the Company guarantee the results of the forward-looking statements contained in this report.

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Introduction

History of Nikkiso

Since its foundation, Nikkiso has provided society with world-first and Japan-first products in numerous fields by embracing the challenge of innovation as a pioneer mainly in the area of fluid technology. More recently, we have developed original technology and products and expanded our business domain into new areas, such as deep ultraviolet LEDs.



First in Japan 1985
Supplied Japan's first cryogenic pump.

1973
Established Nikkiso Eiko Co., Ltd.
Established Nikkiso Deutschland GmbH
(currently Nikkiso Pumps Europe GmbH) in Germany.

First in Japan 1963
Developed Japan's first completely leak-free
canned motor pumps.



First in the world 1983
Started manufacturing and selling
cascades, CFRP aircraft components.

1981
Started manufacturing
CFRP.



1954

Started selling Milton Roy Pumps (metering pumps) as
an agency for Milton Roy Company (USA).

1956

Started manufacturing and selling Japan's
first leak-free canned motor pump.

1959
Company renamed Nippon Kikai Keiso Kaisha, Ltd.

1971
Listed on the Tokyo Stock Exchange First Section.

1974
Completed construction of the Shizuoka Factory
(now the Research & Engineering Institute).

1968
Company renamed Nikkiso Co., Ltd.

First in Japan 1969
Developed and started manu-
facturing and selling the Japan's
first dialysis machines.



First in the world 1984
Started manufacturing
and selling artificial
pancreases.



1975
Started manufacturing and
selling dialyzers.

First in Japan 1967
Started import sales of hemodialysis
machines for the first time in Japan.

First in Japan 1960
Provided Japan's first artificial heart
to the Department of Surgery,
The University of Tokyo.



First in Japan 1955
Developed and started manufacturing and
selling water-conditioning systems for
thermal power plants.



Sampling system at
an early stage.

First in the world 1985
Started manufacturing
and selling warm
isostatic laminators.



Ceramic electronic components manufacturing
equipment (warm isostatic laminator).

fluid control technology

Medical Division

Industrial Division Precision Equipment Division

Aerospace Division

1953
Established
Special Pump
Co., Ltd.



1996
Established Nikkiso LNG Testing INC.
(USA, now Nikkiso Cryo, Inc.).

1994
Established Shanghai Nikkiso Non-Seal Pump Co., Ltd. for the purpose of manufacturing and selling non-seal pumps in China.



2008
Established Nikkiso Vietnam, Inc. as a production base for aircraft components.

2013
Acquired Geveke B.V.
(the Netherlands).

2009
Acquired the LEWA Group (Germany).

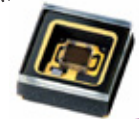


2017
Acquired the Cryogenic Industries Group (USA).

2015
Acquired the LNG cryogenic pump business of Atlas Copco (Sweden).

2016
Started production at the Higashimurayama Plant.

2018
Started production at Nikkiso Miyazaki, and Vietnam No. 2 factory.



2013
Started production at the Kanazawa Plant.

First in the world 2014
Started production of deep UV-LEDs at the Hakusan Factory.

1987
Established a composite material product factory at the Shizuoka Plant (now the Research & Engineering Institute).

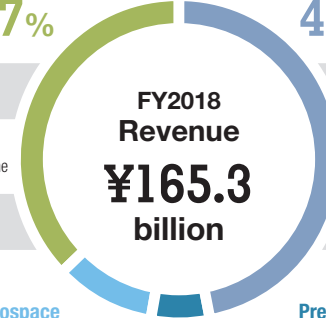
1995
Completed construction of the Kanazawa Plant.

2006
Established a joint venture for R&D, production, and sales related to UV-LEDs.

2014
Completed construction of the Hakusan Factory. Established the Aerospace Products Factory and the Medical Products Factory at the Kanazawa Plant.

Medical
37%

Industrial
47%



2017
Established Nikkiso Miyazaki Co., Ltd.

Aerospace
10%

Precision Equipment
6%

1994
Established M.E. Nikkiso Co., Ltd. (Thailand) for the purpose of manufacturing and selling medical devices.

1997
Established Nikkiso Medical GmbH (Germany, now Nikkiso Europe GmbH) for the purpose of manufacturing and selling medical products.



First in Japan 1996
Started manufacturing and selling "D-dry" for artificial kidney dialysate (Started production at the Kanazawa Plant).



2001
Established Nikkiso Vietnam MFG Co., Ltd. for the purpose of manufacturing blood tubing lines.



2010
Established a joint venture with the China-based Weigao Group for the purpose of manufacturing and selling hemodialysis machines.



First in the world 2016
Started manufacturing and selling the "Acrosurg," a microwave instrument.

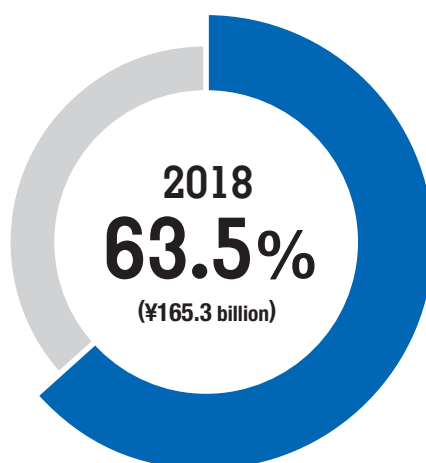
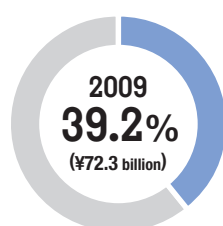
2014
Acquired the CRRT business of Baxter International Inc. (USA).

1993
Established Taiwan Nikkiso Co., Ltd. for the purpose of manufacturing and selling water-conditioning systems.

Expanding Global Presence

In recent years, Nikkiso has expanded its business foundation with M&As. We aim to build manufacturing, sales, and after-sales service platforms to meet the needs of our globally expanding customers anywhere in the world.

Overseas revenue ratio



2009

Acquired the LEWA Group of Germany

Acquired the LEWA Group which is a pump and system manufacturer with a strong position in the oil and gas industry and in Europe.



2010

Established a partnership with Weigao of China

Partnered with the Weigao Group which is China's largest medical equipment manufacturer with a network covering the entire China, and established Weigao Nikkiso (Weihai) Dialysis Equipment Co., Ltd., a joint company, to manufacture and sell dialysis machines.



2013

Acquired Geveke B.V. of the Netherlands

Acquired Geveke B.V., which has strengths in special pump package products, etc., for the oil and gas industry.

2014

Acquired the CRRT business from Baxter International Inc. of the United States

Acquired the CRRT (continuous renal replacement therapy) business which is a new field for blood purification.

2015

Acquired the cryogenic pump business of Atlas Copco of Sweden

Acquired the cryogenic pump business which is known as JC Carter brand.

Founded in 1953

1955

1960

1965

1970

1975

1980

1985

(Billions of yen)

180.0

150.0

90.0

60.0

30.0

0

2018 Revenue

¥165.3 billion

a nine-month period due to
a change made to the
account closing date.

Overseas
revenue

¥105
billion

2016

Acquired the Aquisense Technologies of the United States

Acquired the Aquisense Technologies of the United States which develops, manufactures, and sells Deep UV-LED products.

2017

Acquired the Cryogenic Industries (CI) Group of the United States

Acquired the CI Group, which has world-class technological capabilities and a high market share, mainly in the downstream field of the LNG (liquefied natural gas) sector and in the industrial gas processing and equipment field.

2017

Established a partnership with the Formosa Plastics Group

Concluded a joint-venture contract on Deep UV-LEDs business.



a six-month period due to
a change made to the
account closing date.

1990

1995

2000

2005

2010

2015

2016

JGAAP ← → IFRS

Value Creation Model

At Nikkiso our basic strategy is to provide high value-added products that meet the needs of our customers in highly specialized fields. We perceive changes in society through a process of addressing the challenges our customers face. We have thus far created various businesses with a business model that pioneered new markets and forged a dominant position on the back of our inherent technological know-how and creative ideas. And we will continue to evolve in the future as we seek to create value through our business operations.

Social Issues

Global warming
driven by increased
energy consumption

Demand for
labor-saving
measures owing to
labor shortages

More widespread
movement and
transportation due
to globalization

Greater demand for
water as a result of
population increase

Rising health care
costs due to an
aging population

Nikkiso's Strengths



Highly specialized and reliable products and services

- High value-added products backed by advanced technological know-how
- Systems that guarantee high quality and stable supply to satisfy stringent customer standards
- Continuous customer support structure



Global business platform

- Manufacturing, sales, and service networks covering the key regions of Europe, the US, and Asia



Strategy execution capabilities

- Foreseeing risks and restructuring our business portfolio in line with changes in the business environment
- Making aggressive investments in growth markets

**Growth underpinned by
corporate governance**

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

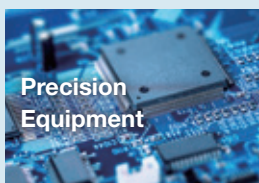


The Sustainable Development Goals (SDGs)—comprising 17 goals and 169 associated targets—were adopted at the UN Sustainable Development Summit in September 2015.

5 Business Domains



Promoting the use of LNG



Addressing next-generation infrastructure



Meeting aircraft demand



Supplying clean water



Saving labor and improving quality of medical care

Providing Value

Realizing a low-carbon society



Details on P21



Promoting sustainable industrialization



Supplying safe and inexpensive transport systems



Details on P20



Realizing a safer society



Improving QOL for patients



Details on P22-23



Financial / Non-financial Highlights

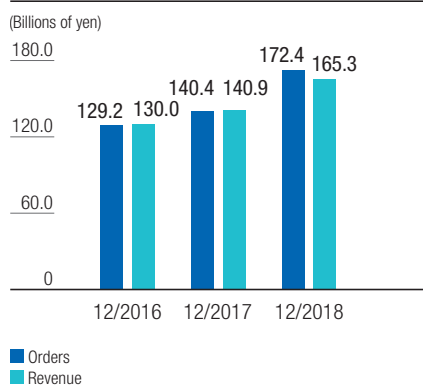
[Financial]

Orders

¥172.4 billion (22.8% up)

Revenue

¥165.3 billion (17.3% up)

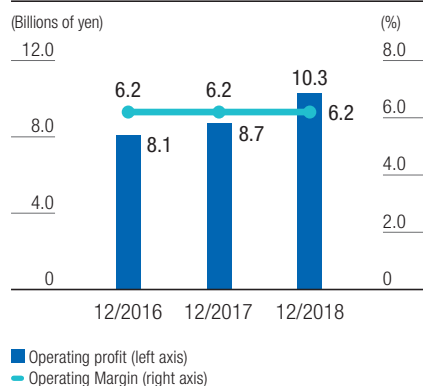


Operating profit

¥10.3 billion (18.2% up)

Operating Margin

6.2% (Flat)

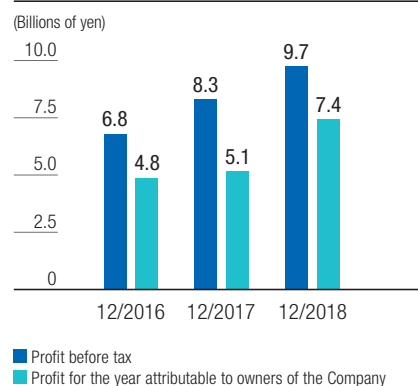


Profit before tax

¥9.7 billion (17.2% up)

Profit for the year attributable to owners of the Company

¥7.4 billion (43.7% up)

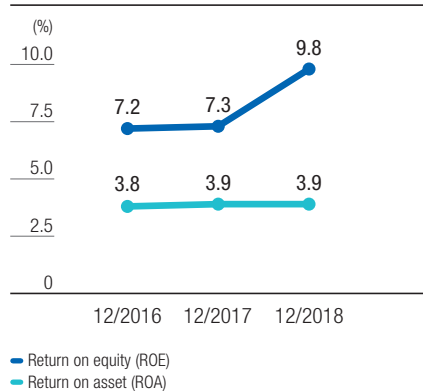


Return on equity (ROE)

9.8% (2.5 point up)

Return on asset (ROA)

3.9% (Flat)



Net cash generated by operating activities

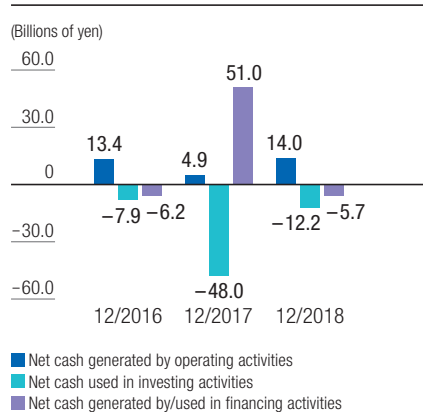
¥14.0 billion

Net cash used in investing activities

-¥12.2 billion

Net cash generated by/used in financing activities

-¥5.7 billion



Total assets

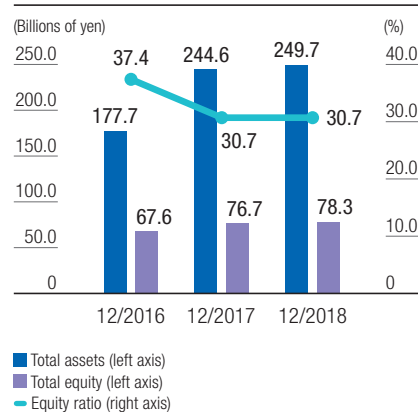
¥249.7 billion (2.1% up)

Total equity

¥78.3 billion (2.0% up)

Equity ratio

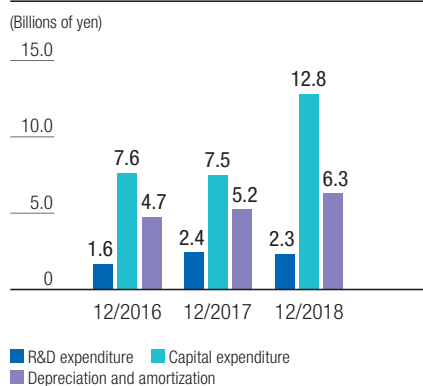
30.7% (Flat)



R&D expenditure
¥2.3 billion (2.0% down)

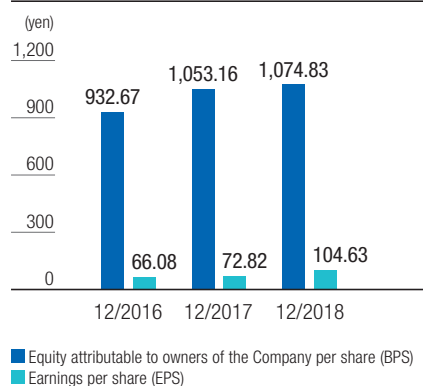
Capital expenditure
¥12.8 billion (71.4% up)

Depreciation and amortization
¥6.3 billion (20.8% up)



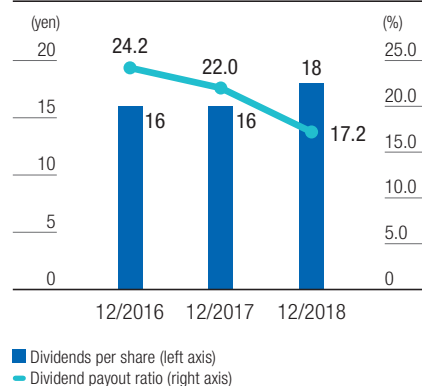
Equity attributable to owners of the Company per share (BPS)
¥1,074.83 (2.1% up)

Earnings per share (EPS)
¥104.63 (43.7% up)



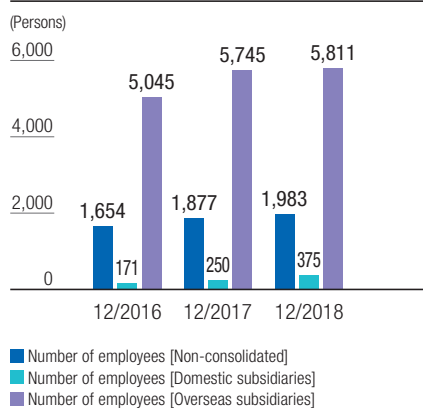
Dividends per share
¥18 (¥2 up)

Dividend payout ratio
17.2% (4.8 point down)

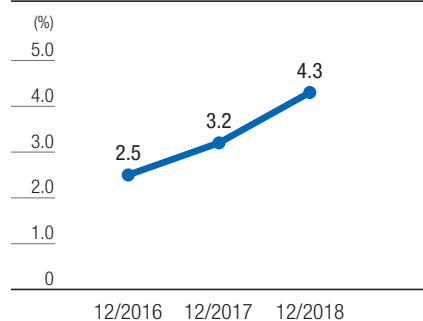


[Non-financial]

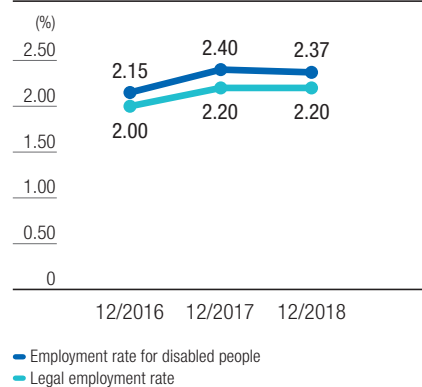
Number of employees
 [Non-consolidated] **1,983** (106 up)
 [Domestic subsidiaries] **375** (125 up)
 [Overseas subsidiaries] **5,811** (66 up)



Ratio of female managers
 (Non-consolidated)
4.3% (1.1 point up)



Employment rate for disabled people
 (Non-consolidated)
2.37% (0.03 point down)



Message from the President



President & Chief Executive Officer
Toshihiko Kai

A stylized, handwritten signature in black ink, likely reading 'T. Kai'.

“Entering the next growth stage in each of our businesses,”

About Nikkiso

Since its establishment in 1953, Nikkiso has consistently used cutting-edge technologies to create multiple Japan-first products in various life-supporting fields, including energy, aerospace, and medical care. In the process, we have contributed to the enrichment of people's lives.

All of our businesses require advanced technologies. They include our Industrial Business, which focuses on specialized pumps for industrial use; our Aerospace Business, which makes cascades that are used in jet engines and have high market share; our Precision Equipment Business, which handles water-conditioning systems for power generation plants; and our Medical Business, which centers on hemodialysis equipment. In each of these fields, we are developing our business for professional customers who require products with unerring quality and do not fail even under severe conditions.

In line with Japan's changing industrial structure, Nikkiso has expanded its business to overseas markets. Using an M&A strategy, we have enhanced our product lineup and strengthened our overseas sales networks, to the extent that overseas sales now account for 64% of consolidated revenues. Nikkiso is now widening its perspectives to the world.

Entering our next stage of growth

In the Industrial Business, crude oil prices have been rising since the end of 2017, resulting in resumption of capital investments in the upstream sector, including crude oil and gas extraction. Accordingly, LEWA GmbH, our Group company, posted an increase in orders for oil- and gas-related pumps. While it is impossible to predict crude oil price trends, we believe that the LEWA Group's business environment will gradually recover.

In midstream and downstream fields, such as petrochemicals, we look forward to growth on the back of construction of large-scale plants in North America. Meanwhile, increasing concern about global environmental issues is behind a progressive shift to LNG as an environmentally friendly energy source, and the related capital investment is moving rapidly as a consequence.

Message from the President

In the context of this rise in demand, we will drive further growth in our pump business by maximizing synergies between three Group companies—the LEWA Group, which is strong in the upstream oil & gas field; Nikkiso, which is strong in midstream and downstream fields; and the Cryogenic Industries Group (CI Group), which is strong in the LNG and gas sector.

Specifically, we will use the LEWA Group's network to provide CI Group and Nikkiso products. We are also considering integrating the LNG-related businesses of the CI Group and Nikkiso in order to win large-scale orders for LNG plants around the world. To support these efforts, we are looking to consolidate business bases and optimize production facilities. As a start, we have begun integrating the sales and marketing functions of the four bases in China operated by Nikkiso, the LEWA Group, and the CI Group.

To date, both the LEWA Group and the CI Group have operated their businesses as independently as possible, but both entities have recently become aware of the benefits of utilizing synergies with Nikkiso. We have come to realize the immense potential of ourselves as a specialized pump business group with product lineups and advanced technologies covering broad-ranging markets unrivalled on the world stage.

In the Aerospace Business, major aircraft companies are focusing on boosting production of single-aisle aircraft, which have increased in demand with the growth of low-cost carriers (LCCs). Given the worldwide spread of supply chains, aircraft companies are placing strong emphasis on supply chain management. In order to increase production volume, thousands of suppliers need to meet strict product quality and delivery standards. Nikkiso has systems in place that can cope with increased production and has earned the deep confidence of customers for its product quality and delivery accuracy, and inquiries from aircraft companies and major components manufacturers are increasing as a result. By advancing our business as a component manufacturers trusted by such major aircraft companies, we believe we will increase the number of opportunities available to Nikkiso, including for the manufacture of new parts.

In the Medical Business, the domestic market for our mainstay dialysis machine is unlikely to grow as the population declines, but we look forward to significant future growth in overseas markets. Particularly in China, which we position as our key market, unit sales of our dialysis machines have been growing significantly year by year, reflecting the increasing number of dialysis patients in that nation. In Europe, meanwhile, unit sales of hemodialysis machines with automation functions, introduced in 2015, have been growing, and demand for hemodialysis machines is also increasing in Southeast Asian countries, where medical insurance systems are progressing. We see the potential for substantial growth of our hemodialysis-related businesses overseas, including in the yet-unexplored North American market. In overseas markets, we are entering the next stage for Nikkiso's dialysis machines, which have exceptional functional advantages in addition to high reliability and economic viability.

As you can see, we believe all of our businesses have immense market appeal and great growth potential.

“ To advance to the next growth stage, it is essential that we once again reassess and enhance our manufacturing capabilities. ”



Strengthening our manufacturing capabilities

We are seeing more and more growth opportunities in markets that we are developing. To firmly seize these opportunities and advance to our next growth stage, it is essential that we once again reassess and enhance our manufacturing capabilities.

Unlike automobiles and electrical equipment, our main products have low production volumes. For this reason, we cannot overcome problems by simply using automation and outsourcing to enhance production efficiency, as is the case with mass-produced items. Rather than increased efficiency and lower costs, the most important thing is the ability to understand the needs of customers and provide solutions unique to Nikkiso.

From the perspective of its future, Nikkiso must crucially deploy modern equipment and exceptional human resources to improve its manufacturing capabilities—not only in aircraft components but in other businesses as well. This conclusion was the starting point for our plan to build a new factory of Nikkiso Miyazaki. At the aerospace facility of Miyazaki Factory, we will draw on our track record to engage in aircraft development from the initial stages. We will also get involved in various development processes, including for new-shaped parts, new materials, and new manufacturing methods. In addition, we will work to improve our proposal capability, expand our product range, and strengthen our market presence in this field.

In Miyazaki, we will forge ahead with the construction of a factory that will handle specialized industrial-use pump systems for our Industrial Business. Utilizing the site's vast area and our excellent human resources, we will further build on Nikkiso's strengths in technology and product reliability.

In the Medical Business as well, we are working to strengthen our manufacturing capabilities on the back of growing demand for our mainstay dialysis machines. If overseas sales of hemodialysis machines continue to grow steadily, we will need to increase our annual production capacity to around 30,000 units, which is double our current level, or even higher. At our medical products factory in Kanazawa, we are reassessing and streamlining our production processes, with a view to increasing production at an early stage.

**Global management
aimed at increasing
production capacity**

Although we engage in overseas production—including at LEWA's pump plant in Germany and our aircraft components plant in Vietnam—we do not make the same products as our Japanese factories. Our Japanese and overseas factories have different equipment and make different products, and we don't bring Japanese plant management practices to our overseas factories. Our Japanese and overseas factories have parallel relationships, with no "mother" or subordinate roles. We have to consider our operations together as Nikkiso Group. In addition, it is necessary for us to control our overall business, including with respect to consistency of governance and mindset, as well as staffing allocations. Global management will assume more and more importance in meeting these challenges.

We will also need to clarify the division of roles between local personnel of overseas Group companies and Nikkiso parent-company members and delegate authorities to local employees for local operations, giving consideration to their motivation and paying respect. Once a certain level of integration is achieved, we plan to promote the integration of bases and exchange of middle management personnel.



Financial strategy and shareholder return

We have continued making upfront investments in our future. For example, we have pursued M&As in areas in which we can exploit our technological strengths. These include the oil and gas business and the LNG business—where we acquired LEWA of Germany in 2009 and CI Group of the United States in 2017. We also established Nikkiso Miyazaki, which will be the base for the Nikkiso Group's production and R&D in the future.

While such investments are based on the idea of maximizing Nikkiso's growth potential, the result is that we have a high level of external debt. In the future, we will work to improve our financial position by building a management system that utilizes funds more efficiently and flexibly. This will entail the full-fledged introduction of a system for collectively managing funds that are currently dispersed throughout the Group. With respect to shareholder return, we posted consolidated operating income in excess of ¥10 billion in fiscal 2018, and we now have a prospect of maintaining that figure consistently in the future. For this reason, we increased year-end dividend by ¥2.00 year on year, bringing total annual dividends to ¥18.00 per share. We will continue returning profits to shareholders in line with our earnings growth. In fiscal 2019, we plan to pay annual dividends of ¥20.00 per share, up ¥2.00 year on year.

Message to stakeholders

To date, we have made multiple upfront investments necessary for growth. These include overseas M&As, such as our acquisition of the CI Group, as well as construction of new plants in Nikkiso Miyazaki and Vietnam. These upfront investments have made tangible contributions to the performances of our Industrial, Aerospace, and Medical businesses. This is evident not only to me, but also to our employees.

In addition to posting a solid performance, in fiscal 2019 we will steadfastly pursue various new initiatives. These include promoting the spread of deep ultraviolet LED products by establishing a joint venture with Formosa Plastics Group.

In those businesses where growth is stagnating, we will reassess our business portfolio as necessary. While the direction we are aiming for is now very clear, we need to forge ahead in a serious manner, so that we can envisage the future shape of the entire Nikkiso Group more easily than before. Then we can more effectively convey the directions and outcomes of the initiatives we have pursued.

I ask all of our investors to take a medium-to long-term perspective on the Company and continue to offer support and understanding.

From Miyazaki, broaden our horizons to the world

Nikkiso Miyazaki comes online

Since its founding, Nikkiso has continued to incorporate and develop technology and products in highly specialized fields to create new marketplaces in Japan. With original technologies and ideas, Nikkiso has built a reputation for excellence among customers in environments that require performance under all contingencies. In order to produce these kinds of products, we recognize that our unwavering commitment to technological innovation is our lifeline. As such, it is vital that we not only nurture human resources capable of embracing fresh challenges, but that we also have a core production center equipped with the facilities and systems to develop world-leading technologies in each of our business fields and constantly make dependable products.

Our Kanazawa and Higashimurayama plants have thus far fulfilled this role, but given that is becoming increasingly difficult to expand these sites because production is running at full capacity, we established a new site, Nikkiso Miyazaki. Operations are already up and running at this new production center, which will serve as our core factory and support Nikkiso's business over the medium to long term. In pushing ahead with Nikkiso 2020, our medium-term business plan, Nikkiso Miyazaki will be required to fulfill a number of missions, including greater production capacity, personnel development, the handing down of technological know-how, and the development of new technologies.



Increasing production capacity

—Mother plant to support all production sites—

In addition to ramping up production of cascades, we expect the Miyazaki Factory to serve as our core factory for producing new and highly challenging aircraft components for which orders will likely increase up ahead, as well as tackling the development and adoption of new production technology. The factory will also play the key role of managing our aircraft component production systems laid across Japan and overseas, establishing quality control and production technology, and arming the Group with the competence becoming of a full-fledged aircraft components manufacturer. We are continuing to get the site ready to function as our mother plant for all our mainstay products, for example, by stepping up the construction of testing facility for specialized large-scale cryogenic pumps used for the transportation of LNG and other liquefied gases at ultra-low temperatures.

Center of R&D

—As a facility for joint development with customers—

Owing to the fact that Nikkiso's products must be customized to meet the needs of each customer, we need to touch base with our customers from the R&D and design stages and then again during the production stage when we check that the product conforms to requested specifications. In contrast with our cramped existing plants where we have struggled to carry out our production plans, the newly completed Miyazaki Factory has ample space and the latest facilities, making it much easier for us to set up areas for joint development with our customers. Through this joint development process, we aim to be an industry leader by engaging in R&D in anticipation of the direction the industry is heading, for example, by developing materials and manufacturing methods for next-generation aircraft.

Future Efforts

One of the basic policies outlined in Nikkiso 2020, our medium-term business plan, is the re-establishment of Nikkiso as a technology expert. By moving toward the achievement of this goal, we will aim to provide sophisticated products and services that meet customer needs with our prominent technological capability in each of our business domains. To the attainment of this objective, however, the cultivation of personnel to shoulder our Company's future is, in the long run, indispensable. In nurturing human resources, we naturally require the right people to develop new products by way of R&D, design and other processes, but we also need a rejuvenation of workers skilled in manufacturing. At Nikkiso Miyazaki we hope to nurture talented employees capable of wielding both traditional techniques and new technologies/methods by implementing initiatives that facilitate the handing down of technical skills—a process that has struggled to gain traction at our existing production sites.



Contributing to greater global travel and transportation



Social issues

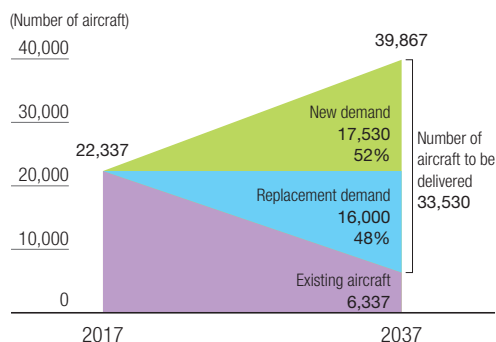
Creating a world of free and easy mobility

- Increased movement and transportation driven by economic growth
- Lower airplane fuel consumption and CO₂ reduction

[Needs]
Greater aircraft demand in Asia

[Needs]
Fuel-efficient and low-cost aircrafts

Results of passenger jet demand forecast



Source: Japan Aircraft Development Corporation (March 2018),
Worldwide Market Forecast 2017–2037

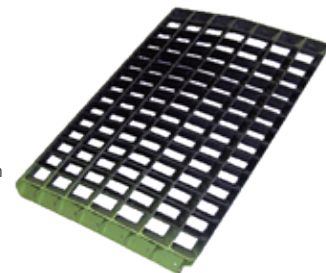
<Nikkiso's solutions>

Reliable and stable supply structure for the aviation industry

Owing to the increase in global travel and transportation driven by economic growth, demand for aircraft is increasing rapidly, especially in Asia for single-aisle airplanes whose capacity of around 150-200 seats. Aircraft companies are devoted to controlling production in order to meet such demand, and the key is the performance of their suppliers. Nikkiso supplies cascades* to almost all of aircraft around the world. We not only manufacture and ship out high-quality cascades in response to our customers' delivery schedule, but also prepare for the future issue of increased demand by utilizing Miyazaki Factory. These efforts have made our relationships with customers firmer. In recent years, Nikkiso Vietnam, Inc. is increasing the number of its product lineup, such as wing parts and nacelle parts, because of NVI's performance capable of achieving the same quality and stable delivery as in Japan.

*Cascades

When an aircraft is landing, it uses braking system in landing gear (tires) to shorten landing length. Aircraft must equip a "thrust reverser system" which makes thrust power in engine push back to a reverse direction. Cascades used in the thrust reverser system play a very important role in controlling reverse airflow. Manufacturing cascades, from their configurations, requires a delicate craftsmanship. The share of Nikkiso has exceeded 90% for commercial airplane.



Balancing safety and fuel efficiency, contributing to aviation market growth

The cascades we manufacture for use in the engines of aircraft are made out of lightweight, heavy-duty CFRP (carbon fiber reinforced plastic). By switching to CFRP from aluminum alloy, we have significantly improved durability and achieved a weight reduction of around 40%. By making aircraft lighter we can reduce fuel consumption, which in turn leads to lower fuel costs. There are other merits too, such as contributing to the important social challenge of curbing CO₂ emissions. Through the development of new production methods and new materials in collaboration with our customers, Nikkiso serves to reduce aircraft CO₂ emissions and contribute to growth in the aviation market.

Contributing to the new generation of energy with LNG-related products



Social issues

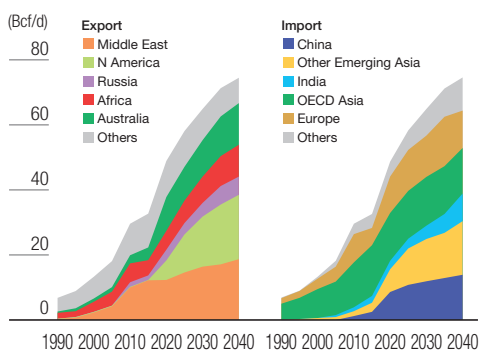
Promoting clean energy

- Global warming
- Increased global demand for energy
- Growing demand for LNG in Asia

[Needs]
Reduction of
CO₂ emissions
by using LNG

[Needs]
Increase in LNG
transportation from
gas production
sites to areas of
consumption

■ LNG export and import growth



Source: BP Energy Outlook 2018

<Nikkiso's solutions>

LNG-related equipment and systems from upstream to downstream processes

We are continuing to beef up our production system for our industrial gas and LNG-related business, such as cryogenic pumps*, which we consider to be one of our growth drivers going forward. The first step was to commence construction plan of testing facility for cryogenic pumps at Nikkiso Miyazaki. Cryogenic pumps are much like precision instruments in that they require a subtle degree of technology. Currently, LNG testing before the pump shipment can only be carried out at a testing facility in Las Vegas, which means the process from production, testing, through shipment needs quite longer leadtime. This process, however, will be shortened once the testing can be done at Nikkiso Miyazaki and we hope to contribute to meeting the ever-increasing demand for clean energy in the future.

*Cryogenic pumps

Large-scale pumps for delivering LNG from LNG import terminals. The manufacturing of cryogenic pumps requires highly skilled techniques given the difficulty of handling LNG at the ultra-low temperature of -162°C , as well as their increasingly large size. Nikkiso has a roughly 50% market share in cryogenic pumps.



Promoting clean energy in Asia

Spurred on by a heightened environmental awareness in recent years, the Asian region—which continues to demonstrate remarkable economic growth and increased demand for energy—is seeing a shift from coal-fired power generation to LNG-fired. In this environment, Nikkiso will be able to swiftly respond to the needs of customers in Asia by building its cryogenic pump testing facility in Miyazaki. Looking to the future, Nikkiso will aim to contribute to the clean energy revolution by providing cryogenic pumps and other LNG-related products.

Aiming to improve QOL for patients

—Toward dialysis therapy of the future—

As a pioneer of dialysis therapy in Japan, Nikkiso has continued to play its role in the development of this field. Every step of the way, from development to manufacture, sales, and service, is carried out within the Nikkiso Group, enabling us to offer a comfortable therapeutic environment to all patients requiring dialysis. In order to encapsulate in our products the utmost peace of mind and reliability for patients and medical institution customers and constantly make new proposals going forward, we continue to engage in basic research in collaboration with our Research & Engineering Institute and conduct R&D for future dialysis machines with a particular focus on elemental technologies and product development/design.

Social needs for dialysis therapy

In the midst of a rapidly declining birthrate and aging population, Japan's Ministry of Health, Labour and Welfare is pushing ahead with its vision of establishing a community-based comprehensive healthcare system by around 2025 so that senior citizens can live out their twilight years with dignity in familiar surroundings as much as possible. More specifically, the Ministry is building a framework under which elderly patients can find comfort living out the remainder of their life at home and receive medical treatment or care predominantly from their family doctor. In connection with this framework building, the following key points were raised regarding the future of dialysis therapy in a report published by the Ministry about life and medical devices in the year 2030: (1) smaller dialysis machines for use at home; and (2) wearable dialysis devices.

Current hemodialysis therapy

Currently the usual method for end-stage renal disease is hemodialysis. Hemodialysis is a type of therapy that artificially replaces some of the functions of the kidneys. A dialyzer is used to remove uremic toxin substance and excess fluid from the blood in place of kidneys that have lost their filtering and excretory functions. However, this treatment places a significant burden on the patient as they are required to visit a medical institution three times a week for sessions that last around 4–5 hours.

*Chronic renal failure

Chronic renal failure refers to a situation where kidney function has declined and where water and uremic toxin substance build up in the body. Kidney cannot excrete uremic toxin substance as urine due to the malfunction of water balance system in the body. As the disease develops, complications usually become more serious, including uremia, anemia, and cardiac failure, which eventually cause end-stage renal failure. As a result, patients will need to have medical treatments such as kidney transplantation or dialysis therapy.





Implications of location-free hemodialysis therapy

In considering the quality of life (QOL) of a patient requiring dialysis, allowing the patient to choose where they would like to undergo treatment would be the most desirable scenario. However, the hemodialysis machines currently in use have been developed on the assumption that they are to be operated by medical professionals at medical institutions, which is why they are too big and too complicated for home use. There are other problems too, such as the time required for preparation prior to treatment as they need large volumes of water. Accordingly, the current system makes it quite difficult for medical professional who is not specialized in hemodialysis therapy at a medical institution or the patient themselves (or family member) at home to perform dialysis treatment. Furthermore, it poses the problem of what to do if something goes wrong during treatment where no medical professional would be able to keep constant watch during treatment and unlike dialysis treatment facilities, there would be no specialized physician to respond quickly in the case of an emergency.

<Nikkiso's challenge>

Developing location-free next-generation dialysis machines

At Nikkiso, we consider it important to develop hemodialysis machines that can be utilized in various settings in order to improve QOL for patients. To that end, we are furthering the development of next-generation dialysis machines with a focus on the following three concepts: miniaturization, service-free/easy operation, and improved safety of treatment.

While we expect to bring our next-generation dialysis machines to market in 2020 at the earliest, we continue to conduct R&D in line with the aforementioned three concepts and plan to present a part of the results gradually in the form of additional features on our existing products or hemodialysis machines.

In fiscal 2018 we developed and brought to market a new blood tubing line product called “Archloop” that helps improve the safety of dialysis treatment. “Archloop” is a simple blood tubing line that has reduced patients’ burden. It minimizes blood-air contact areas in order to reduce extracorporeal blood clotting and also reduces priming volume into blood tubingline. Going forward, we will focus on enhancing the treatment monitoring functionality of our machines so that we can improve treatment safety and reliability, and we have plans to add other features that, for example, make it possible to observe changes in circulating blood volume or send out emergency warnings before a malfunction. At the same time, we will continue to engage in research to find ways to make our machines smaller and easier to operate.



New-concept dialysis machine on display at Nikkiso Miyazaki

Interview

Aiming to create a healthcare environment that benefits both medical institutions and patients

Looking to the future, Nikkiso's Medical Division will continue to contribute to medical institutions and patients alike. In order to offer dialysis therapy with even greater peace of mind, safety, and reliability, we must first incorporate our capabilities into the functions of our products and continually provide those products backed by creative ideas and cutting-edge technology and services trusted by our customers.



Yoshihiko Kinoshita

Director,
Executive Officer,
General Manager,
Medical Division

Furthermore, we must streamline operating costs of dialysis therapy in step with the times in order to keep a lid on medical expenses—which are increasing year on year—and deliver products that have a positive impact on the business management of medical institutions. We will improve the patient monitoring functionality of our machines, make them easier to use, prevent malfunctions, and make responding easier in the event a malfunction does occur.

We are also advancing the development of dialysis machines that embrace an entirely different concept to those on the market already. Specifically, maintenance will be simplified and the machine will be very easy to operate.

I think if we can dramatically lower the life-cycle costs of dialysis machines, it will benefit the management of medical institutions and more managerial resources can then be allocated to improving QOL for patients.

We will continue to set our sights on developing products and services which can be “a good partner” for medical institutions and patients.

At a glance

Revenue Composition Ratio



Industrial Businesses
(Industrial Div. + Precision Equipment Div. + Aerospace Div. + Deep UV-LEDs Div.)

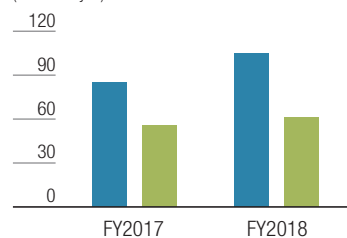
63%

Medical Business (Medical Div.)

37%

Revenue

(Billions of yen)

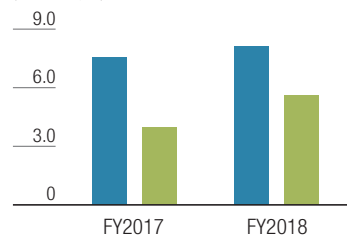


Industrial Businesses
(Industrial Div. + Precision Equipment Div. + Aerospace Div. + Deep UV-LEDs Div.)

Medical Business (Medical Div.)

Segment Profits

(Billions of yen)



Industrial Businesses
(Industrial Div. + Precision Equipment Div. + Aerospace Div. + Deep UV-LEDs Div.)

Medical Business (Medical Div.)

	Fields	Customers
<p>Industrial Division</p>	Oil and gas production Petrochemical plants Power plants	<ul style="list-style-type: none"> Major oil companies EPC contractors Chemical manufacturers Electric power and gas companies, etc.
<p>Precision Equipment Division</p>	Power plants Factories	<ul style="list-style-type: none"> Electric power companies Electronic device manufacturers, etc.
<p>Aerospace Division</p>	Aerospace	<ul style="list-style-type: none"> Aircraft component manufacturers Satellite manufacturers, etc.
<p>Deep UV-LEDs Division</p>	Medical care Analysis Sanitation	<ul style="list-style-type: none"> Water treatment plants Hospitals Offices, etc.
<p>Medical Division</p>	Medical care	<ul style="list-style-type: none"> Medical institutions, etc.

Products

- Reciprocating pumps/systems
- Cryogenic pumps
- Canned motor pumps
- Vaporizers



Cryogenic pumps



Reciprocating pumps/system



Canned motor pump

- Water conditioning systems for power plants
- Warm isostatic laminators
- Dry laminators



Sampling equipment

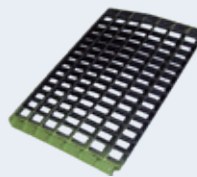


Warm isostatic laminator
(S Series)

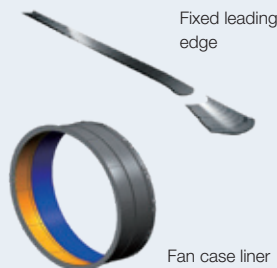
- CFRP jet engine/nacelle parts
(cascades, blocker doors, torque boxes, fan case liners, etc.)
- CFRP main wing components
(fixed leading edges, winglets, flaps, etc.)
- CFRP fuselage components
(cargo doors)



Winglet



Cascade



Fan case liner

- UV-LED chips
- UV-LED water purifier



Water purifier
(medium flow rate: 50L/min)



PearlAqua™
water purifier
(low flow rate: less than 10L/min)

- Hemodialysis-related products
- Continuous renal replacement therapy (CRRT)-related products
- Immunopure (apheresis product)
- Acrosurg. (microwave surgical instrument)
- STG-55 (artificial pancreas)



DBB-100NX
(hemodialysis
machine)



Acrosurg.
(microwave surgical
instrument)

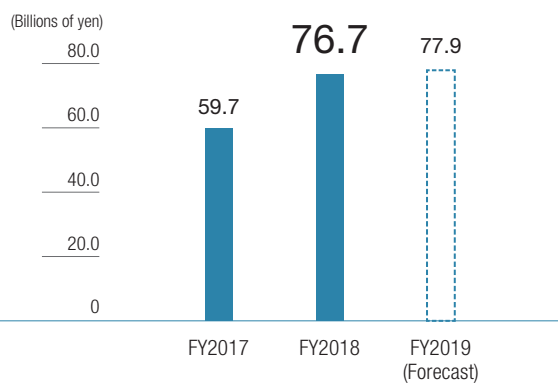
Industrial Division

Masaru Yamamura

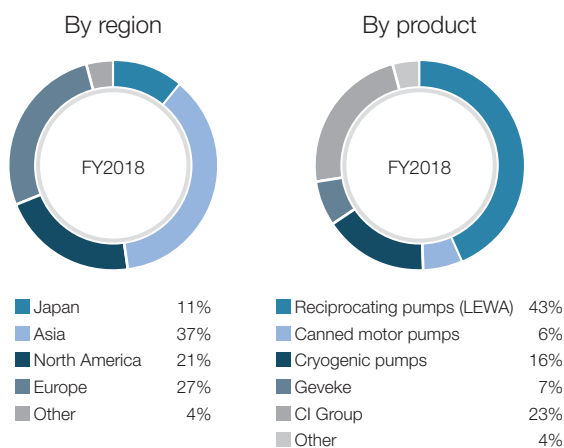
Director,
Executive Officer,
General Manager,
Industrial Division



Revenue



Revenue Composition Ratio



Business Overview

We make pumps and systems used in areas such as oil and natural gas exploration, liquefied natural gas (LNG) transportation, and petrochemical plants. Making pumps that can deliver stable performance even in extreme operating condition of high temperatures, high pressure, or super-low temperatures requires advanced technological capabilities and product quality. Since the days of the petrochemical industry's rapid rise, Nikkiso has supplied various special pumps to meet customer needs. In 2009 we welcomed the LEWA Group of Germany into the Group, followed in 2017 by the US-based CI Group. Today, we are expanding our global business as a world-leading pumps and systems manufacturer with a wide-ranging lineup covering the entire value chain in the oil and gas sector.

Results in 2018

Orders in fiscal 2018 came to ¥82,238 million (+39.8% YoY), while revenue totaled ¥76,763 million (+28.5%). In the oil-related business, capital investments in the oil industry recovered gradually owing to rising crude oil prices since the end of 2017. At the LEWA Group, profitability was squeezed by price competition despite an increase in orders mainly in crude oil and gas exploration and other upstream sectors. The recovery in earnings did not materialize until the fourth quarter and as a result revenue increased but profit fell year on year. In the mid- and downstream petrochemical market, brisk business conditions were sustained by ongoing investments mainly in North America and China. In the LNG and gas-related business, the LNG market started to recover thanks to tailwinds from higher crude oil prices and environmental issues and we received more inquiries about our large cryogenic pumps used in LNG import terminals and floating LNG storage regasification units (FSRUs). We also saw an increase in orders for the CI Group's pump-related equipment for industrial gas. Subsequently, revenue and profit in the Industrial Division increased year on year driven by brisk sales of cryogenic pumps.

Market Analysis

Opportunities and Risks

- Decline in capital investments owing to lower crude oil prices or political instability
- Increase in capital investments owing to greater global demand for energy such as crude oil and LNG
- Upgrades of aging facilities/increase in maintenance demand

Strengths

- Technological capabilities and superior product quality in specialized fields in the energy sector
- Custom-made, high-value-added products that meet customer needs
- Global sales and service network for customers
- Long-term support structure, including sales of parts, repairs, and maintenance services



Specific Efforts for 2019 Onward

<Specific Efforts for 2019>

Oil: The LEWA Group will endeavor to turn the solid pace of inquiries from mainly the upstream sector into definite orders, thereby improving profitability. Demand for maintenance and upgrades to existing facilities in the oil refinery and petrochemical sectors is growing and we will make every effort to enhance our maintenance services and strengthen sales of genuine parts.

LNG and gas: Demand for LNG is on the rise due to growing demand for energy in mainly emerging markets and the shift in fuel away from coal to natural gas. In this environment, the Nikkiso Group, including the CI Group, will work to expand its capabilities to meet the needs of the LNG value chain. We will also step up proactive sales activities to win cryogenic pump orders ahead of the scheduled completion of our performance testing facilities at Nikkiso Miyazaki

around autumn 2020. And we aim to expand sales of the CI Group's industrial gas-related products mainly in the US and China.

<Medium- to Long-Term Efforts>

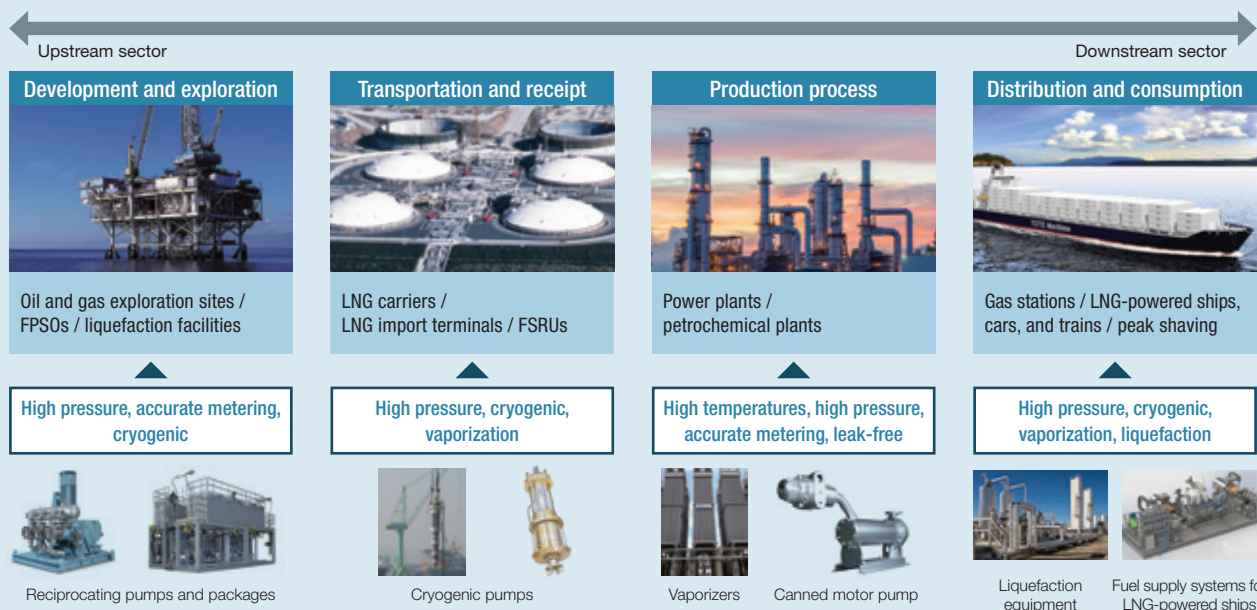
Oil: In the mid- and downstream petrochemical market we will seek to boost earnings by pushing ahead with the optimization of our production, sales, and service frameworks that we have established with our overseas Group companies, chiefly focusing on regions where demand is growing, such as China and the US.

LNG and gas: With a view to future hydrogen-fueled society, which lies beyond LNG, we will aim to deliver new hydrogen pump solutions by leveraging the cryogenic technology we have honed thus far with our LNG pumps. This will be no easy feat because hydrogen requires an even lower temperature than LNG.

Nikkiso's Value

Providing specialized pumps and systems that play a key role at each stage of the energy sector

We provide specialized pump systems that play a key role at each stage of the energy sector and contribute to solving challenges under harsh conditions and requirements, including high temperatures, cryogenic temperatures, high pressure, accurate metering, and the guarantee of no leaks.



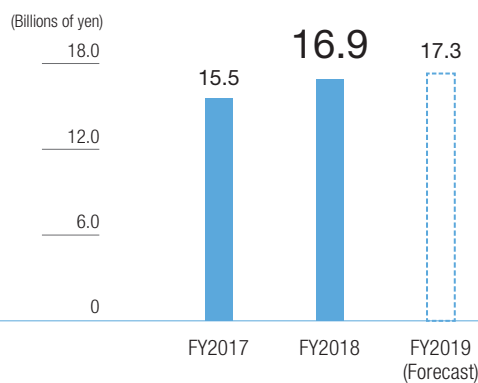
Aerospace Division



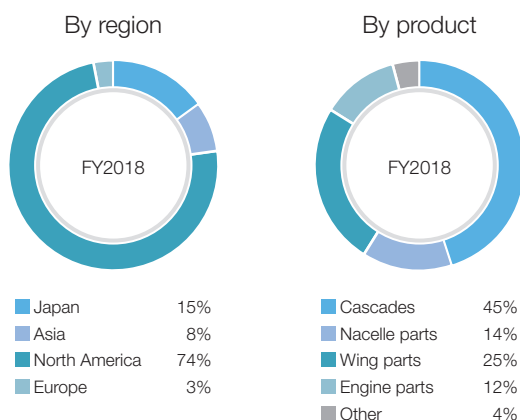
Shoichi Nagato

Director,
Executive Officer,
General Manager,
Aerospace Division

Revenue



Revenue Composition Ratio



Business Overview

In 1983 Nikkiso succeeded in developing the world's first carbon fiber reinforced plastic (CFRP) jet engine cascades for commercial aircraft. Nikkiso has been rated highly for our advanced designs, analysis/assessments, fabrication, production technology, and delivery management, which is why Boeing, Airbus, and other leading global aircraft companies choose to use our cascades in their aircraft. In addition to cascades, we now make a wide range of CFRP products, including engine nacelle parts and main wing components. We are now recognized as not only a manufacturer of cascades, but as a genuine aircraft components manufacturer.

Results in 2018

Orders in fiscal 2018 came to ¥16,884 million (+7.5% YoY), while revenue totaled ¥16,909 million (+8.7%). Demand for commercial aircraft, especially single-aisle planes in the Asian region, is expanding mainly as a result of increased passenger and cargo demand in emerging countries and the growth of low-cost carriers (LCC). Accordingly, aircraft companies are planning to boost production of major airplane models. The Nikkiso Group is seeing a steady increase in inquiries and we have made preparations for expanding production capacity by completing new Miyazaki Factory in October 2018 and our Hanoi No.2 factory in Vietnam in November 2018. Demand for cascades, our mainstay product, rebounded in fiscal 2018, and as a result, shipment volume increased year on year. Shipments of wing components from Hanoi No.1 factory also continue to make solid progress and revenue is on track for a year-on-year increase. Cost reduction activity in Vietnam and stabilized production of engine parts in Higashimurayama have contributed to absorbing the upfront cost for Miyazaki Factory and keeping operating profit at the same level as in the previous year.

Market Analysis

Opportunities and Risks

- Increase in global aircraft demand
- Strict requirement on QCD (quality, cost, delivery)
- Innovation in technology making existing technologies and products obsolete



Strengths

- Design ability and manufacturing skills specializing in complex configurations and quality assurance systems
- Over 90% share for "Cascade" in global market
- Production capabilities and delivery management comply with the increase of aircraft production rate
- Meeting the needs of rapid growth in Asian market through the plants in Vietnam

Specific Efforts for 2019 Onward

<Specific Efforts for 2019>

Our first task is to ensure stable operations at the Miyazaki Factory and Hanoi No.2 factory in Vietnam completed in 2018, and establish an optimal production system to comply with the demand of aircraft companies. Moreover, in order to secure awards for new products, we will strengthen the relationships with existing customers and continue to build connections with new customers.

<Medium- to Long-Term Specific Efforts>

As well as making efforts to consolidate our facilities and optimize manufacturing process, we continue to improve our business foundation through utilizing new Miyazaki Factory as an Research and Development center for aircraft components to comply with customer's requirements for quality improvement and cost reduction at a higher level. We also continue to embrace the challenge of incorporating new technologies and new production methods. We believe these efforts and activities will enable us to participate from the developmental stages at aircraft companies.

Nikkiso's Value

Production management system compliant with the required standard of aircraft companies

"High-level quality products" and "keeping a delivery date" are Nikkiso's well-known features. Based on the designing ability and manufacturing skills, which have been cultivated through cascades development and manufacturing over the years, Nikkiso has obtained required specifications and certifications for other components Nikkiso is manufacturing. With these efforts, Nikkiso is proceeding with the manufacture of more competitive products at its facilities. Nikkiso established Nikkiso Vietnam, Inc. (NVI) in 2008 to comply with the manufacturing

rate of aircrafts and expand our business fields in the industry, and started shipments from NVI in 2011. Nikkiso has adopted education/training system in NVI in response to the requirements of the aviation industry, and built a management system to maintain the same level of high-quality products and keep delivery date as in Japan. These efforts and performances have been evaluated highly by customers in the world. As a result, Nikkiso was awarded with the "Supplier of the Year" in 2018, following 2014 and 2016, from Spirit AeroSystems, Inc.

■ Product lineup

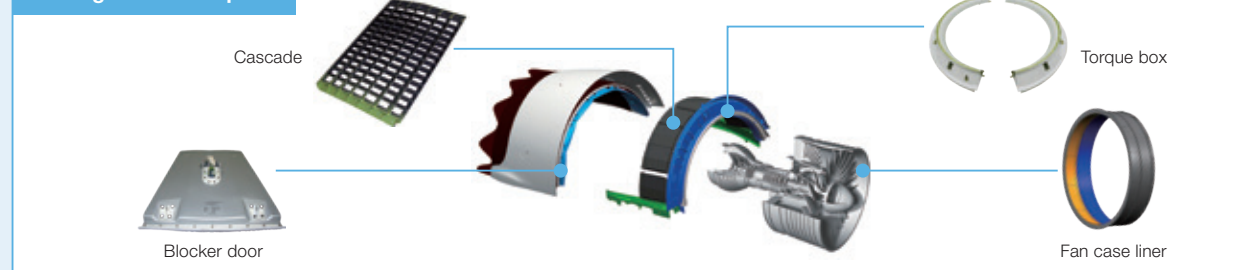
Nikkiso's typical product offerings for commercial aircraft



Main wing components



Jet engine/nacelle parts



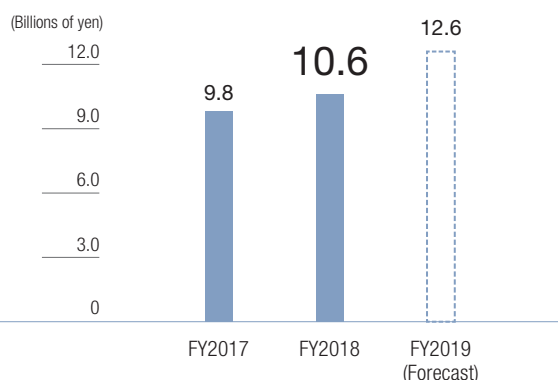
Precision Equipment Division



Akira Ohsawa

Executive Officer,
General Manager,
Precision Equipment
Division

Revenue



Business Overview

Nikkiso developed Japan's first water conditioning systems for power plants. They support the vital infrastructure of power generation by stabilizing the water quality at power plants based on sophisticated water-processing technologies. Our other precision equipment, such as warm isostatic laminators—widely used as an industry standard device in the ceramic substrate production process—are contributing to higher performance in the field of electronic device.

Results in 2018

Orders in fiscal 2018 came to ¥12,204 million (+13.7% YoY), while revenue totaled ¥10,682 million (+8.5%). Demand for power plant projects weakened due to power companies trimming back their budgets for facility repairs and delaying the restart of nuclear power reactors. In contrast, we are receiving more overseas inquiries for water conditioning systems, mainly

for Southeast Asia, and we are continuing to enhance our cost competitiveness and reinforce our sales activities in cooperation with our subsidiary in Taiwan. Moreover, orders are up for production equipment (warm isostatic laminators S series) used in the electronics device production business and we are striving to streamline and strengthen our production/supply structure so we can tap growing global demand from the expansion of applications for multilayer ceramic capacitors (MLCCs).

Market Analysis

Opportunities and Risks

- Increase in demand for electricity in emerging markets
- Prolonged shutdown of domestic nuclear power plants
- Electronic materials market growth
- Abrupt changes in electronic materials market environment



Strengths

- Ability to create and propose new added value
- Ability to develop new products with new technologies and techniques



Medium- to Long-Term Specific Efforts

Water conditioning systems for power plants

We are looking to ramp up collaboration with Taiwan Nikkiso by mainly providing technical support from Japan and will aim to win more orders from power plants in the Southeast Asian market where a high level of growth is expected up ahead.

Electronic device manufacturing equipment

In addition to focusing our efforts on winning constant orders for warm isostatic laminators for MLCCs, we will also endeavor to expand our earnings base by proposing technology and developing equipment for automotive and 5G applications, as well as new devices, such as solid-state batteries.

Deep UV-LEDs Division

Satoshi Matsuzawa

President,
Nikkiso Giken Co., Ltd.



History of Deep UV-LEDs

2006

Drawing on the research achievements of Nobel Prize recipients, Professor Isamu Akasaki and Professor Hiroshi Amano, UV Craftory Co., Ltd. was established with the goal of realizing commercial viability for Deep UV-LEDs.

2012

Samples of Deep UV-LEDs went on sale.

2014

The Hakusan Factory, with capacity for design, development, and mass production of Deep UV-LEDs and modules, was completed.

2015

Deep UV-LEDs with the highest output in the world of 50 mW were successfully developed for mass production.

2016

Nikkiso acquired AqviSense Technologies, a developer of applications for water disinfection.

2017

Deep UV-LEDs with higher outputs of 70 mW and 85 mW were developed.

2018

Deep UV-LED water purifier capable of performing on a par with mercury lamps was developed.

2019

Slated establishment of joint venture with Formosa Plastics Group.










Social Issues and Needs

Deep ultraviolet rays have the capacity to detoxify bacteria living in water and air. In particular, wavelengths of deep ultraviolet LED (Deep UV-LED) between 250nm and 300nm are very effective in detoxification, and have the advantage of being more convenient, smaller, and power saving compared to mercury lamps currently still in use today. Accordingly, they are expected to replace conventional equipment which uses mercury lamps and play a role in water treatment systems. On top of this, Deep UV-LED technology should prove useful in solving various social issues in fields Nikkiso excels in, ranging from industrial and environmental sanitation right through to medical applications.

Future Efforts

In the field of water treatment, an important market for Nikkiso, we have commenced sales of water purifier and we continue to take steps towards product development and commercialization in the areas of air purification and industrials (such as resin hardening and surface improvement). Going forward, our joint venture with Formosa Plastics Group (FPG) will give us the chance to combine our know-how in development, technology, and manufacturing with FPG's low-cost, volume-production technology and know-how in order to reduce manufacturing cost and further enhance the performance of chips and equipment. In the area of product development too, we will look to create high-value-added end products that utilize LEDs for various applications, including those aimed at general consumers.

Main applications

Environment	Medical care and life sciences	Industry
 Water and sewage	 Phototherapy	 Adhesives
 Air purification	 Measurement and analysis	 Printing
 Aquaculture	 Prevention of in-hospital infection	 Coating

Medical Division

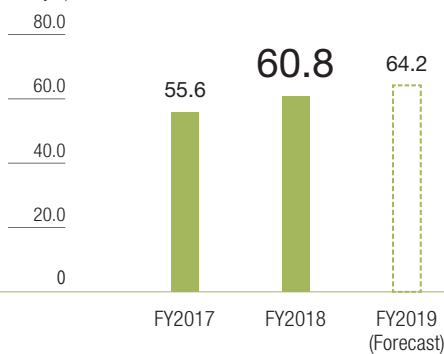
Yoshihiko Kinoshita

Director,
Executive Officer,
General Manager,
Medical Division



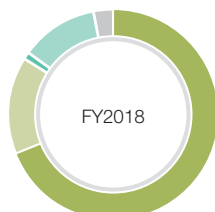
Revenue

(Billions of yen)

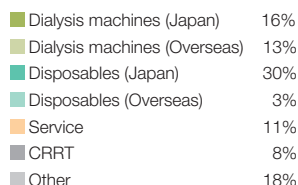
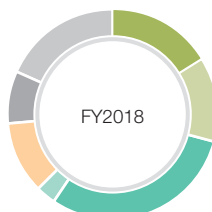


Revenue Composition Ratio

By region



By product



Business Overview

In 1969, Nikkiso became the first company in Japan to produce dialysis machines domestically and as a pioneer of dialysis therapy in Japan, it has continued to respond to dialysis therapy advancements and changes in the medical care environment since then and contribute to the development of dialysis care. Every step of the way is carried out within the Nikkiso Group, from development to manufacture, sales, and service, enabling us to offer a comfortable therapeutic environment to all patients requiring dialysis. In recent years we have started developing overseas markets, such as China, where the number of dialysis patients is rapidly increasing. We are also branching out to other business domains by harnessing the expertise and technology cultivated in the dialysis business and applying it in the field of blood purification, such as continuous renal replacement therapy (CRRT), and in the surgical field with, for example, microwave surgical instruments.

Results in 2018

Orders in fiscal 2018 came to ¥61,032 million (+11.0% YoY), while revenue totaled ¥60,824 million (+9.2%). Conditions in the domestic hemodialysis market remain tough because of slowing growth in the number of dialysis patients, but demand for hemodialysis machines started to recover from the second quarter after stagnating in fiscal 2017. Sales of blood tubing lines and other disposables are also increasing. In overseas markets, sales of knock-down components to the fast-growing Chinese market continue to expand at a steady clip, while equipment sales are rising in the Asian region where dialysis treatment is becoming more commonplace, and in Europe where our high-performance dialysis machines equipped with automated features have received rave reviews. As a result, revenue and profit in the hemodialysis business overall increased year on year. Revenue was up slightly year on year in the CRRT business—currently subject to restructuring initiatives—because weak performances at some of our struggling business sites were offset by higher sales of machines and disposables, as well as the success of policies primarily aimed at reorganizing our sales structure in the mainland Chinese market. That said, we booked higher one-off expenses related to business restructuring, namely the revamp of our R&D structure and cutbacks to offices and personnel.

Market Analysis

Opportunities and Risks

- Increase in dialysis patients in China, the world's largest dialysis market, and in emerging countries of Asia or Central and South America
- Decline in domestic dialysis patient numbers and tougher competition
- Change in healthcare needs (greater demand for medical care which is free from location constraints or implemented remotely, shift in medical costs from chronic treatment to acute medical care)



Strengths

- Development of new technologies based on fundamental research at our Research & Engineering Institute
- Product development capabilities to meet customer needs and high market share
- Long-term support structure, including speedy customer service (training for healthcare professionals, 24/7 direct call service)



Specific Efforts for 2019 Onward

<Specific Efforts for 2019>

Given that we expect to see changes in the medical business climate and even tougher competition up ahead in the domestic hemodialysis business, we will steadily carry out the development of new products and services that are even more superior in terms of functionality and user-friendliness, rebuilding of the business operations framework that supports the development, and operational reforms. In overseas markets, we will not only consolidate our production and service structures in the rapidly growing Chinese market, but we also intend to improve the evaluation of the automated features of our machines and bolster our sales structures in European countries as well as in Asian countries outside of China where health insurance schemes continue to become more sophisticated. Furthermore, we will strengthen collaboration with service providers in Europe and the US. In the CRRT business, we will step up efforts to integrate or shut down loss-making locations and curb fixed costs with the use of agencies. On top of this, we

aim to strengthen our sales structures in the key Chinese market and other rapidly growing markets in Asia, hasten our launch of new machines, and make progress on implementing policies for improving profitability.

<Medium- to Long-Term Efforts>

Leveraging our high level of technological know-how in dialysis machines, one of Nikkiso's expert disciplines, we will aim to expand our hemodialysis business in major overseas dialysis markets like the US by forming partnerships with dialysis medical institutions, providers, and companies with business interests in the dialysis industry. We will also aspire to enhance our services and machine functions with the aim of improving quality of life for patients. Furthermore, we will strive to develop new businesses outside of hemodialysis, such as in the area of blood purification with our apheresis products and in the surgical arena with Acrosurg (microwave surgical instrument) and artificial pancreases.

Nikkiso's Value

Abilities to develop products by challenging new technologies ahead of the pack and deliver reliable services

Taking full advantage of the opportunities afforded by our experimental manufacturing of Japan's first artificial heart in 1960, Nikkiso became the country's first manufacturer of dialysis machines and is now transforming itself into a medical equipment manufacturer. By constantly embracing the challenge of incorporating new technologies ahead of the times, we have produced some of the world's firsts in the medical equipment field, such as artificial pancreases and microwave surgical instruments. In our mainstay dialysis business, we conduct the full gamut of activities, starting with design, development, and manufacturing, through to sales and service. For this reason, we consider ourselves experts in accurately understanding our customer needs and quickly reflecting such requirements into product development. In 2018 we focused on reinforcing our customer support structure mainly by launching the industry's first 24-hour direct call service.

Dialysis-related products



CRRT products



Apheresis products



Artificial pancreases



Microwave surgical instruments





ESG Initiatives

Stepping up our ESG initiatives to help solve social issues and create value through our business activities

At Nikkiso, we aim to achieve sustainable growth and enhance medium- to long-term corporate value by making creative contributions to solving social issues in areas that are essential to living, such as aerospace, dialysis treatment, and the various industries involved in the production of fluids like crude oil and natural gas. We continue to develop the framework needed to make this happen based on the belief that strengthening our environmental, social, and governance (ESG) initiatives is indispensable. From an environmental perspective, we are primarily focused on reducing our greenhouse gas emissions and developing environmentally friendly products. For the social aspect of our ESG initiatives, we strive to be a reliable presence for our customers and continually implement measures aimed at improving customer satisfaction. We are also taking steps to create a workplace environment where employees of all walks of life can thrive by placing the right people in the right jobs. Initiatives include social contribution activities with strong ties to the communities where our business sites are located, the nurturing of global human resources, and the empowerment of female workers. As for corporate governance, we are implementing policies intended to further emphasize transparent and fair decision making.

Contributing to achievement of SDGs

The Sustainable Development Goals, or SDGs for short, are a collection of global goals set by the United Nations General Assembly in September 2015 for the year 2030. They comprise 17 goals (see image) and 169 associated targets aimed at addressing the social, economic, and environmental dimensions of a sustainable society in a balanced manner for not only developing countries, but also developed nations. The Nikkiso Group aims to contribute to a sustainable society by solving the challenges presented in the SDGs with its products, technologies, and services. For more information, refer to pages 8-9 (value creation model) and 18-23 (special features).



Environment



Basic Policy

— Nikkiso Environmental Declaration —

Nikkiso's corporate philosophy is to contribute to the world using its proprietary technologies, focusing on "human life" and the "environment." Modern-day society is in a stage of transition, seeking both harmony with nature and sustainable development. Nikkiso aims to grow and develop with society and offer technologies, products, and services to help realize these objectives. In 1998 we released the Nikkiso Environmental Declaration, which is comprised of our environmental philosophy and action guidelines, and since that time we have continued to make contributions to realizing a recycling-oriented society. More specifically, we continue to take steps towards reducing our impact on the environment by, for example, curbing our CO₂ emissions, implementing recycling-oriented society initiatives, and developing products that help mitigate environmental impacts.

Initiatives for reducing environmental impact — curbing CO₂ emissions

Nikkiso is endeavoring to lower its amount of greenhouse gas emissions across all of its business activities, not just in relation to production operations. We are stepping up our efforts to minimize our environmental impact by managing the amount of resources (energy, water, CO₂ emissions) we use at each of our plants and constantly finding ways to reduce greenhouse gas emissions at every stage of our business operations.

Initiatives for recycling-oriented society — minimizing waste

Nikkiso aims to minimize burdens on the natural environment with

the use of groundbreaking technological innovation in each of its business fields, thereby contributing to the realization of a sustainable environment. In line with this policy, we are making every effort to minimize waste and recycle resources.

Dialysis machine recycling system

With the approval of our customers, Nikkiso reuses and recycles waste products from our used dialysis machines. This system alleviates the waste disposal burden on our customers and contributes to a recycling-oriented society.

■ Recycling System



Developing products that help reduce environmental impacts

At Nikkiso we are committed to developing products without the use of materials that pollute the environment, implementing the three Rs (reduce, reuse, and recycle) across the entire lifecycle of our products, and developing environmentally friendly products.

■ Environmentally friendly products

Business	Product	Description	SDGs
Aerospace	CFRP aircraft components (cascades, etc.)	Aircraft components that are much lighter.	
Industrial	Cryogenic pumps	Pumps that operate as normal even under the cryogenic and high-pressure condition required for LNG production and consumption.	
	Non-seal pumps	Leak-free pumps that prevent the spillage of dangerous solutions during transportation.	
Medical	Smart E System® (dialysis heat pump system)	Equipment that amplifies the small amount of heat source in the used dialysis solution to heat the source water. It reduces power consumption by roughly 78%–90% during dialysis treatment.	
Deep UV-LEDs	Water purifier	Water purifier that uses environmentally friendly Deep UV-LEDs.	

Social

Basic Policy

At Nikkiso, while we protect the rights of our employees and give thoughtful consideration to the creation of a comfortable working environment, we also strive to nurture human resources and make effective use of their capabilities. In doing so, we aim to enhance our corporate value. At the same time, we place an emphasis on relationships with our customers and local communities, seek to improve product quality and customer satisfaction, and actively promote activities that contribute to the local communities where our business sites are located.

Relationships with our customers

Strengthening quality assurance structure

Strengthening our quality assurance structure is an issue that relates to the very essence of management and is something the Company as a whole continues to address. In recognizing that product quality is the result of each and every process, starting with product planning and order solicitation, through to design, manufacturing, and service, the cost of quality has fallen thanks to our efforts to control these sources of quality. Moreover, we once again acknowledge the importance of having systems and frameworks for reviewing on a daily basis the technological standards indispensable to the reliable execution of upstream processes and accordingly strengthened the way we continuously accumulate proprietary technologies and know-how in response to new technologies and changes in requirements. At the same time, we have reorganized and standardized our quality assurance-related regulations, which are essential to smooth operational flow. Based on the regulations, which are easy to understand and use, and our operational standards, we are making improvements to ensure that our operations are carried out adequately and efficiently. We will continue to work even harder so that we strike the right balance between guaranteeing quality and embracing the challenge of incorporating new technologies in order to retain our position as a technology expert.

Improving customer satisfaction

The Nikkiso Group as a whole is working to improve customer satisfaction. We strive to be a reliable presence for our customers, but rather than simply responding to their needs, we have anticipated changes in the business environment and continually proposed the adoption of new technology, new techniques, and new ideas, according to every unique situation. This effort has been favorably received by our customers, so much so that in fiscal 2018 our Aerospace Division was presented with the “Strategic Supplier of the Year 2018” award by Spirit AeroSystems, Inc., one of our major customers.

This recognition owes to our unwavering commitment to ensuring product quality, greater cost reductions, and our ability to meet our customers’ requirements for mass production. Going forward, Nikkiso will continue to raise customer satisfaction levels by engaging in joint research with our customers so we can better solve their problems.



Relationships with partner firms

At Nikkiso we view that many of our partner firms support our original manufacturing activities, so in order to swiftly respond to changing needs of our customers, we believe it is important that we strengthen our collaboration with our partners. For this reason, every year we host our Partners of the Year awards to formally recognize the hitherto contributions of our partner firms and to lay the groundwork for future relationships. At the awards ceremony for fiscal 2018, held in January 2019, we selected Fukutatsu Alloy Manufacturing, Miura Corporation, and the electrical machinery systems plant of Sinfonia Technology. The ceremony provides opportunities for Nikkiso to express its gratitude to our partner firms for the enormous contributions they have made. We hope to establish even better relationships going forward with the aim of achieving mutual growth and development.

Relationships with local communities

As a corporate citizen, we acknowledge that it is our duty, as a matter of course, to build relationships of trust with local communities. We therefore engage in locally established activities that support and make contributions to mainly the communities where our production sites are situated.

Activities in Japan

In October 2018 we held a ceremony to mark the completion of the Nikkiso Miyazaki. We also provided a factory tour at the same time, which was attended by our customers and people from the local community. In the plant’s showroom we have Nikkiso products on display, as well as information about our manufacturing history, and in the future, we plan to accept site tour applications from



local schools and associations. At our Kanazawa Plant we held a Kanazawa Techno Park Science Class during which elementary and junior high school students conducted experiments to learn about how dialyzers work. Actually seeing and touching the dialyzers made at the Kanazawa Plant helps students learn about the functions of the human body and the supporting role that medical equipment can fulfill, and we think helping them learn is part of our social responsibility as a company engaging in manufacturing within the community. Nikkiso will continue to organize these kinds of community-oriented social contribution activities up ahead.

Activities overseas

At our overseas affiliates too, we think it important that we communicate with not only our locally hired employees, but also the local community. In February 2018 the aerospace facility of Nikkiso Vietnam, Inc. (NVI) welcomed a visit from Truong Tan Sang, the former president of Vietnam, and Nguyen Van Phong, chairman of the People's Committee of Hung Yen province. This visit was made possible because NVI is rated highly as a company which generates a lot of local employment and manufactures aircraft components with cutting-edge technology. The visit was also covered in the local news and a great honor for NVI employees.



Relationships with employees

Compliance

In 2017, Nikkiso partially revised the Global Code of Conduct established in 2015 in an effort to spread awareness of compliance. In 2018 a whistle-blowing system was established for all domestic Group companies and we also have a hotline which employees can access at any time on any day of the year. We are making preparations to roll out similar systems at our overseas affiliated companies—we expect to have them up and running at almost all affiliates sometime in 2019. On top of this, we are pushing ahead with employee compliance training and plan to build a framework under which training can be completed via e-learning modules.

Respecting human rights

Nikkiso carries out its business activities with consideration for

human rights in order to fulfill its responsibilities to all stakeholders. We strictly request that employees respect human rights, stop discrimination, prevent harassment, and protect personal information. Regarding the prevention of harassment, we implement training sessions mainly for employees in management positions. We also have a hotline through which employees can consult with an external specialist agency regarding health and nursing care matters. Furthermore, we are becoming increasingly proactive about hiring persons with disabilities. The percentage of disabled employees hired in fiscal 2018 was 2.37% and we aim to create a more diverse working environment going forward.

Human resources development

In recent years we have expanded our business operations overseas and subsequently increased the number of overseas sites. For this reason, it is essential that we make use of a global workforce, which is why we actively recruit talented personnel irrespective of nationality. We also dispatch young employees to our overseas sites as a way of fostering people-to-people exchange within the Nikkiso Group. Through such efforts we hope to nurture Nikkiso employees that possess a global mindset capable of proposing the best solutions to our customers around the world. We also actively hold various types of training sessions for our employees.

Respecting diversity

Given that we lose precious human resources when our female employees leave Nikkiso to give birth and raise children, we are developing frameworks and systems above and beyond those required by law so that our employees can fully realize their capabilities. This includes the provision of a child-care leave system, a shorter working hours system, and a flex-time system. On April 1, 2019 we drafted a new action plan in line with Japan's Act on Promotion of Women's Participation and Advancement in the Workplace and the Act on Advancement of Measures to Support Raising Next-Generation Children. This is part of our efforts to establish a framework that supports the career formation of female employees. We have two objectives: (1) to increase the ratio of female new graduates hired for career-track positions to 20% or more and (2) establish a workplace environment in which both men and women can balance work with child-rearing or nursing care obligations. In order to achieve these goals, we intend to actively engage in an awareness campaign using recruitment tools and carry out activities aimed at spreading awareness of our systems within the Company. Going forward, Nikkiso will endeavor to create a workplace environment where employees of all walks of life can thrive by promoting the active participation of women and placing the right people in the right jobs.

Corporate Governance

Basic Approach

The Group believes that our goal for corporate governance should be to achieve our corporate philosophy by ensuring transparency and fairness in decision-making and by making decisions promptly and decisively. We are working to build optimum corporate governance suited to the development stages of the Group, in line with the following core beliefs.

- We respect the rights of the shareholders and secure their equality.
- We respect the interests of the stakeholders and cooperate with them, appropriately.
- We disclose the Nikkiso Group's information in an appropriate manner and ensure transparency.
- We effectively separate supervision and execution of management.
- We ensure the effective supervision and audit of management through the coordination of independent outside directors, independent outside Audit & Supervisory Board Members, internal auditors, and the accounting auditor, and at the same time, develop an environment within the Nikkiso Group that allows our business execution divisions to focus on improving business profitability.
- We hold constructive dialogue with shareholders who have medium- to long-term shareholder profit as their investment aim.

Corporate Governance Structure Overview

Main items	Value
Organization design format	Company with its Audit & Supervisory Board
Number of directors (number of outside directors)	8 (2)
Number of Audit & Supervisory Board Members (number of outside Audit & Supervisory Board Members)	4 (2)
Number of meetings of the Board of Directors (FY2018)	15
(Average attendance by outside directors)	(97%)
(Average attendance by outside Audit & Supervisory Board Members)	(100%)
Number of meetings of the Audit & Supervisory Board (FY2018)	15
(Average attendance by outside Audit & Supervisory Board Members)	(97%)
Director term	1 year
Employment of Executive Officer System	Yes
Optional committee of the Board of Directors	Internal Control Committee
Accounting auditor	Deloitte Touche Tohmatsu LLC

Major Recent Reforms in Corporate Governance

2001 • Introduced the Executive Officer System

2006 • Abolished officers' retirement benefit system

2008 • Shortened term of office of directors from two years to one year

2012 • Elected one outside director
• Introduced a system of stock options as stock-based compensation for directors excluding outside directors

2015 • Increased the number of outside directors from one to two
• Abolished anti-takeover measures
• Established Nikkiso Group Corporate Governance Guideline

2016 • Examined the effects of cross-shareholdings

- Conducted monitoring of related party transactions
- Introduced a "stock-linked compensation plan" (Phantom Stock Plan) for all directors other than outside directors, executive officers of the Company, and officers of affiliates

- Conducted analysis and evaluation of the effectiveness of the Board of Directors

2017 • Built a Groupwide internal whistle-blowing system

2019 • Established a unit above the business divisions in order to clarify the responsibilities of executive officers and strengthen oversight by the Board of Directors through the separation of business supervision and execution



Board of Directors

In light of its fiduciary responsibility and accountability to shareholders, the Board of Directors is obligated to achieve sustainable growth and maximize medium- to long-term corporate value for the Nikkiso Group by implementing efficient and effective corporate governance. There are eight directors, of which two are outside directors. As a general rule, the Board of Directors meets regularly once a month, and passes resolutions in writing, as necessary, from the standpoint of prompt and efficient decision-making. Individual business execution is delegated to the executing divisions whenever possible to ensure prompt and decisive decision-making. We optimize the Board of Directors Resolution Standards as appropriate in an effort to establish an environment for the Board of Directors to dedicate itself to the roles of “indicating the overall direction of management, including management strategies,” “developing internal systems that support prompt and decisive management decisions,” and “demonstrating supervisory functions over management in general and ensuring fair and transparent management.”

Executive Officer System and Unit/Operating Division System

The Executive Officer System and Unit/Operating Division System have been adopted to build an internal structure that ensures prompt and decisive decision-making. The

Management Meeting, which is composed mainly of the president, vice president, and senior executive officers, has been established to deliberate important business execution matters, including resolutions by the Board of Directors. In addition, as the Company engages in a diverse range of businesses, the Operating Division System has been adopted to delegate each business to executives who are well informed regarding the specific business and market to enable prompt and market-oriented decision-making.

Audit & Supervisory Board

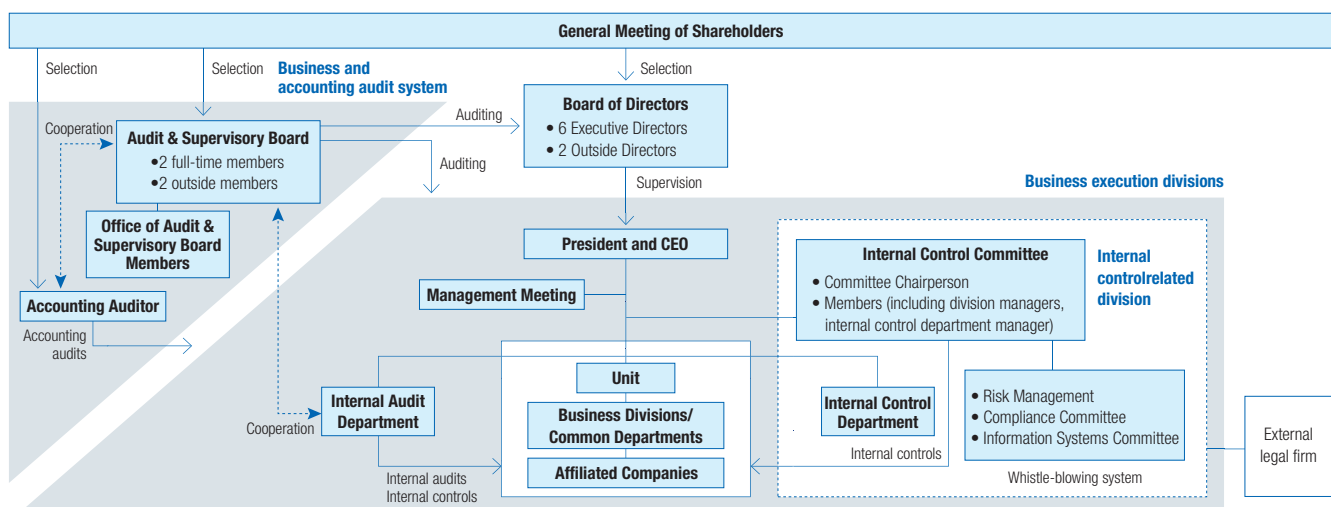
The main responsibility of Audit & Supervisory Board Members and the Audit & Supervisory Board is to determine by audits whether the directors and the Board of Directors are performing their duties in fulfillment of their responsibilities appropriately and in compliance with laws and regulations, from an independent standpoint. Currently, the Audit & Supervisory Board comprises four Audit & Supervisory Board Members (including two outside Audit & Supervisory Board Members).

Assessment of Effectiveness of the Board of Directors

The Board of Directors is fundamentally comprised of persons who can share with the Nikkiso Group the basic values concerned with the Group’s business execution and identify with the Group’s corporate philosophy based on the premise

Corporate Governance Organization, Roles, and Responsibilities

(as of March 28, 2019)



Corporate Governance

that they are individuals of excellent character possessing insight, know-how, and abundant experience. The Board currently comprises eight members, including one female director. Up ahead, we will endeavor to incorporate diversity into the makeup of the Board of Directors from the viewpoint of ensuring it continues to function effectively. Moreover, it is our basic policy to appoint Audit & Supervisory Board members that can dynamically and actively exercise their authority and appropriately express their opinions at meetings of the Board of Directors. Currently we have four Audit & Supervisory Board members, including one who possesses ample knowledge of finance and accounting, and another who is well-versed in legal matters. To analyze and assess the effectiveness of the Board of Directors, we implement a questionnaire of all executives (including outside officers) regarding the effectiveness of the Board of Directors. The results and issues for improvement are then discussed by the Board of Directors. A high proportion of responses to most of the assessment's questions indicates that the board's execution of duties has been appropriate. On the other hand, there were multiple responses indicating the need to enhance meeting agenda materials and executive education. We will tackle these issues to further improve the effectiveness of the Board of Directors.

Independent Outside Board Members

For outside directors, the Company elects people who do not have any personal relationship, capital relationship, transactional relationship or any other interest other than the relationship as an outside officer with the Company and who have no conflicts of interest with general shareholders. Elected outside directors are expected to play their full part to supervise decision-making and execution of duty by directors from an objective and expert standpoint independently from the Company's business execution, and to provide proper advice from the viewpoint of promoting the Company's sustainable growth and increasing corporate value over the medium to long term, based on their own knowledge and experience. Even though the Company has no independent advisory committee, meetings are held between independent outside directors and outside Audit & Supervisory Board members. It is from these meetings that the Company benefits from appropriate involvement and advice of independent outside directors in relation to important matters such as the appointment of directors and their compensation. Furthermore, given that all outside directors and outside Audit & Supervisory Board members have met the independence standards provided by the Tokyo Stock Exchange, which the Company has adopted as its independence standards for

Reasons for Election and Activities of Outside Directors and Outside Audit & Supervisory Board Members

Position	Name	Reason for election	Activities
Outside Director	Eisuke Nagatomo Present position from March 2018*1	Having held major positions during his career, including being former senior executive officer of the Tokyo Stock Exchange, Inc., former member of the Financial Services Agency Business Accounting Council, and Director of the Financial Accounting Standards Foundation, he has close familiarity with corporate governance and risk management, in addition to his extensive knowledge of finance and accounting. He is expected to provide valuable advice for the continuous growth of the Group and to increase our corporate value over the medium to long term.	Board of Directors Attended 14 of 15 meetings
	Haruko Hirose*2 Present position from March 2018	For many years, she has worked on international projects such as in personnel, financial affairs, and industrial development of the United Nations. Furthermore, she has endeavored in activities for developing personnel who are active on the world stage. She is expected to provide valuable advice for building a Group environment where a diverse workforce can thrive in appropriate positions, starting with ensuring the effective functioning of the Board of Directors and promoting the active participation of women.	Board of Directors Attended 11 of 11 meetings
Outside Audit & Supervisory Board Members	Mitsuaki Nakakubo Present position from June 2015	He is an attorney who has been active in a wide range of corporate legal matters. He also has deep insight into corporate governance and compliance systems. He is expected to play an extensive role in monitoring the decision-making and business execution of the directors, from an objective and expert perspective.	Board of Directors Attended 15 of 15 meetings Audit & Supervisory Board Attended 15 of 15 meetings
	Hiroyuki Muneta Present position from March 2018	Through his activities as a certified public accountant and licensed tax accountant over the years, he has acquired abundant expertise related to financial affairs, accounting, and corporate management. He is expected to point out risks and provide advice relating to corporate management, based on a wide range of knowledge relating to finance, accounting, and corporate management.	Board of Directors Attended 11 of 11 meetings Audit & Supervisory Board Attended 9 of 10 meetings

*1 Eisuke Nagatomo attended Board of Directors' meetings as an outside Audit & Supervisory Board member until his appointment as an outside director on March 29, 2018.

*2 Haruko Hirose's legal name is Haruko Makinouchi.

outside officers, they have been registered as such with the Tokyo Stock Exchange.

Succession Plan for CEO, etc.

We think it is of vital importance that we keep an open mind when choosing a candidate for Nikkiso's next president, either from inside or outside the Company. As a leader, they must possess the temperament, experience, and knowledge to appropriately guide and implement Nikkiso's business strategies, including Nikkiso 2020, our medium-term business plan. The Board of Directors will oversee this succession plan in an appropriate manner as necessary and distinguish the timing when the plan is required. It will also actively seek the opinions and advice of outside officers so as to appropriately oversee the succession plan for the president.

Executive Compensation

The Board of Directors determines the proper portion of fixed compensation, short-term performance-based compensation, and medium- to long-term performancebased compensation so that the compensation of executive directors may serve as a sound incentive for sustainable growth. In addition, a draft for the compensation of directors is explained to independent outside officers in advance, and after receiving their advice, is submitted to the Board of Directors. As a part of the compensation, a stock option plan, in which stock options are granted to directors excluding outside directors as stock-based compensation, has been in effect since 2012. Furthermore, in April 2016, a "stock-linked compensation plan" (Phantom Stock Plan) was adopted as an incentive to achieve the medium-term business plan, "Nikkiso 2020," and the enhancement of corporate value.

(Millions of yen, people)

Executive Category	Total Compensation Amount	Basic Compensation	Stock Option	Bonus	Number of People
Directors	170	89	30	50	6
Audit & Supervisory Board Members	33	33	—	—	2
Of which, Outside Directors and Outside Audit & Supervisory Board Members	33	33	—	—	7

Internal Control System

As part of its internal control system, the Company has formed a company-level Internal Control Committee, chaired by the director in charge of internal controls. In addition, the Company has established the "Nikkiso Group Global Code of Conduct," which stipulates basic matters to be fulfilled by officers and employees of the Nikkiso Group, in order to follow their conscience and contribute to society. Furthermore, a "whistle-blowing system" in place both in Japan and overseas allows employees of the Nikkiso Group to make reports directly and either anonymously or in their own names to experts such as outside attorneys, in the event that an illicit act such as violation of laws and regulations is discovered within the Nikkiso Group.

Internal Audits and Audits of Audit & Supervisory Board Members

The Nikkiso Group has formed an Internal Audit Department under the direct control of the President, as an internal auditing body to conduct internal audits. The Internal Audit Department and the Audit & Supervisory Board Members regularly exchange information and opinions, and additionally exchange opinions and deliberate with the accounting auditor on a regular basis or as needed.

Information Disclosure

We have established an IR Department, managed by the officer in charge of IR, for handling information disclosure to our shareholders and investors. The officer in charge of IR and others make every effort to disclose requisite and useful information in a timely and appropriate manner by closely liaising IR Department, which holds much of this information, with the departments such as the General Affairs Department, Accounting & Finance Department, Legal Department, and the Human Resources Department. Moreover, the officer in charge of IR reports periodically, or as required, to top management and the Board of Directors regarding beneficial information, opinions, and advice the Company receives from shareholders. Furthermore, insider information is managed by the heads of business units and general managers of business divisions in their capacity as "managers of information" in accordance with our Internal Information Management Policy. We have in place a system to prevent unintended leaks of insider information when engaging in dialogue with shareholders and investors. Under this system, the officer in charge of IR and others can access to the registered information and check whether or not certain information is registered as insider information at the time of dialogue.

Outside directors in conversation



Two of our outside directors, Mr. Eisuke Nagatomo and Ms. Haruko Hirose, had a face-to-face conversation about Nikkiso's efforts to improve its corporate governance, specifically from the point of view of integrity and corporate value.

Current state of corporate governance

Mr. Nagatomo: I was appointed Nikkiso's outside audit and supervisory board member in 2012 and then outside director last year. I have served Nikkiso as an outside officer for over six years now.

Since my appointment as an outside officer, I've always stressed the importance of managing the company with a focus on risk management from a global perspective, which plays an important part in corporate governance. Every time the directors met, I explained the importance of this issue to them and urged them to take action. I am pleased to say that the directors are doing a very good job. I also think that they now have more proactive discussions on risk assessments in board meetings.

Ms. Hirose: I joined the board of directors as an outside director last year. I've been in this role for only a year, so I am not in a position to discuss the past or present state of Nikkiso's corporate governance. But to someone like me, who has spent over 20 years working overseas at international organizations and competing and working

alongside people from all over the world, Nikkiso seems like a company with a very strong Japanese mindset. It's not a global company yet.

Currently, Nikkiso operates in many countries such as the US, Germany, and Vietnam. Each country has its own way of doing things. These days, adherence to and respect for local business practices, customs, and conventions are considered as important as compliance with laws and regulations. In this current climate, I feel that in order to practice global corporate governance, it is important for Japanese companies to adopt a more localized approach that is suited to the countries they operate while maintaining the social and business values that they embrace.

Role of outside directors

Mr. Nagatomo: To me, the role of an outside director is simple. It is to serve the company to the best of his or her ability to improve its corporate value. To do this, there are three things that must be improved. They are economic value, which is what we promise our shareholders to improve; social value; and environmental value. I believe that governance

Right: Mr. Eisuke Nagatomo, Outside Director

Mr. Nagatomo is well-versed in corporate governance and risk management, as well as finance and accounting. His previous positions include Senior Executive Officer, Tokyo Stock Exchange, Inc.; member of the Business Accounting Council, Financial Services Agency; and Director of the Financial Accounting Standards Foundation. Mr. Nagatomo was an Outside Audit and Supervisory Board Member of Nikkiso Co., Ltd. from 2012 and then was appointed Outside Director in 2018.

Left: Ms. Haruko Hirose, Outside Director

Ms. Hirose has been engaged in personnel, finance, and industrial development in various international organizations. Her previous positions include Director, Bureau of Human Resources Management, United Nations Educational, Scientific and Cultural Organization (UNESCO); Deputy to the Director-General, United Nations Industrial Development Organization (UNIDO); and Ambassador Extraordinary and Plenipotentiary to the Kingdom of Morocco. Ms. Hirose is particularly experienced in international human resource development activities. She was appointed Outside Director of Nikkiso Co., Ltd. in 2018.



exists to contribute to all three areas.

People often ask who owns a company when they talk about corporate governance. I assume its shareholders would be the correct answer, but if I was asked, “For whom does a company exist?,” my answer would be “A company exists for all of its stakeholders, and to meet the genuine expectations of society.” In other words, increasing economic value is not enough—improving social and environmental values is equally important.

A distinctive role that an outside director plays in improving corporate value in these three areas is having the freedom to express his or her views and opinions from a perspective quite different from that of management because he or she is not involved in the execution of the business of the company. For example, an outside director is in an ideal position to examine each and every project at hand and express his or her views from multiple perspectives—short-term versus medium-to-long-term, growth investments versus risk management, financial versus non-financial, and internal versus external, as well as from a big-picture perspective. That’s my idea of why an outside director exists.

Ms. Hirose: To do my job as an outside director, I can contribute my long experience of monitoring developing countries from Europe, as well as working in various international organizations where organizational politics or a range of influence tactics often dominate. People are concerned that Europe may be plunged into further chaos with the UK facing Brexit uncertainty and other countries like Germany and France

having problems of their own.

I hope to offer advice based on my decades of experience of dealing with people from other countries. I have learned over the years how their minds work, what principles they act on, and why they behave the way they do. I’d like to advise Nikkiso on what we should learn from them and how Nikkiso should behave.

Mr. Nagatomo: I mentioned earlier that my role as an outside director to improve Nikkiso’s corporate value is to serve the company to the best of my ability. It does not mean that it is the role that only I or other outside directors should play, but it is the role that all Nikkiso employees should play.

In order to accomplish this fundamental objective, we are obviously not going to allow the staff to do anything they are not allowed to do, but we should manage risks and at the same time be prepared to take risks to secure profits. To put it another way, it is also important to point out that if that is the case, then they are not doing what they should be doing. I hope I can contribute to helping everyone share the same understanding of what should be done to improve the company’s corporate value.

Communication

Mr. Nagatomo: Nikkiso has an audit and supervisory board in place, so I think it is extremely important that outside directors like us and independent outside audit and supervisory board

members communicate and work closely with each other. When it comes to communication and partnership, it seems to me that Nikkiso is ahead of any other company. We always attend audit and supervisory board meetings, which are held before board meetings, and exchange views and ideas with the outside audit and supervisory board members. We also interact with them on a regular basis. I do not see any major distinction between the roles of the outside audit and supervisory board members and those of the outside directors. I believe that the way we share our values is close to perfect.

Ms. Hirose: This is not about communication with management, but at Nikkiso, we have opportunities to visit overseas subsidiaries and regional factories as part of our communication efforts to interact with local staff. It seems to me that what I see or hear from local staff is more likely to stick in my mind than what I read in board meeting reports. It helps me better understand what is really going on over there and also what kind of company Nikkiso in fact is.

My most memorable visit to overseas subsidiaries has to be a visit to Vietnam. While I was there, I witnessed how well local staff were treated. I was impressed with the care and attention they gave to their staff to develop and nurture them. What amazed me in particular was that local Vietnamese management had made progress in the dialysis machine business. What I have actually seen and heard locally is definitely a great help when I offer advice to Nikkiso.

Mr. Nagatomo: I agree. I think it is extremely important that Nikkiso officers visit overseas or regional factories and communicate with local staff. It also gives them an opportunity to communicate more closely with each other because they spend more time together while traveling. Their closer

communication is reflected in having more active discussions in board meetings.

Let me elaborate on my thinking about communication. To me, it is important to be in direct contact with the staff as often as I can. I make conscious efforts to seize every opportunity that I can find to speak to them and find out what is really going on in the organization.

Risk management and information disclosure

Mr. Nagatomo: What impresses me most about Nikkiso's risk management regime is the way the company ensures that the same understanding is shared among its directors and officers. Let's take an M&A deal, for example. In an M&A deal where we cannot see the results of it in the short term, Nikkiso gives a briefing when the acquisition is completed, but briefings do not stop there. The company follows up on the project at least every six months or every year to keep the directors and officers up to date with its progress and current status. At Nikkiso, it is standard practice to report all important projects and their future prospects, not to mention M&A projects, in a comprehensive manner on a regular basis as well as whenever any change occurs.

When Nikkiso has an important project that may have a long-term impact on its business management, anything can happen over a long period of time. There may be some contingent events that management can anticipate but the outside directors cannot. But if you are asked questions about the same project repeatedly and continuously, it would be hard to mislead the company or cover up misconduct. In my opinion, Nikkiso has been successful in reducing the risk of fraud and other contingent and serious risks as much as possible this way.

Ms. Hirose: I agree. I've been with Nikkiso for only a year, so sometimes I find it hard to fully understand the whole picture of M&As or other projects from just a single report. My understanding may not be sufficient to provide advice. It helps me to have a better understanding of a project if I am provided with information on how the project has progressed, what state it is in now, and how it should be handled in the future. I can then offer my insights based on such information and combine them with my knowledge and expertise, so I can give some advice when new projects arise.



Mr. Nagatomo: As far as very important projects are concerned, I make an effort to find the time to travel to have discussions with top management. But unfortunately, due to my busy schedule, it is not always possible to do that.

Diversity

Ms. Hirose: To someone like me who has worked overseas for a very long time, it seems that Nikkiso truly embraces the mindset entrenched in Japanese society. In a way, the company has a highly technically-oriented culture and makes a positive contribution to the world by offering high-value products in a specialist market. But if Nikkiso wants to envision a more global future for itself, I suggest it create an environment for innovation. I also think that the staff should rise to more global challenges.

Mr. Nagatomo: In that sense, we should more aggressively and fearlessly pursue diversity in the head office.

Nikkiso has an annual turnover exceeding 100 billion yen and a greater proportion of its revenue comes from overseas. In a company like ours, there should be more non-Japanese people working in the head office.

Ms. Hirose: It seems to me that not just Nikkiso but many Japanese companies wishing to go global are still trapped in a Japan-centric mindset. If we want to achieve growth



in the global market, we should further pursue diversity to include non-Japanese and female staff among those working in the head office, not to mention transferring Japanese staff abroad. To do that, I think it is important to employ more people at the head office, whether they are mid-career hires or new-graduate hires.

Mr. Nagatomo: For Nikkiso to improve its corporate value, it is essential to develop people who will act as a source for its core competitiveness. We need to put the right people in the right positions to make our global growth strategies succeed. I am aware that there may be numerous restrictions on the front lines that hinder us from pursuing diversity, but taking the first step is crucial, so let's act without hesitation.



Board of Directors and Audit & Supervisory Board Members

As of April 1, 2019

Board of Directors



Toshihiko Kai

President &
Chief Executive Officer

Feb. 1996 General Manager of Dai-ichi Kangyo Bank Nederland N.V.
Mar. 2000 Joined the Company
Apr. 2001 Executive Officer of the Company
Apr. 2002 President, Medical Equipment Unit (currently Medical Division) of the Company
June 2003 Director of the Company (present position)
Dec. 2004 President & CEO of the Company (present position)



Hiroshi Nakamura

Director, Executive Vice
President

Jan. 2006 Executive Officer, General Manager of Nihonbashi Branch, The Bank of Tokyo-Mitsubishi UFJ, Ltd. (currently MUFG Bank, Ltd.)
Mar. 2007 Joined the Company
Oct. 2009 Director of the Company, Managing Director of Nikkiso Europe GmbH (consolidated subsidiary in Germany)
Apr. 2013 Director, Senior Executive Officer, in charge of Information Systems and Quality Control, and General Manager of Precision Equipment Division of the Company
Nov. 2013 Director, Senior Executive Officer, in charge of Administration (Export Control, Internal Control, Internal Audit, Compliance, and Information Systems), and General Manager of Corporate Planning Department of the Company
June 2015 Audit & Supervisory Board Member of the Company
Mar. 2017 Director, Executive Vice President (present position)



Hisakazu Nakahigashi

Director, Executive Officer

Apr. 1978 Joined the Company
Apr. 2011 General Manager of Manufacturing Department, Kanazawa Plant, Medical Division of the Company
Oct. 2011 Technical Senior Manager, Medical Shizuoka Factory, Shizuoka Plant (currently Research & Engineering Institute) of the Company
Apr. 2014 General Manager, Medical Factory, Kanazawa Plant of the Company
Apr. 2015 Executive Officer (present position), General Manager of Kanazawa Plant, and General Manager, Medical Factory, Kanazawa Plant of the Company
Mar. 2017 Director (present position), in charge of Production, and General Manager of Kanazawa Plant of the Company
Jan. 2018 In charge of Production and Engineering, General Manager of Research & Engineering Institute of the Company
Jan. 2019 General Manager of Research & Engineering Institute of the Company (present position)



Yoshihiko Kinoshita

Director, Executive Officer

Apr. 1989 Joined the Company
Apr. 2009 General Manager of Market Development Department Medical Division of the Company
Oct. 2011 Deputy General Manager of Medical Division of the Company
Jan. 2016 General Manager of Medical Division of the Company (present position)
Oct. 2016 Director, Vice Chairman, Weigao Nikkiso (Weihai) Dialysis Equipment Co., Ltd. (the Company's equity method affiliated company in China) (present position)
Jan. 2017 Executive Officer of the Company (present position)
Mar. 2017 Director in charge of Medical Business of the Company (present position)
Oct. 2017 CEO and Managing Director of Nikkiso Europe GmbH (consolidated subsidiary in Germany)
Jan. 2019 General Manager of Medical Business Unit of the Company (present position)



Shoichi Nagato

Director, Executive Officer

Oct. 1987 Joined the Company
Apr. 2006 General Manager of the Planning and Sales Department, Composite Materials Unit (currently Aerospace Division) of the Company
Apr. 2009 Executive Officer (present position), General Manager of Aerospace Division of the Company
Mar. 2016 President & Representative Director, Nikkiso Giken Co., Ltd. (the Company's consolidated subsidiary)
Oct. 2016 General Manager of Precision Equipment Division of the Company
Dec. 2017 General Manager of Aerospace Division of the Company (present position)
Jan. 2019 General Manager of Aerospace Business Unit of the Company (present position)
Chairman, Nikkiso Vietnam, Inc. (the Company's consolidated subsidiary in Vietnam) (present position)
Mar. 2019 Director of the Company (present position)



Masaru Yamamura

Director, Executive Officer

Nov. 1990 Joined the Company
Oct. 2009 General Manager of Business Promotion Department, Medical Division of the Company
July 2012 General Manager of Osaka Branch of the Company
Apr. 2017 General Manager of Industrial Division of the Company (present position)
Jan. 2018 Executive Officer of the Company (present position)
Jan. 2019 General Manager of Industrial Business Unit of the Company (present position)
Mar. 2019 Director of the Company (present position)



Eisuke Nagatomo

Outside Director

Apr. 1971 Joined Tokyo Stock Exchange
Dec. 2005 Senior Executive Officer, Tokyo Stock Exchange, Inc. (Chief Self-Regulatory Officer)
Oct. 2007 President & CEO, EN Associates Co., Ltd. (present position)
Apr. 2008 Visiting Professor, Graduate School of Commerce, Waseda University (present position)
June 2010 Outside Director, Miroku Jyoho Service Co., Ltd. (present position)
June 2012 Outside Audit & Supervisory Board Member of the Company
June 2016 Outside Audit & Supervisory Board Member, Nidec Corporation (present position)
Mar. 2018 Outside Director of the Company (present position)
June 2018 Public Interest Director, Japan Financial Services Association (present position)



Haruko Hirose

Outside Director

Dec. 1968 Appointed to the National Personnel Authority of Japan
Jan. 1992 Director, Bureau of Human Resources Management of Headquarters, United Nations Educational, Scientific and Cultural Organization (UNESCO)
Sept. 2002 Deputy to the Director General and Managing Director of Programme Coordination and Field Operations Division, United Nations Industrial Development Organization (UNIDO)
Nov. 2006 Japanese Ambassador Extraordinary and Plenipotentiary to Kingdom of Morocco
Mar. 2010 Retirement from Ministry of Foreign Affairs of Japan
Apr. 2013 Specially Appointed Professor, Academy for Global Leadership, Tokyo Institute of Technology
May 2014 President, Japan Morocco Association (present position)
June 2016 Outside Director, S&B Foods Inc. (present position)
Apr. 2017 Director, Ochanomizu University
Mar. 2018 Outside Director of the Company (present position)

Audit & Supervisory Board Members



Toshiaki Mitsumi

Audit &
Supervisory Board Member

Sept. 2005 Assistant General Manager of Sales and Administrative Division at Head Office, Mizuho Corporate Bank, Ltd. (currently Mizuho Bank, Ltd.)
Dec. 2007 Joined the Company
Apr. 2013 General Manager of Medical Administration Department, Medical Division of the Company
Jan. 2015 General Manager of Industrial Administration Department, Industrial Division of the Company
Apr. 2015 Auditor, Shanghai Nikkiso Non-Seal Pump Co., Ltd. (the Company's consolidated subsidiary in China)
Jan. 2016 General Manager of Sales Division of the Company
Apr. 2017 General Manager of Administration Department, Corporate Planning Division of the Company
Mar. 2019 Audit & Supervisory Board Member of the Company (present position)



Kenji Hida

Audit &
Supervisory Board Member

Apr. 1978 Joined the Company
Apr. 2007 General Manager, Market Development Department, Medical Equipment Unit of the Company
Oct. 2009 General Manager, Business Strategy and Alliance Office, Medical Division of the Company
Apr. 2011 Senior Manager, Planning & Strategy, Medical Division of the Company
Aug. 2012 Managing Director & COO, Nikkiso Europe GmbH (the Company's consolidated subsidiary in Germany)
Dec. 2014 General Director, Nikkiso Vietnam MFG Co., Ltd. (the Company's consolidated subsidiary in Vietnam)
Mar. 2017 Audit & Supervisory Board Member of the Company (present position)



Mitsuaki Nakakubo

Outside Audit &
Supervisory Board Member

Apr. 1995 Registered as an attorney of Japan (affiliated with the Daini Tokyo Bar Association) (to present)
Apr. 2001 Partner, Asahi Law Offices (present position)
June 2008 Substitute Outside Audit & Supervisory Board Member of the Company
Oct. 2011 Auditor, Bicycle Parking Facilities Provision Foundation, a public interest incorporated foundation (present position)
June 2015 Outside Audit & Supervisory Board Member of the Company (present position)
June 2017 Outside Audit & Supervisory Board Member, Nippon Kodo Holdings Co., Ltd. (present position)



Hiroyuki Muneta

Outside Audit &
Supervisory Board Member

Oct. 1985 Joined Aoyama Audit Corporation, Price Waterhouse as a Junior Accountant
Mar. 1989 Registered as a certified public accountant (to present)
July 1989 Left Aoyama Audit Corporation, Price Waterhouse
July 1989 Joined BDO Sanyu & Co.
Apr. 1997 Registered as a licensed tax accountant (to present)
Aug. 1997 Established Muneta Certified Public Accounting Office (currently Ichiban-cho Joint Accounting Office) as Managing Partner (present position)
Apr. 1999 Representative Director, Biotech System Machinery Co., Ltd. (present position)
Mar. 2018 Outside Audit & Supervisory Board Member of the Company (present position)

Executive Officers

Susumu Koito

General Manager,
Corporate Unit

Takayoshi Izumi

General Manager,
Medical Factory,
Kanazawa Plant

Kyosuke Watanabe

General Manager,
Administration Division,
General Manager,
Corporate Planning Division

Akira Ohsawa

General Manager,
Precision Equipment Division

Tateki Nakamura

General Manager,
Higashinohon Branch

Kenji Tomura

General Manager,
Nishinohon Branch

Financial Information

JGAAP

	3/2010	3/2011	3/2012	3/2013	3/2014	3/2015
Orders	¥ 74,770	¥ 84,536	¥ 94,921	¥103,409	¥122,325	¥133,751
Net sales	78,019	83,143	90,137	103,670	121,548	129,255
Gross profit	24,248	26,920	29,625	34,239	43,953	47,912
Selling, general and administrative expenses	18,585	21,521	23,044	26,757	34,530	41,792
Operating income	5,662	5,398	6,580	7,481	9,423	6,120
Ordinary income	6,022	4,658	6,370	8,945	11,330	8,960
Net income attributable to owners of the parent	3,239	2,684	3,317	6,897	5,897	5,099
Capital investments	¥ 2,966	¥ 2,028	¥ 3,242	¥ 4,377	¥ 9,093	¥ 7,467
Depreciation expenses	2,982	2,802	2,738	2,841	3,452	4,982
R&D expenses	1,229	1,150	1,125	1,433	1,889	1,811
Total assets	¥115,130	¥122,009	¥118,234	¥138,345	¥161,283	¥181,187
Net assets	47,517	49,039	50,392	58,558	67,372	74,464
Interest-bearing debt and bonds	46,172	51,924	44,332	49,844	56,737	70,302

Cash flows

Cash flows from operating activities	¥ 11,674	¥ 6,004	¥ 3,961	¥ 8,398	¥ 5,587	¥ 8,183
Cash flows from investing activities	(25,208)	(609)	(3,325)	(324)	(15,966)	(9,046)
Cash flows from financing activities	15,005	6,623	(10,242)	3,653	2,047	11,578

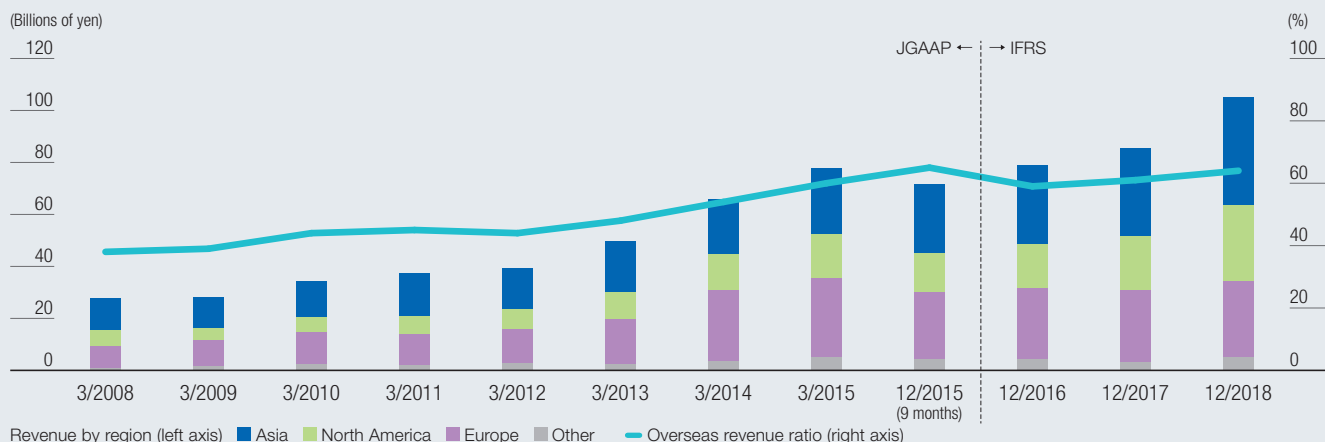
Per share information (yen)

Net assets	¥ 587.66	¥ 605.46	¥ 639.98	¥ 742.03	¥ 853.06	¥ 945.30
Net income attributable to owners of the parent	47.49	33.86	42.47	89.41	76.46	66.12
Cash dividend	12.00	12.00	12.00	14.00	16.00	16.00

Ratio

Equity ratio (%)	40.5	39.3	41.8	41.4	40.8	40.2
Return on equity (ROE) (%)	7.8	5.7	6.8	12.9	9.6	7.4
Return on assets (ROA) (%)	6.1	3.9	5.3	7.0	7.6	5.2
Payout ratio (%)	25.3	35.4	28.3	15.7	20.9	24.2
Debt/equity ratio (times)	0.99	1.08	0.90	0.87	0.86	0.96
Number of employees	4,691	4,820	5,185	5,408	6,198	6,389

Trends in Overseas revenue

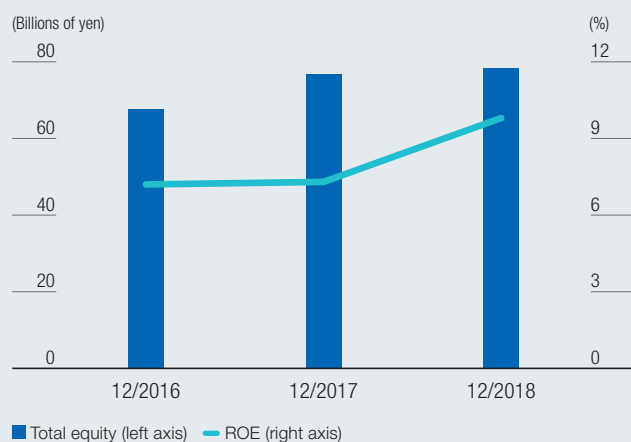


Millions of yen	
12/2015 (9 months)	12/2016
¥113,059	¥130,980
110,218	132,890
40,856	45,225
37,012	40,332
3,844	4,893
3,964	4,201
2,031	2,729
¥ 4,828	¥ 7,635
4,738	5,150
1,688	1,679
¥177,646	¥175,457
71,142	65,533
69,843	69,488
¥ 3,265	¥ 12,608
(4,635)	(7,400)
(1,209)	(6,052)
¥ 904.40	¥ 902.45
26.34	36.93
16.00	16.00
39.3	36.6
2.8	4.1
2.2	2.4
60.7	43.3
1.00	1.08
6,558	6,870

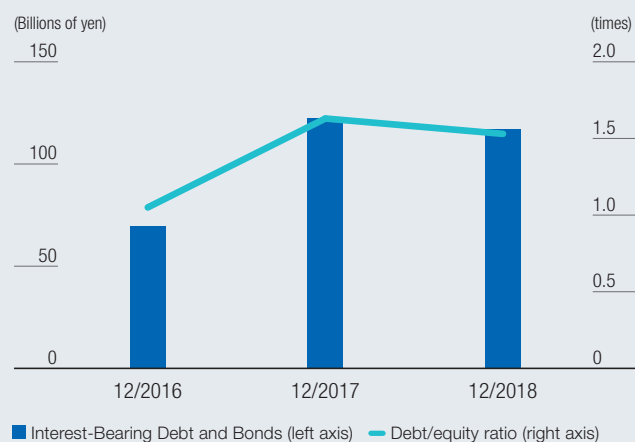
IFRS

IFRS	Millions of yen		
	12/2016	12/2017	12/2018
Orders	¥ 129,209	¥ 140,412	¥ 172,492
Revenue	130,045	140,912	165,326
Gross profit	44,855	48,608	56,977
Selling, general and administrative expenses	37,374	42,218	47,123
Operating profit	8,117	8,718	10,302
Profit before tax	6,801	8,310	9,741
Profit for the year attributable to owners of the Company	4,883	5,182	7,448
Capital expenditure	¥ 7,635	¥ 7,508	¥ 12,869
Depreciation and amortization	4,766	5,246	6,335
Research and development expenditure	1,679	2,435	2,387
Total assets	¥177,717	¥ 244,692	¥ 249,788
Total equity	67,664	76,787	78,338
Interest-bearing debt and bonds	69,884	122,528	117,052
Cash flows			
Net cash generated by operating activities	¥ 13,400	¥ 4,915	¥ 14,076
Net cash used in investing activities	(7,993)	(48,058)	(12,218)
Net cash generated by/used in financing activities	(6,251)	51,015	(5,771)
Per share information (yen)			
Equity attributable to owners of the Company per share	¥ 932.67	¥1,053.16	¥1,074.83
Earnings per share (Basic)	66.08	72.82	104.63
Dividends	16.00	16.00	18.00
Ratio			
Equity ratio (%)	37.4	30.7	30.7
Return on equity (ROE) (%)	7.2	7.3	9.8
Return on asset (ROA) (%)	3.8	3.9	3.9
Dividend Payout Ratio (%)	24.2	22.0	17.2
Debt/equity ratio (times)	1.05	1.63	1.53
Number of employees	6,870	7,872	8,169

■ Total Equity/ROE



■ Interest-Bearing Debt and Bonds & D/E Ratio



Management's Discussion and Analysis

Overview of Operating Performance

In the fiscal year ended December 31, 2018, the Company booked orders of ¥172.492 billion (+22.8% year on year), revenue of ¥165.326 billion (+17.3%), operating profit of ¥10.302 billion (+18.2%), profit before tax of ¥9.741 billion (+17.2%), and profit for the year attributable to owners of the Company of ¥7.448 billion (+43.7%). Both revenue and profit increased in the Industrial Businesses as brisk sales of cryogenic pumps drove the performance of the Industrial Division, while earnings were also solid in the Precision Equipment Division and Aerospace Division. The increase in segment profit was weak compared to the Company-wide increase in orders and revenue. This mainly owed to the booking of depreciation expenses for intangible assets related to the acquisition of the Cryogenic Industries Group (CI Group), along with the fact that project profit margins at both the LEWA Group and the CI Group have yet to improve because the business recovery in the oil and gas exploration industries is taking longer than expected. In the Medical Business, sales of hemodialysis machines and disposables in both domestic and overseas markets grew sharply year on year, but profit growth was weighed down by the impact of weak earnings in the CRRT business which is currently being restructured. In company-wide expenses, one-off gains from mainly the sale of property booked in the previous fiscal year dropped out, denting operating profit on a year-on-year basis. Excluding such one-off factors, operating profit remained flat.

Overview of Business Divisions

<Industrial Division>

Despite the uncertain outlook for crude oil prices, the environment for orders in the oil-related business is on the mend with the resumption of capital investments in oil and gas exploration and other upstream sectors thanks to rising prices since the latter half of 2017. In the mid- and downstream petrochemical market, brisk business conditions have been sustained by ongoing investments mainly in North America and China, while in Japan we expect to see demand for facility upgrades. At the LEWA Group, profitability was squeezed by price competition despite an increase in orders mainly in upstream sectors. The recovery in earnings did not materialize until the fourth quarter and as a result revenue increased but profit fell year on year. However, inquiries are solid and we therefore anticipate a recovery in earnings from next fiscal year. In the LNG and gas-related business, the LNG market started to recover thanks to tailwinds from higher crude oil prices and environmental issues, while inquiries remain active for our large cryogenic pumps used in LNG import terminals and floating LNG storage regasification units (FSRUs). Meanwhile, there is vigorous demand mainly in Asia for industrial gas from the

semiconductor and healthcare-related industries, which helped boost orders for industrial gas pump-related equipment at the CI Group. In addition, we expect to see stronger demand in areas of consumption for mainly fuel supply systems for LNG-powered ships and small LNG plants. Up ahead, we hope to strengthen collaboration with the LEWA Group and CI Group with the aim of accelerating the pace of our global expansion. We will continue to enhance group synergies predominantly through the joint use of production sites and integration of sales promotion systems.

<Precision Equipment Division>

Demand for power plant projects is weak due to power companies trimming back their budgets for facility repairs and delaying the restart of nuclear power reactors, but we are receiving more overseas inquiries for water conditioning systems, mainly from Southeast Asia, and we are continuing to enhance our cost competitiveness and strengthen our sales activities with the help of our subsidiary in Taiwan. Orders are up for high-pressure equipment (new-model warm isostatic laminators) used in the semiconductor production business and we are striving to streamline and strengthen our production/supply structure so we can tap growing global demand from the expansion of applications for multilayer ceramic capacitors.

<Aerospace Division>

Demand for commercial aircraft, especially small airplanes in the Asian region, is expanding mainly as a result of increased passenger and cargo demand in emerging countries and the growth of low-cost carriers. Accordingly, aircraft manufacturers are planning to boost production of major airplane models. The Nikkiso Group is seeing a steady increase in inquiries and we have made preparations for expanding production capacity by completing our new Miyazaki Factory in October 2018 and our Hanoi No.2 factory in Vietnam in November 2018. Demand for cascades, our mainstay product, rebounded in fiscal 2018, and as a result, shipment volume increased year on year. Shipments of mainly wing components from our Hanoi No.1 factory in Vietnam also continued to make solid progress with revenue increasing year on year. Upfront costs related to the new Miyazaki Factory were offset by lower cost of goods sold thanks to the in-house production of materials at the plant, as well the stabilization of engine parts production at the Higashimurayama Plant, which took longer than expected to get up to speed. As a result, operating profit remained flat year on year. Going forward, in addition to advancing the consolidation and streamlining of our scattered production sites and systems, we will further improve quality and keep a lid on costs by having our new Miyazaki Factory function as an R&D hub for aircraft

components. We will also push ahead with the development of a business platform that can satisfy the requirements of our customers with high levels of service. Elsewhere, in the Deep UV-LEDs Division we continue to take steps towards product development and commercialization in the key market of water and surface disinfection. In the field of water disinfection, we developed an improved version of our conventional flowing water disinfection module, which performs on a par with, or better than, mercury lamp products. Going forward, we will endeavor to reduce manufacturing costs and further enhance the performance of chips and modules with the aim of facilitating the adoption of LEDs in various fields, including products for general consumers.

<Medical Division>

Conditions in the domestic hemodialysis market remain tough because of slowing growth in the number of dialysis patients, but demand for hemodialysis machines started to recover from the second quarter after stagnating in fiscal 2017. Sales of blood tubing lines and other disposables are also increasing. In overseas markets, sales of knock-down components to the fast-growing Chinese market are driving overall earnings, while equipment sales are rising in the Asian region where dialysis therapy is becoming more commonplace, and in Europe where our high-performance dialysis machines equipped with automated features have received rave reviews. As a result, revenue and profit in the hemodialysis business overall increased year on year. Revenue was up slightly year on year in the CRRT business—currently subject to restructuring initiatives—with weak performances at some of our business sites outside of China offset by higher sales of machines and disposables, as well as the success of policies primarily aimed at reorganizing our sales structure in the mainstay Chinese market. At the same time, operating profit was dragged down by higher one-off expenses related to business restructuring, namely the revamp of our R&D structure and cutbacks in offices and personnel. In the Medical Division, given that we expect to see changes in the medical economic environment and even tougher competition up ahead in the mainstay domestic hemodialysis business, we aim to develop new products and services that are even more superior in terms of functionality and user-friendliness, rebuild the business operations framework which supports the development, and steadily execute operational reforms. In overseas markets, we will not only consolidate our production and service structures in the rapidly growing Chinese market, but we also intend to bolster our sales structures in Asian countries outside of China where health insurance schemes continue to become more sophisticated and in the major dialysis market of the US with a

view to collaborating with leading dialysis service providers. In the CRRT business, we will step up efforts to integrate or shut down loss-making locations and curb fixed costs with the use of agencies. On top of this, we aim to strengthen our sales structures in the key Chinese market, hasten our launch of new machines, and make progress on implementing policies for improving profitability. In addition, we are steadily opening up markets with products in new business fields, such as the STG-55 artificial pancreas, our microwave surgical energy device called Acrosurg., and our Immunopure apheresis (blood purification) product for patients suffering from ulcerative colitis, and fostering them as our medium-term earnings base in the Medical Division.

Research and Development

The Nikkiso Group spends heavily on research and development to create new products and technologies that address the needs of its customers, applying innovative technologies in each business domain. In the industrial field, we are working to enhance the functionality and efficiency of large pumps for LNG exploration sites. In addition, we are developing new applications for carbon fiber reinforced plastic (CFRP) molding products that help reduce weight and thus fuel consumption in commercial jet aircraft. We are also developing Deep UV-LEDs that consume less power, are long-lasting, and are friendly on the environment because they do not use toxic mercury. In the medical field, we continue to engage in basic research on next-generation dialysis therapy and are working to develop the next generation of dialysis machines with enhanced functionality. Leveraging the dialysis-related technologies we have honed over many years, we continue to conduct clinical research on blood purification therapy techniques with the aim of contributing to the treatment of ulcerative colitis and other immunological diseases. We are also making every effort to further improve our artificial pancreas currently available for purchase and for use in the internal medicine and surgical fields, as well as develop new products for acute medical care. Total R&D expenses for fiscal 2018 came to ¥2.387 billion.

Financial Position

As of December 31, 2018, total assets were ¥249.788 billion, an increase of ¥5.096 billion compared with a year earlier. This owed mainly to an increase in tangible fixed assets. Total liabilities were ¥171.450 billion, an increase of ¥3.544 billion, mainly reflecting an increase in trade payables and other liabilities. Total equity was ¥78.338 billion, an increase of ¥1.551 billion. This mainly owed to an increase in retained earnings due to the booking of profit for the year attributable to owners of the Company.

Management's Discussion and Analysis

■ Cash Flows

As of December 31, 2018, cash and cash equivalents totaled ¥29.269 billion, a decrease of ¥4.825 billion from the end of the previous fiscal year. Net cash generated by operating activities increased ¥14.076 billion, mainly reflecting the booking of profit before tax. Net cash used in investing activities decreased ¥12.218 billion. This owed mainly to payments for the acquisition of tangible fixed assets. Net cash generated by/used in financing activities decreased ¥5.771 billion. This owed mainly to the repayment of borrowings.

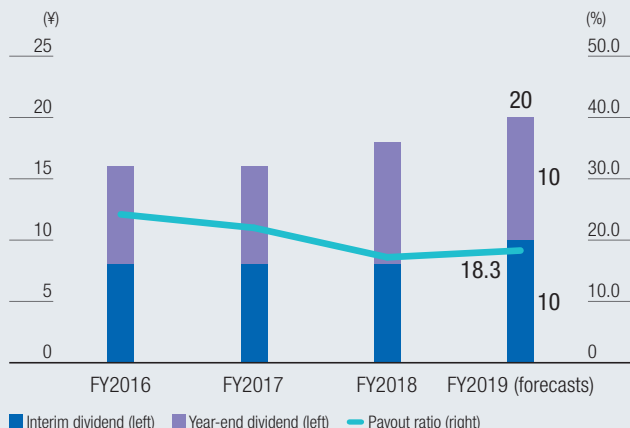
■ Capital Expenditure and Depreciation and Amortization

In fiscal 2018, capital expenditure totaling ¥12.869 billion was mainly allocated to the expansion of production capacity, including investments in facility upgrades and streamlining. By segment, the Industrial Businesses invested a total of ¥10.930 billion, mainly for constructing an aircraft components plant in Miyazaki, newly establishing and expanding capacity of production facilities at our Hanoi factory in Vietnam for products such as carbon fiber reinforced plastic (CFRP) molding products, and expanding capacity at our reciprocating pump production facilities in Germany. The Medical Business invested a total of ¥1.582 billion in beefing up R&D equipment at our Research & Engineering Institute, upgrading production facilities at the Kanazawa Plant, and boosting production capacity at factories in Thailand and Vietnam that manufacture our blood tubing lines. Company-wide investments amounting to ¥356 million were mainly for upgrading systems at the head office and other business sites. No major property and equipment was disposed nor sold in fiscal 2018. Depreciation and amortization came to ¥6.335 billion.

Shareholder Return Policy

Nikkiso's basic capital policy is to achieve sustained growth and

■ Dividend per share



improve corporate value over the medium to long term while pursuing an optimal balance in financial health, capital efficiency, and shareholder returns. On the basic recognition that consistent and stable shareholder returns are a key pillar of our capital policy, management endeavors to return profits to shareholders based on a comprehensive assessment of performance and the operating environment, while appropriately reinvesting internal reserves for the purpose of nurturing new businesses and strengthening production structures. In fiscal 2018, earnings in each of our business segments were generally solid and outperformed the consolidated earnings forecasts we announced at the beginning of the year. In light of prospects for stably maintaining operating profit of around ¥10 billion and comprehensively considering our recent financial condition and other factors, Nikkiso raised its year-end dividend by ¥2 (from ¥8 to ¥10) to pay an annual dividend of ¥18 per share in fiscal 2018. For fiscal 2019, we plan to pay an annual dividend of ¥20 per share.

Forecasts for Fiscal 2019

We recognize that the operating environment surrounding Nikkiso remains difficult owing to factors such as the clouded outlook for crude oil prices and changes in the medical economic environment in Japan. However, in fiscal 2019, the fourth year of our medium-term business plan, Nikkiso 2020, we should begin to see our growth investments slowly blossom as pillars of our businesses and earnings. Fiscal 2019 will be a time to push ahead with the concrete initiatives of each business and turn the results into tangible earnings—notably, leveraging our acquisition of the CI Group to expand our capacity to meet the needs of the LNG value chain, further developing our Aerospace Division under the full-scale operation of the new Miyazaki and Vietnam plants, and embracing the challenges of the global dialysis market. Moreover, in aiming to bring about a stronger profit structure for the entire Nikkiso Group, we will review our allocation of managerial resources and assess the future prospects of those unprofitable businesses in order to invest more in growth businesses. In light of this situation, our consolidated earnings forecasts for fiscal 2019 are as follows.

(Millions of yen)			
	Fiscal 2018 results	Fiscal 2019 forecasts	Change
Orders	172,492	174,000	+0.9%
Revenue	165,326	172,000	+4.0%
Operating profit	10,302	11,000	+6.8%
Profit before tax	9,741	10,600	+8.8%
Profit for the year attributable to owners of the Company	7,448	7,800	+4.7%

Business Risk

Business and Other Risks

The following are recognized as the main risk factors that could adversely affect the business results, stock price, and financial condition of the Nikkiso Group. Please note also that forward-looking statements herein represent the expectations of the Group as of the end of the fiscal period described in this report.

■ Changes in Product Markets

Our principal customers in the industrial sector are in such industries as energy, petrochemicals, and power generation. Shrinking demand or a decline in competitiveness in these industries could have a negative impact on the Nikkiso Group's operating performance and financial position. Furthermore, aircraft industries account for the majority of the Group's customers in the Aerospace Business. Should an incident such as a synchronized terrorist attack that substantially impacts aircraft demand occur, the Nikkiso Group's operating performance and financial position could be negatively affected.

■ Medical Insurance

In the Medical Business, government regulations on medical insurance affect dialysis-related markets, which are key sources of sales. Such regulation can have both direct and indirect effects on the markets and prices for products in this business. If markets were to shrink or prices to fall as a result of changes in government policies, the Nikkiso Group's operating performance and financial condition could be negatively affected.

■ Fluctuations in Currency Exchange Rates

The assets and liabilities of the Nikkiso Group's overseas subsidiaries are denominated in foreign currencies, and the Group has foreign currency sales, purchases, assets, liabilities, and other items that are converted into Japanese yen when preparing its consolidated financial statements. Fluctuations in the exchange rates for the major non-yen currencies, notably the U.S. dollar and the euro, could affect the Nikkiso Group's operating performance and financial condition. For the Nikkiso Group as a whole, the Nikkiso Group's foreign currency sales exceed its purchases that are denominated in foreign currencies, and foreign currency assets outweigh foreign currency liabilities. As a result, appreciation of the Japanese yen against these currencies could have a negative effect on the Nikkiso Group's operating performance and financial condition.

■ Overseas Production

As overseas sales grow in relation to the Nikkiso Group's total sales, its overseas production ratio is also rising. In the Industrial Business, we manufacture pump products mainly in Germany and the United States, some parts in China, Taiwan, and other countries. The Company manufactures some aircraft components in Vietnam, as well. In the Medical Business, the Group manufactures disposables such as blood tubing lines in Vietnam and Thailand, and some dialysis machines through a joint venture in China. Accordingly, changes in laws and regulations or changes in political and economic conditions in those regions could affect normal company operations and production activities at overseas subsidiaries. Such changes could have a negative effect on the Nikkiso Group's operating performance and financial condition.

■ Performance of Overseas Subsidiaries

The Nikkiso Group acquires and invests in companies and businesses in Japan and overseas in an effort to enhance its lineup of products and technologies in existing businesses, reinforce sales routes, and acquire new businesses. The Nikkiso Group believes that such acquisitions and investments will strengthen its operations and lead to higher growth in the future. However, if the performance of such businesses were to fall significantly, the Nikkiso Group's performance and financial condition could be negatively affected.

■ Other

In addition to the factors described above, should certain events such as a downturn in the global economic environment or a large-scale natural disaster that would significantly affect the Group's operating environment occur, the Nikkiso Group's operating performance and financial position could be negatively affected.

Consolidated Statement of Financial Position

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Assets			
Current assets			
Cash and cash equivalents	¥ 34,095	¥ 29,269	\$ 263,691
Trade and other receivables	50,434	54,077	487,181
Other short-term financial assets	1,698	1,107	9,977
Inventories	30,363	33,297	299,977
Income tax refund receivable	359	186	1,684
Other current assets	2,152	3,403	30,661
Total current assets	119,103	121,342	1,093,173
Non-current assets			
Property, plant and equipment	38,454	44,920	404,691
Goodwill and Intangible assets	67,792	64,255	578,880
Investments accounted for using the equity method	1,198	1,299	11,708
Long-term financial assets	15,354	13,825	124,557
Deferred tax assets	1,913	2,735	24,639
Other non-current assets	875	1,409	12,697
Total non-current assets	125,588	128,446	1,157,175
Total assets	¥ 244,692	¥ 249,788	\$ 2,250,348
Liabilities and equity			
Liabilities			
Current liabilities			
Bonds and short-term borrowings	¥ 76,975	¥ 40,056	\$ 360,867
Trade and other payables	22,624	27,380	246,666
Other short-term financial liabilities	573	626	5,648
Income taxes payable	1,237	1,977	17,810
Provisions	1,513	1,347	12,136
Other current liabilities	11,006	15,658	141,066
Total current liabilities	113,930	87,045	784,196
Non-current liabilities			
Long-term borrowings	45,553	76,996	693,663
Other long-term financial liabilities	569	1,050	9,463
Net defined benefit liabilities	3,287	3,217	28,983
Provisions	176	213	1,924
Deferred tax liabilities	4,269	2,807	25,292
Other non-current liabilities	117	118	1,070
Total non-current liabilities	53,974	84,404	760,398
Total liabilities	167,905	171,450	1,544,594
Equity			
Share capital	6,544	6,544	58,958
Capital surplus	11,099	11,069	99,724
Treasury shares	(2,543)	(2,544)	(22,923)
Other components of equity	6,268	1,851	16,676
Retained earnings	53,682	59,703	537,871
Equity attributable to owners of the Company	75,051	76,624	690,306
Non-controlling interests	1,736	1,714	15,447
Total equity	76,787	78,338	705,754
Total liabilities and equity	¥ 244,692	¥ 249,788	\$ 2,250,348

Consolidated Statement of Profit or Loss

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Revenue	¥ 140,912	¥ 165,326	\$ 1,489,425
Cost of sales	(92,304)	(108,349)	(976,119)
Gross profit	48,608	56,977	513,306
Selling, general and administrative expenses	(42,218)	(47,123)	(424,536)
Other income	2,554	805	7,254
Other expenses	(227)	(356)	(3,208)
Operating profit	8,718	10,302	92,814
Financial income	493	528	4,760
Financial costs	(1,112)	(1,355)	(12,209)
Share of profit of associates and joint ventures accounted for using the equity method	210	266	2,396
Profit before tax	8,310	9,741	87,762
Income tax expenses	(3,005)	(2,146)	(19,337)
Profit for the year	5,304	7,595	68,425
Profit for the year attributable to:			
Owners of the Company	5,182	7,448	67,104
Non-controlling interests	121	146	1,320
Profit for the year	¥ 5,304	¥ 7,595	\$ 68,425
Earnings per share			
Basic (Yen or U.S. dollars)	¥ 72.82	¥ 104.63	\$ 0.94
Diluted (Yen or U.S. dollars)	¥ 63.97	¥ 97.09	\$ 0.87

Consolidated Statement of Other Comprehensive Income

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Profit for the year	¥ 5,304	¥ 7,595	\$ 68,425
Other comprehensive income			
Items that will not be reclassified subsequently to profit or loss			
Financial assets measured at fair value through other comprehensive income	1,674	(1,207)	(10,880)
Remeasurements of defined benefit pension plans	(70)	(39)	(354)
Share of other comprehensive income (loss) of associates and joint ventures accounted for using the equity method	0	3	27
Total	1,603	(1,244)	(11,207)
Items that may be reclassified subsequently to profit or loss			
Exchange differences on translation of foreign operations	3,357	(2,885)	(25,996)
Gain (loss) on cash flow hedges	14	(294)	(2,649)
Share of other comprehensive income (loss) of associates and joint ventures accounted for using the equity method	31	(59)	(540)
Total	3,403	(3,239)	(29,186)
Other comprehensive income, net of tax	5,007	(4,483)	(40,394)
Total comprehensive income for the year	10,311	3,111	28,031
Total comprehensive income for the year attributable to:			
Owners of the Company	9,717	2,991	26,952
Non-controlling interests	593	119	1,078
Total comprehensive income for the year	¥ 10,311	¥ 3,111	\$ 28,031

Consolidated Statement of Changes in Equity

Millions of yen

	Equity attributable to owners of the Company										Non-controlling interests	Total equity
	Share capital	Capital surplus	Treasury shares	Other components of equity					Retained earnings	Total		
				Financial assets measured at fair value through other comprehensive income	Remeasurements of defined benefit pension plans	Exchange differences on translation of foreign operations	Profit (loss) in cash flow hedges	Total				
Balance as of January 1, 2017	¥6,544	¥11,103	¥(2,578)	¥3,754		¥(1,798)	¥(292)	¥1,662	¥49,709	¥66,441	¥1,222	¥67,664
Profit for the year									5,182	5,182	121	5,304
Other comprehensive income				1,674	¥(70)	2,917	14	4,535		4,535	471	5,007
Total comprehensive income for the year				1,674	(70)	2,917	14	4,535	5,182	9,717	593	10,311
Purchase of treasury shares			(0)							(0)		(0)
Disposal of treasury shares		3	35							38		38
Dividends									(1,138)	(1,138)	(80)	(1,219)
Share-based payments		(7)								(7)		(7)
Transfer to retained earnings					70			70	(70)			
Total transactions with owners		(3)	34		70			70	(1,209)	(1,108)	(80)	(1,188)
Balance as of December 31, 2017	¥6,544	¥11,099	¥(2,543)	¥5,428		¥1,118	¥(278)	¥6,268	¥53,682	¥75,051	¥1,736	¥76,787
Adjustment resulting from changing an accounting policy									(248)	(248)		(248)
Balance as of January 1, 2018	¥6,544	¥11,099	¥(2,543)	¥5,428		¥1,118	¥(278)	¥6,268	¥53,433	¥74,802	¥1,736	¥76,538
Profit for the year									7,448	7,448	146	7,595
Other comprehensive income				(1,204)	¥(39)	(2,918)	(294)	(4,456)		(4,456)	(26)	(4,483)
Total comprehensive income for the year				(1,204)	(39)	(2,918)	(294)	(4,456)	7,448	2,991	119	3,111
Purchase of treasury shares			(0)							(0)		(0)
Disposal of treasury shares		0	0							0		0
Dividends									(1,139)	(1,139)	(136)	(1,275)
Share-based payments		30								30		30
Changes in ownership interests in a subsidiary		(61)								(61)	(4)	(66)
Transfer to retained earnings					39			39	(39)			
Total transactions with owners		(30)	(0)		39			39	(1,178)	(1,170)	(141)	(1,311)
Balance as of December 31, 2018	¥6,544	¥11,069	¥(2,544)	¥4,223		¥(1,800)	¥(572)	¥1,851	¥59,703	¥76,624	¥1,714	¥78,338

Thousands of U.S. dollars

	Equity attributable to owners of the Company										Non-controlling interests	Total equity
	Share capital	Capital surplus	Treasury shares	Other components of equity					Retained earnings	Total		
				Financial assets measured at fair value through other comprehensive income	Remeasurements of defined benefit pension plans	Exchange differences on translation of foreign operations	Profit (loss) in cash flow hedges	Total				
Balance as of December 31, 2017	\$58,958	\$99,999	\$(22,918)	\$48,904		\$10,073	\$(2,504)	\$56,473	\$483,624	\$676,137	\$15,641	\$691,778
Adjustment resulting from changing an accounting policy									(2,241)	(2,241)		(2,241)
Balance as of January 1, 2018	\$58,958	\$99,999	\$(22,918)	\$48,904		\$10,073	\$(2,504)	\$56,473	\$481,383	\$673,896	\$15,641	\$689,536
Profit for the year									67,104	67,104	1,320	68,424
Other comprehensive income				(10,853)	¥(354)	(26,294)	(2,649)	(40,152)		(40,152)	(242)	(40,394)
Total comprehensive income for the year				(10,853)	(354)	(26,294)	(2,649)	(40,152)	67,104	26,952	1,078	28,030
Purchase of treasury shares			(5)							(5)		(5)
Disposal of treasury shares		0	0							0		0
Dividends									(10,261)	(10,261)	(1,228)	(11,489)
Share-based payments		277								277		277
Changes in ownership interests in a subsidiary		(552)								(552)	(44)	(596)
Transfer to retained earnings					354			354	(354)			
Total transactions with owners		(274)	(5)		354			354	(10,615)	(10,541)	(1,272)	(11,813)
Balance as of December 31, 2018	\$58,958	\$99,724	\$(22,923)	\$38,051		\$16,221	\$(5,154)	\$16,676	\$537,871	\$690,306	\$15,447	\$705,754

Consolidated Statement of Cash Flows

	Millions of yen		Thousands of U.S. dollars
	12/2017	12/2018	12/2018
Operating activities:			
Profit before tax	¥ 8,310	¥ 9,741	\$ 87,762
Depreciation and amortization	5,246	6,335	57,073
Interest and dividend income	(350)	(357)	(3,216)
Interest expense	856	1,074	9,683
Exchange difference	612	(59)	(535)
Share of profit of associates and joint ventures accounted for using equity method	(210)	(266)	(2,396)
Losses (gains) on sale and disposal of property, plant and equipment	(1,191)	77	696
Increase in trade and other receivables	(5,375)	(4,791)	(43,169)
(Increase) decrease in inventories	2,094	(3,661)	(32,983)
Increase (decrease) in trade and other payables	(1,921)	5,469	49,276
Decrease in net defined benefit liabilities	(470)	(91)	(827)
Other	2,098	4,359	39,274
Subtotal	9,696	17,830	160,637
Interest and dividends received	441	422	3,803
Interest paid	(688)	(1,014)	(9,137)
Income taxes paid	(4,534)	(3,162)	(28,492)
Net cash generated by operating activities	4,915	14,076	126,811
Investing activities:			
Payments into time deposits	(467)	(420)	(3,783)
Proceeds from withdrawal of time deposits	839	370	3,340
Purchase of property, plant and equipment	(5,604)	(11,959)	(107,747)
Proceeds from sale of property, plant and equipment	1,703	627	5,655
Purchase of intangible assets	(508)	(909)	(8,193)
Proceeds from sale of intangible assets	9	70	639
Purchase of equity instruments	(1,734)		
Payments for acquisition of subsidiaries	(42,299)		
Payments made for short-term loans receivable	(6)	(9)	(87)
Proceeds from collection of short-term loans receivable	11	10	98
Payments made for long-term loans receivable	(1)	(0)	(2)
Net cash used in investing activities	(48,058)	(12,218)	(110,080)
Financing activities:			
Proceeds from short-term borrowings	53,118	29,778	268,272
Repayments of short-term borrowings	(13,296)	(49,055)	(441,943)
Repayments of finance lease obligations	(75)	(71)	(644)
Proceeds from long-term borrowings	16,886	40,700	366,666
Redemption of bonds and repayments of long-term borrowings	(4,398)	(25,769)	(232,157)
Payments for purchase of treasury shares	(0)	(0)	(5)
Proceeds from sale of treasury shares		0	0
Dividends paid	(1,138)	(1,139)	(10,261)
Dividends paid to non-controlling interests	(80)	(136)	(1,228)
Payments for acquisition of interests in subsidiaries from non-controlling interests		(76)	(692)
Net cash generated by/ used in financing activities	51,015	(5,771)	(51,994)
Effects of exchange rate changes on the balance of cash and cash equivalents held in foreign currencies	302	(911)	(8,209)
(Decrease) increase in cash and cash equivalents	8,175	(4,825)	(43,473)
Cash and cash equivalents at the beginning of the year	25,919	34,095	307,164
Cash and cash equivalents at the end of the year	¥ 34,095	¥ 29,269	\$ 263,691

Company Information

As of December 31, 2018

Company Name	NIKKISO CO., LTD.
Head Office	Yebisu Garden Place Tower 22nd Floor, 20-3, Ebisu 4-Chome, Shibuya-ku, Tokyo 150-6022, Japan Tel: +81-3-3443-3711 Fax: +81-3-3473-4963
Date of Establishment	December 26, 1953
Paid-in Capital	¥6,544,339,191
Number of Employees	8,169 (Consolidated) 1,983 (Non-consolidated)
Fiscal Year	From January 1 to December 31

■ Major Group Companies

regions	Company Name	Location	Operations
Japan	Nikkiso Eiko Co., Ltd.	Higashimurayama-shi, Tokyo	Manufacture and sale of general-purpose small pumps and water filtration systems
	Nikkiso Giken Co., Ltd.	Hakusan-shi, Ishikawa	Development, manufacture, and sale of deep UV-LEDs and applied products
	Nikkiso Miyazaki Co., Ltd.	Miyazaki-shi, Miyazaki	Manufacture of aircraft components made of carbon fiber reinforced plastic (CFRP), special pumps for industry and other Nikkiso products
	Nikkiso-Therm Co., Ltd.	Musashino-shi, Tokyo	Manufacture and sale of precision thermistors and applied products
The Americas	Nikkiso America, Inc.	San Diego, U.S.A.	Administration and management of business planning at Nikkiso subsidiaries in the U.S. as well as development of new businesses for Nikkiso products in North, Central, and South America
	Cryogenic Industries, Inc.	Temecula, U.S.A.	Development of business strategies and management of the Cryogenic Industries Group, specializing in liquefied gas-related plant engineering as well as development and manufacture of related equipment and systems
	Nikkiso Cryo, Inc.	Las Vegas, U.S.A.	Manufacture, sale, and servicing of cryogenic pumps
Europe	LEWA GmbH	Leonberg, Germany	Manufacture and sale of industrial reciprocating pumps and pump systems
	Geveke B.V.	Amsterdam, Netherlands	Provision of solution services through development, designing, manufacture, and sale of system package products for pump compressors, etc.
	Nikkiso Europe GmbH	Langenhagen, Germany	Manufacture, sale, and maintenance of hemodialysis and blood purification-related products in Europe
Asia	Nikkiso Critical Care Medical Supplies (Shanghai) Co., Ltd.	Shanghai, China	Import, sale, and maintenance of critical care blood purification-related products in the medical business in China
	Shanghai Nikkiso Non-Seal Pump Co., Ltd.	Shanghai, China	Manufacture, sale, and maintenance of non-seal pumps
	Shanghai Nikkiso Trading Corporation	Shanghai, China	Import and sale of hemodialysis-related products and components in the medical business in China
	Weigao Nikkiso (Weihai) Dialysis Equipment Co., Ltd.	Weihai City, China	Manufacture, sale, maintenance of Nikkiso technology-based medical products in China
	Taiwan Nikkiso Co., Ltd.	Taipei City, Taiwan	Marketing, designing, manufacture, inspection, and test run of boiler water-conditioning systems for the Asian market
	M.E. Nikkiso Co., Ltd.	Chacheongsao, Thailand	Manufacture and sale of disposables parts for medical devices
	Nikkiso Medical (Thailand) Co., Ltd.	Bangkok, Thailand	Import, sale, and maintenance of Nikkiso dialysis machines, disposables, and other medical products in Thailand
	Nikkiso Vietnam, Inc.	Hung Yen Province, Vietnam	Manufacture of aircraft components
	Nikkiso Vietnam MFG Co., Ltd.	Ho Chi Minh City, Vietnam	Manufacturer of blood tubing lines for hemodialysis



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