

Hitachi Chemical Co., Ltd.
ANNUAL REPORT

2018

2017.4.1 ▶ 2018.3.31

HITACHI

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Working On Wonders

Surpassing conventional common sense and
going beyond the field of conventional chemistry,
our quest to create new “wonders” will be continued to
fulfill the dreams of customers and society.

“Working On Wonders” is Hitachi Chemical’s declaration
to continue creating wonders through the development
of innovative technologies and products for customers,
shareholders, business partners and local community members.

Organizations Covered

Hitachi Chemical Co., Ltd., its 96 consolidated subsidiaries and 2 equity-method associates and joint ventures (a total of 99 companies). (As of the end of March 2018)
When the Hitachi Chemical Group as a whole is indicated, the terms “Hitachi Chemical,” “the Hitachi Chemical Group,” “the Group” and “consolidated” are used. The terms “the Company” and “non-consolidated” refer to Hitachi Chemical Co., Ltd.

Reporting Period

Fiscal year 2017 (April 1, 2017 to March 31, 2018)

This report also contains information regarding events of particular importance that have occurred prior to or after fiscal year 2017. Please note that “fiscal year” and “FY” refer to accounting years from April 1 to March 31 of the following year.

Guidelines Consulted

International Integrated Reporting Council (IIRC) Integrated Reporting Framework
GRI Sustainability Reporting Standards
Ministry of the Environment of Japan Environmental Reporting Guidelines (2012 edition).

Forward-looking Statements

In addition to information of material fact regarding the past and present activities of Hitachi Chemical, this report contains forward-looking statements concerning future plans and forecasts. Forward-looking statements are assumptions and judgments based on information available at the time of publication. Therefore, future results of business activities and events may differ from forward-looking statements due to changes in a variety of factors.

Third-party Assurance of Environmental and Social data

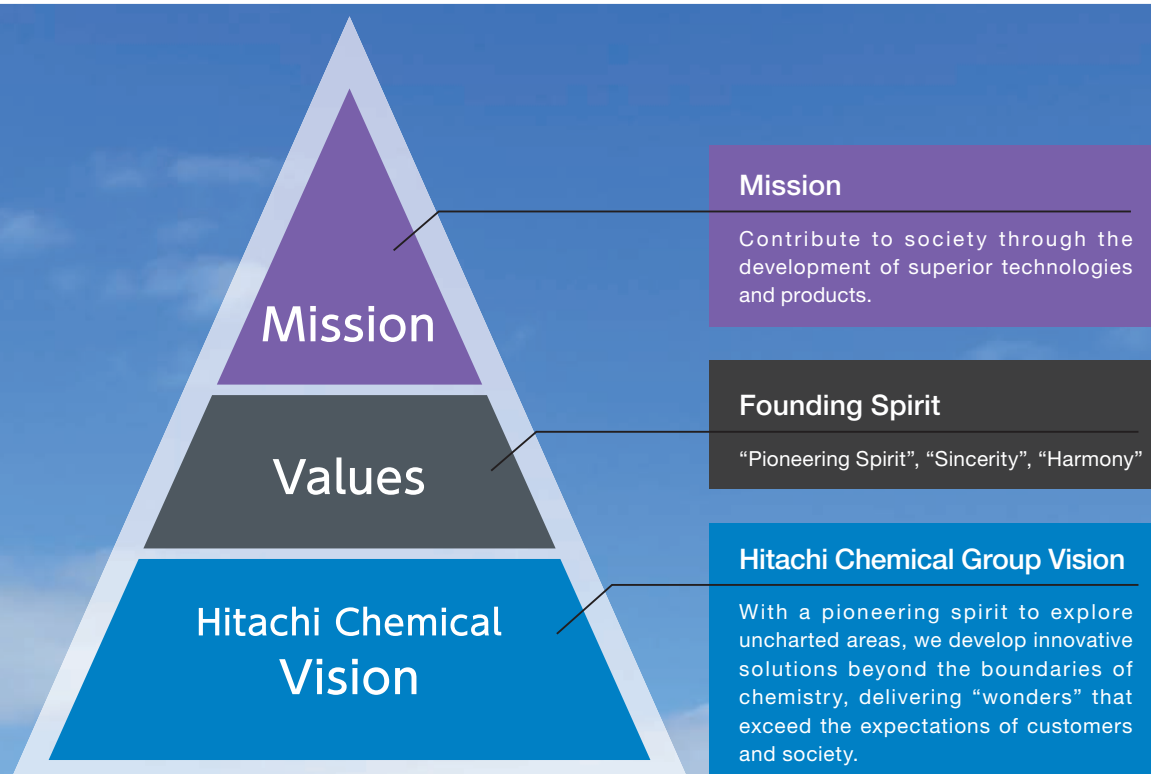
In order to enhance the credibility of the environmental and social data we disclose on our CSR website, we have engaged KPMG AZSA Sustainability Co., Ltd. to provide assurance as a third party with respect to some environmental and social data (energy consumption, greenhouse gas emissions, water consumption, VOC emissions, accident frequency rate, accident severity rate, and number and proportion of female managerial positions).



For GRI content index, refer to the
[Hitachi Chemical website](#) ▶ [About Hitachi Chemical](#) ▶ [CSR](#) ▶ [GRI Content Index](#).

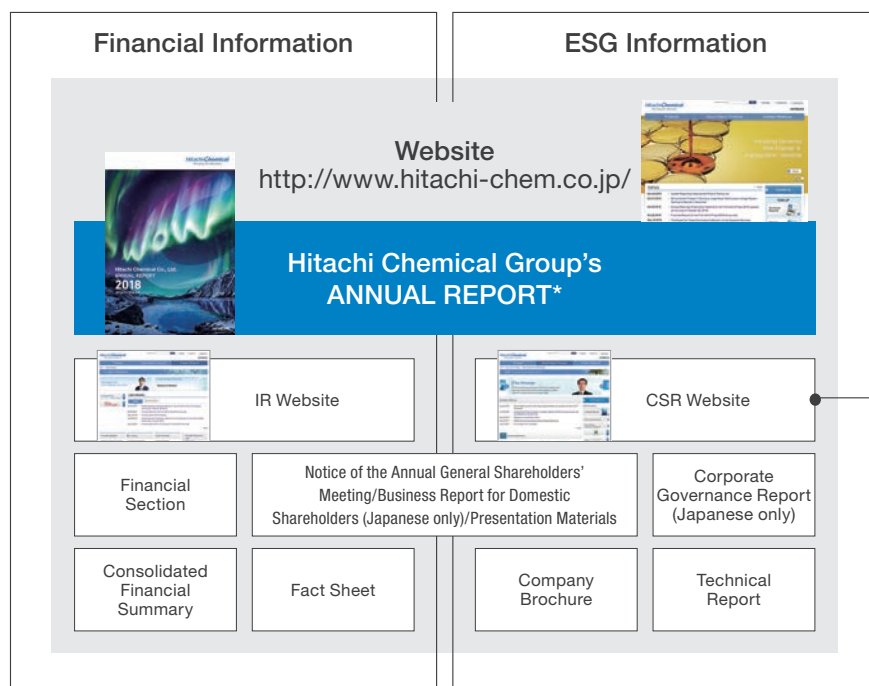


For a third party assurance report,
refer to the [Hitachi Chemical website](#)
▶ [About Hitachi Chemical](#) ▶ [CSR](#) ▶
[Third Party Assurance Report](#).



The “Hitachi Chemical Group Identity,” consisting of our “Mission,” “Founding Spirit,” and the “Hitachi Chemical Group Vision,” is the globally shared structure of our philosophy and values, established to strengthen our Group’s teamwork beyond regions and business fields.

Hitachi Chemical's Information Disclosure Tools



Editorial Policy

The Hitachi Chemical Group's Annual Report is published each year to help various stakeholders, including shareholders and investors, understand our activities aimed at fulfilling the Hitachi Chemical Group Vision. It is an integrated report covering our management strategy, financial information and information on environmental, social and governance (ESG) activities.

This Annual Report provides an overview of the Group's medium-term policy/strategy and value creation process, in addition to initiatives in its key businesses and ESG (Environmental, Social and Governance) activities. A wide range of detailed, timely information on Hitachi Chemical is disclosed on our website. Please also make use of our other information disclosure tools.

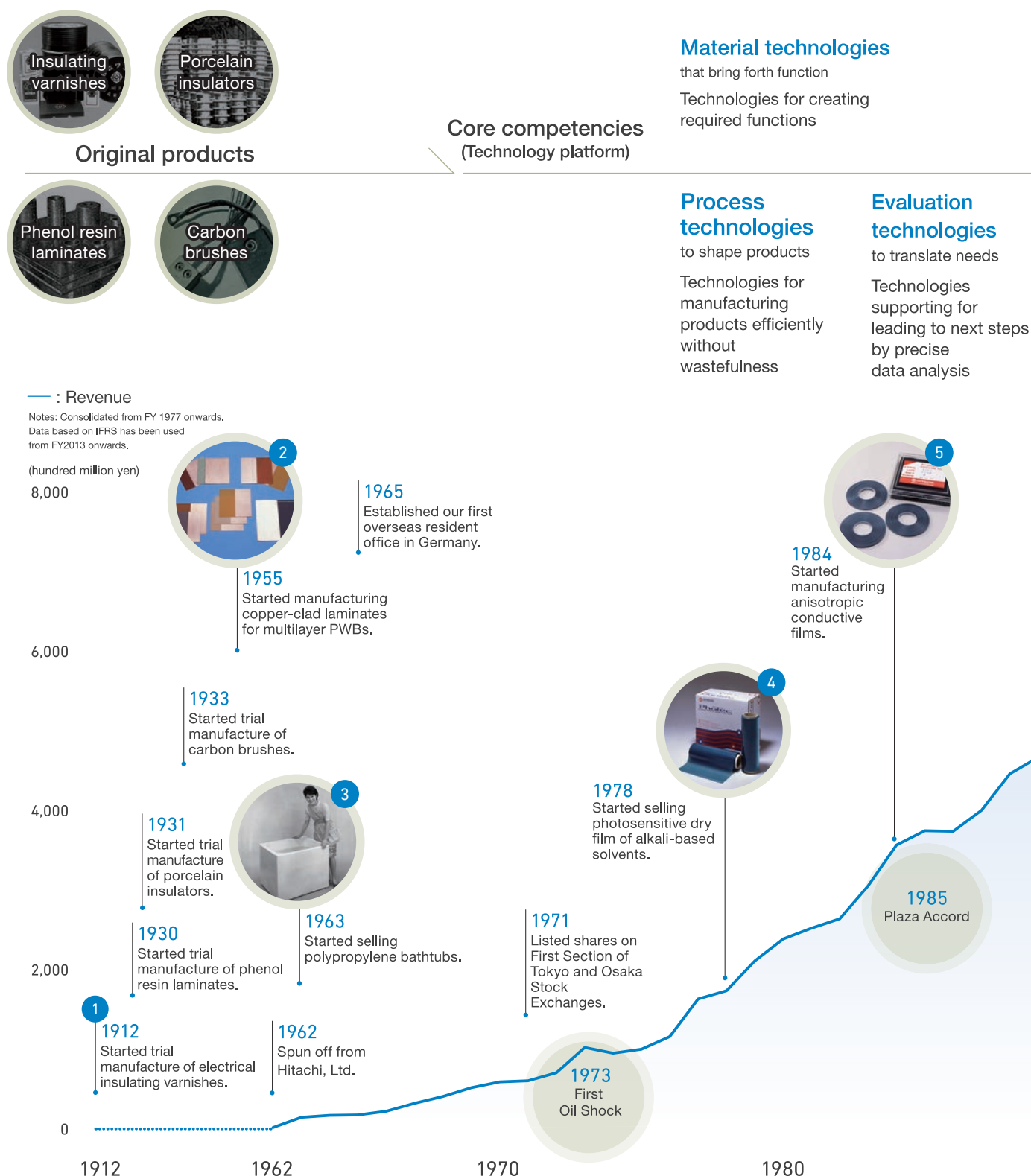
Extensive and detailed ESG information

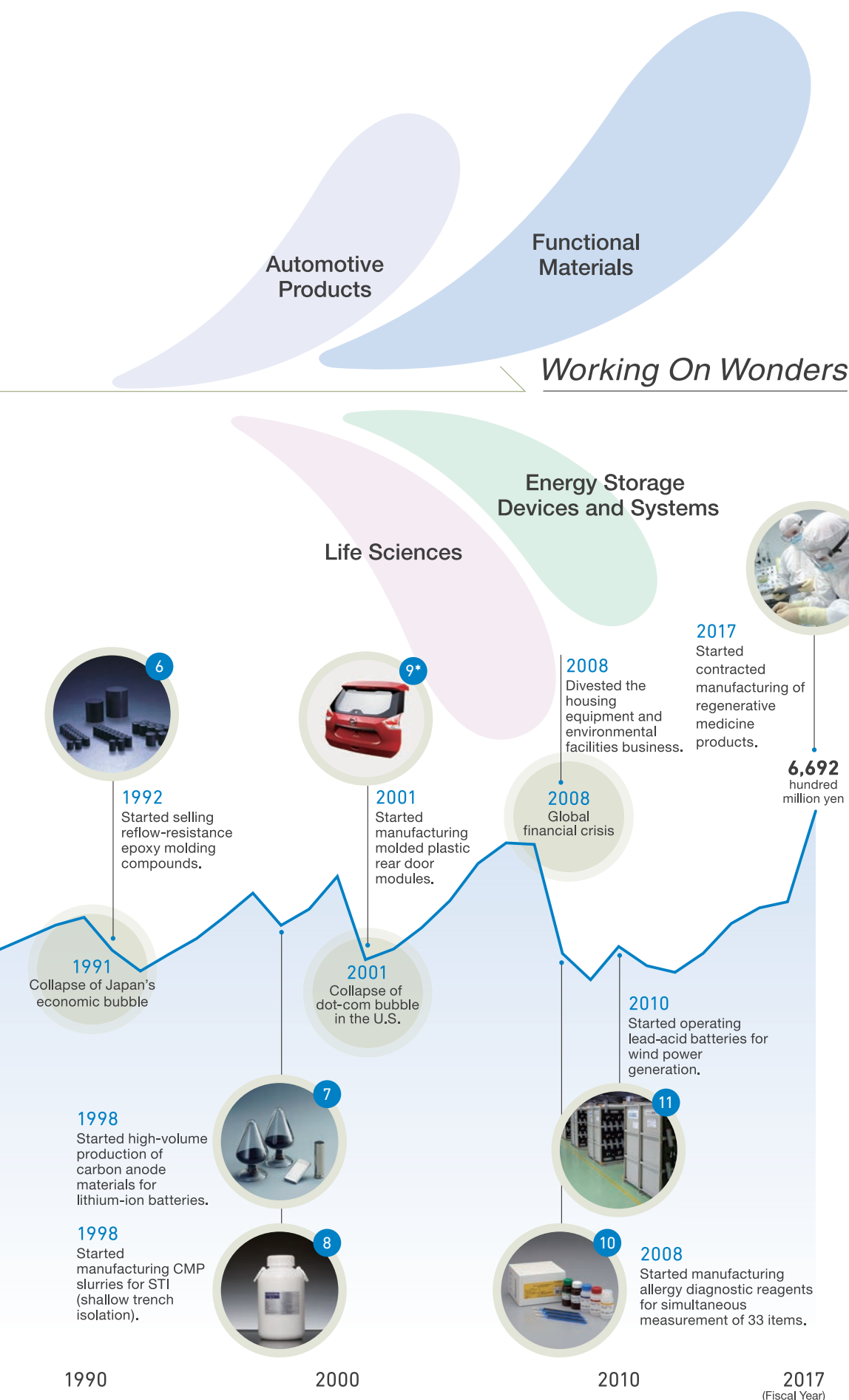
- Environmental report
- Social report
- Governance and CSR management
- ESG data

*For detailed financial information, please refer to the Financial Section and IR Website, and for detailed ESG information, refer to the CSR website, etc.

History of Explorations Taken on by Capitalizing on Core Competencies

Hitachi Chemical's core competencies have been established based on its in-depth know-how that straddles organic and inorganic chemistry amassed through its four original products, namely, insulating varnishes, phenol resin laminates, porcelain insulators and carbon brushes. The combination and integration of these technologies have led to the birth of numerous products.





Resolving social issues through
Hitachi Chemical products

(① through ⑪ on the timeline)

① Hitachi Chemical started research to become the first domestic producer of insulating varnish for motors, and succeeded in developing a varnish containing natural resin in 1914.

② This was developed for the "printed wiring method," replacing manual wiring of copper wires by hand soldering. It enabled the mass production of electronic circuits and contributed to the spread of TV sets.

③ Hitachi Chemical succeeded in the high-volume production of plastic bathtubs for the first time in Japan, where most bathtubs were made of wood at the time. This contributed to the spread of plastic bathtubs in households.

④ Hitachi Chemical developed and produced solvent-free products ahead of other manufacturers, foreseeing that environmental-friendliness would become a requirement in the manufacturing of electronic circuits in the coming era.

⑤ Hitachi Chemical realized the batch connection of wires at the micrometer level in LCDs. This enabled the high-volume production of LCDs with high picture quality and expanded their applications.

⑥ Hitachi Chemical resolved, the problem of cracking of sealing material caused by heat in the reflow soldering process for semiconductors. This enhanced the reliability of electronic equipment.

⑦ Hitachi Chemical developed high-capacity artificial graphite that reduces the frequency of re-charging. This accelerated the replacement of natural graphite with artificial graphite and contributed to the improvement of mobile terminals.

⑧ Hitachi Chemical developed unique cerium oxide particles that self-collapse while polishing wafer surfaces, which enabled higher density in semiconductors and also greatly reduced waste.

⑨ Hitachi Chemical succeeded in manufacturing molded plastic rear door modules for the first time in Japan, where such modules had been conventionally made of metal. This not only reduced weight but also gave much more freedom in design.

* Sample of molded plastic rear door

⑩ Hitachi Chemical made it possible to perform a test for many allergens simultaneously from a single blood sample. This has helped diagnose allergy diseases and contributed to the quality of life (QOL) of patients.

⑪ Hitachi Chemical developed a lead-acid battery with a long life that can endure irregular and frequent charging and discharging cycles. This contributed to the successful operation of Japan's first wind power station with output-power stabilization control.



For Hitachi Chemical Group's history, refer to
[Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [Corporate Profile](#) ▶ [Brief History](#).



President and
Chief Executive Officer
Hisashi Maruyama

Hisashi Maruyama

Our high value-added technologies and products will provide solutions to the social issues and our customers as we head toward “where we want to be in ten years’ time.”

Speeding up in the final fiscal year of the 2018 Medium-term Management Plan

When formulating the 2018 Medium-term Management Plan (FY2016-2018), we repeatedly discussed where the Hitachi Chemical Group should be in ten years. We used the “where we want to be in ten years’ time” as a foundation for breaking down the long-term plan into three-year periods for backcasting to understand what we should do at the present moment. Through this process we reached an answer: we want to become a company that is an active innovator going beyond the boundaries of chemistry, and based on advanced Functional Materials, operates globally in an extensive variety of businesses which encompass among others devices, systems and services. We set a goal of significantly increasing our sales revenue and achieving an operating margin of 14% or more by transcending the boundaries of chemistry and expanding our potential beyond BtoB to BtoC. If we achieved this, rivaling global chemical companies would no longer be a dream but a reality.

Hitachi Chemical has been growing by standing alongside its customers, assessing their needs and providing them with solutions, while leveraging its three technology platforms of material technologies, evaluation technologies and process technologies as core competencies. However, with the awareness that it will be difficult to arrive at “where we want to be in 10 years’ time” solely with these strategies amid the drastically changing market environment, we are working on a new business approach for increasing our business conceptualization abilities, such as an ability to discover the true needs of customers and design businesses.

In the 2018 Medium-term Management Plan, which was formulated by



For information on the 2018 Medium-term Management Plan, refer to P.25-28.



For information on “where we want to be in ten years’ time” refer to P.23.



For core competencies, refer to P.03-04.

2018 Medium-term Management Plan Targets

	FY2017 result	FY2018 forecast	FY2018 target
Revenue	669.2 billion yen Up 20.8% year on year	710 billion yen	CAGR 7-8% Target from FY2015 to FY2018
Operating Margin	6.9%	8.3%	11%

backcasting from “where we want to be in 10 years’ time” we are working to promote open innovation through activities such as the acceleration of growth through the acquisition of technologies and business foundations from the outside, the acceleration of commercialization through collaborative creation with outside resources, and the expansion of global, top market share business through our Niche and Cluster Strategies; that is, by transforming businesses into niche businesses with high profitability and a strong growth rate, and into business cluster where strategies for global success can be shared by the groupings of several product families through the exercising our comprehensive strengths.

Expanding our growing operations in this one-year period



For progress on the 2018 Medium-term Management Plan, refer to P.25-28.

PMI
Post-merger Integration

In fiscal 2017, our M&A efforts in business areas such as Automotive Products, Energy Storage Devices and Systems, and Life Sciences bore fruit and our operations expanded. As a result, our sales revenue sharply rose by more than 100 billion yen versus the previous year and reached a record-high of 669.2 billion yen (20.8% increase from the previous year). We saw consistent growth in the last year and achieved greater profit even without the non-continuous part resultant from M&A.

However, some issues remain and need to be addressed in fiscal 2018. In the last two years, we have constructed a system for increasing sales revenue but our operating margin in fiscal 2017 was 6.9%, which did not increase as planned. This is attributable to the fact that we were not able to properly pass the rise in raw material prices onto products prices, and due to reasons such as a sharp decrease in the demand for smartphones and the delay in the creation of synergies with new consolidated Group subsidiaries unexpectedly slowed the increase in our profits around the end of the term. Given that revenue growth means that a base for increasing profits has already been set in place, it is an issue for fiscal 2018 to increase profit corresponding to the increase in revenue. For our new consolidated Group subsidiaries, we will facilitate PMI, leading to the early creation of synergistic effects. Also, we will aggressively invest in areas of growth in our existing businesses. In this way, we will strive to further solidify our growth. We will also strive to establish a profit structure that is less susceptible to influences from fluctuations in raw material prices.

With these initiatives, we are likely to achieve CAGR of 7-8% of revenue, the target for the final year of the 2018 Medium-term Management Plan. While achieving the initial target of 11% for operating margin is difficult, recovery to 8.3% is expected.

Ensure consistent improvement of our profitability



Facilitate continued growth in four businesses as we head toward where we want to be in ten years' time

Looking back on the businesses in fiscal 2017, our advanced Functional Materials business enjoyed strong market conditions for semiconductor materials and the success of our Cluster strategy. Among our Niche products, CMP slurry has gained an established reputation and become a de facto standard item, which resulted in more orders and increased our profits. In the domain of semiconductor packages, we have already seen some cases where our products were designated as de facto items for major customers. Moreover, sales of our anode material for lithium ion batteries, which boast one of the world's largest shares in the market for vehicle-mounted applications, also increased significantly.

In Automotive Products, an increase in revenue of high value-added products led to increased profits. These products include, among others, exterior molding for automobiles and environmentally conscious disc brake pads. The former involves the use of our Group's unique foaming and molding resin technology that has achieved weight-saving and strength compatibility while the latter complies with the regulation of copper content, which will be introduced in the U.S. in 2021. In the future, we will proceed with environmental actions more strongly, and, among other activities, the Group will unite on project for automatic operation and increasing the reliance of automobiles on electronics. Last year, we acquired ISOLITE, a company in Germany that develops, manufactures and distributes thermal insulation parts for automobiles, aircraft and other industrial applications. With ISOLITE as a new business base, we will strengthen the expansion of our sales to European automobile manufacturers. In the Energy Storage Devices and Systems business, we were affected by a rise in the price of lead, a raw material, in the previous fiscal year. However, we were able to focus on the construction of a business foundation, which is less affected by lead prices. Now a framework for developing the battery business globally, which was previously operated mainly in Japan, has been set in place due to FET joining Hitachi Chemical Group in fiscal 2016 and TSB who joined the Group in fiscal 2017. In fiscal 2018, we will strengthen our product lineup, which makes maximum use of the TSB's 3K brand and the Hitachi Chemical brand. We are confident that our operation can expand in this business area while strengthening our earnings power.

TOPICS

1

For the better realization of a sustainable environment

- Accelerating the development and commercialization of products based on the demands for environmental soundness

We will stimulate the development and commercialization of Automotive Products by adapting them to meet the growing market needs for factors such as fuel efficiency, environmental responsiveness. Hitachi Chemical was the first in the world to develop resin projection foam molding technology, which can be applied to automotive exterior parts. The technology was introduced to Serena, a new minivan model manufactured and launched by Nissan Motor Corporation in August 2016, and to Subaru XV, a new SUV model launched in May 2017. Hitachi Chemical extensively produces functional components such as resin inverter housings. With newly added technologies, we will pursue the global market expansion for our Automotive Products. Our copper-free friction materials have a copper content below 0.5%, and these were introduced in the Ford Motor Company's Fusion in July 2017. We will become structurally capable of producing and supplying friction materials, such as copper-free friction materials, in Japan, China, Thailand and Mexico and pursue the continued expansion of their share, which will increase in demand.



For detailed information on the outcomes and strategies for our four businesses in the 2018 Medium-term Management Plan, refer to [P.29-36](#).



For detailed information on ISOLITE, refer to [P.31](#).



For detailed information on FET and TSB, refer to [P.33](#).

Resin inverter housing

A resin inverter housing, a resin case, has built-in electric power elements and circuits used for inverters for eco-friendly HEVs (hybrid electric vehicles) and EVs (electric vehicles), and is also equipped with a connection function.

Copper-free friction materials

The U.S. announced regulations to control the copper content in friction materials. Similar regulations may also be imposed in Europe. The copper-free friction materials developed by Hitachi Chemical are equivalent to conventional friction materials in terms of performance and also allow for noise reduction. They may be used in electric vehicles with little noise during operation.



For detailed information on HCATS and Kyowa Medex Co., Ltd., refer to [P.35](#).



For the following details, [refer to the Hitachi Chemical website ► About Hitachi Chemical ► News Releases](#).

Feb.05.2018: Hitachi Chemical Licenses Patents and Know-How for Technologies Relating to Stem Cell Culture Media/Stem Cell Culture Methods from Accellta in Israel

Mar.13.2018: SanBio Reaches Agreement on Manufacture of Regenerative Medicine Product SB623 with Hitachi Chemical

Mar.19.2018: Hitachi Chemical Signed Agreement for Clinical Manufacturing of Regenerative Medicine with Daiichi Sankyo

Accellta Ltd.

Accellta Ltd. was founded on the results of 20 years of advanced research and the development of stem cells at Technion - Israel Institute of Technology. The company developed a method of culturing media and stem cells that allows for the high-speed culturing of a large quantity of stem cells. The technology is highly regarded and is patented in many countries.

Culture medium

This is used for the cultivation of cells, among other things. It is a liquid or solid material that contains the nutrients necessary for cultivation.

SanBio Group

SanBio Group engages in the research, development, production and sales of regenerative cell medicine. Bilateral efforts are under way in the U.S. and Japan for the development and launch of SB623, which is a product with applications such as regenerative medicine, and is expected to stimulate the regeneration of neural function in CNS diseases.

Lastly, our Life Sciences business is consistently showing successful results based on the policy of investing in the future and expanding the business. We have advanced into the contract manufacturing business for regenerative medicine by acquiring PCT (now HCATS) in the United States in May 2017. Currently, large orders for commercial production in 2019 and 2020 are coming from companies such as SanBio Co., Ltd. and Daiichi Sankyo Co., Ltd. With fewer competitors, the life science business is very promising and we expect significant growth in this area. Additionally, in the field of diagnostic reagent business, we made [Kyowa Medex Co., Ltd.](#) a subsidiary in January 2018 due to the company's strengths in its lineup of many different diagnostic reagents. Significant synergistic effects are expected, including the enhancement of overseas business development that takes advantage of the sales networks of the Hitachi Chemical Group in the United States, Europe and Southeast Asia, and the promotion of sales of Hitachi Chemical's diagnostic reagents through leveraging the sales network of Kyowa Medex in Japan.

TOPICS 2

Aiming to improve patients' quality of life (QOL)

- Contributing to cutting-edge medical services

Industries relating to regenerative medicine are expected to grow into a 15 trillion yen market by 2050. Hitachi Chemical utilizes its material technology capabilities and aims to establish highly safe products with excellent quality and expand its related businesses. In February 2018, Hitachi Chemical concluded a technical license agreement with Accellta Ltd. on the methods for making a [culture medium](#) for stem cells and for culturing stem cells, thus acquiring a license for the latest culture medium. In this way, Hitachi Chemical's technology capabilities in the contract manufacturing business will be strengthened, and the higher quality and lower cost of cell manufacturing will be promoted. In March 2018, [we concluded an agreement with SanBio Co. Ltd. on the partnership for the manufacturing of SB623, a product for applications such as regenerative medicine, independently developed by SanBio Group](#). We are aiming for its initial launch in Japan by using the conditional and fixed-term early approval system for regenerative medicine and other equivalent products in Japan. Furthermore, [we concluded an agreement on contract production in Japan with Daiichi Sankyo Co., Ltd. in March 2018](#).



Strengthen our financial strategies by foreseeing mid- and long-term growth

Expect growth and a higher profit rate by introducing an aggressive financial strategy

For fiscal 2018, we are planning to invest 60 billion yen in equipment. Considering that our annual investment amount in the 2000s was around 30 billion yen, our willingness to invest in the recent years is understandable. Hitachi Chemical's capital cost ranges between 6 and 7%. As interest rates remain at a historically low level, it is necessary to strategically raise funds to ensure the growth of our operations. Based on this idea, we issued a 20 billion yen bond in fiscal 2017. As a result, the ratio of interests of shareholders of the parent company reached 57%. In fiscal 2018, capacity augmentation and efficiency will be our priorities for equipment investment, and we are planning to construct a new plant to increase the production of the products that make up our strengths.

From the perspective of efficiency of invested capital, the business management of Hitachi Chemical also places importance on ROIC. To efficiently connect capital to profits, the entire Hitachi Chemical Group will manage this index and will increasingly keep an eye on the asset turnover rate and the need for the disposal of assets.

Our dividend-related policy will be based on achieving a stable dividend with a dividend payout ratio of around 30%. Recently, the position of major institutional investors has been changing and we are receiving more requests for investing in mid- and long-term growth strategies instead of buying back our stocks. As President and CEO, I am determined to create an expansive scenario that will help to meet expectations. Additionally, I am willing to talk with investors about the direction of our growth strategies.



For detailed information on equipment, refer to P.26.

ROIC

Return on invested capital. This is an index for determining the extent of how efficiently a business enterprise's investment in its own business activities leads to profits.

2018 Medium-term Management Plan Targets

ROIC	ROE	CO ₂ Emissions ^{*1}	Proportion of Female Managerial Positions ^{*2}
FY2017 result	FY2017 result	FY2017 result	FY2017 result
7.7%	9.4%	96%	7.9%
▼	▼	▼	▼
FY2018 target	FY2018 target	FY2018 target	FY2018 target
15%	12%	96%	12.0%

*1: CO₂ emissions: Per unit of sales compared to the FY2014 results (major production sites including Group companies (Japan only))

*2: Proportion of female managerial positions: Non-consolidated, under age of 45



The entire Group concerts efforts to facilitate ESG management

We will contribute to the environment and society with our operations

Sustainable engineering

Sustainable engineering is an accumulation of Hitachi Chemical's technologies involving the minimization of adverse effects and environmental burden from the stages of R&D, product planning and design through the combination of technologies with an aim to contribute to society and the environment as well as to enhance our corporate value.



For our Global Coaching Program, refer to [P.38](#).



For detailed information on our Carbon Management Strategy, refer to [Hitachi Chemical website](#)
▶ [About Hitachi Chemical](#) ▶ [CSR](#)
▶ [Environmental Report](#) ▶
[Minimizing the Environmental Impact of Our Business Activities](#).



For detailed information on reduce CO₂ emissions, refer to [P.37](#).

It is meaningless if our operations and ESG management make progress in different dimensions. The operations of Hitachi Chemical must be environmentally friendly and contribute to society. Based on this idea, Hitachi Chemical has developed sustainable engineering. If each of our staff members becomes aware, proud and happy about contributing to society, this will ultimately transform how we work.

Hitachi Chemical has introduced AI and robots to its indirect operations and production practices thus streamlining production while pushing forward with efforts to reduce the total workload by optimizing business processes. In the days ahead, we will expand overseas in an effort to enhance our productivity on a global scale. In Japan, initiatives such as telework have already been extensively introduced. However, efforts to make such initiatives more readily available still leave room for improvement. Therefore, we will rationally reduce the total workload, clarify the roles shared among staff members, and introduce an assignment method that will help to increase work satisfaction. To this end, we will continue to develop a workplace environment where communication between superiors and subordinates can be stimulated through our Global Coaching Program and its members, and based on our motto of "Develop a culture of dialogue and taking on challenges." The 2018 Medium-term Management Plan includes a goal for raising the proportion of female managerial positions under the age of 45 to 12%. To achieve the target, we will showcase a guideline for specific educational and other methods to staff members with the aptitude for a managerial-level position, and we will develop a continuous follow-up system for these individuals.

Utilizing Carbon Management Strategy in our business management

As part of the actions to reduce CO₂ emissions, we use Carbon Management Strategy. This method involves converting CO₂ emissions into an amount of money, deducting it from profits and using it for internal management. This helps to raise awareness about CO₂ reduction in our businesses. In fiscal 2017, we used this decision-making method on issues such as energy-saving investments, and successfully achieved our target for CO₂ emissions set forth in the 2018 Medium-term Management Plan. In the days ahead, we will further strengthen

our efforts to reduce CO₂ emissions throughout our supply chain and making maximum use of our sustainable engineering to achieve the long-term environmental targets and SDGs of the Hitachi Group as a whole. Conventionally this method of Carbon Management Strategy was limited to Japan but in fiscal 2017 it was also applied to China. In fiscal 2018, the application of Carbon Management Strategy will be extended to our Group companies in other countries.

Lively exchange of opinions between Directors and Executive Officers meant to facilitate healthy management

The governance of Hitachi Chemical is based on the separation of supervision and execution functions. The Board of Directors plays a supervisory function. In an effort characteristic of Hitachi Chemical, the Outside Directors, who are on our Audit Committee, sequentially visit our Group companies, including those overseas, and provide feedback to our Board of Directors.

In my view, the Board of Directors of Hitachi Chemical is more vigorous than in other companies with our Board of Directors exchanging many opinions. In our monthly Board of Directors Meeting, Executive Officers report on the status of operations of respective divisions and Directors give advice. In addition, Directors and Executive Officers have off-site meetings on topics such as basic management policies and the Medium-term Management Plan for the next business period. The Directors and Executive Officers exchange opinions with an aim to ensure healthy management.

Also, supervision of the successor training plan is one of the roles of the Board of Directors. Based on the advice from Nomination Committee, the Board discusses the requirements for presidential candidates, plans for the training of candidates and other topics in order for Directors to be deeply involved in the training of our future leaders. We currently have candidates for Executive Officers and nominees for presidential candidates. Through discussions with outside managers and training sessions, these candidates are learning more than just management theory; they are acquiring greater depth and versatility in their personalities and developing the culture and aptitude to be managers.

Strengthen our group governance

As we recently announced, it has been ascertained that inappropriate data entries were made in inspection reports submitted to customers regarding certain products among lead-acid batteries for industrial use manufactured at our Nabari Works (Nabari City, Mie Prefecture).

We deeply apologize for the significant inconvenience caused to our customers and all other persons concerned.

The Hitachi Chemical Group has established a special investigative committee that includes outside experts and is thoroughly investigating the causes. After receiving an investigative report from the committee, we will announce the details again after figuring out the specific issues and taking measures to prevent a recurrence. We will do our utmost to restore customers' trust by conducting a fundamental review of the quality control structure and focusing on the further strengthening of compliance.

Regarding our past cartel behavior in the capacitors business of the Group, we have been cooperating fully in the investigation since 2014, and financial penalties and compensation for damages of around 11.6 billion yen have been

SDGs

Sustainable Development Goals

A collection of 17 global goals and 169 targets to transform a sustainable world. This was stated in "The Agenda for Sustainable Development" adopted by 193 countries at the United Nations General Assembly to achieve the goals in 15 years, from 2016 to 2030.



For our governance, refer to [P.39-46](#).



For our successor training plan, refer to [P.42](#).



For the following details, refer to the [Hitachi Chemical website](#) ▶ [About Hitachi Chemical](#) ▶ [News Releases](#). Jun.29.2018: Inappropriate Entries of Figures in Inspection Reports of Some Products among Lead-acid Batteries for Industrial Use



For the past cartel actions concerning our capacitors, refer to [P.44](#).

imposed on us. While this was a case that occurred before 2010, we have established measures to prevent a recurrence as a concerted effort of the Group while keeping firmly in mind that the misconduct of only a few people could result in an enormous loss.

After M&A and other measures, many like-minded companies joined the Hitachi Chemical Group and the consolidated number of employees in Hitachi Chemical now exceeded 20,000. Due to this, occupational safety and compliance are the cornerstones of management. Through meetings and messages, I will continue to communicate the importance of labor, safety and compliance. The rules at Hitachi Chemical will be spread, including to new Group companies, in an effort to strengthen governance.

Develop businesses that will help to address future social issues

Our 10-Year Strategy aims to facilitate businesses that help to address social issues and enhance our corporate value on a long-term basis while keeping SDGs in mind. To spread awareness, the Group Environment and CSR Committee holds quarterly meetings to share our track record of sustainable engineering activities that contributes to the resolution of environmental issues with products and services. During the meetings, I feel that the idea of materiality for long-term growth is gradually spreading within the Group. Through materiality analysis, we will formally analyze the relationship between Hitachi Chemical's businesses and social issues and reflect Hitachi Chemical's attitude toward the social issues in our 2021 Medium-term Management Plan. At the same time, I want all of our employees to have a sense of contributing to society.



For sustainable engineering, refer to the Hitachi Chemical website ► About Hitachi Chemical ► CSR ► Social Report ► Pursuing Customer Satisfaction.



For detailed information on materiality analysis, refer to P.19-20.



For 2021 Medium-term Management Plan, refer to P.28.

TOPICS 3

Contribution to SDGs through businesses (Regenerative medicine business)

Outline of the business

Regenerative medicine involves transplanting cells into the body, for example, by culturing cells outside the body to facilitate the recovery of organs and immune system damaged by an injury or illness. Hitachi Chemical has two facilities in the U.S. and one in Japan for the culturing and processing of cells. Hitachi Chemical also globally develops methods for creating products such as cells for regenerative medicine and undertakes their contract production.



Contribution to achievement of SDGs (business opportunities)



Social issues

Improvement of patients' quality of life (QOL) over lifestyle-related diseases, cancer and other intractable diseases associated with the aging society

Solutions

Development of minimally-invasive and radical approaches to regenerative medicine that would serve as an alternative to the conventional practice of surgical treatment, chemotherapy and others

Expected effects

- Improvement of quality of life (QOL) through the reduction of physical and financial burdens on patients
- Reduction of expenses for healthcare and nursing care through radical treatments

Creating a corporate culture for exploring new business directions

Under the slogan of “Working On Wonders,” Hitachi Chemical continues to take on challenges every day to provide new value to our stakeholders. We hold the WOW Global Awards every year to create a climate of taking on challenge for our future. This is part of the WOW-BB activities that we began conducting on the 50th anniversary of Hitachi Chemical’s founding. This year, more than 900 entries were registered from the Group companies around the world, and a range of challenges were taken on. The challenge entry qualifications are as follows: A challenge is an effort that falls under any of Hitachi Chemical’s five challenges, and can also walk the talk. We will continue to materialize wonders that exceed the expectations of customers and society by further deepening our culture of dialogue and taking on challenges.

TOPICS

4

Outline of WOW Global Awards 2017

In fiscal 2017, 945 teams around the world, comprising 64% of all employees, participated in the WOW Global Awards, marking its fourth year. In the final selection in May 2018, 10 teams gave a presentation, and four projects were selected as Gold Award winners after careful consideration by the Executive Officers. At the venue, there were approximately 300 employees participating from eight regions including China, Malaysia, Singapore, Indonesia and Thailand and other countries. Scenes from the venue were broadcast live to 22 locations of the Group, and many colleagues watched the broadcast.



Remain as a company that is needed for the trends of the times

In the last 30 years, our revenue has more than tripled and our profit rate has also increased dramatically. This is proof of our growth in which our operations have focused on the growing markets of the time and our strength in material technology has been maximized. Today, Hitachi Chemical’s products are needed for the advancement of automatic automobile driving and EV-related technologies as well as for the sophistication of IT communication technologies. This represents a tail wind for us.

We will continue to accurately identify market trends and remain committed to the creation of new products and businesses using our core technologies. To this end, I would like to have meaningful discussions for growth with our stakeholders. We greatly appreciate your understanding of our direction and policies as well as your advices and opinions regarding our future.

WOW-BB activities

Working On Wonders Beyond Boundaries Activities. WOW-BB activities are activities in which all employees participate to realize the Hitachi Chemical Group Vision.

Hitachi Chemical’s 5 challenges

- 1 Discovering potential needs
- 2 Designing future scenarios
- 3 Developing the next core technology
- 4 Becoming a globally competitive firm
- 5 Building a co-creative work style

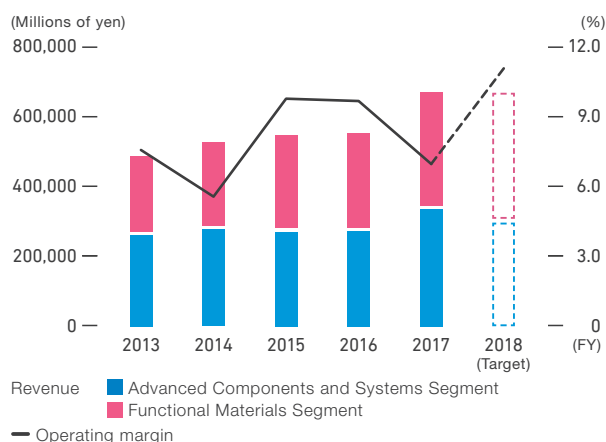
Gold Award challenge winners

- Development of an automated and consistent line for ABS* cases
- Pioneer the future of clean diesel
- Barbapapa color food wrap (emphasizing the familiarity of and affinity for Hitachi Chemical through the development of food wrap)
- Five-year plan for a packaging plant (2015 - 2017): Final part of assigning an entire workforce to the day-shift

*Anti-lock Braking System

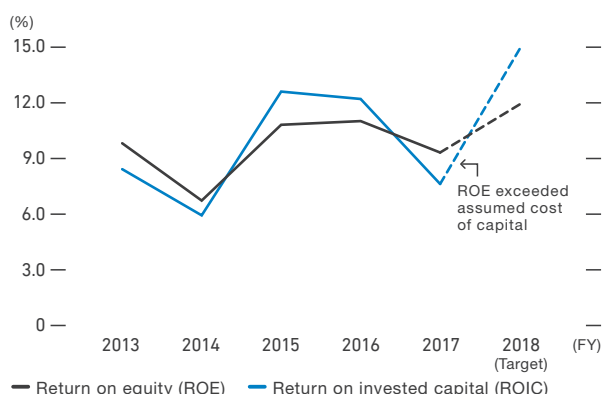
Trends in Management Indicators

Revenue/Operating margin



Revenue increased significantly due to a rise in demand for semiconductor materials, copper-clad laminates and lithium-ion battery (LiB) carbon anode materials and an increase in new consolidated subsidiaries as a result of M&A. Profit declined due to the posting of expenses such as financial penalties for past cartel acts in the capacitor business of the Group, in addition to the insufficient exertion of synergy effects with new consolidated subsidiaries as a result of M&A and rising raw material prices, despite factors for higher profit such as an increase in the amount of materials and continuous cost reductions.

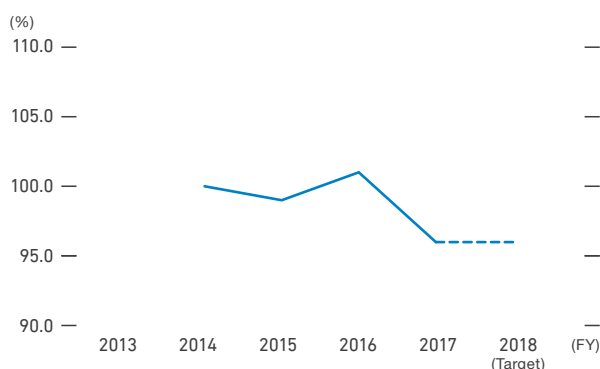
ROE/ROIC



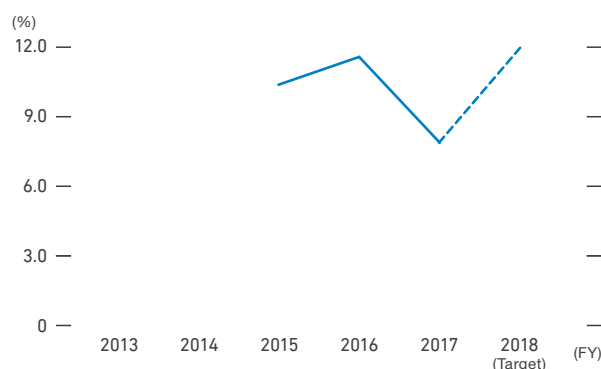
ROIC declined due to a delay in the response to rising raw material prices and the imposition of financial penalties for cartel acts, despite the expansion of business assets due to M&A. ROE also decreased due to the delay in the response to rising raw material prices and the insufficient exercise of synergy effects with new consolidated subsidiaries. In fiscal year 2018, we will take measures to improve the rate of cost shifts to prices and reduce gaps in the collection period in response to rising raw material prices and increase productivity by reviewing manufacturing in order to exert synergy effects with new consolidated subsidiaries.

Financial Data	FY2012 (JGAAP)	FY2013 (IFRS*1)	FY2014 (IFRS)	FY2015 (IFRS)	FY2016 (IFRS)	FY2017 (IFRS)
Revenue (Millions of yen)	464,655	488,725	526,687	546,468	554,144	669,234
Functional Materials Segment (Millions of yen)*2	245,157	261,179	277,127	269,769	272,994	297,051
Advanced Components and Systems Segment (Millions of yen)*2	219,498	227,546	249,560	276,699	281,150	372,183
Overseas share of revenue (%)	46.7	51.1	53.6	58.3	58.0	62.9
Operating income (Millions of yen)	23,559	36,569	29,226	53,036	53,152	46,219
Operating margin (%)	5.1	7.5	5.5	9.7	9.6	6.9
Functional Materials Segment (%)*2	8.7	9.8	8.5	14.3	16.2	15.8
Advanced Components and Systems Segment (%)*2	1.0	4.8	2.3	5.2	3.1	(0.2)
Net income attributable to owners of the parent (Millions of yen)	18,818	29,464	22,587	38,512	40,186	36,324
Net income attributable to owners of the parent to revenue (%)	4.0	6.0	4.3	7.0	7.3	5.4
Return on equity (ROE)(%)	6.4	9.9	6.8	10.9	11.0	9.4
Return on invested capital (ROIC)(%)	5.0	8.5	6.0	12.7	12.3	7.7
Return on assets (ROA) (%)	4.1	6.2	4.4	7.1	7.0	5.5
Debt/Equity attributable to owners of the parent ratio (DER) (Times)	0.2	0.2	0.2	0.2	0.1	0.3
Dividend payout ratio (%)	42.1	25.4	33.2	27.0	28.5	34.0
R&D expenses (Millions of yen)	25,534	26,234	26,920	27,816	28,164	30,839
R&D expenses to revenue (%)	5.5	5.4	5.1	5.1	5.1	4.6
Capital expenditures (Millions of yen)	46,698	31,935	26,643	32,022	39,859	42,589
Cash flows from operating activities (Millions of yen)	47,931	50,357	34,009	95,069	60,819	34,916
Cash flows from investing activities (Millions of yen)	(53,182)	(37,099)	(22,258)	(35,663)	(34,606)	(87,802)
Cash flows from financing activities (Millions of yen)	(2,867)	(2,374)	(16,874)	(22,123)	(36,476)	28,932
Cash and cash equivalents at fiscal year-end (Millions of yen)	73,978	87,652	88,997	119,988	107,649	84,037

*1: Data based on IFRS has been used from FY2013 onwards. *2: For detailed information on both segments, refer to page 17.

CO₂ emissions per unit of sales (relative to FY2014) ^{*3}

*3: Data covers major domestic production sites.

Proportion of female managerial positions (under age of 45) ^{*4}

*4: Non-consolidated, under age of 45

In the previous fiscal year, while the targets in the medium-term management plan were not achieved temporarily due to external factors including the product line and climate conditions, we were able to achieve the targets for fiscal year 2018 ahead of schedule in fiscal year 2017, overcoming the deterioration in the previous fiscal year, as a result of continuously implementing realistic energy-saving activities mainly at production sites. We will continue to aim to further reduce emissions per production unit in the final fiscal year by maintaining the promotion of energy-saving activities and further strengthening the Carbon Management Strategy on a Company-wide basis.

While the proportion of female managerial positions is still low, we have been hiring female employees in career-track positions in earnest since 2005 and taking a range of measures by setting the medium-term goal of maintaining the same proportion of female managerial positions as the proportion of female employees in career-track positions at the age of managerial appointment. Since the previous fiscal year, the number of employees who were over this age exceeded those who were newly appointed as managers, and the proportion of female managerial positions therefore declined. However, given that the proportion of female assistant managers is growing as we maintain individual development plans for candidates for female managers to build a pipeline, the proportion of female managerial positions is expected to increase in the years to come.

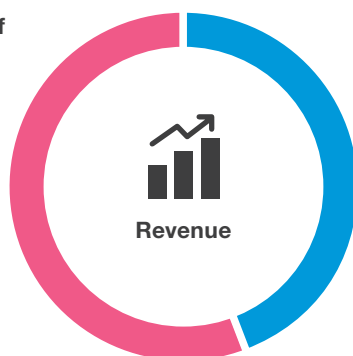
ESG Management Data ^{*5}	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Revenue of Environmental Conscious Products to total revenue (%) ^{*6}	71	66	70	74	69	58
Environmental investment (Billions of yen)	4.6	6.2	6.1	5.0	6.7	5.6
Energy consumption (TJ) ^{*7}	9,043	8,630	9,369	8,497	10,312 ^{*8}	10,446 ^{*8}
Greenhouse gas emissions (1,000 tons CO ₂ e) ^{*7}	474	495	541	482	590 ^{*8}	590 ^{*8}
Greenhouse gas emissions per production unit (Tons CO ₂ e per million yen) ^{*7}	1.27	1.43	1.40	1.32	1.41 ^{*8}	1.23 ^{*8}
CO ₂ emissions per unit of sales (Percentage relative to FY2014) (%) ^{*3}	-	-	100	99	101	96
Water consumption (1,000m ³) ^{*7}	11,371	10,970	10,672	9,311	9,725 ^{*8}	9,761 ^{*8}
Volatile organic compound (VOC) emissions (Tons) ^{*7}	518	506	577	519	725 ^{*8-9}	793 ^{*8-9}
Number of participants in chemical substance management training (Persons)	-	710	374	400	460	304
Number of supplier audits (non-consolidated) (Companies) ^{*10}	96	89	73	137	162	147
Number of employees (outside Japan) (Persons)	17,732 (6,963)	18,149 (7,530)	19,499 (10,207)	19,117 (9,920)	20,043 (10,922)	22,623 (13,148)
Proportion of female managerial positions (non-consolidated) (%) ^{*10}	1.8	1.9	2.0	2.7	3.1	3.1
Proportion of female managerial positions (under age of 45) ^{*10}	-	-	-	10.4	11.6	7.9
Proportion of female assistant managers (non-consolidated) (%) ^{*10}	2.2	2.6	3.8	2.9	2.6	4.2
Number of participants in Global Coaching Program (Persons)	1,752	2,370	2,394	1,506	960	972
Accident frequency rate (Japan, consolidated)	0.25	0.34	0.09	0.10	0.15	0.20
Accident severity rate (Japan, consolidated)	0.011	0.003	0.001	0.007	0.001	0.012
Number of participants in BCP ^{*11} management simulation training (Persons)	77	71	72	73	34	94
Number of participants in compliance drill (Persons)	1,774	2,072	3,137	3,350	4,110	4,491
Number of patent applications (outside Japan) (Applications)	1,451 (724)	1,392 (727)	1,452 (651)	1,493 (576)	1,557 (642)	1,635 (860)
Number of patents held (outside Japan) (Patents)	4,545 (2,174)	4,988 (2,406)	5,501 (2,518)	6,429 (2,999)	6,870 (3,082)	6,710 (3,122)
Social contribution expenditure (Millions of yen)	111	103	107	138	159	263
Number of Directors (including Outside/ Female/Foreign Directors) (Persons) ^{*12}	7 (4/0/0)	8 (5/1/0)	9 (6/1/1)	9 (6/1/1)	11 (5/1/2)	11 (5/1/2)

*5: For the scope of the third-party assurance of environmental and social data, refer to p.01. *6: We have revised the definition from ECO-products until FY2015, and we have newly indexed the revenue ratio of Environmental Conscious Products. *7: The data covers major production sites. *8: The numbers of sites and companies have been expanded (from 32 sites at 14 companies in FY2015 to 43 sites at 24 companies in FY2017). <http://www.hitachi-chem.co.jp/english/csr/stakeholder/environment/plan-3rd.html> *9: The selected substances for investigation have been expanded from 41 substances to 77 substances. *10: Non-consolidated basis. *11: Business Continuity Plan *12: Non-consolidated basis. As of the end of June of every fiscal year, 10 persons (5/1/2) as of the end of June 2018.

Highlights of Fiscal Year 2017

FY2017

Revenue and number of employees by segment



Functional Materials Segment

Revenue 297.1 billion yen (109% of previous year's level)
44.4% Operating income 46.8 billion (106% of previous year's)

Number of employees
33.5% 7,576 people (103% of previous year's level)

Revenue from epoxy molding compounds for semiconductors increased due to strong sales in China, while revenue from CMP slurry increased because of high demand in 3D model NAND type flash memory. On the other hand, revenue from die bonding materials for semiconductor decreased due to lower demand in the market. Revenue from inorganic materials increased as environmental friendly vehicle sold well which lithium-ion battery (LiB) carbon anode materials are used for. Revenue from resin material partially decreased in self-adhesive film, while revenue from the other products steadily increased. Revenue from printed wiring board materials for smartphones increased due to strong sales of copper-clad laminates and photosensitive dry films.



Advanced Components and Systems Segment

Revenue 372.2 billion yen (132% of previous year's level)
55.6% Operating income -0.6 billion yen (-107% of previous year's level)

Number of employees
66.5% 15,047 people (119% of previous year's level)

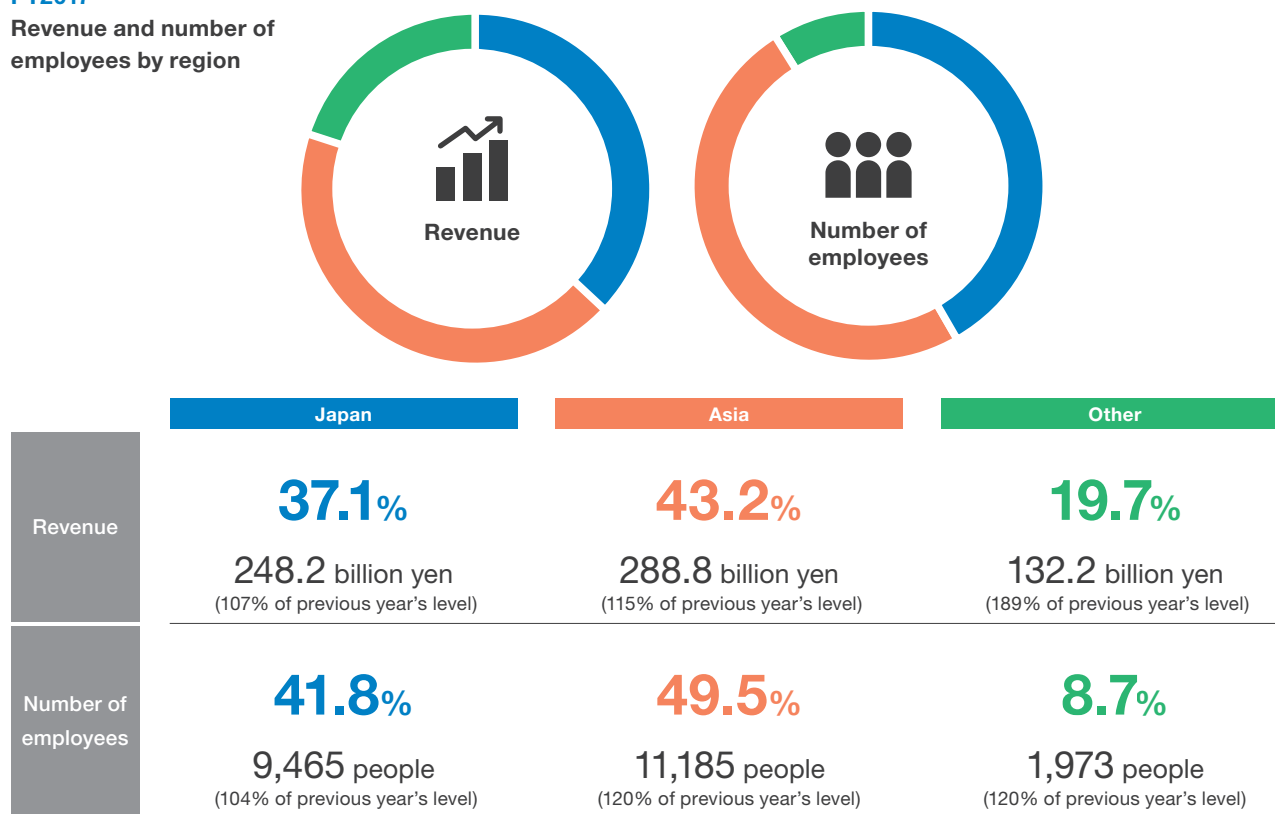
Revenue from automobile components, namely molded plastic products increased due to ISOLITE becoming a consolidated subsidiary and the launch of new projects. Revenue from friction materials also increased because of the launch of new projects as well. Revenue from powder material products increased by good sales of components for construction machinery. Revenue from energy storage device system, automotive batteries and industrial batteries system increased as having FET and TSB consolidated subsidiaries. Revenue from capacitors and electronic components increased due to rise in sales for industrial equipments while diagnostic reagent and device also had an increase with acquiring Kyowa Medex Co., Ltd. as a consolidated subsidiary.

Main products and the overview of fiscal year 2017 of each segment

Segment	Major Products		Revenue	Related business areas	
 Functional Materials	Electronic Materials	Molding compounds, die bonding materials, CMP slurry	96 billion yen (105% of previous year's level)	Functional Materials	Automotive Products
	Inorganic Materials	Anode materials and carbon materials for lithium-ion batteries	30.6 billion yen (125% of previous year's level)	Functional Materials	Automotive Products
	Resin Materials	Molding resin, circuit-connecting films for displays	62.2 billion yen (106% of previous year's level)	Functional Materials	Automotive Products
	Printed Wiring Board Materials	Copper-clad laminates, photosensitive films	83.3 billion yen (118% of previous year's level)	Functional Materials	
 Advanced Components and Systems	Automotive Components	Molded plastics, friction materials, powder metal products	141.6 billion yen (114% of previous year's level)		Automotive Products
	Energy Storage Devices and Systems	Automotive batteries, industrial batteries	176 billion yen (152% of previous year's level)		Energy Storage Systems
	Electronic Components	Printed wiring boards	42.2 billion yen (117% of previous year's level)	Functional Materials	
	Others	Diagnostic reagents and devices, research reagents and kits / services for regenerative medicine	12.3 billion yen (272% of previous year's level)		Life Sciences

FY2017

Revenue and number of employees by region



Global Network of Solution Operations under Concept of "Near Customer Site"

Hitachi Chemical group has opened its manufacturing, sales and research sites outside of Japan in order to provide best solutions to our customers.

In addition, we have established regional headquarters in China and the U.S. to build an organizational structure to agilely respond to market needs.

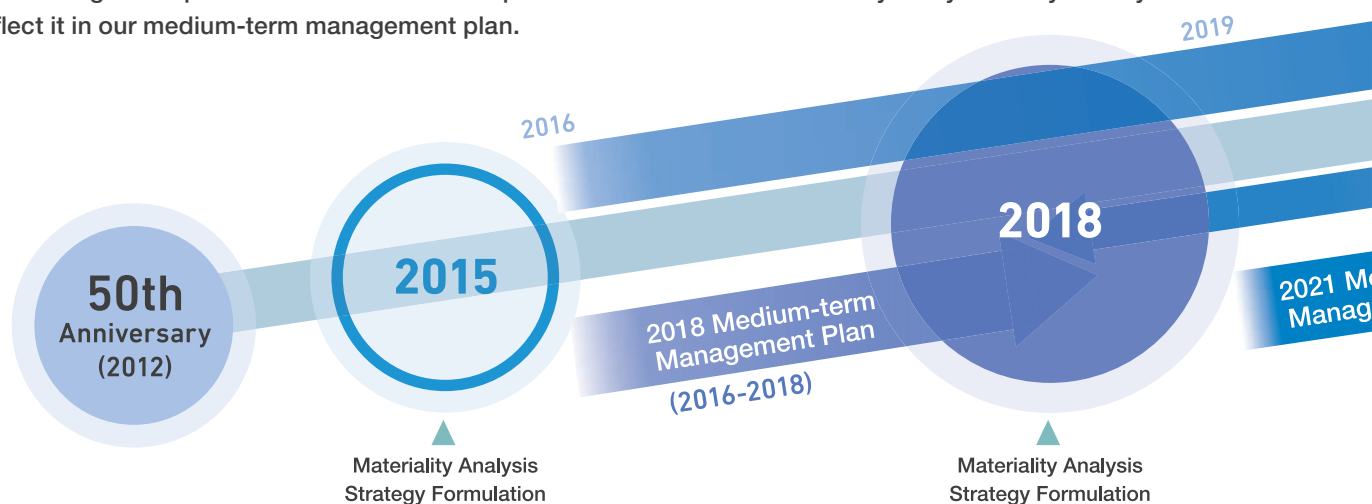


To view details on our Group companies, access [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [Corporate Profile](#).

Strategy Development Process

Backcasting from “where we want to be in ten years’ time”

In fiscal year 2015, as a first step towards the next 50 years, we outlined our “where we want to be in ten years’ time” and settled on the 10-year Strategy to implement it. Backcasting from there, we formulated our 2018 Medium-term Management Plan. We regularly conduct gap management on the progress of this three-year medium-term management plan and review the annual plan. We also conduct materiality analysis every three years and reflect it in our medium-term management plan.



2012~2013 (50th Anniversary)

Formulating “Management Message Looks to the Future”

When we celebrated our 50th anniversary in 2012, we held a communication workshop attended by all staff members of the Hitachi Chemical Group. We formulated “Management Message Looks to the Future” by summarizing our business by anticipating 50 years in the future to the value offered, the way we want to be and our DNA that will drive our actions. The message was shared among all staff members.

Establishment of the Hitachi Chemical Group Identity and start of WOW-BB activities

We repeated discussions by anticipating 50 years in the future. Hitachi Chemical Group Identity, consisting of our “Mission,” “Founding Spirit” and the “Hitachi Chemical Group Vision,” was established in fiscal year 2013. To embody the Hitachi Chemical Group Vision, we have started WOW-BB activities that consist of the WOW Global Awards, in which the entire Group workforce can participate to create an aggressive corporate culture, as well as our 10-year Strategy.



Hitachi Chemical becomes a powerful group with a **challenging** spirit that continuously innovates, building on individual initiatives

2015

Formulation of our 10-year Strategy and the 2018 Medium-term Management Plan

With the aim of delivering the Hitachi Chemical Group Vision, we drew a blueprint for what we want to be in 10 years’ time and formulated our 10-year Strategy for making the blueprint come true. The value that Hitachi Chemical should deliver through its operations is defined as the enhancement of quality of life (QOL) and the achievement of a sustainable environment. In this way, we pursue growth that goes beyond simply an extension of our existing growth. Starting from “where we want to be in 10 years’ time,” the 2018 Medium-term Management Plan shows where we will be three years from where we were in 2016.

Materiality of Hitachi Chemical (2015)

In pursuit of long-term, sustainable growth, Hitachi Chemical conducts a materiality analysis to identify the priority issues that we should undertake in the three-year period of the next Medium-term Management Plan. The analysis is utilized in our business management. The following describes the materiality analysis in fiscal 2015.





Delivering the Hitachi Chemical Group Vision

2018

Formulating 2021 Medium-term Management Plan

Currently, Hitachi Chemical is committed to materiality analysis in an effort to formulate the 2021 Medium-term Management Plan. We specify materiality for the purpose of ensuring sustained long-term growth. Joined by our Executive Officers and Directors and after hearing opinions from experts, we will push forward with the materiality analysis that aims to serve as the basis or starting point of our discussion of the Medium-term Management Plan.



For the details of "Management Message Looks to the Future," refer to Hitachi Chemical's website ► [About Hitachi Chemical](#) ► [CSR](#) ► [Social Report Engagement with Stakeholders](#) ► [Stakeholders' Dialogue](#) ► "Moving Ahead the Next 50 Years."



For the Hitachi Chemical Group Identity, refer to [P.02](#).



For the WOW Global Awards, refer to [P.14](#).



For the 10-year Strategy and the 2018 Medium-term Management Plan, refer to [P.23-28](#).



For the 2021 Medium-term Management Plan, refer to [P.28](#).

- | | |
|---|--|
| 1 Creating new businesses and products | 20 Providing accurate product and service information |
| 2 Augmenting global business expansion | 21 Promotion of intellectual property strategies |
| 3 Resolving customer and social issues by strengthening marketing capabilities | 22 Raise management quality to align with global expectations |
| 4 Development of technologies and products that help resolve social issues | 23 Environmental concerns associated with manufacturing |
| 5 Swift decision-making and resolution of customer issues by promoting localization | 24 Strengthening corporate governance |
| 6 Implementation of strategic alliances and M&A | 25 Improving management transparency through appropriate information disclosure |
| 7 Reforms toward Niche and Cluster business models | 26 Interactive communication with stakeholders |
| 8 Strengthening material technology capabilities | 27 Ensure fair competitive conditions for procurement and fair supplier partnerships |
| 9 Improving productivity | 28 Strengthening and promotion of sustainable engineering |
| 10 Improving synergy effects | 29 Thoroughness of customer information management |
| 11 Strengthening supply chain management | 30 Resolving societal issues through strategic social action programs |
| 12 Diversified global human resources management | 31 Actualizing fair and impartial employment opportunities and working conditions |
| 13 Promoting open innovation | 32 Occupational health and safety management |
| 14 Cultivating compliance awareness | 33 Prevention of global warming |
| 15 Pursuing customer satisfaction | 34 Recycling resources |
| 16 Strengthening quality management | 35 Building medium- to long-term relationships with the local community |
| 17 Business continuity management (BCM) | 36 Preserving local ecosystem |
| 18 Promotion of bold "WOW-BB activities" with an eye to the medium and long term | |
| 19 Development and provision of safe, easy-to-use products | |

Materiality Analysis Process

Step 1 Issue identification

- Analyze ESG trends both domestically and abroad, and identify key issues relevant to our business strategy
- Assessment of identified issues by external experts



Step 2 Priority evaluation by Executive officers^{*1}

- Executive Officers' evaluation of importance of issues assessed in Step 1 from the view of the Company^{*2} and stakeholders^{*3}
- Prioritize issues utilizing the materiality matrix on the left



Step 3 Management team approval

- Executive Officers at the level of Vice President and above, as well as Executive Officers in charge of management strategies and finance, attend a management strategy meeting to approve the priority issues.



For detailed information, refer to Hitachi Chemical's website ► [About Hitachi Chemical](#) ► [CSR](#) ► [Governance and CSR Management](#) ► [Hitachi Chemical's Value Creation and Materiality](#).

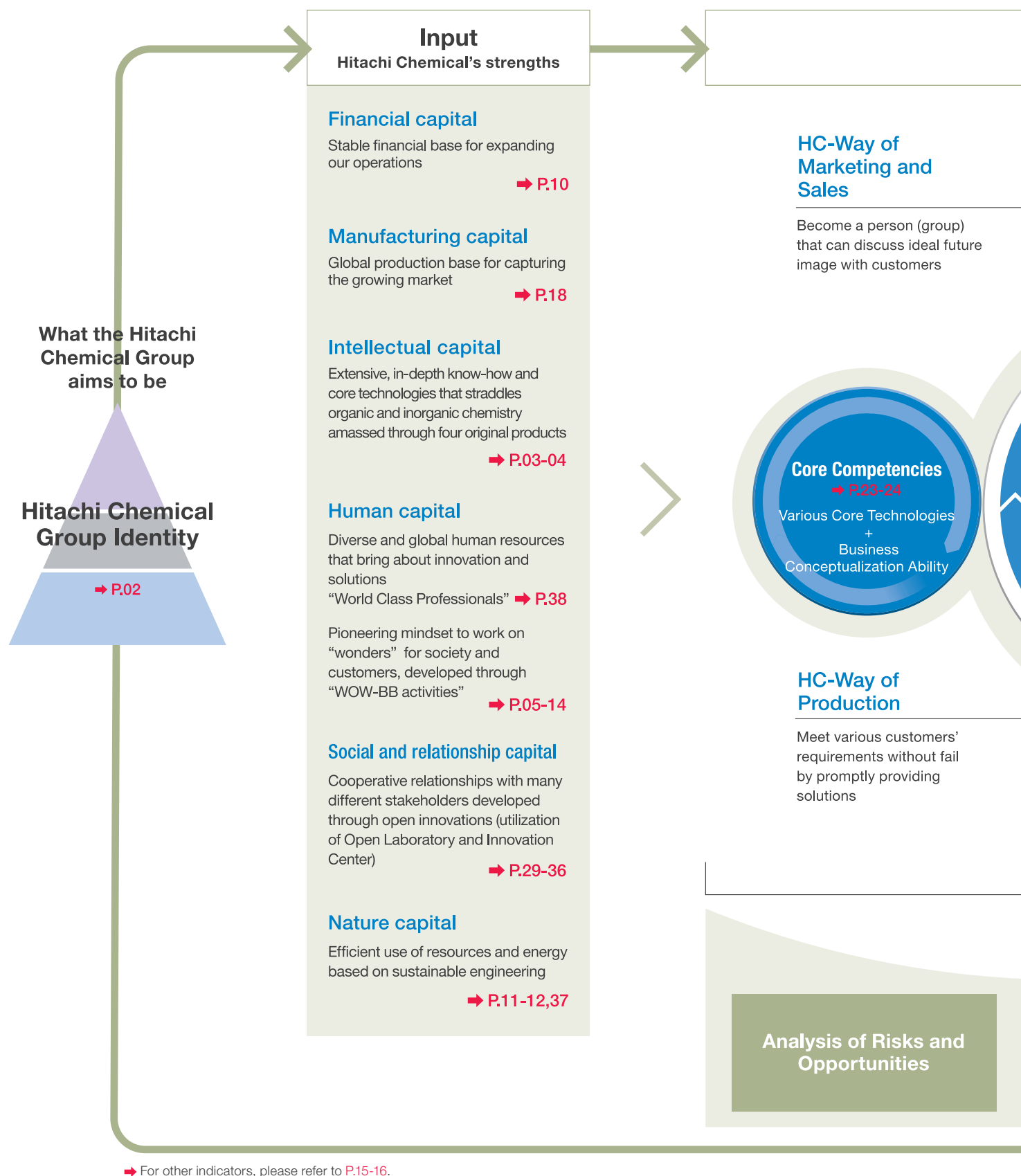
*1: The target evaluation period has been established in conjunction with the 2018 Medium-term Management Plan.

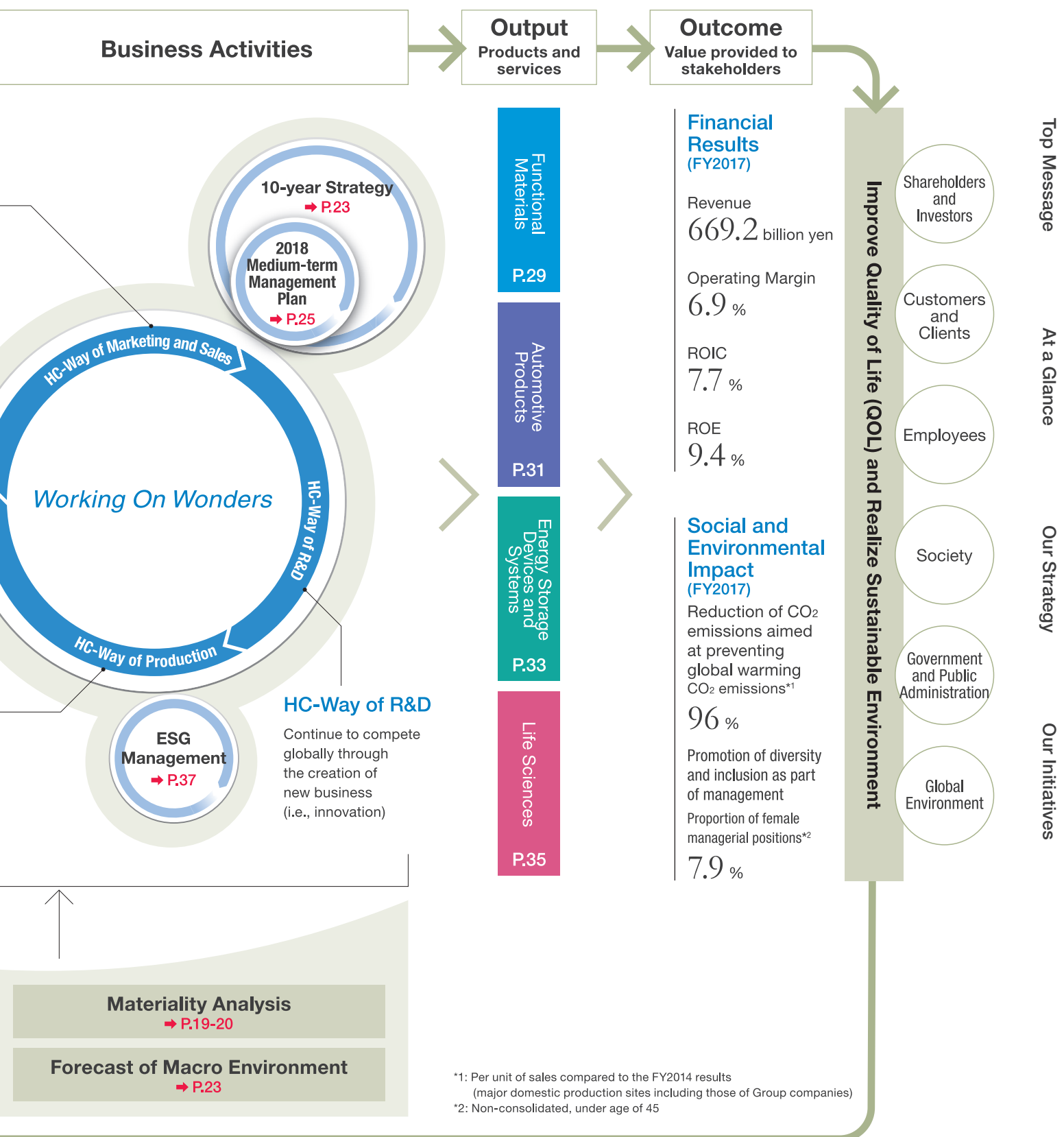
*2: The X axis represents importance to business and includes increased revenue and operating income, enhancement of global business, and strengthening of the management base.

*3: The Y axis represents importance to stakeholders and includes shareholders, investors, customers, clients, suppliers, employees, local communities, the global environment, and government/public administration.

Value Creation Process

To realize the Hitachi Chemical Group Vision, Hitachi Chemical is refining its core competencies and creating a wide range of technologies. Driven by this, we will implement “Working On Wonders” through our four businesses and provide value to stakeholders in terms of “Improve Quality of Life (QOL)” and “Realize Sustainable Environment.”





10-year Strategy

In order to realize the Hitachi Chemical Group Vision, we conceived a hypothetical future with a long-term outlook in our “where we want to be in ten years’ time,” then formulated the 10-year Strategy for its actualization.



For materials explaining our “10-year Strategy,” refer to: [Hitachi Chemical's website](#) ▶ [Investor Relations](#) ▶ [IR Library](#) ▶ [Presentation Materials](#) ▶ [FY2015](#) ▶ [Medium-Term Management Plan and Consolidated Results for the Fiscal Year Ended March 31, 2016](#).

Where We Want to Be in Ten Years’ Time

A globally developing innovative solutions beyond the boundaries of chemistry, with advanced Functional Materials as core and extending to devices, systems and services

2015 ➔ 2025 Growth Target

A globally active innovator providing high value-added solutions unattainable by other companies, demonstrating performance that will prevail in global competition

Operating margin: **14%+**

Key Businesses Going Forward

Having analyzed medium- and long-term changes in the business climate and major industry trends, we see that “high efficiency” and “smart” will be important keywords for future markets. Further, utilizing various core technologies that constitute our core competencies, we will

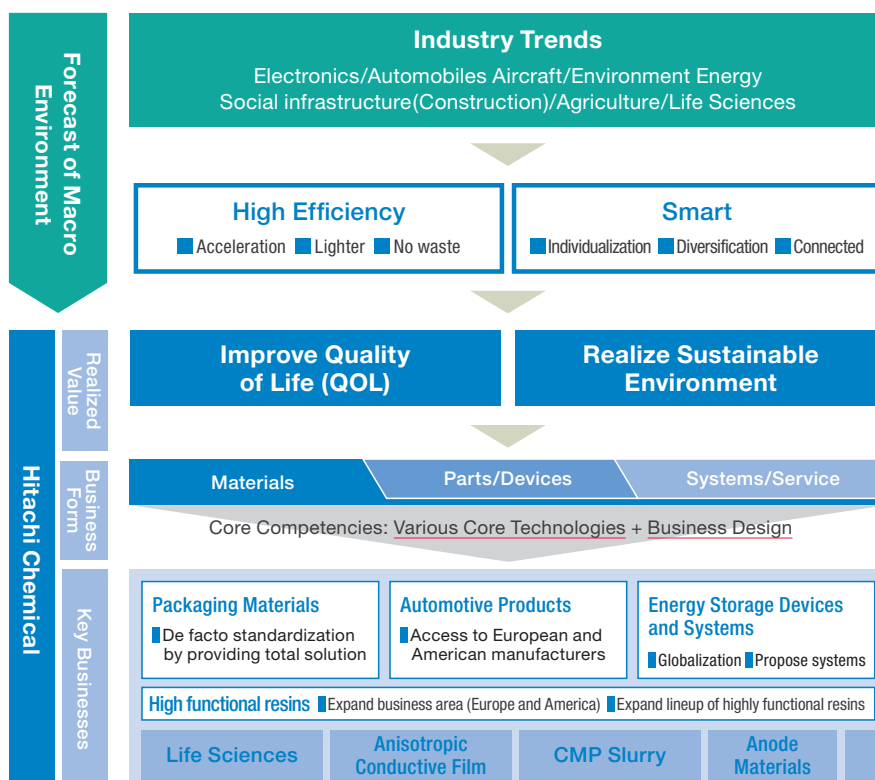
provide solutions in line with customer needs with materials, components and devices, as well as systems and services, promoting our key businesses such as Functional Materials, Automotive Products, Energy Storage Devices and Systems, and Life Sciences.



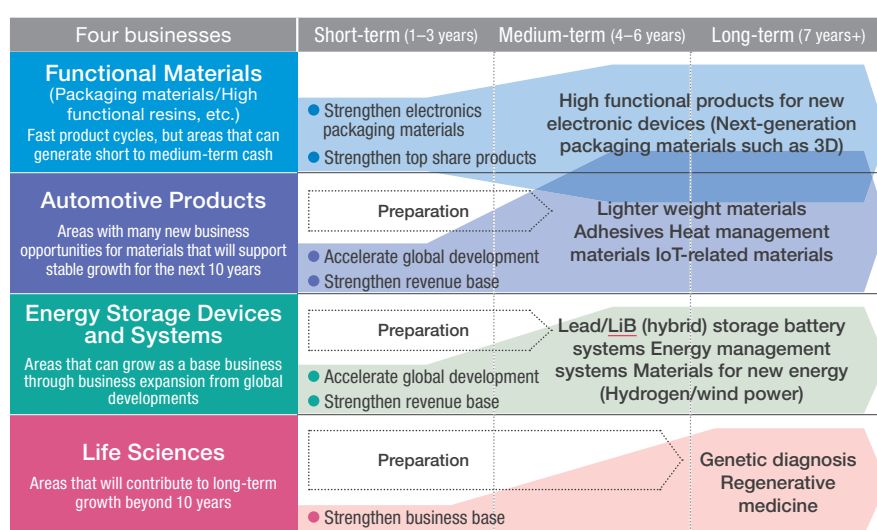
For information on Various Core Technologies, refer to [P.03–04](#).

Business Design

It is indispensable at the inception of a new enterprise. Along with social currents, prominent industry trends, and customer information, we incorporate technological seeds from within and outside the Group. For the resulting new products and fresh business ideas, Business Design is a process of creating structures that 1. understand the competitive climate of the market, 2. along with corporate value planning and 3. increase profits.

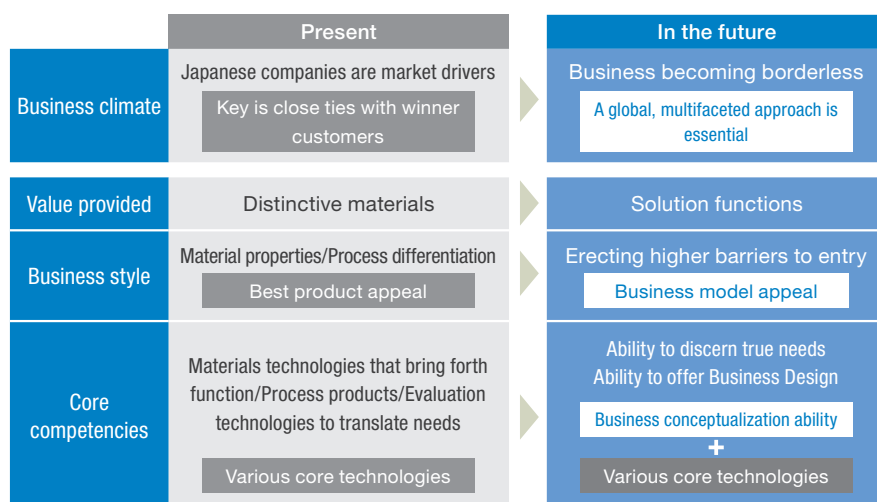


Long-term Growth Milestones

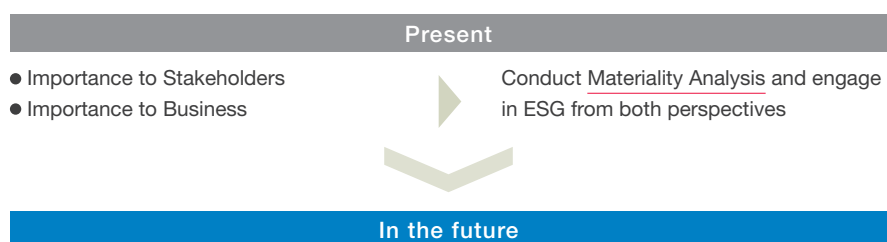


LiB
Lithium-ion Rechargeable Battery

Change How We Compete, Reflecting Changes in Business Climate



Promotion of ESG Management



In addition to the above, we will disclose information in a timely and appropriate manner while taking into account the UN Sustainable Development Goals (SDGs) and further enhancing the initiatives.

Environment (E)	Society (S)	Governance (G)
<ul style="list-style-type: none"> Carbon Management Strategy (reduce CO₂ emissions) Reduce water usage Reduce waste Promote sustainable engineering 	<ul style="list-style-type: none"> Promote diversity Promote occupational health and safety Respect human rights Promote activities that contribute to local community 	<ul style="list-style-type: none"> Secure shareholder rights and equality Appropriate collaboration with stakeholders Secure appropriate disclosure and transparency Fulfill responsibilities such as Board of Directors meetings Dialogue with shareholders



For information on ESG management, refer to P.37–46.

For information on Materiality Analysis, refer to P.19–20.



For detailed information on ESG management, refer to [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [CSR](#).

2018 Medium-term Management Plan



For materials explaining and progress on our “2018 Medium-term Management Plan,” refer to [Hitachi Chemical's website](#) ▶ [Investor Relations](#) ▶ [IR Library](#) ▶ [Presentation Materials](#) ▶ [FY2017](#) ▶ [Medium-term Management Plan Progress Report and Consolidated Results for the Fiscal Year Ended March 31, 2018](#).

Niche

Businesses that should be sustained even if small in scale due to high profitability and strategic significance

Cluster

Business groups that can be implemented by sharing strategies for global success through grouping

2018 Medium-term Management Plan

Basic Policies

Strengthen Global Business

- Cultivate top share business by changing method of competition
- Accelerate commercialization through Open Innovation

Strengthen Management Base

- Build global management infrastructure
- Establish cost structure as a global business leader

Key Measures

- Expansion of global top share business through reforms to Niche and Cluster business structures
- Accelerate commercialization by “Collaborative Creation” using outside resources
- Acquire technologies and business platforms from outside the Group and accelerate growth

Promotion of ESG management

- | | |
|---------------|---|
| Environmental | ■ Reducing CO ₂ emissions in the Group |
| Social | ■ Promoting career opportunities for female employees |
| Governance | ■ Reinforcing corporate governance based on efficacy evaluations |
| | ■ Rebuilding compliance structures and thoroughly implementing training in order to prevent recurrence of cartel issues |

Outcomes and Forecasts of the 2018 Medium-term Management Plan

	FY2016	FY2017	FY2018 Target	FY2018 Forecast
Revenue	554.1 billion yen +1.4% from previous year	669.2 billion yen +20.8% from previous year	CAGR7-8% (FY2015→FY2018)	710 billion yen +6.1% from previous year
Operating margin	9.6% (9.8%)* ³	6.9% (8.5%)* ³	11%	8.3% (9.2%)* ³
ROIC	12.3%	7.7%	15%	
	Functional Materials: 30.1%	29.8%	27%	
	Automotive Products: 7.0%	5.8%	10%	
	Energy Storage Devices and Systems: 6.0%	1.5%	10%	
ROE	11.1%	9.4%	12%	
CO ₂ emissions* ¹	101%	96%	96%	
Proportion of female managerial positions* ²	11.6%	7.9%	12.0%	

*1: CO₂ emissions:

Per unit of sales compared to the FY2014 results (domestic production sites)

*2: Proportion of female managerial positions:

Non-consolidated, under age of 45

*3: Operating margin:

Operating margin without other income and expenses

Reflections on FY2017 and Initiatives for FY2018

FY2017 Progress

Outputs	■ Acquired global business bases and increased the scale through M&A
	■ Expanded sales of Niche products (anode material, CMP slurry)
	■ Proposed and adopted new packages for the packaging material cluster
	■ Expanded the mass production of formed resin for molded exterior products
	■ Started the mass production of copper-free disk brake pad
Issues	■ Entered agreements on the contracted manufacturing of regenerative medicine products
	■ Failure to respond in a timely fashion to the rapid decline in demand for mobile devices
	■ Deterioration of the product line due to delays in launching new products and withdrawing non-core products
	■ Delay in responding to the rapid increase in raw material prices
	■ Insufficient synergy with merged and acquired companies
	■ Fines and compensations paid (approximately 10 billion yen) over capacitor cartel

Initiatives for FY2018

- Reap results from Niche and Cluster businesses
- New businesses and new products to contribute to profitability
- Make a comprehensive, bold shakeup of the product line
- Secure profitability through synergy generated with new consolidated subsidiaries
- Improve productivity globally
- Build a global management infrastructure

Strategies for Key Businesses

Functional Materials	Strengthen key businesses through Niche and Cluster Strategies	Automotive Products	Strengthen base to become a global top supplier
Energy Storage Devices and Systems	Establish presence in global markets through increased scale	Life Sciences	Cultivate future foundation business based on materials technology and diagnostic reagent business



For the progress of strategies for key businesses and the focus of efforts in fiscal year 2018, refer to the following pages.

Functional materials: [P.29-30](#).

Automotive Products: [P.31-32](#).

Energy Storage Devices and Systems: [P.33-34](#).

Life Sciences: [P.35-36](#).

Investment Strategy

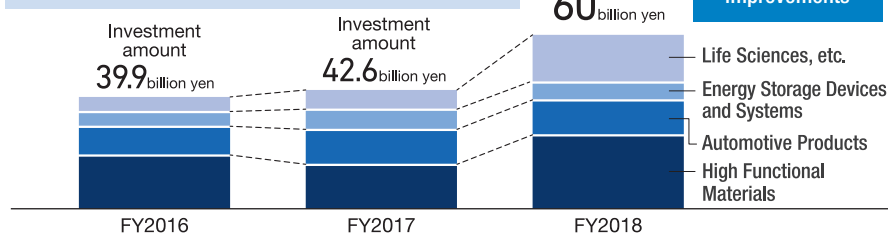
Basic Policy

Invest in growth areas as much as 1.5 times the previous Medium-term Plan

- Relocation and expansion of Packaging Solution Center
- Expand nanoceria slurry production capacity
- Work Life Innovation for indirect operations (IT investment, etc.)

Investment amount
60 billion yen

Accelerate investment in growth fields and cost structure improvements



For detailed information, refer to [Hitachi Chemicals Website](#) ▶ [About Hitachi Chemical](#) ▶ [News release](#). Jan.12, 2017: Relocating and Upgrading the Open Laboratory that Promotes Open Innovation for Semiconductor Packaging Materials and Processes

IoT

Internet of Things

AI

Artificial Intelligence



For information on ESG management, refer to [Hitachi Chemicals Website](#) ► [About Hitachi Chemical](#) ► [CSR](#).



For information on efforts to reduce CO₂ emissions, refer to [P.37](#).

*1: CO₂ emissions:

Per unit of sales compared to the FY2014 results (major domestic production sites)



For detailed information on the Promoting career opportunities for female employees, refer to [P.38](#).

*2: Proportion of female managerial positions:

Non-consolidated, under age of 45



For detailed information on our governance efforts, refer to [P.39-44](#).



For detailed information on evaluation of effectiveness of the Board of Directors, refer to [P.41](#).



For detailed information on our selection and training of candidates for next-term successors, refer to [P.42](#).

Strengthening Our Management Base

Accelerate action in line with the business development on a global basis

Global improvements in productivity

FY2017 Progress

Initiatives for FY2018

Promote advanced manufacturing processes leveraging IoT and AI

Used an IoT system to ensure appropriate inventory levels for automotive batteries

Use AI to automate parts of the production process

Building global management infrastructure

FY2017 Progress

Initiatives for FY2018

Increase the speed of decision making, reinforce corporate governance

Built up the coordination capabilities of our regional headquarters in North America

Further develop businesses in Greater China and the ASEAN region

Promotion of ESG Management

FY2017 Progress

Initiatives for FY2018

Reducing CO₂ emissions in the Group

96%*1

Focused on energy-saving measures in facilities where emissions per unit of production deteriorated

- Simulated the activities of the Energy Conservation Committee
- Moved forward with steady "Carbon Management Strategy"

Target: 96%

Further strengthen energy conservation activities

- Continue the activities of the Energy Conservation Committee
- Further energize the respective activities of sales / operations offices
- Promote the awareness of 'CO₂ = Cost'
- Overseas Carbon Management Strategy

Environment (E)

Promoting career opportunities for female employees

7.9%*2

Secured and trained candidates for management positions

Created an environment where female employees can play active roles

- Further promoted flexible working styles including teleworking and discretionary working systems
- Continued training to raise awareness, and changed behavior of female managers

Target: 12.0%

Accelerate the retention and training of candidates for management positions

Further accelerate the creation of an environment where female employees can play active roles

- Increase training opportunities regarding raising of awareness

Social (S)

Reinforcing corporate governance based on efficacy evaluations

Efficacy evaluation of Board of Directors

Held interviews, particularly with Outside Directors

Continue implementation

Holding off-site meetings

All Directors and Executive Officers took part in meetings for the first time

Hold meetings related to the next medium-term management plan

Selecting and developing candidates for next-term successors by Board of Directors

Began implementing the selection / development process

Upgrade corporate governance on the basis of the results of the efficacy evaluation

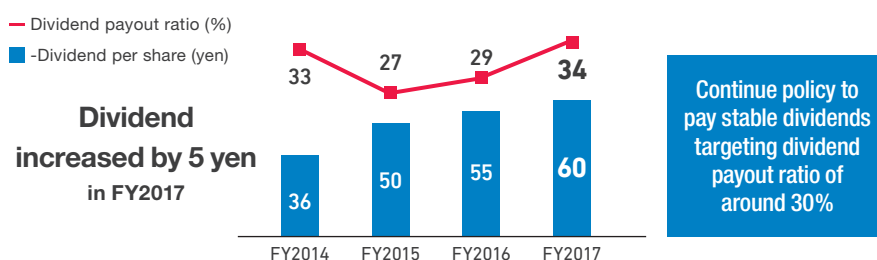
Governance (G)

Audit of Group companies by Outside Directors

Continued to visit and inspect business sites in Japan and abroad

Rebuilding compliance structures and thoroughly implementing training in order to prevent recurrence of cartel issues

Dividends



Approach for 2021 Medium-term Management Plan

External Environmental Changes

- Changes in market structure through artificial intelligence, digitalization, automated driving
- Coordination between different industries through growth of ICT (business ecosystems)
- Creation of Society 5.0 (supply necessary services/items only when needed, as needed)
- Promotion of SDGs globally, accelerating the realization of a sustainable society

Impact on Our Company

QOL improvements

- Automated driving / progress on ADAS
- Greater use of IoT, AI
- Introduction of high-speed communications (5G)
- Development of preventative / advanced medical treatment

+

Realization of a sustainable environment

- Further improvements in fuel efficiency
- Shift to EVs
- Reduced burden on environment (greenhouse gases / reduce contaminants, renewable energy)

Our Contribution

	Environmental changes	Issues	Required characteristics	Our technologies / products
Contributions to QOL improvements	Automated driving ADAS	Sensor diversification	Next generation semiconductors, displays, packaging materials	Technology for packaging materials
	Greater use of IoT, AI	High-speed communications (5G)		Technology for packaging processes
		Large capacity storage		
	Improved quality of medical services	Enhanced preventive medicine	Advanced pathological diagnosis	Genetic diagnosis
		Expanded regenerative medicine	Stable cell supply	Cell cultivation
	Environmental changes	Issues	Required characteristics	Our technologies / products
Shift to EVs	Shift to EVs	Safety, longer continuous driving distance	Improved performance of storage batteries	Anode materials / electrolytes
		Further fuel efficiency improvements	Heat management	Thermal insulation material
			Electronic control	Power semiconductor material
	Lower environmental burden	Greater use of renewable energy	Weight saving	Plastic molding
			Improved efficiency of energy usage	Adhesives
				Lightweight metals
				Energy management systems

ICT

Information and Communication Technology

Society 5.0

Refers to a human-centered society that supports economic development and the solution of social issues at the same time, based on a system that closely integrates a virtual space with a physical space (the Cabinet Office).

ADAS

Advanced Driver Assistance Systems

EV

Electric Vehicle



Vice President and Executive Officer
General Manager
Advanced Performance Materials Business
Headquarters

Hiroyuki Yamashita

Functional Materials

Basic Policies of the 2018 Medium-term Management Plan

Strengthen key businesses through Niche and Cluster Strategies

Strengths

- A wide array of material technologies
- Product functions and design excellence of product forms
- Semiconductor packaging materials, process technologies and state-of-the-art simulation evaluation facilities
- Ability to offer proposals suited to customer needs

Opportunities

- Expansion of markets for electrification, 5G and automatic driving
- Growth in the semiconductor package market
- Increase of highly functional adhesives and anode materials in the automotive market

Weaknesses

- Delay in taking actions toward the diverse needs by overemphasizing the self-sufficiency principle
- Dispersion of development/marketing resources through multi-axial deployment of businesses

Threats

- Increased competition (products, services, and prices) in main product areas
- Rise in the risk of slowed growth in Chinese economy

M&A/Alliance strategies

The Functional Materials Business will focus on “expanding alliances across the entire value chain” and “gaining global competitive advantage through increased scale,” and will acquire technologies, business platforms and foundations from outside resources.

ROIC (FY2017)

29.8% (FY2018 Target: 27%)

ROIC is managed by referring to the ROIC of our competitors. We plan to further improve our ROIC going forward.

HCET

Hitachi Chemical Electronic Materials (Taiwan) Co., Ltd.

PAL-ACF

Stands for particle-aligned anisotropic conductive film developed by Hitachi Chemical, it can help to refine flat panel displays.

xEV

Collectively means EVs, hybrid cars and plug-in hybrid cars.

Fiscal Year 2017 Progress

In Niche products, we expanded sales of nanoceria slurries to contribute to the miniaturization of semiconductor devices. The nanoceria slurries use finer abrasive grains than those of conventional products and boast a technological advantage that no other company can imitate. They are increasingly applied to the most advanced area of semiconductors, a growing product category. QD (quantum dot) films, a new product, match the market needs for compatibility between high definition and the reduction of environmental burdens. Our QD films were introduced to next-generation 4K and 8K displays. In the Cluster businesses, great demand is expected in highly functional laminate materials for semiconductor devices and modules for use in AI, automatic driving and 5G (next-generation radio technology), among others. Therefore, we decided to construct a new plant for copper-clad laminates for printed wiring boards at **HCET**, our subsidiary. This is intended to prepare for the establishment of a supply system. Furthermore, the Open Laboratory for Semiconductor Packaging Materials is increasingly gaining industry recognition and cooperative projects with clients, material manufacturers and device manufacturers are gradually expanding. Therefore, we decided to relocate the Open Laboratory to Shin-Kawasaki (Kawasaki-shi, Kanagawa), a convenient area in terms of transportation, in an effort to streamline research and development.

Total solutions through the collaborative project to create next-generation semiconductor packaging

Process	Chip lamination			Sealing			Debonding		Circuit formation		
	Mounter	Temporary fixing material	Carrier	Mold	Grinder	Molding compounds	Mold release film	Debondor	Exposure system	Photosensitive dry film	Insulating film
Equipment											
Materials											
Hitachi Chemical	—	○		—	—	○	○	—	—	○	○
Business partners (Materials/Equipment)	○	○	○	○	○	○	—	○	○	—	—

Key Measures for Fiscal Year 2018

Strengthen key businesses through Niche and Cluster Strategies

In Niche products, we will focus on growing fields in an effort to achieve further growth. The recent rise in demand for high-density semiconductor devices led to a rising need for nanoceria. The capacity of our production facilities in Japan and Taiwan will be reinforced so that our mass production capacity grows five times larger. (The facilities started operating in the summer of 2018.) In this way, we will proceed

Outputs and Strategies of the 2018 Medium-term Management Plan

FY2017 Progress	Initiatives for FY2018	Goals for FY2018	
Niche products			
Anisotropic conductive films			
<ul style="list-style-type: none">Opened Integration Lab in Suzhou, China to increase our market shareReceived orders for high-definition displays in PAL-ACF	<ul style="list-style-type: none">Set up an evaluation facility in Chongqing, China to capture demand in ChinaBeat competitors to increase our market share in advanced fields	Niche and Cluster Strategies that take advantage of M&As and alliances have had impact, and business is expanding at a pace exceeding the market growth rate. Niche products global top share has been maintained and expanded by erecting higher barriers for entry Semiconductor packaging materials de facto standardization is achieved in next-generation packaging technology through collaborative creation using outside resources High functional resins adhesives and insulating varnishes have entered the U.S. and European markets and sales have increased	
CMP slurries			
<ul style="list-style-type: none">Increased sales of nanoceria slurry that enables micro semiconductor devices	<ul style="list-style-type: none">Expand nanoceria slurry production capacity by 5 times (in Japan and Taiwan)		
Carbon anode materials for lithium-ion batteries			
<ul style="list-style-type: none">Captured strong demand for xEV	<ul style="list-style-type: none">Build a supply system to capture growing global demand		
Cluster businesses			
Semiconductor packaging materials			
<ul style="list-style-type: none">Proposed and adopted new packages based on open lab strategiesAccelerate development collaboration with customers, material suppliers, and device manufacturers	<ul style="list-style-type: none">Relocate Packaging Solution Center improve its functionContinue acceleration of development collaboration with customers, material suppliers, and device manufacturers		
High functional resins			
<ul style="list-style-type: none">Focused on the growth area of automotive application to boost sales	<ul style="list-style-type: none">Maintain focus on automotive application for business expansion on a global basisBuild a development center for plastic products in Johor, Malaysia to strengthen our ability to capture demand in Asia		

Goals for the 10-year Strategy

Establish top-class profitability and scale, and become a functional materials manufacturer with a global presence

- Expand highly profitable businesses in growing markets (including M&A)
- Capture the overwhelming No.1 position in semiconductor packaging materials
- Become one of the world's top-class manufacturers of high functional resins

with sales expansion on a global scale. Our QD films will be increasingly introduced to 4K and 8K displays and their sales will therefore expand.

Hitachi Chemical has a wide selection of semiconductor packaging materials to the extent they can provide an overview of the semiconductor packaging process. We boast the top share of such materials in the industry. To strengthen our advantage, we will aggressively push forward by cooperating with outside resources through the strengthened function of the Open Laboratory, and will establish a process for new semiconductor packages. Also, we will continue to discuss and consider the launch of a new project using open innovations such as M&A and alliances with other companies.

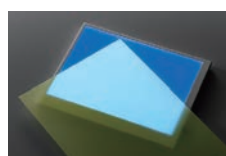
Strengthening our capabilities to create customer-tailored proposals through our Open Laboratory

The Packaging Solution Center of the Open Laboratory has the most-advanced equipment and evaluation devices for use in the back-end process of semiconductor manufacturing. Engineers of our customers, device manufacturers and material manufacturers can work together in the Laboratory to experimentally make and evaluate new semiconductor packages. We will serve as a solution provider in the development of processes, for example, by making proposals on optimal combinations of packaging materials for different processes and on the use of the packages, including the process conditions. In this way we will strive to establish an unshakable position in the industry.

Product examples

Materials that may contribute to the enhancement of QOL and the realization of a sustainable environment

Using the most advanced material technologies, Hitachi Chemical develops products that will help to solve many different problems. For example, 4K and 8K displays are expected to have a wider range of color. This can be achieved using Hitachi Chemical's QD films without increasing the consumption of electric power. There is large market potential in China, South Korea and other Asian countries, all of which are the main target of the TV market. Also, Hitachi Chemical launched Hitachi Wrap—Blue Type, commercial-use wrap that is designed to be easily distinguishable to identify any film pieces mixed in with food. Subsequently, three-color wrap with characters from the popular picture book Barbapapa launched in April 2018 to provide consumers or households with greater fun in their kitchen.



QD (quantum dot) film



Color Wrap with Barbapapa, food wrap film

Major Products

Anisotropic Conductive Films

These are wire connecting materials for displays. Both electrical conductivity and insulation property are achieved while these films connect batches of very small electrodes in micrometer order. Widely used in smart phones, LCDs and other devices, these films make higher definition images and smaller, thinner devices.



Nanoceria slurries

Nanoceria slurries are polishing materials for use in the circuit formation process for semiconductor devices. They are better able to reduce the polishing flaws on the semiconductor substrate than their conventional counterparts. Cracks and the disconnection of the circuit, which may result from such flaws, may also be prevented.



Conventional CMP slurries (left) and nanoceria slurries (right)

Carbon Anode Materials for Lithium-ion Batteries

Graphite materials are the keys to larger capacity and longer life of lithium-ion batteries. Our carbon synthesis technology and particle design technology gained in the development process of carbon brushes are used in the design of internal structures for efficient inward and outward movement of lithium ions.





Vice President and Executive Officer
General Manager
Automotive Components Business Headquarters

Hiroyuki Morishima

Automotive Products

Basic Policies of the 2018 Medium-term Management Plan

Strengthen base to become a global top supplier

Strengths

- Ability to offer proposals by taking advantage of the compounding technologies of materials
- A rich insight into research data regarding material characteristics
- Production system to support the globalization of customers

Weaknesses

- Delay in launching of new products
- Delay in entry into the European market
- Shortage of human resources for entry into European and U.S. markets

Opportunities

- Fulfilling the needs for automotive electrification, reduced weight and automation
- Thermal management of automobiles (more fuel-efficient, less hazardous substances)
- Consumer needs toward environmental friendliness and lower fuel consumption

Threats

- Oligopolization of markets due to emerging mega suppliers
- Decrease in the sales volume of cars due to car sharing, etc.

M&A/Alliance strategies

The Automotive Products Business will focus on "creating new business with material technologies at its core" and "establishing European development and production sites with a view to expanding into new regions," and acquire technologies and business platforms from outside the Group.

ROIC (FY2017)

5.8% (FY2018 Target: 10%)

The Automotive Products Business currently faces an important task of improving its operating margin.

Exterior plastic molded foam products

Creating a sponge-like foam inside of exterior plastic molded products can help reduce the weight and improve the mileage of automobiles.

ISOLITE

ISOLITE GmbH
ISOLITE's strengths lie in its unique insulation technologies, as well as its sales network and manufacturing sites across Europe and the United States.

HCA

Hitachi Chemical Company America, Ltd

Fiscal Year 2017 Progress

A number of initiatives were taken under the slogan of "strengthen base to become a global top supplier." The Company's exterior plastic molded foam products were used in the new SUBARU XV SUV, expanding to mass production. In Thailand, the opening of a new design center for powder metal products helps secure new orders in India and Southeast Asia. For friction materials, the Group has established production and supply systems in Japan as well as China, Thailand and Mexico amid expectation of rising demand in the future, such as the copper-free friction materials being used in Ford Motors' Fusion.

Additionally, by making ISOLITE GmbH a consolidated subsidiary, the Hitachi Chemical has strengthened the global expansion of insulation materials that address the needs to comply with environmental regulations, including the sale of ISOLITE products in Japan and the use of ISOLITE's sales locations in Europe to expand sales of Hitachi Chemical products.

Key Measures for Fiscal Year 2018

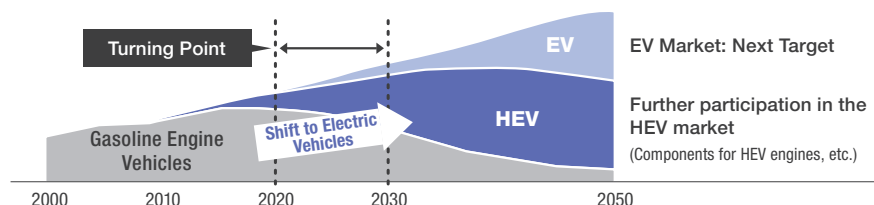
Active development of European markets

As an European regional strategy, the Group will leverage the European manufacturing and sales channels of ISOLITE in an effort to expand global sales of Hitachi Chemical products based on the insulating materials business, including friction materials, powder metal products and plastic gears. Additionally, the Group will augment its sales and marketing resources primarily through the Detroit office of HCA, and pursue its North American regional strategy with products such as friction materials, powder metal products, molded plastic, insulating materials.

Expanding the Automotive Business through a fusion with Functional Materials

With sights set on future automotive business trends, the Group will seek to expand the Automotive Business through a fusion with Functional Materials. To achieve this, Hitachi Chemical has launched a

Changes in the Global Market (2020 to 2030)



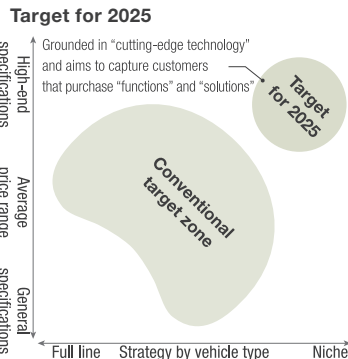
Outputs and Strategies of the 2018 Medium-term Management Plan

FY2017 Progress	Initiatives for FY2018	Goals for FY2018	Goals for the 10-year Strategy
Strategies for environmentally friendly products at the world-class level			Become a global top 3 supplier
Molded products			
<ul style="list-style-type: none">Expand the mass production of Exterior plastic molded foam products	<ul style="list-style-type: none">Continue to respond to weight-saving needs		
Powder Metal Products		<ul style="list-style-type: none">To expand businesses, a system that will maintain Hitachi Chemical's competitive advantage is in place.	
<ul style="list-style-type: none">Established a design center in Thailand, received new local orders	<ul style="list-style-type: none">Successfully start up operations planned in FY2018	<ul style="list-style-type: none">The number of customers has increased due to the cultivation of new customers.	
Friction materials		<ul style="list-style-type: none">Production has begun at alliance partners.	
<ul style="list-style-type: none">Started the mass production of copper-free disk brake pads for U.S. auto manufacturers	<ul style="list-style-type: none">Continue to respond to market needs for copper-free disk brake pads		
Globally extending sales, development and production sites			
M&A			
<ul style="list-style-type: none">Made <u>ISOLITE a consolidated subsidiary</u>	<ul style="list-style-type: none">Expanding global sales of insulating materials in response to demands for environmental regulatory compliance		

marketing project spanning multiple divisions and is conducting market analysis and research. In fiscal year 2018, the Group will develop strategies and technologies aimed at further participation in the HEV market, and expand into EV market as its next target.

Strategies for environmentally friendly products at the world-class level

An automobile's environmental soundness, including lighter weight, restrictions on pollutant emissions and thermal management, is expected to become increasingly critical. Hitachi Chemical has a wide range of eco-friendly products in the molded plastic products, powder metal products and friction materials fields, and we will continue to focus on increasing sales of these products. Moreover, in the field of thermal management, we will focus on creating a synergy between the technologies of ISOLITE and Hitachi Chemical.



Product examples

ISOLITE Thermal Insulations

ISOLITE, which was made a consolidated subsidiary in fiscal year 2017, is engaged in the manufacturing and sale of insulating components for automobiles, aircraft and industrial applications and is highly regarded for its unique and highly effective insulating components. With demand for environmentally sound products on the increase, Hitachi Chemical will continue to expand the businesses of both companies through cross-selling, accelerate the development of eco-friendly products through synergies in insulating technologies, and strengthen its proposals for thermal management solutions for products such as engines and exhaust system components.



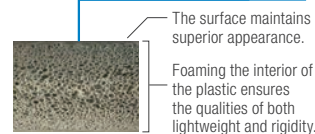
Exhaust manifold coated with ISOLITE insulating material



ISOLITE Akustop



ISOLITE Heatshield



Examples of actual use: exterior plastic molded foam products (left: New Nissan Serena, right: New Subaru XV)



For detailed information, refer to [Hitachi Chemicals Website](#) ▶ [About Hitachi Chemical](#) ▶ [News release](#).
Apr. 27, 2017: Notice Regarding the Share Acquisition of ISOLITE GmbH, a Thermal Insulation Manufacturer in Germany

HEV
Hybrid Electric Vehicle

EV
Electric Vehicle

Major Products

Exterior plastic molded foam products

In keeping with its goal of realizing a sustainable environment, Hitachi Chemical is pursuing the development of new products that can cater to the demand for lighter automobiles. As part of this effort, we succeeded in the development of exterior plastic molded foam products that are both rigid and lightweight. These products are being used by automobile manufacturers in an increasing number of projects and Hitachi Chemical will focus leveraging this technology as part of its global expansion efforts.



Vice President and Executive Officer
General Manager
Energy Storage Business Headquarters

Misao Nakagawa

Energy Storage Devices and Systems

Basic Policies of the 2018 Medium-term Management Plan

Establish presence in global markets through increased scale

Strengths

- Business foundation in the lead-acid battery market, where there is an entry barrier for new manufacturers
- A wide array of material technologies

Weaknesses

- Failure to fully reap M&A synergies

Opportunities

- Needs in key industries such as tele-communications and automotive industries
- Rising interest for the renewable energy

Threats

- Possibility of global M&As
- Post-lead-acid batteries

M&A/Alliance strategies

The Energy Storage Devices and Systems Business will focus on “global growth (increase production sites and sales offices)” and will put business in Europe and ASEAN on track.

ROIC (FY2017)

1.5% (FY2018 Target: 10%)

ROIC remained at a low level in fiscal year 2017, reflecting business expansion through M&A and the effect of rising lead prices

In fiscal year 2018, we plan to reap M&A synergies while rationalizing operations.

TSB

TSB operates an automotive and industrial lead-acid battery business, mainly in Southeast Asia. It has an extensive product lineup and sales network, and commands large shares of the Thailand and Southeast Asia markets with its well-known “3K” brand.

HCTD

Hitachi Chemical Asia (Thailand) Co.,Ltd.

FET

FIAMM Energy Technology S.p.A.

HCEN

Hitachi Chemical Energy Technology Co.,Ltd.

Fiscal Year 2017 Progress

The basic policy of the Energy Storage Systems Business is to “establish a presence in global markets through increased scale.” By fiscal 2017, we had successfully acquired a global network of manufacturing bases, brands and business flow in Europe and ASEAN through M&A.

In fiscal 2017, we acquired shares in TSB, a Thailand battery manufacturer, laying the foundations to strengthen our automotive and lead-acid storage battery business for industrial use in Southeast Asia. Meanwhile, in the domestic automotive battery business, we were able to expand sales of ISS-equipped vehicle batteries. We put in place a framework that will enable us to demonstrate synergies with TSB, HCTD, FET and HCEN over the globe including Japan. We completed the “Smart Community Demonstration Project in the Federal Republic of Germany” held in the German city of Speyer as one of NEDO (New Energy and Industrial Technology Development Organization)’s demonstration projects in Europe. We demonstrated that our integrated system improved the self-consumption rate of electricity produced by photovoltaic panels and also helped reduce CO₂ emissions.

However, the effects of rising prices for lead raw materials and the appreciation of the Taiwan dollar led to lower profitability. To address this, we worked on building a business base that is less sensitive to raw material prices, especially lead prices.

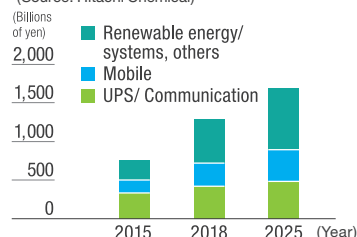
Key Measures for Fiscal Year 2018

Capturing demand in growth areas of industrial use business

In our global operations, we will reap synergies with HCEN and FET and pursue initiatives to increase profitability. We will also increase sales of next-generation monitoring system operated by storage batteries (Gen.2.0) to customers such as data centers and telecommunication base stations. In capacitors business, we will put the transition to high performance capacitors on track, continuing to focus on medical, social infrastructure and energy fields.

We will also invest resources into new batteries such as nickel-zinc batteries as an alternative to lead-acid batteries, to meet new market needs.

Forecast market for industrial batteries
(Source: Hitachi Chemical)



Outputs and Strategies of the 2018 Medium-term Management Plan

FY2017 Progress	Initiatives for FY2018	Goals for FY2018
Overall <ul style="list-style-type: none"> Increased business scale in Europe and ASEAN through M&A (Outside Japan revenue ratio 60%) Promoted to establish a business foundation that is less susceptible to influences from fluctuations in raw material prices Insufficient synergy effect 		
Industrial batteries <ul style="list-style-type: none"> Increased sales in the areas of mobile devices and <u>UPS</u>/telecommunications Launched a monitoring system of battery conditions (current, voltage, temp. etc.) 		
Automotive batteries <ul style="list-style-type: none"> ASEAN: acquisition of new sales channels/brands Achievement of the target of high performance batteries for <u>ISS</u> vehicles 		
Capacitors <ul style="list-style-type: none"> Continuation of product shift through the shift of resources to high functional products 		

Goals for the 10-year Strategy

To become one of the global top three manufacturers of automotive and industrial batteries and capacitors

Regional strategies

Manufacturing synergy (Optimization of bases)

Put the new industrial and automotive battery businesses in Europe and ASEAN into track

Sales strategies

Sales synergy
Utilize branding and maximize cross-selling

Product strategies

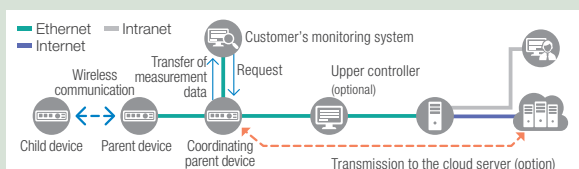
Development synergy (High value-added products)

- Industrial: Development of new products that generate synergy
- Automotive: Expansion of our ISS batteries in Europe
- Capacitors: Shift to high-performance products

Storage Battery Monitoring System

This system enables users to quickly know any battery problems in important facilities such as telecommunication base stations and to reduce maintenance man-hours. Hitachi Chemical began increasing sales of the system to data centers in fiscal 2016 and has introduced a new product (Gen2.0) in fiscal 2018. The characteristics of the new product compared to the conventional product (Gen 1.0) are as follows.

- Enables measurement of the capacity of lead-acid storage batteries for telecommunications and UPS in cells (in 2V cells)
- Improves frequency change function in the event of communication difficulties and otherwise improves the reliability of wireless communication



Capture global demand in automotive battery business

To enable us to demonstrate Group synergy, we will take advantage of FET's sales networks and brand strength in Europe, while at the same time seeking to expand our share of the European market by rolling out our environmentally friendly ISS battery technologies to meet strong demand for environmentally friendly products. We will also introduce the Group's manufacturing technologies to TSB and seek to improve its business performance in line with market expansion in the ASEAN region.

Meanwhile, Hitachi Chemical will work on expanding sales of European Norm (EN) batteries as well as ISS batteries.

Product examples

Tuflong G3

ISS vehicles are rapidly expanding, especially in Japan and Europe. Hitachi Chemical's Tuflong G3 battery for ISS vehicles won the Nippon Brand Award category in the 14th 'CHO' MONODZUKURI Innovative Parts and Components Awards in November 2017, in recognition of its durability that helps improve fuel economy and reduce CO₂ emissions. Tuflong G3 also won the METI Minister's Award in the 17th GSC Awards in June 2018.

'CHO' MONODZUKURI Innovative Parts and Components Awards

These awards are presented by MONODZUKURI Nippon Conference and Nikkan Kogyo Shimbu, Ltd. to enterprises whose parts play a significant role in supporting Japanese industry and society, with the spotlight directed on parts and members playing a behind-the-scenes role as a source of manufacturing competitiveness

GSC Awards - METI Minister's Award

Awarded by Japan Association for Chemical Innovation (JACI) to individuals and organizations that make an outstanding contribution to green sustainability chemistry (GSC). The METI Minister's Award is awarded to individuals and organizations that have contributed to the development of industrial technology.



Major Products

NEDO European Verification Projects

Hitachi Chemical is participating in three NEDO verification projects in Europe. One such project, a demonstration project conducted in the Germany city of Speyer, was completed in fiscal year 2017. This project used a hybrid storage system combining lithium-ion batteries and lead-acid batteries.



Forklift batteries

We will roll out our forklift battery technology that has been tried and tested in Japan to TSB. We will gradually start production of new batteries with better low temperature performance and battery life than TSB's conventional products.



Single cell



Assembled battery



Executive Officer
General Manager
Life Science Business Headquarters

Masato Yoshida

Life Sciences

Basic Policies of the 2018 Medium-term Management Plan

Cultivate future foundation of business based on materials technology and diagnostic reagent business

Strengths

- Business experiences in Life Science field (pharmaceutical and diagnostics business)
- Accumulation of applicable technologies to the life science field (wiring board technologies and material technologies)
- Collaboration with other companies, other businesses and the Hitachi Group

Weaknesses

- Inadequate interaction between R&D and building business models

Opportunities

- Rapid growth in the regenerative medicine markets
- Expansion of personalized medical care (treatment) (including genetic diagnosis)
- Expansion of health care-related markets

Threats

- Aggressive competition among various players, including major players and venture businesses
- Policies for reduction in medical spending

M&A/Alliance strategies

Hitachi Chemical has been focusing on the establishment of infrastructure in the field of diagnostic reagent business and regenerative medicine through the acquisition of technologies and business foundations from the outside.

Kyowa Medex Co., Ltd.

Kyowa Medex has an extensive lineup of products such as diagnostic reagents used in tests for dyslipidemia, diabetes, cancer and renal diseases. In particular, the company has large shares in Japan related to dyslipidemia, and diabetes.

HCATS

Hitachi Chemical Advanced Therapeutic Solutions, LLC (formerly PCT Cell Therapy Services, LLC) is highly skilled in the development of regenerative products technologies for manufacturing and testing as well as business operations.

Fiscal Year 2017 Progress

Building our business foundation by utilizing external resources through M&A, alliances and other methods brought us a good result.

In the regenerative medicine business, we invested nearly ¥2 billion and opened a new facility for the development and contract manufacturing for regenerative cells in Yokohama. This is one of the largest facilities of its kind in Japan. We also successfully received orders from clients. Entering into agreements for contract cell manufacturing with two companies, Daiichi Sankyo Co. Ltd. and SanBio Co. Ltd., we laid the foundation for the full-scale launch of our contract cell manufacturing business. Moreover, we concluded a technical license agreement with Accellta Ltd., an Israeli company with advanced technology for making culture media.

In the diagnostic reagents business, Kyowa Medex Co., Ltd., a company that specializes in diagnostic reagents for diseases such as diabetes and dyslipidemia, has become our consolidated subsidiary through which we have a robust foundation for our diagnostic reagents. We have launched efforts including the mutual utilization of business locations and sales networks, improvement of our product lineups and addition of specialized personnel.

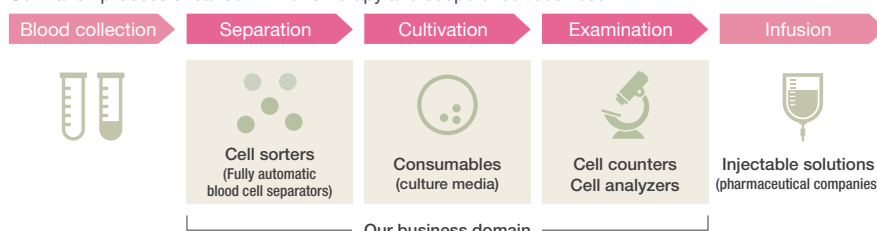
Key Measures for Fiscal Year 2018

Establish business foundations for regenerative medicine

The worldwide market of regenerative medicine is expected to exceed ¥3 trillion in 2025. We will strive to establish our presence in partnership with the Hitachi Group to develop technology for the mass production of regenerative products and by leveraging HCATS' fully automated cell production technology. Contract cell manufacturing from Daiichi Sankyo Co., Ltd. and SanBio Co., Ltd. will launch on a full scale. The addition of clean rooms is also planned with the aim of speedily addressing our clients' needs for contract cell manufacturing.

We will also build a system for streamlining our manufacturing practices using Accellta's latest culture media technology.

Cultivation process of cancer immunotherapy and scope of our business



(Development of manufacturing methods and contracted manufacturing of regenerative medicine products, and development and sale of consumable supplies)

Outputs and Strategies of the 2018 Medium-term Management Plan

FY2017 Progress	Initiatives for FY2018	Goals for FY2018	Goals for the 10-year Strategy
Regenerative Medicine <ul style="list-style-type: none"> Laid the business foundations and began developing manufacturing methods and contracted manufacturing of regenerative medicine products (entered contracted manufacturing agreements with SanBio Co., Ltd. and Daiichi Sankyo Co., Ltd.). Proceed with project launch in Japan (open contract manufacturing facility in Yokohama, which started business in April 2018) 	<ul style="list-style-type: none"> Fully launch contract cell manufacturing with SanBio Co., Ltd. and Daiichi Sankyo Co., Ltd. Additionally establish a contract cell manufacturing facility in Yokohama for receiving new orders 	<ul style="list-style-type: none"> Complete grand design towards global expansion Start developing manufacturing methods and contracted manufacturing of regenerative medicine products in Japan 	<p>Become a global player in the development of manufacturing methods and contracted manufacturing of regenerative medicine products</p> <p>Commercialize regenerative medicine consumables</p> <p>Develop profitable businesses in the growing markets, such as immuno-/genetic diagnostics and POCT</p>
Immuno- and Genetic Diagnostics <ul style="list-style-type: none"> Obtain a business foundation for diagnostic reagents through M&A (turning Kyowa Medex Co., Ltd. into our consolidated subsidiary) Continue the development of next-generation allergy systems Continue efforts to establish a business foundation for genetic diagnostic reagents 	<ul style="list-style-type: none"> Establish a system for immunodiagnostic and POCT diagnostic reagents Establish a PMI (Post-merger Integration) process for generating a synergy effect Continue efforts to establish a business foundation for genetic diagnostic reagents Establish a system for exploring new themes in genetic diagnostic reagents 	<ul style="list-style-type: none"> Establish the foundations for the immuno- and POCT diagnostics business and develop a system for genetic diagnostics business 	

Establish business platforms for immune, POCT and genetic diagnostics

Now that Kyowa Medex is our consolidated subsidiary, we have built a foundation for our domestic projects. In addition to mutual supplementation of product lineups, Hitachi Chemical's technological strengths and sales network in the United States will be utilized in an effort to explore markets for immune, POCT and molecular diagnosis, which concern high-value added diagnostic reagents. Kyowa Medex will function as the core of the Hitachi Chemical Group's diagnostic reagents. Also, in partnership with the HCA R&D Center, a facility characterized by its geographic advantage in the United States, we will build a system for generating a synergy effect when launching new themes in molecular diagnostics, immunodiagnosis and POCT.

POCT

Point of Care Testing
This collectively refers to tests performed near a patient, such as in a general practitioner's office.

	Hitachi Chemical	Kyowa Medex
Genetics	Cancer (under development)	
Immunology	Allergies Infectious diseases	Heart disease Infectious diseases Cancer HbA1c
Biochemical		Dyslipidemia Diabetes Kidney disease

Work to expand business by mutually complementing resources

HbA1c

Hemoglobin A1c
A form of hemoglobin that binds to glucose. Similar to blood glucose level, it is used in the diagnosis of diabetes.

Product examples

Diagnostics and Instruments of Kyowa Medex Co., Ltd.

Kyowa Medex Co., Ltd., which became a consolidated subsidiary in fiscal year 2017, is primarily engaged in the research and development and manufacturing and sale of in vitro diagnostics and automated analyzers used in clinical testing at medical institutions and registered clinical laboratories.



Reagents for clinical chemistry analyzers

These products are test reagents used in analyzers of biological sample material such as human serum, plasma and urine. Kyowa Medex offers a product lineup that addresses a wide range of testing needs, including measuring LDL cholesterol and neutral fat levels for diagnosing dyslipidemia and blood sugar levels and hemoglobin A1c used to diagnose diabetes.



Immunological test reagents and analyzers

These products are reagents and analyzers that utilize antibody immune responses to analyze biological materials such as human serum, plasma and urine. Measurements include tumor markers, cardiovascular risk markers, infection-related markers, hormones, markers of bone turnover, and faecal occult blood (bowel cancer screening).



Multi-allergen simultaneous test (MAST Immuno Systems)

This product measures the levels of allergen-specific IgE antibodies in human serum, which helps physicians identify the allergens responsible for the patients' symptoms. The system simultaneously measures 48 IgE antibodies including antibodies to pollen and food allergens, enabling the collection of a large amount of data in a single test.



POCT (Point of Care Testing) products

These are products that enable test results to be obtained quickly and simply in a variety of healthcare settings. Products include A1cGear Quick K for glycohemoglobin, Uropis S for urine analysis, Tear Total IgE Detection Kit for allergic conjunctivitis and Quick Chaser Flu A, B for influenza virus.

Environment

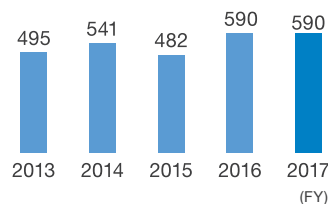
To achieve a sustainable society in harmony with the global environment, Hitachi Chemical will globally promote the reduction of the environmental burden in its business activities, products and services and the solution of environmental issues as typified by climate change.



For detailed information on environmental management, refer to [Hitachi Chemical's website](#) ►
[About Hitachi Chemical](#) ► [CSR](#) ► [Environmental Report](#).

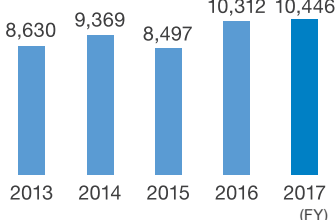
Greenhouse gas emissions^{*2}

(Thousands tons CO₂e)



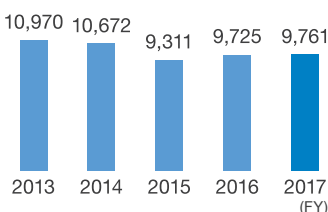
Energy consumption^{*2}

(Thermal conversion TJ)



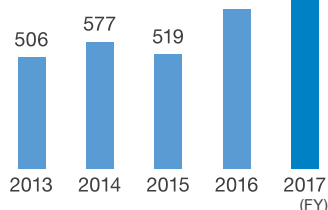
Water consumption^{*2}

(Thousands m³)



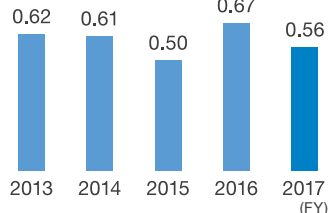
VOC emissions^{*2}

(Tons)



Environmental investment^{*3}

(Billions of yen)

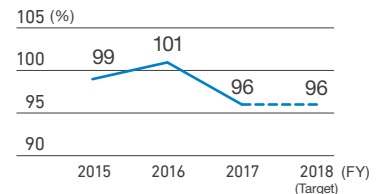


^{*2}: Major business sites (Global)

^{*3}: Major business sites (Japan only)

Management indicators in the 2018
Medium-term Management Plan

CO₂ emissions per unit of sales (Percentage relative to FY2014)*



*Data covers domestic production sites including the Group companies (Japan only)

Engaging in Environmental Management

Fiscal Year 2017 Initiatives

Regarding harmony with the global environment as one of the top priority issues of management, Hitachi Chemical is promoting a range of initiatives to reduce the environmental burden associated with its business activities and the environmental burden of its products and services through their life cycle by establishing its own policies and action plans on the promise of Hitachi's Environmental Vision, which is a framework common to the Hitachi Group, that consists of "Low-carbon Society," "Resource-efficient Society," "Harmonized Society with Nature" and "Hitachi Environmental Innovation 2050."

We have established numerical targets for CO₂ emissions in the 2018 Medium-term Management Plan. We have achieved the targets for fiscal year 2017 as a result of working as one to reduce greenhouse gas emissions through the Carbon Management Strategy by which we engage in management by assessing the financial impact of CO₂ emissions on Hitachi Chemical from a management perspective.

In its products and services, Hitachi Chemical promotes the sustainable engineering that will create environmentally friendly products and technologies through the integration and fusion of core technologies. We are creating products and businesses that can contribute to reducing the environmental burden in the value chain while meeting customers' needs. In fiscal year 2017, the revenue of Environmental Conscious Products accounted for 58% of total revenue.

In addition, we are also calculating the greenhouse gas emissions of the 18 major product families through the product life cycle based on LCA (Life Cycle Assessment) since fiscal year 2016. The LCA has been completed for 12 product families until fiscal year 2017.

Plan for Fiscal Year 2018

Our Environmental Conservation Action Plan for 2016 to 2018 includes a total of 12 action plans in the category of "High-standard Eco-factories and offices," "Provision of next-generation products and services," and "Promotion of environmental management."

In fiscal year 2018, the final year of the Action Plan, we will aim to achieve the targets for all items and proceed with the preparations for establishing the next action plan so that we will be able to work to further reduce the environmental burden through concerted efforts as the Group in the next action plan.

Environmental Conservation Action Plan for 2016 to 2018 (some of the main items)

Category	Item	Objective	Description	FY2017			FY2018
				Target	Result	Rating	Target
High-standard Eco-factories and offices	Prevent global warming	Improve energy consumed per production unit from FY2005 base year	Contribute to measures against global warming by improving the efficiency of energy use and promoting the reduction of CO ₂ emissions and activities to suppress emissions	13.3%	20.0%	Achieved	20.2%
	Use resources effectively	Improve water usage per production unit from FY2005 base year	To resolve the water scarcity problem, which is a worldwide concern, promote efficient water usage by strengthening water risk management	26.8%	28.8%	Achieved	28.5%
	Manage chemical substances	Improve chemical substances released into atmosphere per production unit from FY2006 base year	Reduce atmospheric emissions of chemical substances such as volatile organic compounds (VOCs) that have an impact on the human body and ecosystem by improving processes and providing alternative solutions	41.7%	44.9%	Achieved	44.0%

Note: To see all items in the Environmental Conservation Action Plan for 2016 to 2018, refer to <http://www.hitachi-chem.co.jp/english/csr/stakeholder/environment/plan-3rd.html>

Society

To deliver “wonders” that exceed the expectations of customers and society, Hitachi Chemical emphasizes active dialogue and communication with stakeholders and strives for sincere and honest corporate management throughout the value chain.



For detailed information on Society, refer to [Hitachi Chemical's website](#) ► [About Hitachi Chemical](#) ► [CSR](#) ► [Social Report](#).

Diversity and Inclusion

Fiscal Year 2017 Initiatives

By positioning diversity and inclusion as one of its management strategies for securing a competitive advantage, Hitachi Chemical is working on a range of initiatives from the perspectives of management attitude, the environment, awareness and institution by establishing a specialized organization to promote diversity and inclusion in its head office. The management team takes on the role of promoting diversity and inclusion in a tangible manner with the Executive Officers serving as the owners of the Diversity Promotion Project under the themes of change in mindset, foreign employees, LGBT, nursing care and disability, and the Outside Directors speaking about the importance of diversity at the corporate governance workshop for the employees.

In the 2018 Medium-term Management Plan, we have set a numerical target for the proportion of female managerial positions (non-consolidated basis, under the age of 45), and it was 7.9% in fiscal year 2017. We have also made a plan for developing female employees for each department to build the pipeline of female employees in career-track positions and monitor it by setting a target for the hiring rate and the resignation rate of new female engineering graduates, etc. As a result of a range of initiatives, awareness has been changing steadily among both female employees and managers, as seen in the rising scores related to the orientation toward female managers in career-track positions and the cultivation of female managers in a diversity attitude survey. Hitachi Chemical has also become the company with the highest ratio of patents in which female inventors are included among the 100 Japanese companies with the largest number of international patent applications in 2017 ([WIPO survey](#)).

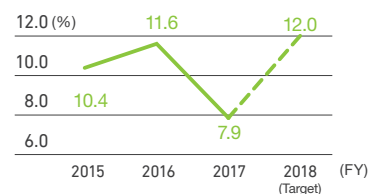
In addition, Hitachi Chemical has also set World Class Professional (WCP) as its vision for human resource development. It is indispensable to improve one's skills in dialogue to become a world-class professional. This is why we promote the utilization of the [KT method](#) and the strengthening of English-language skills on the Group-wide basis and conduct the [Global Coaching Program](#). In fiscal year 2017, a total of 927 people participated in the Program from 12 countries and regions.

Plan for Fiscal Year 2018

Hitachi Chemical will continue to set specific numerical targets for diversity and inclusion and publish them inside and outside the Company so that each employee will correctly understand diversity and inclusion as a management strategy and change their behavior as a result. We will continue to execute the PDCA cycle by quantitatively measuring the impact of each initiative.

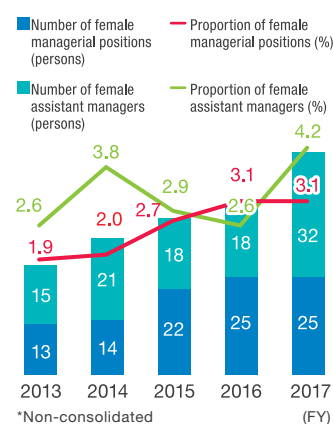
Management indicators in the 2018 Medium-term Management Plan

Proportion of female managerial positions*



*Non-consolidated, under age of 45

Number of female managerial positions/Number of female assistant managers/ Proportion of female managerial positions/ Proportion of female assistant managers



*Non-consolidated



Corporate governance workshop by Outside Director George Olcott



Lecture on 'LGBT at workplace' by Nijiro Diversity (NPO)

Survey of WIPO

It was published by the World Intellectual Property Organization (WIPO) in April 2018. WIPO is a specialized organization of the United Nations that is in charge of the development of the international intellectual property system.

KT method

The KT (Kepner-Tregoe) method is one of the communication tools common to Hitachi Chemical.

The KT method is a thinking process that systematizes problem-solving methods. It is used in discussions and decision-making scenarios in meetings as a tool for understanding the situation and determining choices.

Global Coaching Program

This program was launched in fiscal year 2012 to encourage dialogue. Internal coaches learn coaching skills and coach five stakeholders, primarily personnel in other divisions. The coaching continues for about eight months with the aim of developing new awareness and expanding the spirit of taking on challenges.

Governance

Hitachi Chemical will carry out management in the interests of shareholders and all other stakeholders by establishing the Hitachi Chemical Corporate Governance Guidelines in order to achieve sustainable growth and increase corporate value.



For detailed information on corporate governance, refer to [Hitachi Chemical's website](#) ► [About Hitachi Chemical](#) ► [Corporate Profile](#) ► [Corporate Governance](#).

Hitachi Chemical Corporate Governance Guidelines

The Hitachi Chemical Corporate Governance Guidelines have been established based on the principles of the Corporate Governance Code of Japan in fiscal year 2015.



The Corporate Governance Guidelines and Corporate Governance Report (Japanese only) can be downloaded in PDF format from the [Hitachi Chemical's website](#) ► [About Hitachi Chemical](#) ► [Corporate Profile](#) ► [Corporate Governance](#).

Internal audits

In fiscal year 2017, the Auditing Office conducted internal audits of a total of 50 business sites in both Japan and overseas.

Composition of the Board of Directors (As of the end of June 2017)

Percentage of non-executive Directors

80% (8 out of 10 Directors)
* Chairman of the Board does not concurrently serve as an Executive Officer.

Percentage of Outside Directors
50% (5 out of 10 Directors)

Percentage of Outside Directors in Nomination, Compensation and Audit Committees

Nomination Committee: 60%
(3 out of 5 members)
Compensation Committee: 60%
(3 out of 5 members)

Audit Committee: 83%
(5 out of 6 members)

* Changed name to EY ShinNihon LLC from July 1, 2018.

Reinforcing Governance

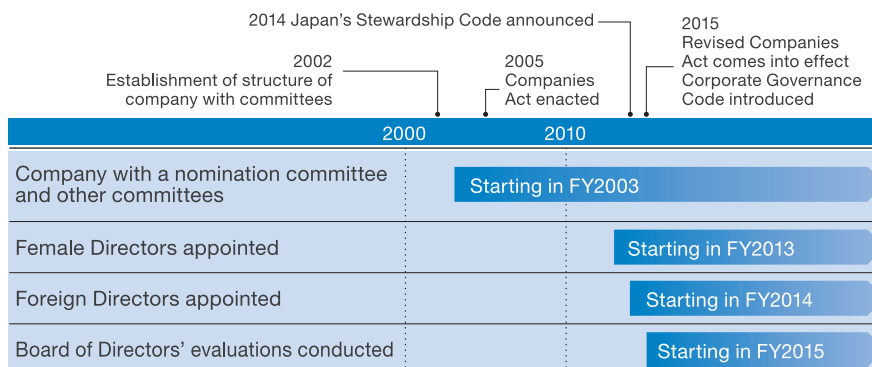
Measures to Strengthen Corporate Governance Structures

In order to achieve a high level of agility, objectivity and transparency in its management, Hitachi Chemical adopts the “company with a nomination committee and other committees” structure that separates executive and supervisory functions. To maximize the advantages of this structure, Hitachi Chemical established an executive framework which enables timely and firm decision-making; it also set up three Board of Directors' committees—Nomination, Compensation and Audit Committees—with the majority of the members of each committee being Outside Directors, to exercise appropriate supervision over management.

Furthermore, Hitachi Chemical has ensured diversity among Directors and reflect in management opinions capitalizing on their respective extensive experience and knowledge. We are also reinforcing operational aspects of the Board of Directors through means such as the introduction of a system for evaluating effectiveness. Additionally, in order to attain sustainable growth and increase corporate value, we have established the [Hitachi Chemical Corporate Governance Guidelines](#) and prepared the [Corporate Governance Report](#) for submission to the Tokyo Stock Exchange.

For the purpose of bolstering oversight functions over Group companies, we dispatch Directors and Auditors to Group companies as necessary and conduct periodic [internal audits](#) of business sites and Group companies.

Changes in corporate governance structures



Corporate governance structure (As of the end of June 2018)



Convocation Status of Important Meetings

In fiscal year 2017, Hitachi Chemical's Board of Directors held 15 meetings and passed resolutions on important matters relating to the basics of management such as management policies, the appointment of Chief Executive Officer and Executive Officers and other such matters. The Board of Directors also periodically received reports on business results and engaged in constructive discussions, as well as promoting the development of appropriate internal control and risk management systems and supervising the effectiveness of the implementation of such systems.

The Executive Officers' Meeting was convened 24 times, where discussions were held by combining the knowledge of all Executive Officers for the Chief Executive Officer to make accurate and prompt decisions on matters of importance that may affect the Company or the Group. In regards to other important meetings, the Nomination Committee held 3 meetings, the Audit Committee held 13 meetings, the Compensation Committee held 4 meetings, the J-SOX Committee held four meetings and the Compliance Management Committee held 4 meetings.

Some of the agendas discussed at the Board of Directors' meetings in FY2017

- Conclusion of a final agreement for the acquisition of ISOLITE GmbH
- Conclusion of a final agreement for the acquisition of Kyowa Medex Co., Ltd.
- Augmentation of production capacity for advanced functional materials
- Augmentation of production capacity for CMP Slurry

Ensuring the Effectiveness of Audits by the Audit Committee

The Audit Committee consists of six Directors including five Independent Outside Directors, under whom three staff members in positions equivalent or subordinate to general managers of departments are assigned. The Audit Committee holds a meeting every month and determines audit policies, audit execution plans, etc. Also, together with Independent Outside Directors, it conducts auditing activities including interviewing Executive Officers, attending important internal meetings and performing audits at the head office, division, business sites and Group companies. In fiscal year 2017, audits were performed at five business sites, three regional and branch offices and 29 Group companies.

We are also ensuring the effectiveness of audits through collaboration secured by frequent meetings and interviews with the external Independent Auditor and the internal audit section.



Onsite audits of HCMX and HCD by Outside Director Chieko Matsuda and Outside Director Richard Dyck



Rate of attendance at Board of Directors' meetings in FY2017

Name	Attendance rate
Kazuyuki Tanaka	100% (15 out of 15 meetings)
Takemoto Oto	100% (15 out of 15 meetings)
George Olcott	100% (15 out of 15 meetings)
Masayuki Sarumaru	100% (12 out of 12 meetings)
Richard Dyck	100% (15 out of 15 meetings)
Chieko Matsuda	100% (15 out of 15 meetings)
Yoshihito Kitamatsu	100% (12 out of 12 meetings)
Yoshihiro Nomura	100% (15 out of 15 meetings)
Hisashi Maruyama	100% (15 out of 15 meetings)
Koji Tanaka*	-

* Elected at General Meeting of Shareholders held in June 2018.

HCMX
Hitachi Chemical Mexico, S.A. de C.V.

HCD
Hitachi Chemical Diagnostics, Inc.

Evaluation of Effectiveness of the Board of Directors

In accordance with the Hitachi Chemical Corporate Governance Guidelines, Hitachi Chemical has been evaluating the effectiveness of the Board of Directors every year in order to ensure the effectiveness of the Board's management oversight function and decision-making function. Based on the evaluation results, the Company takes measures to improve governance every year according to the results of the evaluation of effectiveness.

As a result of undertaking a self-evaluation using a questionnaire survey in the evaluation of effectiveness of the Board of Directors in fiscal year 2016, "Development of a successor to the President and CEO" and "Deliberation of important strategies" were cited as challenges. In light of these challenges, we promoted new initiatives including holding the Off-site Meeting at which the Directors and Executive Officers deliberated important strategies in December 2017.

In fiscal year 2017, we also introduced an interview, in addition to a questionnaire, to evaluate the effectiveness of the Board of Directors that consisted of Directors who were elected at the Annual General Shareholders Meeting held in June 2017. With respect to the effectiveness, the result showed that it was "Generally effective." Given that some issues were also identified in the evaluation, we will make efforts to improve the effectiveness in fiscal year 2018 based on the evaluation of effectiveness in fiscal year 2017.

■ Overview of the Evaluation of Effectiveness of the Board of Directors in FY2017

Overview

We conducted a self-evaluation of all 11 Directors using a questionnaire survey as in the past in cooperation with outside advisors. We then held interviews with seven Directors (one Chairman, five Outside Directors and one President and CEO) based on the results of the questionnaire. Based on the analytical findings in the responses, we held discussions at the Board of Directors Meeting in May 2018.

Results of Analysis and Evaluation

- 1 Given that positive evaluations of effectiveness accounted for more than half (61%) while negative evaluations made up a small amount (7%) in the results of the questionnaire, we have determined that the effectiveness of the Board of Directors has been generally secured (also improved from the evaluation last year (I agree (55%), I don't agree (11%)).
- 2 As a result of the interviews, it was established that the following are key issues to address in the future: "Structure of the Board of Directors based on the direction of medium- to long-term management strategies," "Strengthening of monitoring over business operation and governance under the business division profit system" and "Implementation of more effective audit activities by the Audit Committee."

Given the results above, we have confirmed that the Board of Directors of the Company fulfills the roles and duties stipulated in the Guidelines for the sustainable growth of the Group and the enhancement of its corporate value and evaluates that the Board of Directors was "generally effective" in fiscal year 2017 as well.

Efforts to Improve Effectiveness

As a result of performing the evaluation of effectiveness, Directors expressed numerous constructive opinions about issues and measures for increasing effectiveness.

The Company will ensure the effectiveness of the operation method and the management oversight function and decision-making function of the Board of Directors and continue to achieve a high level of agility, objectivity and transparency in its management by revising the Guidelines, etc. by reference to the constructive opinions expressed by the Directors.

Questionnaire

Respondents undertake a self-evaluation (selection from three-grade evaluation) for each question in the categories of "Structure and operation of the Board of Directors," "Management strategies and business strategies," "Corporate ethics and risk management," "Performance monitoring and the evaluation and compensation of Executive Officers, etc." and "Dialogues with shareholders, etc." and record the reasons and improvements. Three questions including "Roles of the Chairman of the Board" were added to the questions in the previous fiscal year, and the total number of questions came to 21.

Interview

Based on the reasons for the evaluations and improvements stated in the questionnaires, individual interviews lasting about 60 minutes each were conducted by an outside advisor on the background and reasons, etc. for the comments.

Implementation of Plan to Develop Successors

Hitachi Chemical is making efforts to elaborate “Leaders to Win” by securing the management leaders that are necessary for achieving its growth strategies globally on a group-wide basis.

With respect to the excavation and selection of candidates for successors by the Executive Officers, taking diversity into consideration along with plans for their development, the Nominating Committee holds discussions and undertakes confirmation based on the Hitachi Chemical Corporate Governance Guidelines, and the Board of Directors exercises the continuous oversight of the overall efforts by obtaining advice from the Nominating Committee.

■ Roles of the Nominating Committee

- Discussion of human resources requirements for the President and CEO
- Confirmation of the profile and development policy of candidates
- Confirmation of the individual development of candidates for the President and CEO, and the status of their assignment

■ Roles of the Board of Directors

- Discussion of human resources requirements for the President and CEO and the development policy of candidates <consultation from the Nominating Committee>
- Confirmation of the individual development of candidates for the President and CEO, and the status of their assignment <report from the Nominating Committee>
- Determination of appointment standards for Executive Officer
- Overall process management and progress management of candidates for Executive Officer

Appointment of Directors and Executive Officers and Independence of Outside Directors

With regard to the reasons for selecting Directors, the Nomination Committee nominates candidates and eligible persons based on its standards, and the General Shareholders’ Meeting makes decisions by resolution. Decisions regarding the appointment of Executive Officers are made by the Board of Directors based on standards.

Independent Outside Directors are independent from Hitachi Chemical and ask questions, present opinions and give advice, etc., as appropriate from the perspective of ensuring the lawfulness, appropriateness and efficiency of management and raising corporate value based on their extensive experience and knowledge at the Board of Directors Meeting, etc. The Nomination Committee determines the independence of Outside Directors based on its standards for determining their independence.

Directors’ and Executive Officers’ Compensation

The compensation of Directors and Executive Officers is determined in accordance with policies for recruiting diverse and exceptional human resources, in order to provide management motivation to pursue higher corporate value not just over the short term, but also over the medium to long term. The Compensation Committee discusses and determines compensation of Directors and Executive Officers based on the Policy for Determination of Directors’ and Executive Officers’ Compensation on an annual basis.

■ Directors’ and Executive Officers’ Compensation (FY2017)

Type of management position	Total compensation (Millions of yen)	Compensation by category (Millions of yen)		Number of eligible persons
		Monthly base salary	Performance-based reward and term-end bonus	
Directors (excluding Outside Directors)	114	101	13	8
Executive Officers	632	414	218	15
Outside Directors	81	72	9	6



For detailed information on Plan to Develop Successors, refer to [Hitachi Chemical's website](#) ► [About Hitachi Chemical](#) ► [Corporate Profile](#) ► [Corporate Governance](#) ► [Hitachi Chemical Corporate Governance Guidelines](#).



For detailed information on reasons for selecting Directors, refer to [Hitachi Chemical's website](#) ► [About Hitachi Chemical](#) ► [Corporate Profile](#) ► [Corporate Governance](#) ► [Hitachi Chemical Corporate Governance Guidelines](#).



For the reasons for selecting Directors, refer to [P.45-46](#).



For detailed information on cross-held shares, refer to [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [Corporate Profile](#) ▶ [Corporate Governance](#) ▶ [Hitachi Chemical Corporate Governance Guidelines](#).

Shareholding Status

Hitachi Chemical has decided to hold shares of other companies if the Company has determined based on the Hitachi Chemical Corporate Governance Guidelines that there is a reason for holding shares from the standpoint of business operation and that the continuous holding will contribute to the enhancement of corporate value. We do not hold shares of other companies merely for investment purposes. We hold 39 stocks as of the end of June 2018, and their total amount on the balance sheet is ¥9,804 million. Whether or not we can acquire shares of other companies is determined by the Executive Officers or Board of Directors, which is the decision-making body, in accordance with the Standards for Submissions to the Board of Directors.

We also regularly check the aim and reasonability of important cross-held shares through deliberations at the Executive Officers' Meetings and report the checking results to the Board of Directors.

Relationship with Parent Company and Ensuring Equality Among Shareholders

As a member of the Hitachi Group, Hitachi Chemical continues to maintain cooperative relationships with Hitachi, Ltd. and other Hitachi Group companies through business activities such as management information exchange, R&D, and sharing product supply, and effectively uses management resources including the Hitachi brand strength to increase its corporate value. In order to ensure independence in business operations and transactions, we also pay due consideration to ensure that Directors, who concurrently serve as Director of the parent company or its Group company, constitute minority of the Board of Directors, as well as developing measures and an environment to ensure the rights of shareholders and equality among them, including making it our policy to give consideration to minority shareholders.



For detailed information on thorough practicing of compliance, refer to [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [CSR](#) ▶ [Governance and CSR Management](#) ▶ [Compliance](#).

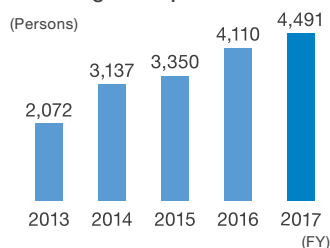
Thorough Practicing of Compliance

We define compliance as more than just strict adherence to laws and regulations, and understand it to include observance of industry standards as well as employees' routine activities to comply with and enhance corporate ethics and social norms. Compliance is positioned at the heart of Hitachi Chemical's CSR activities. We distribute the Hitachi Chemical Group Codes of Conduct Handbook—an easy-to-understand explanation of the Codes of Conduct, which serve as a guide for conduct—to all employees and require them to periodically reread and comply with the Handbook. We have also specified every October as Corporate Ethics Month, in which a message from the top management translated in 11 languages is conveyed for all the Group employees, and a wide range of awareness-raising activities are carried out.

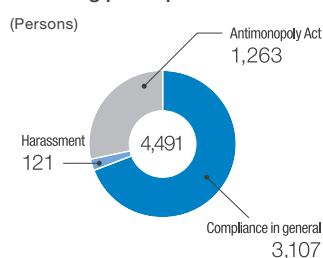
We conduct training and audits to reinforce compliance. In fiscal year 2017, the Risk Management Center provided trainings 113 times, in which 4,491 employees participated. Audits were conducted with respect to 2 companies in Japan and 11 overseas companies, and guidance and education were provided to improve compliance management systems. Plans for fiscal year 2018 include audits of 12 Hitachi Chemical business sites in Japan and overseas.

We have also set up the "Global Hotline," a whistleblowing system in which reports can be made in three languages (Japanese, English and Chinese), with points of contact established inside Hitachi Chemical as well as outside (at a law firm). In fiscal year 2017, 32 inquiries/reports were received including those from overseas, none of which would have led to serious breach of laws or regulations.

Number of Compliance Training Participants



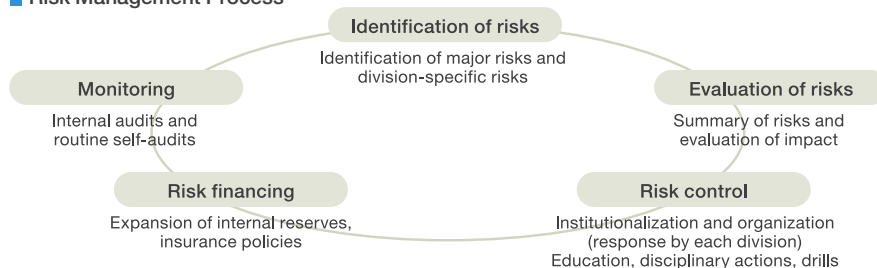
Breakdown of compliance training participants in FY2017



Strengthening of Risk Management

Hitachi Chemical requires its officers and employees to keep an eye on various risks and act by being mindful of preventing such risks from arising. In regards to risks that may have a particularly substantial impact on management, we have established countermeasures by making their financial impact visible in the form of a risk assessment table based on a scenario specifying the types, responding division, scale of damage and frequency of occurrence through risk assessment. These are reported to the Executive Officers' Meeting and the Board of Directors and are also described as "Business-related Risks" in the Securities Reports. Having established the Risk Management Center as an independent organization that reports directly to the President and CEO, we are making efforts to further improve governance systems from the viewpoint of compliance, business continuity, export controls and internal audits.

Risk Management Process



Main Risks and Countermeasures

Category	Main risks	Countermeasures
Health & safety Business continuity	Damage caused by earthquakes and tsunamis Infection with diseases, pandemics	<ul style="list-style-type: none"> Develop manuals on initial response that varies from business site to business site, formulate BCP and conduct drills Formulate BCP against worldwide new-strain influenza, make alternate production arrangements, support preparedness of overseas Group companies
Stable revenue	Recession, fall in demand, intensified competition, Failure to detect product defects, leaks to outside	<ul style="list-style-type: none"> Formulate medium/long-term strategies, dynamic business operations by each business division Application to quality management systems, stringently enforce manufacturing processes
Social responsibility	Unfair trading (bidrigging, bribery) Leakage of customer/ client information	<ul style="list-style-type: none"> Promote audits, education, various compliance programs Thoroughly manage information through the development of rules and self-auditing, raise awareness by e-learning Evaluate Information security and execute measures to improve Information security

Business Continuity Management

In order to meet the expectations of customers and society, we are seeking to improve the standard of business continuity management through such efforts as periodic business continuity plan (BCP) simulation drill. In fiscal year 2017, a simulated emergency drill was conducted at Hitachi Chemical's Yamazaki Works to respond to a direct-hit earthquake and a worldwide new-strain influenza pandemic scenario. The learnings from these exercises were reported to the Executive Officers' Meeting, shared among the entire management including Executive Officers and utilized to improve next year's BCP.

Past Cartel Acts related to the Capacitor Business

Since 2014, the Company has been investigated by the competition authorities in several countries and regions regarding its past cartel acts related to the capacitor business of the Group, and it was ordered by the European Commission to pay financial penalties in March 2018 because the Company had violated the European competition law. In the United States, civil suits to seek compensation for damages because the Company was involved in a cartel and had violated the US anti-trust law were filed by plaintiffs who had purchased capacitors, and the Company concluded a settlement agreement to pay settlement compensation in fiscal year 2017.

We offer our heartfelt apologies to all the affected parties, including our shareholders, for the concern and inconvenience caused. The Group has deep remorse on its involvement in the cartel acts and will continue to fully enforce measures to prevent recurrence and regain our trust by enhancing training and governance in the Group.



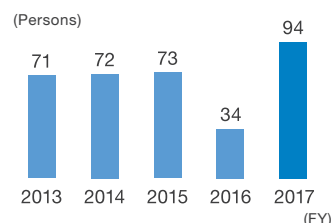
For detailed information on strengthening of risk management, refer to [Hitachi Chemical's website](#)
▶ [About Hitachi Chemical](#) ▶ [CSR](#) ▶ [Governance and CSR Management](#) ▶ [Risk Management](#).



For detailed information on Business-related Risks, refer to [Hitachi Chemical's website](#) ▶ [Investor Relations](#) ▶ [IR Library](#) ▶ [Financial Summaries](#) ▶ [Results for the Year](#).

BCP Business Continuity Plan

Number of participants in BCP management simulation drill



* Please refer to the page 12 for more information on inappropriate entries of figures in inspection reports of some products among lead-acid batteries for industrial use.

Board of Directors and Executive Officers

(As of the end of June 2018)



From back left: George Olcott Masayuki Sarumaru Richard Dyck Yoshihiro Nomura
From front left: Yoshihito Kitamatsu Takemoto Oto Kazuyuki Tanaka Hisashi Maruyama Chieko Matsuda Koji Tanaka

Name	Position	Reasons for selection	Significant concurrently held positions	Nominating Committee	Compensation Committee	Audit Committee	Independent Director
Kazuyuki Tanaka	Chairman of the Board	Mr. Tanaka has a wealth of experience and excellent management capabilities as a management executive of Hitachi Chemical and Hitachi Group companies. He is expected to enhance the Board of Directors' decision-making functions by sharing information as a member of the Board.	Director & Audit Committee Member of Hitachi, Ltd.	◎			
Takemoto Oto	Outside Director	Mr. Oto is expected to enhance the Board of Directors' functions by reflecting, in the management of the Hitachi Chemical Group from a standpoint independent from the Hitachi Group, his extensive expertise in personnel and general affairs and the broad insight he has gained as a management executive as well as outside auditor of other companies.	Outside Director (Audit & Supervisory Committee Member) of A.D.Works. Co., Ltd. Outside Corporate Auditor of Imperial Hotel, Ltd.	○	○	◎	○
George Olcott	Outside Director	Dr. Olcott is expected to enhance the Board of Directors' functions by reflecting, in the management of the Hitachi Chemical Group from a standpoint independent from the Hitachi Group, his wealth of experience and broad insight as an academic expert and management executive.	Guest Professor, Faculty of Business and Commerce, Keio University Outside Director of The Dai-ichi Life Insurance Co., Ltd., Outside Director of DENSO Corporation, Non-executive Director of JPMorgan Japanese Investment Trust plc			○	○
Masayuki Sarumaru	Outside Director	Mr. Sarumaru is expected to enhance the Board of Directors' functions by reflecting, in the management of the Hitachi Chemical Group from a standpoint independent from the Hitachi Group, his wealth of experience and broad insight as a management executive of an international enterprise.	Chairman of YKK Corporation	○	○	○	○
Richard Dyck	Outside Director	Dr. Dyck is expected to enhance the Board of Directors' functions by reflecting, in the management of the Hitachi Chemical Group from a standpoint independent from the Hitachi Group, his wealth of knowledge and experience in semiconductors and the broad insight he has gained as a management executive.	Representative Director of TKG K.K.			○	○



For the list of the Executive Officers, please refer to [Hitachi Chemical's website](#) ► [About Hitachi Chemical](#) ► [Corporate Profile](#) ► [Board of Directors & Executive Officers](#). For the brief background of Directors, please refer to the "Notice of Annual General Shareholders' Meeting," [Hitachi Chemical's website](#) ► [Investor Relations](#) ► [Stock Information](#) ► [Notice of Annual General Shareholders' Meeting](#).



Top Message

At a Glance

Our Strategy

Our Initiatives

Name	Position	Reasons for selection	Significant concurrently held positions	Nominating Committee	Compensation Committee	Audit Committee	Independent Director
Chieko Matsuda	Outside Director	Dr. Matsuda is expected to enhance the Board of Directors' functions by reflecting, in the management of the Hitachi Chemical Group from a standpoint independent from the Hitachi Group, her extensive expertise in business economics and accounting/finance and the broad insight she has gained as an university professor and management executive.	Professor, Graduate School of Management, Tokyo Metropolitan University, Professor, Faculty of Economics and Business Administration, Tokyo Metropolitan University, Outside Corporate Auditor of Kirin Holdings Co., Ltd. Outside Director of SATO HOLDINGS CORPORATION, Outside Director of Foster Electric Co., Ltd.	○	○	○	○
Yoshihito Kitamatsu	Director	Mr. Kitamatsu has a wealth of operational experience and expertise in accounting and finance. He is expected to enhance the Board of Directors' decision-making functions by sharing information as a member of the Board.	-			○	
Yoshihiro Nomura*	Director	Mr. Nomura has broad business experience and knowledge, having been engaged in the management of Hitachi Chemical's core businesses such as advanced performance materials business and energy storage & automotive products business as well as overseas Group companies. He is expected to enhance the Board of Directors' decision-making functions by sharing information as a member of the Board.	-				
Hisashi Maruyama*	Director	Mr. Maruyama has a wealth of experience, proven track record and excellent management execution capabilities, having been engaged in the management of Hitachi Chemical and its Group companies. He is expected to enhance the Board of Directors' decision-making functions by sharing information as a member of the Board.	-		◎		
Koji Tanaka	Director	Mr. Tanaka has a wealth of experience and broad insight as a management executive, having been engaged in management in a broad ranges of areas including the electricity business and the life science business. He is expected to enhance the Board of Directors' functions by reflecting them in the management of the Group from a broad perspective.	Advisor of Hitachi, Ltd., Chairman of the Board and Outside Director of Hitachi Transport System, Ltd. and Director of Hitachi Construction Machinery Co., Ltd.	○	○		

*Concurrently serving as Executive Officer ◎ Committee Chairman

SRI Ratings

MSCI		2018 Constituent MSCI Japan ESG Select Leaders Index		
		2018 Constituent MSCI Japan Empowering Women Index (WIN)		

Paper Considerations



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