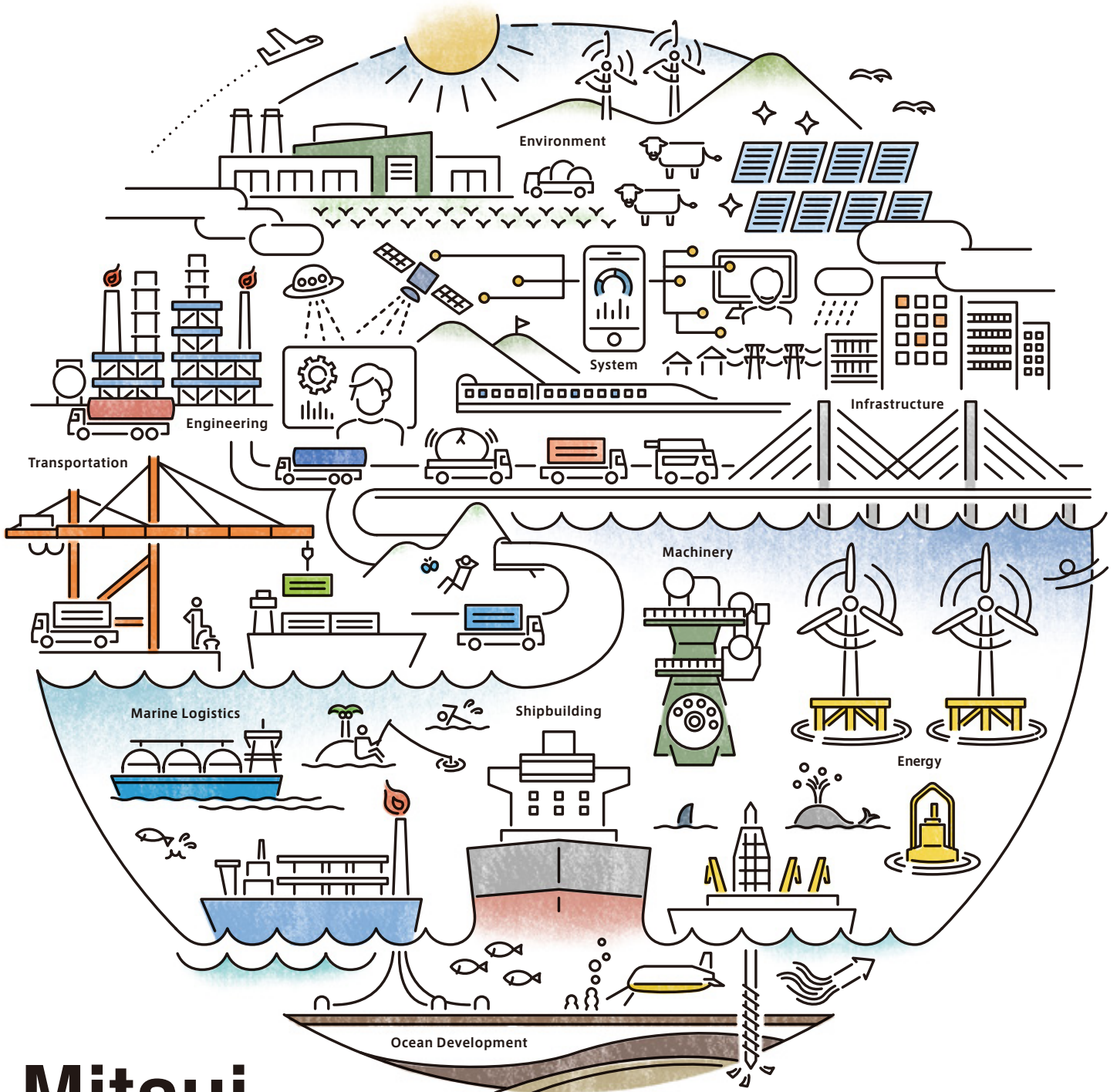


# Action

Corporate Action Report 2017



# Mitsui Engineering & Shipbuilding

**100**<sup>th</sup>  
Anniversary

# Contents

## From the sea, onward

The power to travel on the sea is essential for the development of our country,  
which is surrounded by the ocean.

Mitsui Engineering & Shipbuilding was established on November 14, 1917  
with the mission of getting Japan to move forward.

Ships travel in the tough environment of the ocean while carrying lives.

Our job of building ships has brought out the great potential of  
people and fostered numerous technologies.

Now, our technologies are applied not only in the marine engineering, but on the entire planet and beyond.

We have begun to work on global issues, including ones in the fields of the environment and energy.

In April 2018, MES will become Mitsui E&S Holdings Co., Ltd.

One hundred years after our foundation, we will instigate a new era with greater strength.



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- 04 Action for "Marine Logistics & Transportation"
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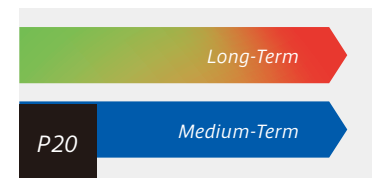
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Action Report



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Message from the President



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Medium- & Long-Term Management Plans



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Business Segment Overview

### Editing Policy

Under our Company Philosophy of "To continue our role as a trusted company, and as a trusted member of society" we at Mitsui Engineering and Shipbuilding Co., Ltd. uphold our corporate philosophy as we strive to be a company that uses manufacturing to contribute to social development and preserve the global environment. We view all actions related to achieving this goal as collective approach towards the creation of corporate value.

The Corporate Action Report is a comprehensive summary of all the activities that we carried out in the fiscal year, covering management strategies, vital strategies, and the business status, as well as environment conservation activities and our social contribution initiatives. It is designed to provide stakeholders with greater insight into company operations.

### Website pages

- ▶ Overall corporate activities <http://www.mes.co.jp/english/>
- ▶ Financial information <http://www.mes.co.jp/english/investor/>
- ▶ Non-financial information <http://www.mes.co.jp/english/company/>

### Coverage of the report

- ▶ This report covers the period from April 2016 to March 2017. (However, some sections include information for April 2017 and thereafter.)
- ▶ Issued in: August 2017 (The last report was issued in July 2016. The next report is planned to be issued in August 2018.)

### Guidelines used as reference

- Ministry of the Environment, Environmental Reporting Guidelines
- GRI, Sustainability Reporting Guidelines Version 4
- ISO 26000

### Disclaimers

This report contains plans and forecasts that were current as of the date of publication, as well as descriptions about our future business activities based on our management plans. Please note that this information is based on the currently available information, and the actual contents of our business activities may differ from the contents of this report due to future circumstances or the environment, or due to unanticipated events that may occur after the publication of this report.

In April 2018, the MES Group will become Mitsui E&S Holdings Co., Ltd.

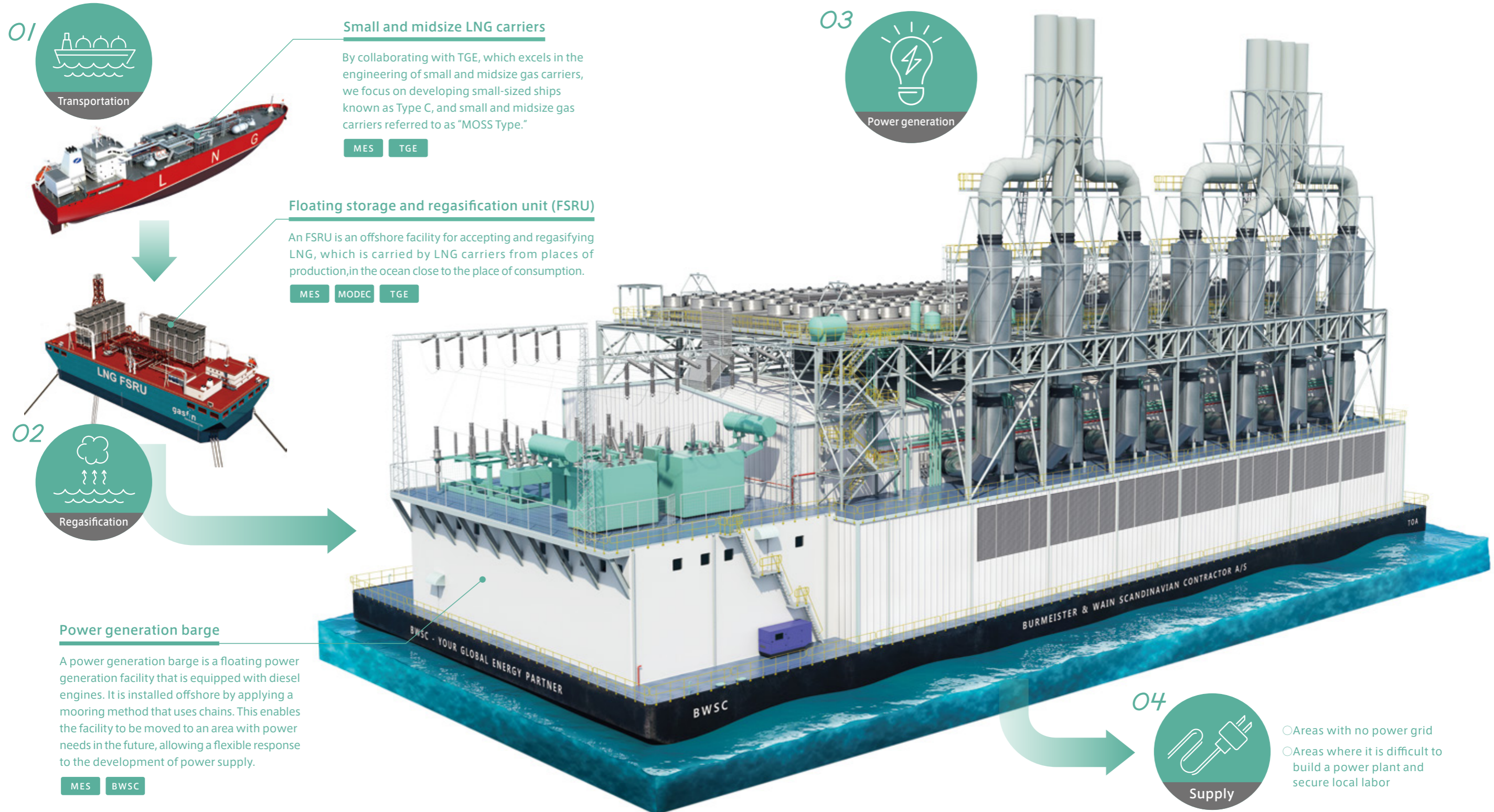


# Delivering energy anywhere in the world

[Provision of floating gas power generation systems]

With populations in Asia and Africa expected to continue to grow, how to support ever-rising global energy consumption has been a serious issue. At MES, we have developed and manufacture floating mobile power plants (power generation barges), which are equipped with diesel engines and power generators, together with Burmeister & Wain Scandinavian Contractor A/S (BWSC), our subsidiary in Denmark. We thus contribute to stable power supply in regions where it is difficult to procure materials or

secure labor locally, or where a power grid has yet to be developed. Moreover, we are also a one-stop provider of integrated floating gas power generation systems, which consist of environmentally friendly gas power generation barges fueled by natural gas, floating storage and regasification units (FSRU) provided by TGE Marine Gas Engineering GmbH (TGE), our subsidiary, and small and midsize gas carriers.





# Providing one-stop solutions for natural gas transportation needs

[Provision of consistent solutions from the upstream to the downstream processes of natural gas transportation projects]

01

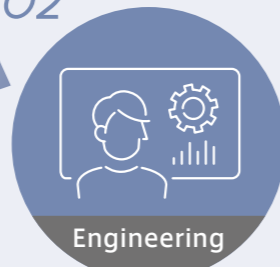


Consulting

Consulting services including the selection of ship specifications for ship owners

MES TGE

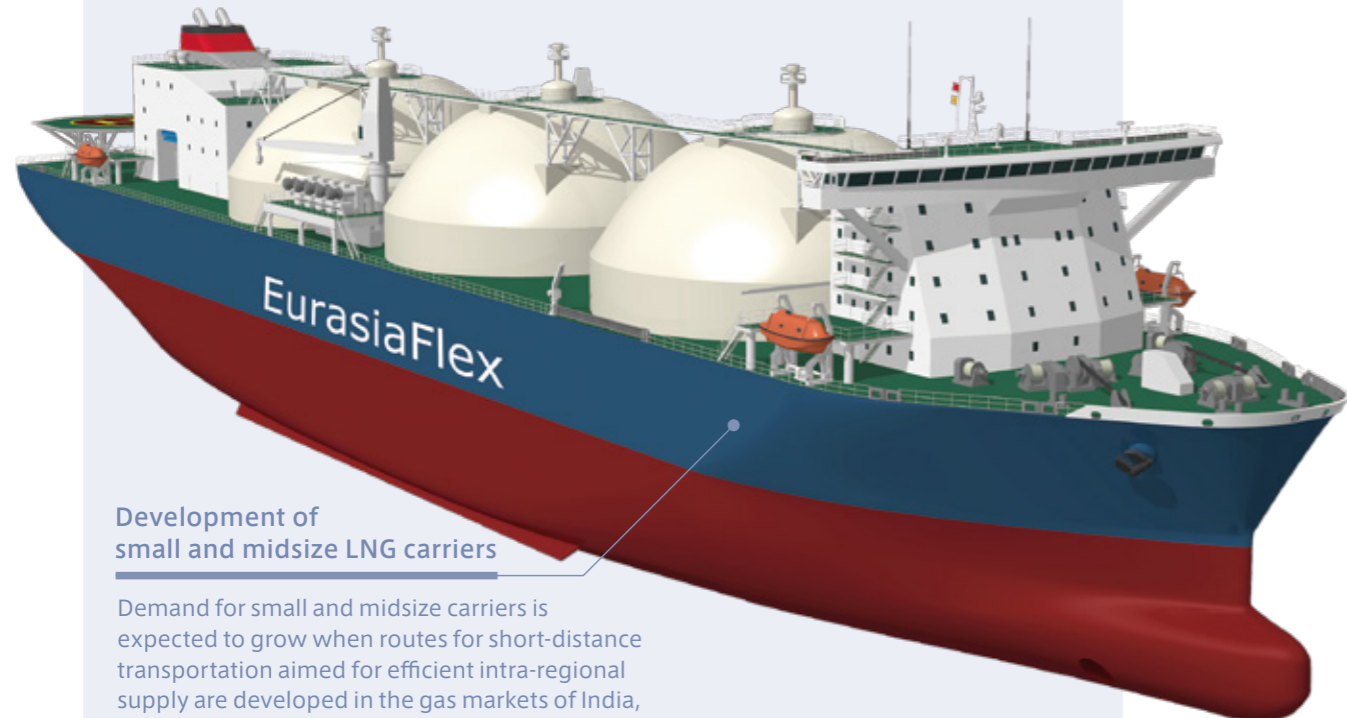
02



Engineering

Provision of engineering services for small LNG carriers, small LPG carriers, ethylene carriers, LNG bunker ships, and others

MES TGE

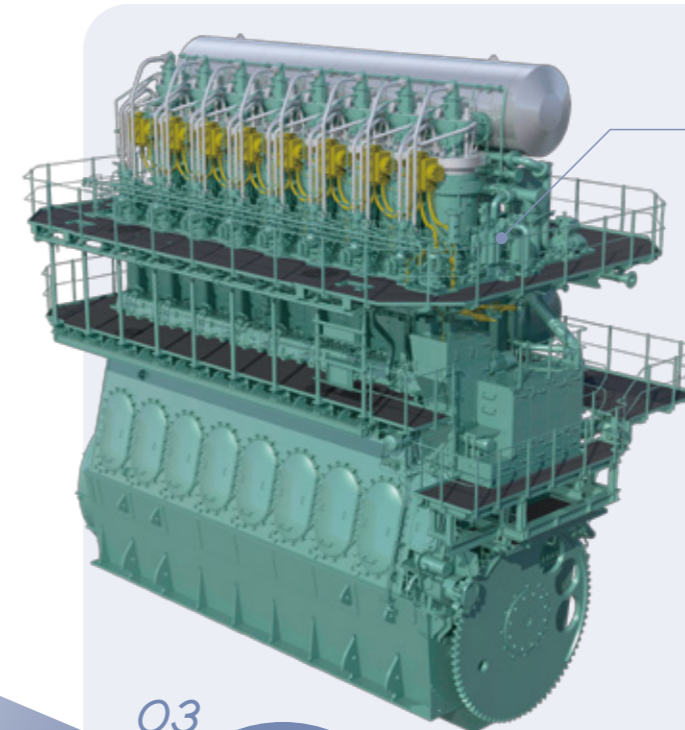


## Development of small and midsize LNG carriers

Demand for small and midsize carriers is expected to grow when routes for short-distance transportation aimed for efficient intra-regional supply are developed in the gas markets of India, China, and Southeast Asia in the future.

Natural gas is attracting attention as a clean energy with a small environmental footprint. Demand for gas carriers for importing and exporting natural gas is expected to grow with future increases in natural gas consumption. Working together with our subsidiary TGE Marine Gas Engineering GmbH (TGE), a German gas carrier engineering company, we are aiding the development of the small and midsize gas carrier market. We will enter the upstream processes of gas carrier construction by acquiring expertise from TGE, which

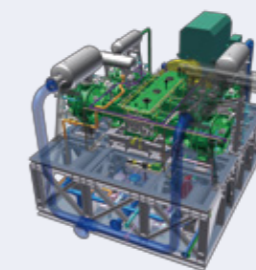
has worked on a large number of Engineering, Procurement, and Construction Supervision (EPCS) projects, including the development of small and midsize gas carriers, demand for which is expected to increase in the future. In addition, we will provide solutions that are not limited to shipbuilding through an integrated provision of technologies and products for handling gas fuels, including the electronically controlled gas injection diesel engine (ME-GI), which we developed jointly with MAN Diesel & Turbo SE, the licensor, and fuel gas supply systems (FGSS).



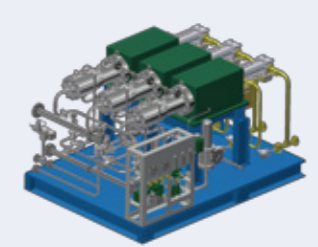
## Electronically controlled gas injection diesel engine (ME-GI)

An ME-GI is a dual fuel engine that can be fueled by both natural gas (LNG) and heavy oil, despite being a large, two-cycle low-speed diesel engine with high thermal efficiency.

## Fuel gas supply systems (FGSS) for LNG carriers

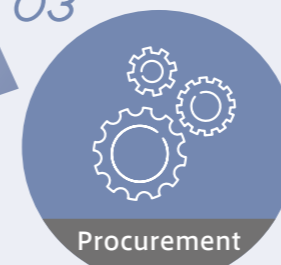


High-pressure compressor for FGSS



High-pressure pump for FGSS

03

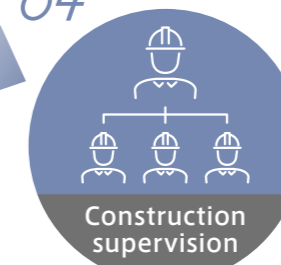


Procurement

Provision of gas engineering equipment

MES Kaji Technology

04



Construction supervision

MES

05



After-sales services

MES Technoservice Dept.

## After-sales services

We have established facilities for maintenance and repairs at key locations in Japan and overseas. At these facilities, we provide services for the overall lifecycle of marine diesel engines.

## e-GICSX

This equipment provides early detection of abnormalities by analyzing and monitoring big data, which include not only data from multiple main engine sensors but also navigation data, such as weather and sea conditions.

# Evolving into a general hospital that protects the social infrastructure

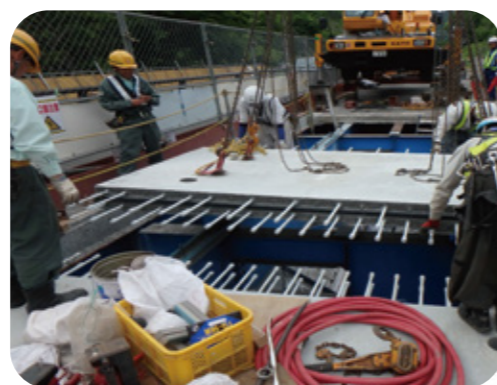
【Provision of one-stop services from investigation and diagnosis to repairs, replacement, and renewal】

## Technologies for construction and repair of prestressed concrete (PC) bridges

DPS Bridge Works Co., Ltd., which is our subsidiary, caters to needs for a longer service life of structures with its technologies for constructing, repairing, and reinforcing PC bridges and steel structures. For repair and reinforcement works, the company provides comprehensive management, ranging from investigations and diagnosis made by using the latest equipment, to work done by applying the Outplate Method, which can be applied to reinforcement work for various kinds of structures, and Naoshitaru\*, a mortar material for repairing cross sections.

\*Naoshitaru is a registered trademark of DPS Bridge Works Co., Ltd.

MES DPS Bridge Works



## Technologies for constructing and repairing steel bridges

Mitsui Zosen Steel Structures Engineering Co., Ltd., our subsidiary, provides one-stop solutions ranging from planning, engineering, and production to installation of bridges, steel towers, and other steel structures. In repairs, reinforcement, widening, and replacement of existing bridges, the company has an extensive track record in improving seismic capacity and durability and measures for extending service life. Moreover, based on its proven track record in floating structures (PC hybrid and RC hybrid structures) that are essential for coastal development, hybrid caisson, and other coastal structures, the company plans and carries out the optimal engineering, production, and installation work as well as inspection, repair, and reinforcement.

MES Mitsui Zosen Steel Structures Engineering



## Integration of subsurface inspection (radar) technology and surface inspection (laser) technology

We have developed a system (hybrid inspection system) that permits simultaneous inspection of surface conditions, such as cracks on road surfaces, and subsurface conditions of roads, such as cavities. This was enabled by original technologies in radar (electromagnetic waves) owned by MES and MES Testing & Research Center Co., Ltd. and an alliance with Tonox Corporation.

MES MES Testing & Research Center TONOX



In Japan, we are seeing demand not only for the construction of new social infrastructure, but also for maintenance measures for aging structures, with growing importance placed on technologies for inspecting and diagnosing structures. In 2015, we established the Infrastructure Business Department to consolidate our resources that are dispersed across the Group. We will provide one-stop services ranging from investigation and diagnosis of social infrastructure to their repair, replacement, and renewal by integrating resources and cooperating with both internal and external parties. Investigation and diagnosis are carried out by MES

and MES Testing & Research Center Co., Ltd., which have radar scanning technologies. In addition to applying our original scanning technologies, we will differentiate ourselves through alliance with Tonox Corporation. Repairs, maintenance, and renewal are conducted by Mitsui Zosen Steel Structures Engineering Co., Ltd., which works on steel bridges, and DPS Bridge Works Co., Ltd., which works on PC bridges. We provide services by taking advantage of the fact that we have technologies and experience in both iron and concrete within the Group, which is our strength.

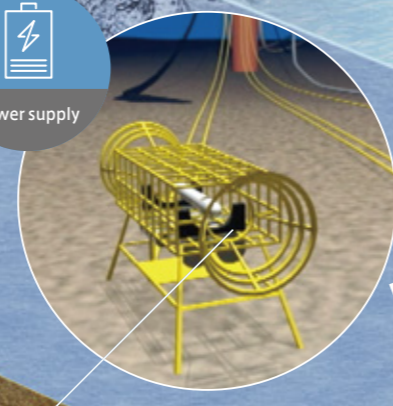
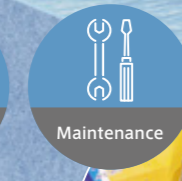


# Making Japan one of the world's leading ocean resources powers

[Creating next-generation ocean resource development systems]

## Floating production, storage and offloading system (FPSO)

An FPSO is an ocean-based facility that produces oil and gas, stores produced oil in the facility's internal tanks, and then directly supplies it to oil tankers. The FPSO is the most popular type of production facility, representing over 60% of floating vessels for marine oil and gas production.



## Remotely operated vehicle (ROV)

An ROV is an underwater robot that is connected with the mother ship via power supply and communication cables and is remotely operated from the mother ship. Small ROVs are used in shallow sea areas, while large ROVs are capable of cruising at a depth of 11,000 meters, the deepest in the world. ROVs are used to inspect failures of undersea communication cables, undersea oilfield pipes, and similar equipment as well as to observe deep-sea floors.

## Non-contact power supply system

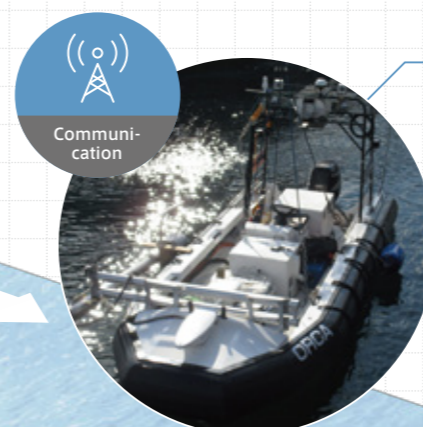
A non-contact power supply system is a docking station that is used for supplying power to AUVs under the sea and for data communication with equipment on the water. While AUVs excel in mobility because they are not connected to the mother ship via power supply/communication cables, the duration of the time during which they remain active is limited. We are developing a non-contact power supply system that will enable continuous inspections and explorations over a long time and across a wide range by supplying power to AUVs under the water.

Japan is a great marine nation with the world's sixth largest exclusive economic zone (EEZ) with territorial water. Energy resources and mineral resources in the bottom of its seas will be highly valuable for economic security and industrial development if they are mined and secured as domestically produced resources. The MES Group is one of world's leading players in the domain of offshore oilfield development and also has a leading role in the development of shallow methane hydrates harvesting technology. In 2016, we began to partner with MHWirth GmbH, a German company that provides offshore drilling technologies and services around the world. We aim to establish and

commercialize shallow methane hydrates harvesting technology by combining technologies of the two companies. Concerning the development and practical application of underwater robots that are essential for searching for offshore resources, we have a proven track record in the production of robots designed for different kinds of surveys, ranging from small underwater robots used in shallow sea areas to a large remotely operated vehicle (ROV) that is capable of travelling at a depth of 11,000 meters, the deepest in the world. We thus make a major contribution to the marine resource development of Japan.

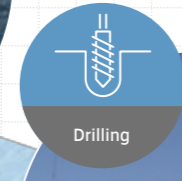
## Autonomous surface vehicle (ASV)

This is a small autonomous surface vehicle (ASV) based on a test machine for evaluating unmanned surface vehicle technologies. It can be operated remotely using the wireless communication system and camera system mounted on it. In addition, it can sail on specified routes autonomously.



## Chikyu, a ship for investigating deep seabed

Chikyu is the world's first riser drilling-equipped science vessel. For the first time in the history of mankind, it is capable of drilling down into the mantle and the region where major earthquakes occur. MES was in charge of constructing hull of this ship.

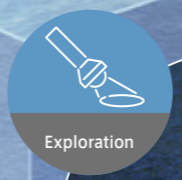
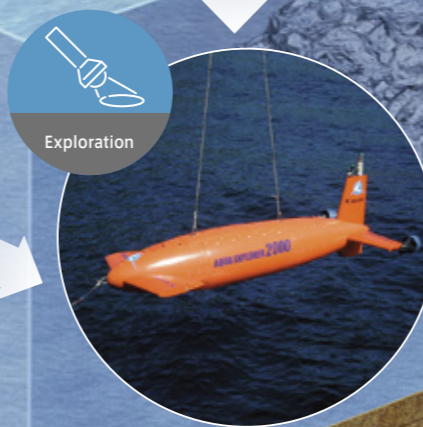


## Shallow methane hydrates and sea-floor hydrothermal deposits

The Japanese coastal waters are said to be world-leading waters in terms of sea-floor hydrothermal deposits and the amount of methane hydrates deposit. Projects are underway for the practical utilization of these resources.

## Autonomous underwater vehicle (AUV)

An AUV is an underwater inspection robot that is not connected to the mother ship via power supply/communication cable but travels underwater based on a program created in advance. There are various types of AUV, including those that can measure the seabed topography over a wide range by using ultrasound, those that measure the topography with high resolution by using camera systems mounted on them, and those that are capable of three-dimensional mapping.



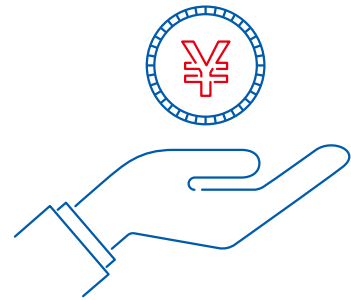


# What's MES Group

## Company Philosophy

To continue our role as a trusted company,  
and as a trusted member of society

## Business scale



Net sales(FY2017)

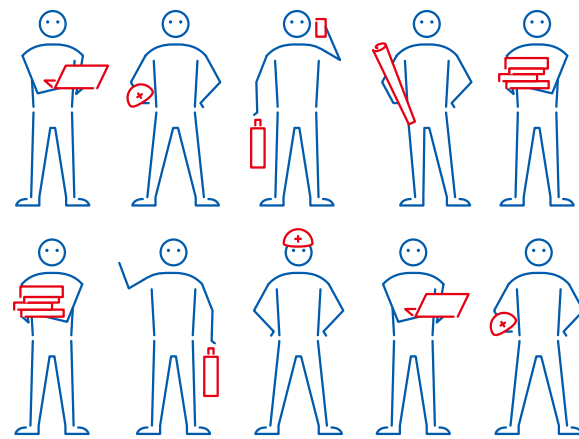
¥ **731.5** billion

Operating income

¥ **8.3** billion

Ordinary income

¥ **14.9** billion



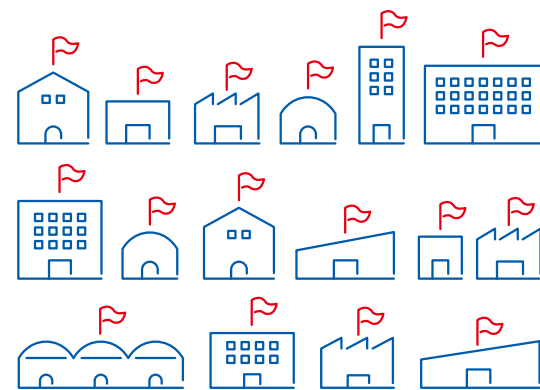
Number of employees(As of March 31, 2017)

**13,171** people



Established in

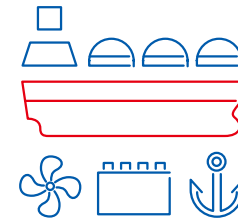
**1917**



Number of Group companies

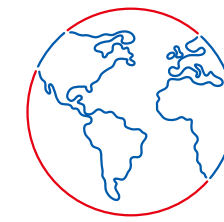
More than **100**

## Business domains



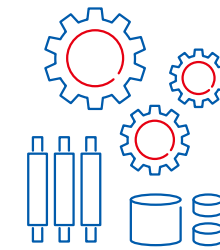
Ship

We build a wide range of ships, including bulk carriers, which are used to transport coal, iron ore, cereal grains, and other commodities, as well as crude oil tankers and LNG carriers for transporting liquefied natural gas (LNG). We also build ships intended for public offices such as the Ministry of Defense and the Japan Coast Guard.



Ocean development

We develop and manufacture products that are essential for marine resource development. They include floating production storage and offloading system (FPSO), which is used for producing and storing petroleum and gas at sea, submersibles, and unmanned probes.



Machinery

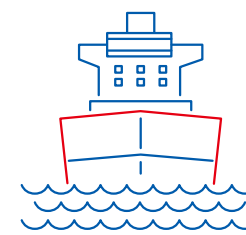
We manufacture machines for diverse industries, including marine diesel engines, compressors and turbines and cogeneration systems for power generation, which are used at petrochemical plants, and container cranes for ports.



Engineering

We construct various plants, including petrochemical plants, sulfuric acid plants, phosphoric acid plants, and fertilizer plants. We also work on a large number of products related to the environment and energy, including those in the building and civil engineering fields, biogas plants, and biomass plants.

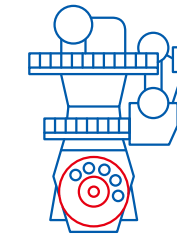
## Performance



Ship

Total number of ships that we have built

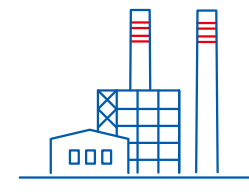
**2,000** 隻



Marine diesel engines

Domestic market share

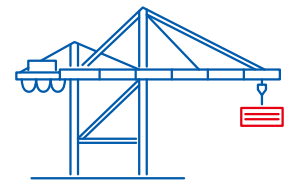
**No.1**



Petrochemical plants

The total number of plants we have handed over in more than 40 countries

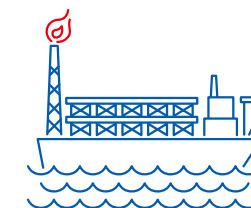
**1,300** 件



Container cranes for ports

Domestic market share

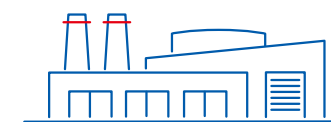
**No.1**



FPSO business

MODEC, Inc.

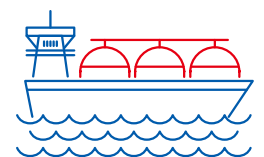
One of the top two companies in the world



Power generation plants

Burmeister & Wain Scandinavian Contractor A/S  
We have handed over

**175 plants**  
in 53 countries



Small-sized gas carriers

TGE Marine Gas Engineering GmbH

**World-class**  
engineering company

# History

Shipbuilding was essential for the modernization of Japan. With shipbuilding technologies at the core, the MES Group has always ventured boldly into new domains and has continued to evolve with the needs of the times. Our domains have expanded, and we have grown to become an engineering group that works on ship and ocean projects, machinery, and even plant construction. We aim to create greater value. Our history of challenges and innovations continues.



## 1917~ Taking on challenges for the modernization of Japan

### Established as the Shipbuilding Division of Mitsui & Co., Ltd.

On November 14, 1917, we were founded as the Shipbuilding Division of Mitsui & Co., Ltd. This was the beginning of our history as one of Japan's leading shipbuilding companies.



In 1924, we built Akagisan Maru, Japan's first ship with a diesel engine.

### Introduction of technologies on marine diesel engines

In 1926, we concluded a technical licensing agreement with Burmeister & Wain A/S (B&W) of Denmark to manufacture and sell marine diesel engines. In 1928, we completed the first Mitsui-B&W diesel engine.

### Entry into the onshore sector

In the 1930s, we built rayon plants and manufactured various devices and steel pipes. This became the foundation for our subsequent entry into the fields of chemical industrial equipment and steel structures.

### Spin-off as an independent company and change of the name to Mitsui Engineering & Shipbuilding

In 1937, the Shipbuilding Division was spun off from Mitsui & Co., Ltd. to become Tama Shipyard Co., Ltd., taking its first step as an independent company consisting of five organizations: the Headquarters, Kobe Sales Office, hospital, General Affairs Department, and Engineering Department.



Tama Shipyard (1952)

### Entry to the field of plant construction

We were involved in the plant construction for Mitsui Petrochemical Industries Ltd., which was established in 1955. This was our first step toward the business of petrochemical plant construction, which we subsequently launched.



No.1 ethylene plant for Iwakuni Works of Mitsui Petrochemical Industries Ltd. (1958)

## 1945~ Evolving into a comprehensive heavy manufacturer

### Launch of steel structure business

We established the production system in the steel structure sector. Having started with the construction of road bridges from small and midsize bridges, we became a company that was able to receive orders for large bridges from Japan Highway Public Corporation and other clients.



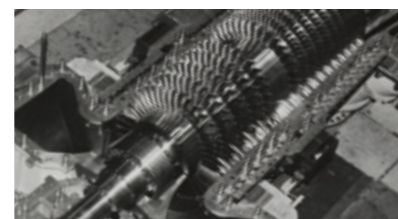
Izumiotsu Bridge (1976)

### Entry into the crane industry

In 1961, we concluded a technical licensing agreement with PACECO, Inc. of the United States. We thus began to promote the spread of containerization and delivered many port cranes at home and abroad.

### Expansion of rotating machine business

In the 1960s, we entered the centrifugal compressor and reciprocating compressor sector by introducing advanced technologies from Europe. We continued to produce technological innovations and worked on axial compressors, steam turbines, and similar equipment.



An axial compressor (1980)

## 2000~ Business model innovations

### Strengthening energy-saving, environmentally friendly technologies

In response to the rising demand for environmentally friendly ships and energy-saving ships, we developed next-generation environmentally friendly ships with low fuel consumption. We also began to develop other eco-friendly products, such as marine diesel engines that conform to international emission regulations.



A "neo series" eco-friendly bulk carrier with low power consumption

### Listing of MODEC, Inc.

In July 2003, MODEC Inc. was listed on the Tokyo Stock Exchange for the first time as a subsidiary of MES. On June 1, 2004, the company's stock listing was upgraded to the First Section of the Tokyo Stock Exchange, and the company has continued to make rapid progress today.



MODEC, Inc.'s stock listing was upgraded to the First Section in 2004.

### Provision of lifecycle solutions

In addition to Engineering, Procurement, and Construction (EPC), we began to provide engineering services for the entire lifecycle of products, from planning to dismantling, through maintenance and after-sales services.

## 2016~ Towards the next 100 years

### Formulation of the MES Group 2025 Vision

In 2016, we developed a long-term vision that shows our future vision, direction, and ideal situation. We have defined our ideal situation as "The MES Group will evolve into an engineering team that creates social value," describing a company that provides value in response to social issues and market needs in a way that transcends the existing framework of ideas.



### 100th anniversary

The MES Group will celebrate its centenary in November 2017. Our businesses, which began with shipbuilding, have expanded globally, and we have evolved into an engineering group with more than 100 Group companies and over 13,000 employees. We continue to innovate to ensure that the MES Group continues to evolve through the next 100 years.



### Moving to a holding company structure

At the MES Group, we have begun preparations to move to a holding company structure by April 1, 2018. To enable group management with greater penetration, we will spin off our ship and ocean business, machinery and systems business, and engineering business, making them operating companies. At the same time, we will change our trade name to Mitsui E&S Holdings Co., Ltd. and make a fresh start as the new Mitsui E&S Group.



# Highlights

(JPY million)

Financial Results	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
New Orders Received	662,556	1,107,750	959,784	609,621	516,577
Net Sales	577,093	670,067	816,520	805,413	731,464
Operating Income	24,001	19,969	13,298	11,813	8,304
Ordinary Income	26,162	26,179	14,899	15,078	14,859
Net Income <sup>※1</sup>	△8,207	42,854	9,463	7,599	12,194

Cash Flow	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Operating Cash Flow	47,182	14,499	15,167	29,802	△7,843
Investing Cash Flow (Loss)	△12,100	△37,312	△32,385	△34,599	△28,753
Free Cash Flow	35,082	△22,813	△17,218	△4,797	△36,596
Financing Cash Flow (Loss)	△4,793	15,531	△4,374	48,216	19,401
Cash and Cash Equivalents	106,192	111,926	94,664	135,747	115,620

Financial Position	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Net Assets	207,313	323,608	347,305	343,853	367,608
Total Assets	660,397	932,896	1,074,563	1,094,042	1,096,735
Interest-bearing Debt <sup>※2</sup>	148,256	187,831	188,313	239,871	265,175

Per Share Information	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
EPS (Net Income per Share)	△9.91	51.80	11.63	9.40	15.09
BPS (Net Assets per Share)	212.24	266.64	292.86	290.48	309.78
Dividends per Share	3.0	2.0	2.0	4.0	3.0
Share Price at the year end	166	218	205	168	172

Key Financial Indicator	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Shareholders' Equity to Total Assets (%)	26.6	23.6	22.0	21.5	22.8
ROE (Return of Equity) (%)	△4.6	21.6	4.1	3.2	5.0
D/E Ratio	0.8	0.9	0.8	1.0	1.1

Non financial Information	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Employees (Consolidated)	9,881	12,055	12,291	12,705	13,171
Total Energy Consumption	1,290	1,175	1,265	1,300	1,305
CO <sub>2</sub> Emission	6.70	6.90	8.14	8.13	8.20

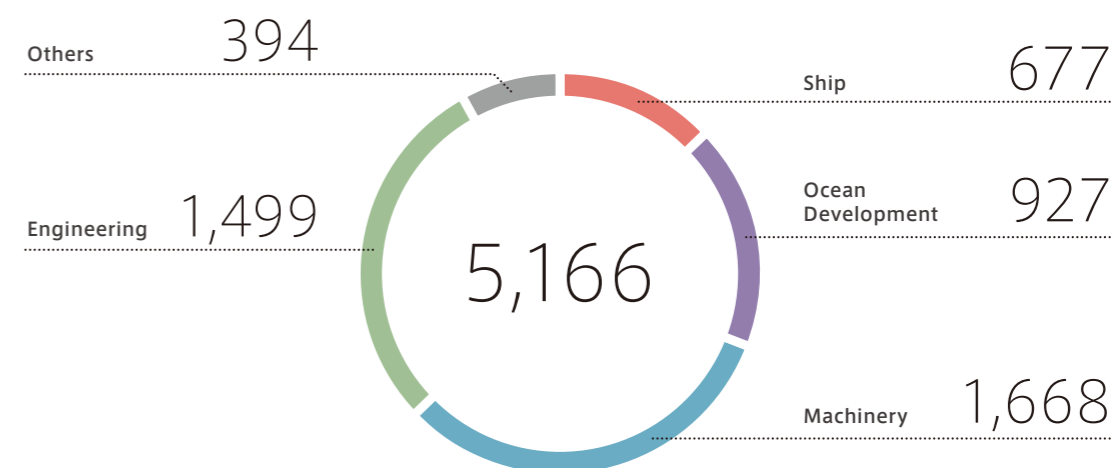
※1 Profit(losses) attributable to owners of parent

※2 Excluding lease liabilities

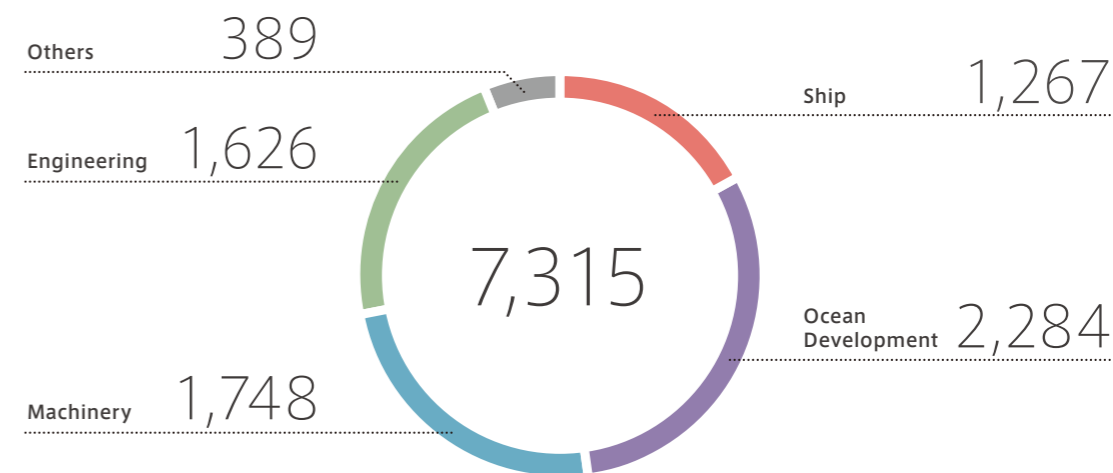
FY 2017

(For year ended March 31, 2017)

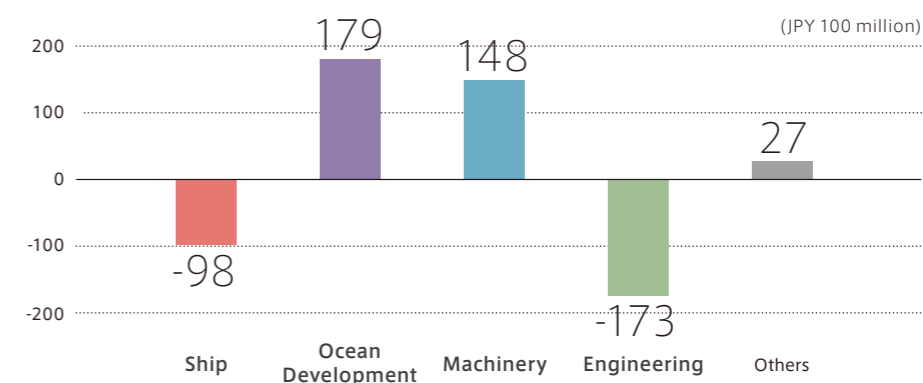
New order by Segment (JPY 100 million)



Sales by Segment (JPY 100 million)



Operating Income





# Message from the President

As an engineering team,  
the MES Group will continue to  
create new value by maximizing  
its strengths collectively.

President/Representative Director & CEO

*T. Tanaka*



Another achievement that I feel we have made is that the terms “engineering” and “life cycle” have begun to take root in the company. In the field of engineering, we made the German gas engineering company TGE Marine Gas Engineering GmbH (TGE) one of our subsidiaries in 2015. Needless to say, the gas carrier market is a global growth market. **I also think, however, that this move was very meaningful in that it allowed us to instill the idea, both internally and externally, that the MES Group operates under an engineering-oriented management system.**

On the other hand, “life cycle” is an engineering concept of contributing not only to EPC (engineering, procurement, and construction) but to the entire life cycle of a product, from planning to dismantling, through maintenance, after-sales services, and other services. In MBP14, we positioned “Expansion of Business Engagement and Related Service” as one of the important measures and focused on the expansion of our overseas after-sales network and business engagement in the form of

equity participation. We have yet to achieve a sufficient milestone from the viewpoint of earnings, but I believe that the reform of our awareness about business models has made progress. **Our approach to business represented by “engineering” and “life cycle,” which goes beyond EPC, unlike our previous approach, has been instilled in the company. This has, I believe, begun to be reflected in our portfolio values.**

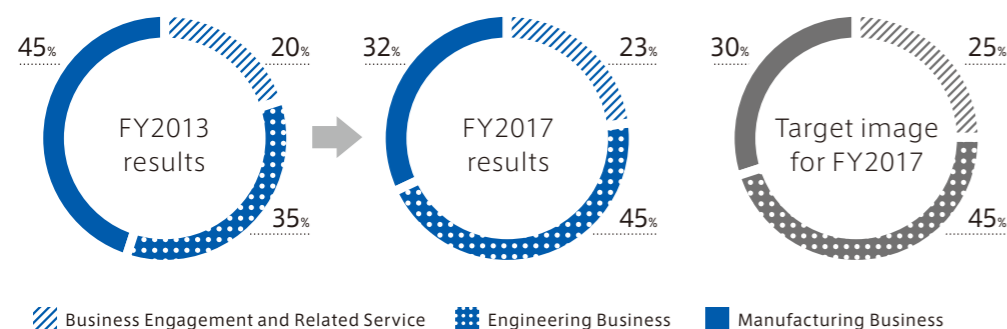
While we can see certain achievements, we also posted huge losses from particular projects. This is a matter of great regret for me as the business manager, and I regard the strengthening of risk management as an essential task under the Mid-Term Business Plan 2017. I take pride in the fact that we have extremely advanced capabilities in technical aspects such as engineering, design, and manufacturing. On the other hand, I recognize that our ability to manage global risks was insufficient. We will strive to prevent the recurrence of the loss by strengthening our skills regarding contracts in global fields.

## Review of FY2017 (Year ended March 31, 2017)

For the MES Group, FY2017 was the final year of the Mid-Term Business Plan 2014 (MBP14). Under MBP14, we promoted business domain innovation and business model innovation for the purpose of achieving “Well-balanced Portfolio -- Sustainable Growth and Solid

Profit Stability --.” The composition of each business model is close to the target image for FY2017, and I feel that our business model innovation, which has been a consistent focus for us since FY2014, has been making steady progress.

Composition of each business model



## Deepening group management

In the MES Group 2025 Vision, which we formulated in 2016, we have set the ideal vision for the MES Group in FY2026 (year ending March 31, 2026) as an “engineering team that creates social value.” We have also set “net sales of 1.1 trillion yen and an ordinary income rate of 6%” as our quantitative target. As the first step towards the target, we formulated the Mid-Term Business Plan 2017 (MBP17) in February 2017.

In MBP17, we have set the ideal vision for FY2020 (Year ending March 31, 2020) the final year of the plan, as “Maximize MES Group strengths collectively to improve profitability and stabilize earnings.” **As specific quantitative targets, we have set net sales of 920.0 billion yen and ordinary income of 37.0 billion yen.** We are therefore strongly committed to improving profitability. Profit is a share of the earnings of customers, and achieving a

high profit means that we provide customers with highly valuable services accordingly. So, what can we do to continue to remain valuable for customers and society? We are now pressed to think beyond the existing framework of manufacturing.

In the process, it will be important to “maximize MES Group strengths collectively.” The MES Group, which was founded as a shipbuilder, has grown into an engineering group with more than 100 affiliates at home and abroad. We can provide solutions that cater to customer needs by combining the resources and products of our group. This means the provision of total solutions, such as creating a system that fulfills the demand for lower electric power cost instead of only delivering power-generating equipment and a system that fulfills the demand for highly efficient logistics instead of just delivering a port crane.

**MES Group 2025 Vision:**  
Our long-term vision is introduced on pages 20 and 21 of this report.

**Mid-Term Business Plan 2017:**  
Details of our mid-term business plan beginning in 2017 are introduced on pages 22 to 27 of this report.



“ We can create unique business models by combining businesses in which the MES Group engages. ”



A photo taken with Mr. Bentzen (right), who is the chairman of BWSC, our subsidiary in Denmark, and Mr. Jensen (left), who is the president of BWSC.

At present, we have yet to maximize the group's collective strengths in this way. However, the buds of new business have begun to be seen in some projects. In the project on floating production storage and offloading system (FPSO), we promote cooperation and collaboration with our subsidiary MODEC, Inc. In addition to collaborating in terms of the manufacturing aspect, such as building hulls and topsides, we are enhancing and strengthening the related services. For example, we began investing in a special purpose company (SPC) that implements an FPSO charter project (owning and operating FPSO and providing maintenance and inspection services). We have also developed a barge system for gas power generation jointly with Burmeister & Wain Scandinavian Contractor A/S (BWSC),

our subsidiary in Denmark, and TGE of Germany. These and other projects, in which we take advantage of our group's unique, collective strengths, are taking shape.

As a manufacturing company with 100 years of history, we have developed a high level of technological capabilities and production bases. Because of this, we do everything ourselves, which is another characteristic of ours. To respond promptly to customer needs, it is essential to be proactive in adopting and applying the capabilities of external parties, **such as business collaborations and M&A, not to mention collaborating within the group. We will strive to create new businesses by thinking beyond the framework of the MES Group's previous business models.**

**Projects in which we take advantage of our collective strengths:**

The projects in which we maximize MES Group strengths collectively are introduced on pages 2 to 7 of this report.

**For sustainable growth**

The businesses of the MES Group, including marine logistics that use ships and port cranes, the supply of energy resources such as offshore oil and natural gas, and environmental energy such as biomass and biogas, are all built on our planet. In addition, the operation of these businesses involves the emission of substances that affect the global environment, such as CO<sub>2</sub>, NO<sub>x</sub> (nitrogen oxide), and SO<sub>x</sub> (sulfur oxide). To continue businesses while protecting the global environment, it is essential to participate in solving issues proactively in addition to reflecting considerations for the global environment in our products. We take initiatives to reduce the environmental impact through products, including the development of engines conforming to gas emission regulations and next-generation

environment-friendly ships. **At the same time, we should contribute to solving social issues in the three business domains specified in the MES Group 2025 Vision, which I believe will lead to our sustainable growth.**

**I believe that another important factor for achieving sustainable growth is "people." The future of the MES Group depends on whether we can continue to secure people who participate in our businesses.** This involves two issues. One is how to secure excellent skilled human resources who will be involved in manufacturing. In the face of the decline of the population and the falling birthrate and the aging population, securing human resources is a pressing task for manufacturers.

**Actions we take in the three domains to focus our strengths on:** Specific actions to take in the three domains on which to focus our strengths, which we specified in our long-term vision, are introduced on pages 2 to 7 of this report.

Tamano City in Okayama Prefecture, where Mitsui Engineering & Shipbuilding Co., Ltd. was founded, will establish a technical course at a commercial high school in the city in FY2018 in order to secure human resources for the manufacturing industry, which is the city's core industry. We will send our experienced engineers to the high school to have them instruct students and offer our Skills Training Center to the high school as a venue for the practical training of the students. We will thus support the development of skilled human resources in a proactive manner.

Yet another important factor is the development of global human resources. Our business

domains have expanded globally, making it essential to develop management capabilities in global fields. For this purpose, we will dispatch our young and mid-level employees to our overseas subsidiaries and send young engineers to overseas plants for practical training and other purposes. We will thus focus our efforts on the proactive development of human resources in the global environment. To move in the direction of new engineering, a target set by the MES Group, we need to do more than just look around ourselves or inward. We need to look outward, gain practical experience, and deepen our knowledge in the global field.

**Human resource development:** Our initiatives for human resource development are introduced on page 49 of this report.

**Development of global human resources:** Our initiatives for developing global human resources are introduced on page 49 of this report.

**Becoming Mitsui E&S Holdings in April 2018**

**I am concerned that we will not be able to achieve the target we set in our long-term vision unless we change the current management system. To achieve the target, we must further accelerate the innovation that we have been focusing on since MBP14. We will proceed with organizational reform by taking the 100th anniversary as an opportunity to make a fresh start. We have begun preparations to move to a holding company structure through an absorption-type company split on April 1, 2018.**

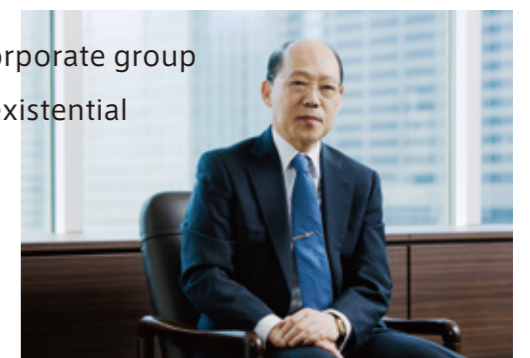
To maximize MES Group strengths collectively, as I mentioned above, we will turn into a holding company by splitting off the ship and ocean business, machinery and systems business, and engineering business to make them operating companies. Each operating company will strive to improve our corporate value further by formulating and implementing strategies more quickly, changing strategies flexibly in response to changes in the external environment, implementing bold strategies such as M&A (including business tie-ups) with other companies, and promoting selection and concentration. On the other hand, the pure holding company will strengthen the system for cooperation between operating companies, which will be more independent in terms of business, and group companies. It will also strive to improve the

MES Group's corporate value by fostering an organic sense of unity through the formulation of a business plan for the overall group and other strategies, and by consolidating our management resources on the three business domains that we position as growth domains in the MES Group 2025 Vision.

Our 100 years of history since our foundation has been a history of challenges and reforms. We are now facing another major turning point.

When we move to a holding company structure in April 2018, the MES Group will change its trade name to Mitsui E&S Holdings Co., Ltd. and make a fresh start as the new Mitsui E&S Group. We humbly ask our stakeholders to continue supporting us from a medium- and long-term perspective and cooperate further with us.

“ We aim to be a corporate group that has greater existential value globally. ”



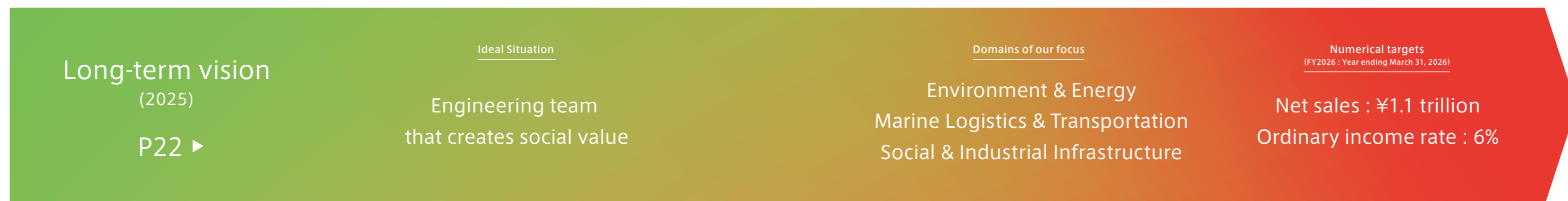
In April 2018, the MES Group will transform into Mitsui E&S Holdings.



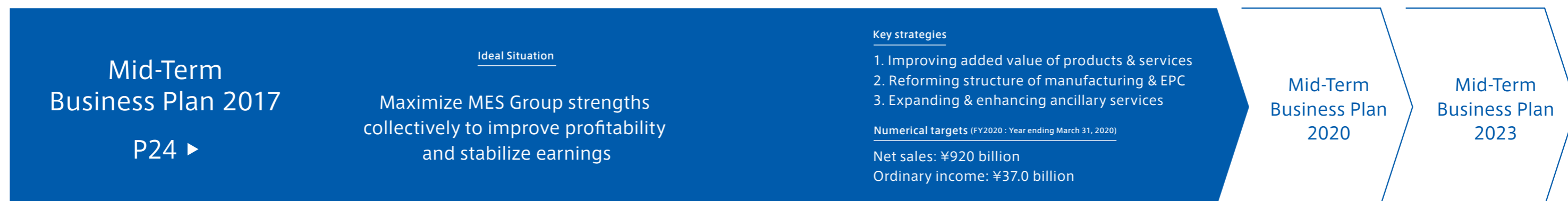
# Medium- & Long-Term Management Plans

We launched the new Mid-Term Business Plan in 2017 as the first step toward achieving the MES Group 2025 Vision, which is the long-term vision of the MES Group. In this plan, we have set “Maximize MES Group strengths collectively to improve profitability and stabilize earnings” as our ideal vision, under which we pursue innovations aiming to ensure that we achieve our long-term vision.

## MES Group 2025 Vision



## Mid-term Business Plan 2017



## Perceived business environment

### ○ General

- Market expansion attributable to the economic growth of emerging countries and business expansion attributable to the development of an information-intensive society.
- Uncertain outlook of the global economy, which includes the formation of economic blocs and a slowdown in the growth of emerging countries.
- Increased volatility of the exchange market and resource industry.

### ○ Environment & Energy

- Offshore oil and gas development projects: Predicted to increase again in the medium to long terms.
- Electricity and other energy: Increase in demand driven by the development of emerging countries.
- Renewable and clean energy: Demand continues, driven by rising environmental awareness.

### ○ Marine Logistics & Transportation

- Shipbuilding: Fierce price competition continues due to a decline in new shipbuilding demand.
- Marine engine and equipment: Demand for environmentally friendly technologies has been rising although demand for ship engines has been declining due to the continued excess capacity.
- Container cranes: Demand is increasing in Southeast Asia, Latin America, and other regions. Demand for the renewal and upgrade of those cranes has also been brisk.
- Maintenance, inspections and upgrades: There remains strong demand for projects for improving environmental friendliness/energy efficiency and those for extending the service life, despite the uncertain economic outlook.
- Gas products: Demand has been increasing due to the global shift to clean energy.

### ○ Social & Industrial Infrastructure

- Industrial machinery: Demand for upgrades and renovations has been growing while demand for new construction has remained weak.
- Public works projects: Demand has been growing for large-scale upgrades and renovations, including the full-scale implementation of measures for deteriorating infrastructure.
- Chemical industry: Investments in the industry have been recovering but it will take a while before a full-scale recovery occurs, due to the uncertainty of the economic environment.

# MES Group 2025 Vision

The MES Group 2025 Vision outlines the MES Group's long-term direction for the period between fiscal 2017 and fiscal 2026. To achieve the MES Group company philosophy of "To continue working as a company trusted by society and individuals through our products and services," we outlined the direction of our future initiatives based on an evaluation of our rapidly changing external environment.

## Ideal Situation of the MES Group

### An engineering team that creates social value

Diverse products and services

Engineering prowess

Connections with customers and partner corporations

Commitment to manufacturing and engineering

## Quantitative Target

**Achieving net sales of ¥1.1 trillion and ordinary income rate of 6% in FY2026** (Year ending March 31, 2026)

## Environment & Energy

We will contribute to the future of a sustainable earth through the effective utilization of ocean resources, energy and waste products.

Asia and Africa are projected to experience dramatic population growth. How will we support the subsequent increase in global energy consumption? We have reached a point in time where the MES Group must make even greater contributions to energy creation. The MES Group is already widely involved in energy creation, including the development of renewable energies such as wind power, bio-gas, and biomass power plants, and we are participating in the ocean resource development sector by constructing floating production, storage, and offloading (FPSO) system for offshore oil and gas production. Moving forward, we will further concentrate and strengthen our know-how and resources.

Major products

- Ocean development and submersible equipment
- Environmental plants
- Renewable energy
- Power generation plants



Floating production, storage, and offloading (FPSO) system



Gas power generation barge

## Environment & Energy

The three domains on which we will make full-scale efforts

## Marine Logistics & Transportation

### Marine Logistics & Transportation

We will contribute to social development by providing energy-saving and environmental performance, fuel diversity, and labor-saving equipment

The economic development of developing countries is expected to result in an increase in marine transportation volume. The MES Group's work in port logistics has included providing container cranes and other structures, not to mention building ships. Accordingly, the MES Group is expected to serve as a marine logistics professional with expertise in every aspect of the global supply chain. The MES Group excels not only at manufacturing hardware, but also at the development of related software. By combining our strengths in both hardware and software, we can achieve even greater innovation in the field of marine logistics and transportation, such as use of IT for engine control and container terminal management.

Major products

- Port cranes
- Ships
- Marine diesel engines



Medium- and small-sized gas carriers



Electronically-controlled dual fuel gas injection diesel engine (ME-LGI)

### Social & Industrial Infrastructure

We will contribute to creating a safe and comfortable living environment by providing the plant facilities and public transportation infrastructure vital to the development of developing countries and the maintenance services necessary for infrastructure in Japan and other advanced economies.

Developing countries in Asia and Africa require social and industrial infrastructure and facilities. We are heavily involved in developing countries, from bridge construction in China and Vietnam to power plant construction in Indonesia and chemical plant construction in the Middle East and Southeast Asia. Now is the time for us to fuse the various product technologies available to us to provide new solutions. In Japan and other advanced economies, the need for our maintenance technology as a measure against aging infrastructure will only grow stronger. We can provide new solutions in these segments as well by fusing technologies such as radar and robotics-based safety management.

Major products

- Infrastructure maintenance
- Chemical plants
- National defense
- Bridges
- Industrial machinery



Bridge



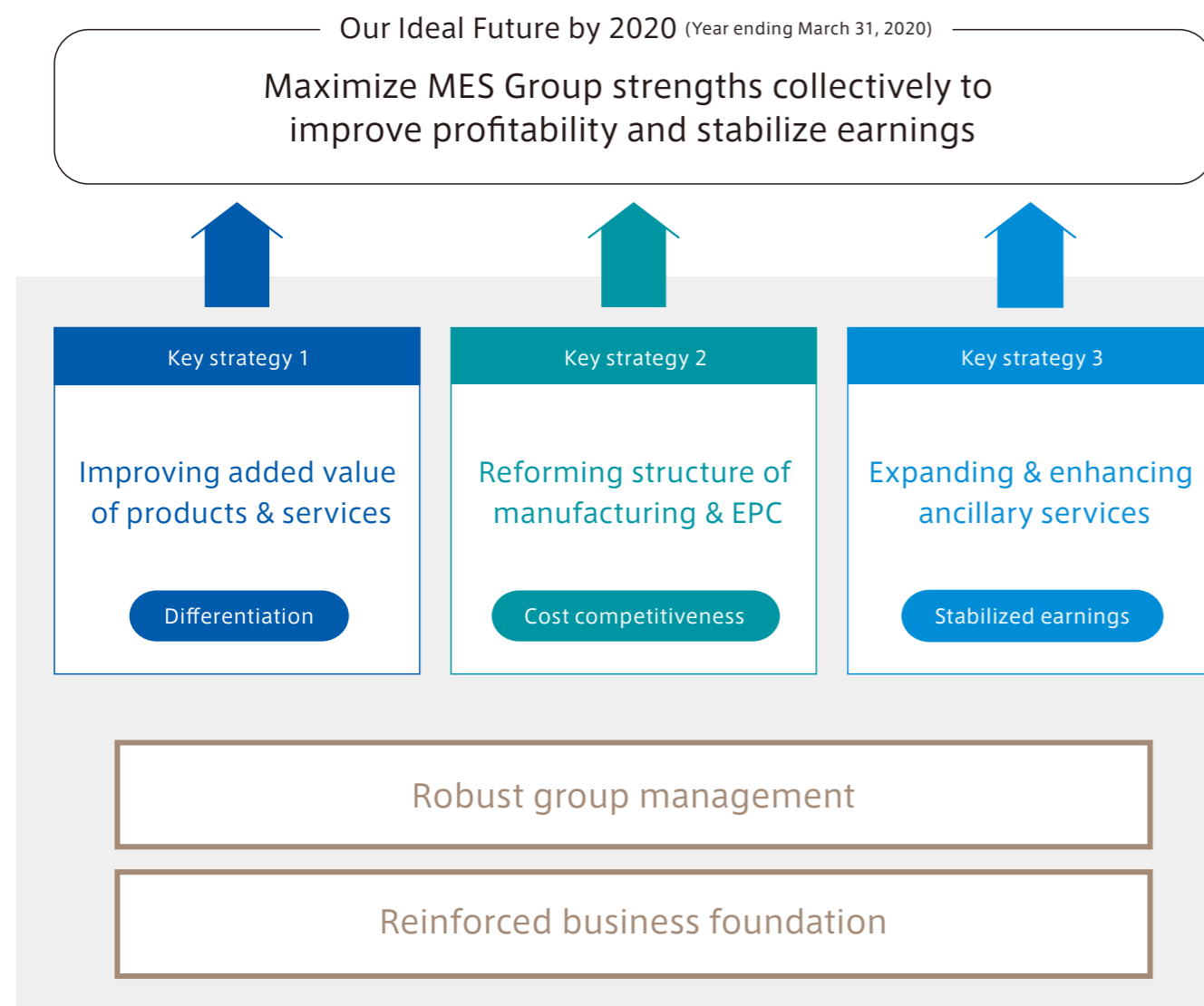
Vehicle for radar inspection



# Mid-term Business Plan 2017

The Mid-Term Business Plan 2017 will be followed by the Mid-Term Business Plan 2020 and the Mid-Term Business Plan 2023. This series of our medium-term business plans constitute a long-term strategy for achieving our 2025 Vision.

Under the vision of "Maximize MES Group strengths collectively to improve profitability and stabilize earnings," we will make best use of the MES Group's network and resources, in our efforts to achieve stable earnings and improve our corporate value.



## Numerical targets

Net sales	¥920 billion
Ordinary income	¥37 billion
Ordinary income rate	4%
ROIC	6.5%
Interest-bearing debt	¥270 billion or less

## Key strategy 1 | Improving added value of products & services

### Improving our planning ability and capability of making proposals

- Formulating a strategy for creating value for society based on the three domains
- Increasing our competitiveness in the service domain by strengthening intra-group cooperation and alliances with other companies

### Improving our product development capability

- Enhancing technology and product development in view of the future market (energy-saving/ labor-saving/ environmental performance)
- Strengthening technologies for increasing the competitiveness of our core products

## Key strategy 2 | Reforming structure of manufacturing & EPC

### Building a dynamic, flexible production system

- Enhancing the system for production in optimal overseas locations/building a global production base
- Improving the productivity of domestic bases by applying IoT and robotics

### Establishing a system for flexible EPC

- Promoting collaboration within the Group in the field of ocean business
- Strengthening cooperation within the Group in the field of renewable energy/gas power generation

## Key strategy 3 | Expanding & enhancing ancillary services

### Enhancing domains and areas of services we provide

- Enhancing after-sales services
- Expanding FPSO charter business, power generation business, and other businesses that result in constant profits based on medium- or long-term contracts

### Evolving services by applying IoT

- Enhancing maintenance and services based on remote monitoring
- Provision of preventive maintenance services (remaining life assessment and suggestion of optimal maintenance)

## Robust group management

- Organization and human resources
- Strategic use of Group companies (clarifying the positions of operating companies and subsidiaries)
- Effective utilization of human resources in the Group (increasing the mobility of human resources)
- Financial affairs
- Maximizing consolidated earnings of the Group

## Reinforced business foundation

- Common strategies
- Improving the risk management capability (elimination of excessive loss)
- Selection and concentration of businesses based on growth potential and investment effect
- Organization and human resources
- Building and implementing a human resources rotation program (other departments/ subsidiaries)

# Business Segment Overview



Ship



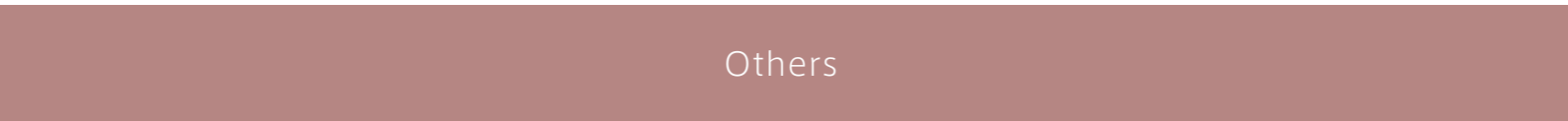
Ocean Development



Machinery



Engineering



Others

FY 2017 (Year ended March 31, 2017)  
(JPY 100 million)

Main Products	Major Group Companies	Net Sales Composition	Net Sales	Operating Income
<ul style="list-style-type: none"> <li>● Bulk carrier</li> <li>● Oil tanker</li> <li>● LNG carrier</li> <li>● Research vessel / Training vessel</li> <li>● Fishery patrol vessel</li> <li>● High-speed vessel</li> <li>● Naval ship / Patrol ship</li> </ul>	<ul style="list-style-type: none"> <li>● Niigata Shipbuilding &amp; Repair, Inc.</li> <li>● Shikoku Dockyard Co., Ltd.</li> <li>● Akishima Laboratories (Mitsui Zosen) Inc.</li> <li>● MES TOKKI &amp; Engineering Co., Ltd.</li> <li>● MES Shipping Co., Ltd.</li> <li>● MES-KHI Yura Dock Co., Ltd.</li> <li>● TGE Marine Gas Engineering GmbH</li> </ul>	<p>17.3%</p>	1,267	△98
<ul style="list-style-type: none"> <li>● Floating production storage and offloading system (FPSO)</li> <li>● Submersible</li> </ul>	<ul style="list-style-type: none"> <li>● MODEC, Inc.</li> </ul>	<p>31.2%</p>	2,284	179
<ul style="list-style-type: none"> <li>● Marine diesel engine</li> <li>● Gas turbine and gas engine co-generation system</li> <li>● Process compressor</li> <li>● Top pressure recovery turbine (TRT) generating system</li> <li>● Reactor / Heat exchanger</li> <li>● Rotary dryer / Coal moisture controller</li> <li>● Quayside container crane</li> <li>● Transfer crane in container yard</li> <li>● Container terminal management system</li> <li>● Industrial crane</li> <li>● Bridge</li> <li>● Floating piers and pontoon</li> <li>● Radar scanner</li> <li>● Manipulator</li> </ul>	<ul style="list-style-type: none"> <li>● Mitsui Zosen Machinery &amp; Service, Inc.</li> <li>● MES Technoservice Co., Ltd.</li> <li>● Mitsui Meehanite Metal Co., Ltd.</li> <li>● Mitsui Zosen Steel Structures Engineering Co., Ltd.</li> <li>● DPS Bridge Works Co., Ltd.</li> <li>● Kaji Technology Corporation</li> <li>● PACECO CORP.</li> <li>● CSSC-MES Diesel Co., Ltd.</li> </ul>	<p>23.9%</p>	1,748	148
<ul style="list-style-type: none"> <li>● Petro-chemical plant</li> <li>● Inorganic chemical plant</li> <li>● Biomass power plant</li> <li>● Biogas power plant</li> <li>● Wind power facility</li> <li>● Overseas power plant engineering &amp; construction</li> <li>● Environmental facility</li> <li>● Diesel engine generating plant</li> </ul>	<ul style="list-style-type: none"> <li>● Mitsui Zosen Plant Engineering Inc.</li> <li>● Mitsui Zosen Environment Engineering Corporation</li> <li>● Sanzo Yuki Recycle K.K.</li> <li>● Hamamatsu Green Wave Co., Ltd.</li> <li>● Green Power Ichihara Co., Ltd.</li> <li>● Betsukai Biogas Power Co., Ltd.</li> <li>● Burmeister &amp; Wain Scandinavian Contractor A/S</li> <li>● DASH Engineering Philippines Inc</li> <li>● Engineers and Constructors International, Inc.</li> <li>● Simon Carves Engineering Limited</li> </ul>	<p>22.2%</p>	1,626	△173
<ul style="list-style-type: none"> <li>● Real Estate Development</li> <li>● System Development</li> </ul>	<ul style="list-style-type: none"> <li>● Showa Aircraft Industry Co., Ltd.</li> <li>● Mitsui Zosen Systems Research Inc.</li> <li>● MES Facilities Co., Ltd.</li> </ul>	<p>5.3%</p>	389	27



# Ship



We will achieve profits by strengthening our cooperation with group companies and innovating our production system.

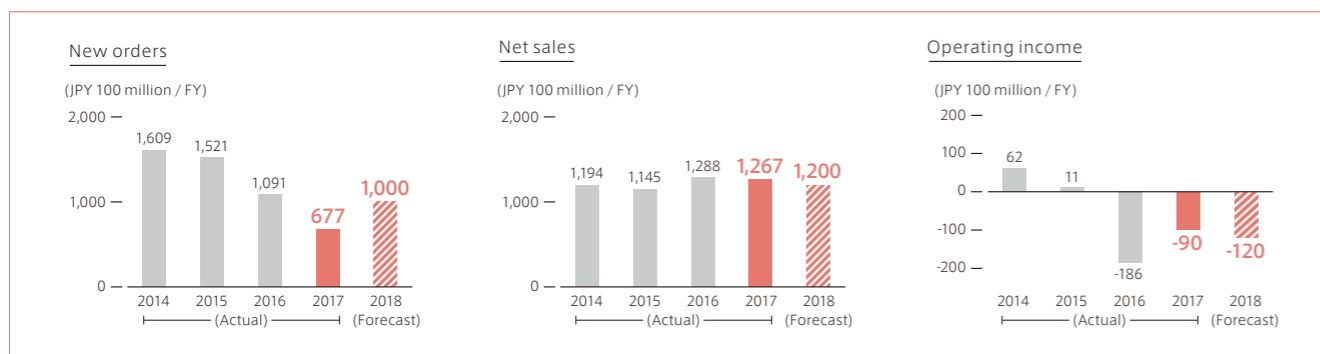
Director and Managing Executive Officer  
General Manager of Ship & Ocean Project Headquarters

Tetsuro Koga

## Business environment and performance

The shipping market has continued to experience a state of excess capacity attributed to the completion of numerous new shipbuilding construction projects over the last several years. In particular, while charter freight has remained at historically low levels in the dry bulk division, there were only a few projects in which we received business inquiries. While charter freight began to show a recovery trend at the beginning of 2017, shipbuilding prices have yet to reach a satisfactory level, and it is expected to be some time before a full-scale recovery takes place. On the other hand, in the market for crude oil tankers and LPG carriers, which has remained at a relatively reasonable level, excess capacity has begun to be felt due to the progress of projects for which orders were received. Moving forward, we hope that excess capacity will be eliminated by scrapping aging ships and ships with high fuel costs. We also expect that market recovery and an increase in the sea-borne cargo volume will result from the continuous growth of emerging economies. In the midst of these conditions, MES has developed and released a steady stream of new bulk carriers that incorporate energy-saving and environment-friendly technologies and VLCC. Since we handed over the first energy-saving ship in November 2013, we have completed and handed over a

cumulative total of 50 energy-saving bulk carriers of various types, which are 56,000-ton, 60,000-ton, 66,000-ton, and 182,000-ton bulk carriers. The environment for receiving new orders has been tough. However, we will continue to apply our competitive advantages as the pioneer shipyard for energy-saving ships and strive to be selective in accepting new orders, while at the same time trying to improve profitability. We will also make efforts to develop new ships that will stimulate the demand of ship owners, such as gas-fueled ships. Orders received decreased by 41.373 billion yen (-37.9%) compared to the previous fiscal year, to 67.712 billion yen, reflecting poor orders received for commercial ships due to the sluggish shipping market, which offset the orders for ships that we received from the public sector and others. Net sales remained almost unchanged from the previous fiscal year, at 126.690 billion yen. We posted an operating loss of 9.753 billion yen due to the ongoing impact of the loss from ocean support vessels, despite the improvement of 8.924 billion yen from the previous fiscal year that resulted from the decrease of low-priced ships, cost improvements, and other positive factors.



## Our Action

Initiatives for innovation based on the Mid-Term Business Plan

### Topics Development of LNG carriers for medium-distance transportation

#### Development of EurasiaFlex, a 80,000m<sup>3</sup> class LNG carrier

The LNG transportation market is expected to see an increase in demand for transportation from terminal ports as hubs to less-equipped ports. Focusing on this trade, we developed an 80,000m<sup>3</sup> class LNG carrier in 2017. We named it EurasiaFlex, positioning it as a versatile ship for medium-distance transportation in the Mediterranean Sea and Asian region. We are proceeding with specific business negotiations.

The new ship has three MOSS-type spherical tanks, and its main engine is ME-GI, a dual fuel engine fueled by crude oil and gas. To satisfy the demand for versatile ships that can enter a variety of ports, we have designed the hull to be 215 meters long, thereby ensuring high versatility. We have also taken steps to reduce the operation cost and other costs. We will improve our existence value by promoting intra-group cooperation in the small-scale LNG carrier market, where technologies, forms of business, key players, and other elements are completely different from those in the traditional large LNG carrier market.



EurasiaFlex 80,000m<sup>3</sup> class LNG carrier

### Topics Acceleration of spread of common platform for FPSO projects

#### An Approval in Principle (AIP) granted by Bureau Veritas to next generation design for a FPSO Hull Platform – the “noah-FPSO Hull”

MES has obtained Bureau Veritas Approval in Principle (AIP) for the noah-FPSO Hull and associated design and construction methods following the American Bureau of Shipping. This AIP provides assurance of the feasibility and reliability of the noah-FPSO Hull design.

The noah-FPSO Hull is a next-generation FPSO (Floating Production, Storage and Offloading) platform (“noah” stands for New Offshore Adapted Hull). The hallmark of the noah-FPSO Hull is that it allows a flexible approach to the design and construction of the hull reflecting production requirements, rather than adjusting the oil/gas production facilities to the hull’s design. MES is now marketing the noah-FPSO Hull to achieve the common platform in the expectation that the FPSO market will expand significantly.



The noah-FPSO Hull, the next-generation FPSO platform

### Topics Building ships for the public sector

- Naming and launching ceremony of Chiyoda, a submarine rescue ship
- Handover of Yonakuni, a 1,000-ton patrol ship for the Japan Coast Guard
- An order received for a fisheries training boat for Nagasaki University

We held the naming and launching ceremony of a submarine rescue ship, the order for which was received from the Ministry of Defense in October 2016. In November of the same year, we handed over a patrol ship for the Japan Coast Guard. We have built 30 ships for the Ministry of Defense and 29 patrol ships for the Japan Coast Guard. We will continue to contribute to activities for protecting the sea around Japan by building ships for these public offices.



Naming and launching ceremony of Chiyoda submarine rescue ship

# Ocean Development

We will deepen our collaboration with MODEC, Inc. to provide services beyond the existing domains.

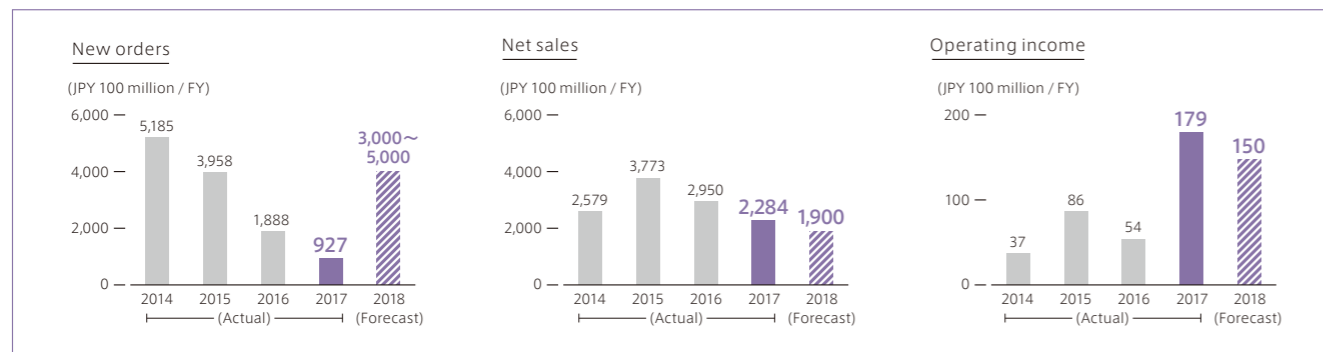
Director and Managing Executive Officer  
General Manager of Corporate Planning Headquarters  
Shinsuke Minoda



## Business environment and performance

Crude oil prices recovered from the low level recorded at the beginning of 2016, reflecting the anticipation of the elimination of excess supply attributed to the oil-producing countries' agreement to reduce production. West Texas Intermediate (WTI) has recovered to more than 50 US dollars per barrel. Oil companies are expected to continue development with a focus on deep-sea areas from the viewpoint of a sustainable supply of energy resources. Accordingly, businesses related to the floating production storage and offloading system (FPSO) are expected to grow stably in the medium and long term. In the midst of these conditions, we have established the Corporate Planning Headquarters, which performs corporate planning functions for the entire company, to create businesses in the core domains specified in the MES Group 2025 Vision that we announced in February 2016 and to increase the driving force for achieving this objective. We also changed our structure into one in which the ocean business is under the direct control of the Corporate Planning Headquarters. With MODEC, Inc., a group company that engages in the FPSO business, we will enhance collaboration in the overall group in areas including not only the manufacturing of hulls but also the field of engineering

called topside, the after-sales service business, and even joint participation in FPSO charter projects. Orders received declined by 96.063 billion yen (-50.9%) year on year, to 92.704 billion yen, although we received orders for specification changes, operation services, and others for existing FPSO projects. This is attributed mainly to a shift in the timing of the placement of orders for new projects. Net sales decreased by 66.562 billion yen (-22.6%) year on year, to 228.419 billion yen, due in part to a shift in the timing of the placement of orders for new projects, which offset the progress of the existing FPSO construction. Operating income increased by 12.522 billion yen (+233.1%) from the previous fiscal year, to 17.895 billion yen, mainly reflecting the improved profitability of existing projects.



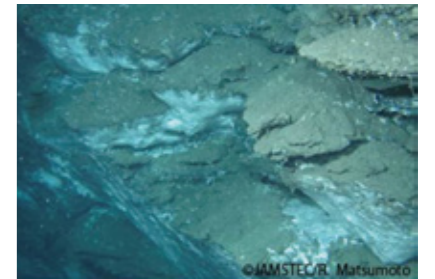
## Our Action

Initiatives for innovation based on the Mid-Term Business Plan

### Topics Promoting the commercialization of shallow methane hydrate production

- Implementation of a research project on the development of technology for recovering shallow methane hydrate, which was commissioned by the government

Under the national government's Basic Plan on Ocean Policy that was developed in March 2008, development targets, how to achieve them, the development of the necessary technologies, the division of roles between the public and private sectors, and other details were determined for each type of marine energy and mineral resources, such as methane hydrate and polymetallic sulphides. The government decided to promote research for the practical application of methane hydrate, which is deposited in Japan's surrounding marine zones, and publicly recruited bodies implementing the research project. MES applied for this project jointly with Shimizu Corporation and Nihon University, with MES being the representative. Five consortiums were selected as a result, including MES. MES has a rich knowledge of gas hydrates and an extensive track record in offshore structures, machinery, and plants. We will aim to commercialize shallow methane hydrate production by working together with domestic and overseas partners.



Methane hydrate exposed on the ocean floor off Joetsu.  
Source: Website of Gas Hydrate Research Laboratory, Meiji University

### Topics Commencement of time charter of FPSO for the Lapa oil field in the "pre-salt" region offshore Brazil

Our subsidiary MODEC, Inc. (MODEC) was awarded the contract for the supply, time charter, and operations of Floating Production, Storage and Offloading (FPSO) unit by Guará B.V., which is a 45% subsidiary of Petróleo Brasileiro S.A. (Petrobras), the national oil company of Brazil. MODEC was responsible for engineering, procurement, construction, mobilization and installation of the FPSO. The FPSO began crude oil production and a twenty-year time charter service (lease and operation & maintenance) off the coast of Brazil in December 2016. The FPSO, which was named the FPSO Cidade de Caraguatatuba MV27, is owned by Carioca MV27 B.V., whose shareholders are MODEC, Inc. (20.1%), Mitsui & Co., Ltd. (32.4%), Mitsui O.S.K. Lines, Ltd. (20.6%), Marubeni Corporation (17.6%), and MES (9.3%). It is expected that the commencement of the time charter service will further expand the revenue base of MODEC from the current fiscal year onwards.



FPSO Cidade de Caraguatatuba MV27

### Topics Enhanced cooperation with MODEC

- Establishment of a department to support FPSO chartering business

In February 2016, MES established the FPSO Business Section, which handles all operations and management related to our participation in FPSO chartering-related businesses, in order to invest aggressively in businesses conducting FPSO chartering. We have already acquired shares of the following three Special Purpose Companies (SPCs) for FPSO chartering business from MODEC, Inc. We will further enhance our cooperation with MODEC as we continue to focus on the development of the offshore business.

○SPCs for FPSO charter business in which MES has currently investigated T.E.N. Ghana MV25 B.V. for "FPSO Prof. John Evans Atta Mills" offshore Ghana Cernambi Norte MV26 B.V. for "FPSO Cidade de Itaguaí MV26" offshore Brazil Carioca MV27 B.V. for "FPSO Cidade de Caraguatatuba MV27" offshore Brazil

#### MODEC's first FPSO for offshore Ghana appears on new banknote of Ghana



MODEC supplied and has been operating the first FPSO for offshore Ghana, FPSO Kwame Nkrumah MV21, whose image was adopted for a new banknote of the Republic of Ghana.

In addition, the second FPSO which MODEC supplied for the country began operation in August 2016. In the past decade, MODEC has expended considerable efforts on identifying and involving Ghanaian based professionals and labor to contribute to the construction and eventual operation of these FPSOs through capacity building investments and development of local suppliers and fabricators. The adoption of the FPSO as an image on the currency, which is said to reflect the culture and historical backdrop representing each country, proves that the FPSO and MODEC are expected to contribute to the economic development of Ghana, which is a great honor.



# Machinery

We will increase the competitiveness of our service business with the aim of providing total solutions in growth fields.

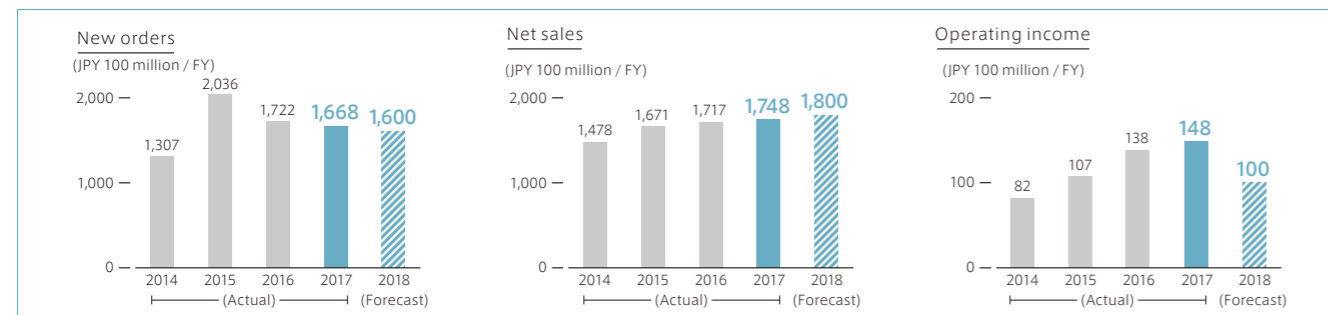
Director and Managing Executive Officer  
General Manager of Machinery & Systems Headquarters  
Ryoichi Oka



## Business environment and performance

With regard to marine diesel engines, we secured sufficient work volume, although orders received declined from the previous fiscal year due to the reduction in orders received for large engines. The production volume increased year on year, to 182 engines/3,780,000 horsepower due to the production of large engines. The production volume for the next fiscal year is expected to be almost equivalent to this, around 3,800,000 horsepower, due to the production of large engines. It was decided that the first commercial machine of the large, low-speed marine diesel engine, which is equipped with an Exhaust Gas Recirculation (EGR) system to conform to the IMO NOx (Nitrogen Oxides) Tire III regulation, will be adopted in Japan for the first time. Regarding industrial machinery, the environment for receiving new orders has been tough due to a decrease in capital expenditures related to petroleum refinery, although crude oil prices are about to recover. Orders received increased year on year, but have remained in a slump. In the midst of these conditions, we have made Kaji Technology Corporation, with which we formed a capital and business alliance in January 2015, into our consolidated subsidiary by means of a takeover bid to increase the synergy with the company further. We will work together with Kaji Technology Corporation to expand our operations, including the manufacturing and sales of the high-pressure reciprocating pump for supplying fuel gas to LNG-fueled ships, which we developed by collaborating with the company. Orders received for cranes remained flat from the previous

fiscal year, due in part to delays in capital expenditure projects that resulted from the integration of the container shipping business by three shipping lines in Japan. Demand for container cranes is expected to remain strong, with numerous inquiries having been made about the products. To respond to the demand, we have conducted large-scale capital investments at our Oita Works and increased its production capacity by 50%. In social infrastructure, orders received increased significantly year on year because we received numerous orders for coastal structures and orders related to disaster-relief work in areas affected by the 2016 Kumamoto Earthquake and work for replacing the floor slabs of expressways, among others. The LSS Service centered on after-sales services (Life-cycle Solution Service and Customer Oriented Service) was affected by the slowdown in the shipping market in the first half of the fiscal year. However, it recovered gradually in the second half, and orders received grew to a level close to that of the previous fiscal year, when the result was strong. Orders received declined by 5.409 billion yen (-3.1%) year on year, to 166.829 billion yen. This was due in part to the decrease in orders received for marine diesel engines, container cranes, bridges, port structures, various industrial machinery, and after-sales services. Thanks to these products and businesses, net sales remained almost unchanged from the previous fiscal year, at 174.847 billion yen. Operating income increased by 0.965 billion yen (+7.0%) year on year, to 14.772 billion yen.



## Our Action

Initiatives for innovation based on the Mid-Term Business Plan

### Topics Responding to the diversification of fuels for diesel engines

#### Completion of the world's first ME-GI-Ethane for liquefied ethylene gas carriers

In June 2016, we completed an ethane-fueled electronically-controlled gas injection diesel engine (ME-GI-Ethane) for the first time in the world. As with LNG, ethane is a more environmentally-friendly fuel than heavy oil. It also attracts attention for its superior economic efficiency due to the development and spread of shale gas. Following LNG, ethane is attracting attention as an alternative ship fuel to heavy oil, which is the mainstream fuel at present. We have established a system that enables us to respond to diverse fuel needs, including ME-GI (LNG and heavy oil), ME-GI-Ethane (ethane and heavy oil), and ME-LGI (methanol, etc. and heavy oil). Moving forward, we will continue to provide customers with eco-friendly propulsion systems, which are also excellent in terms of economic efficiency. In July 2016, we received Marine Engineering of the Year 2015, an award commending excellent vessel and marine equipment technologies from the Japan Institute of Marine Engineering. We received this award for the development of a dual fuel diesel engine that uses methanol and heavy oil as fuels (ME-LGI).



ME-GI-Ethane for liquefied ethylene gas carriers

### Topics Contribution to the first automation of a port terminal on the west coast of the United States

#### Delivery of three automated container cranes for TraPac, LLC of the United States

We handed over three automated container cranes for railroad yards to TraPac, LLC (Wilmington, California), which is a U.S. subsidiary of Mitsui O.S.K. Lines, Ltd., via PACECO CORP., our U.S. subsidiary. Ever since the 1990s, numerous automated container terminals have been built globally, but TraPac LLC's terminal in the Port of Los Angeles is the first automated terminal on the West Coast of the United States. It is expected that the introduction of these automated container cranes will contribute to developing a consistent automated system, from the part under the quay crane to the railroad yard.



Automated container cranes for railroad yards

### Topics Increasing our competitiveness in the social infrastructure domain

#### Joint development of an inspection system that permits the simultaneous inspection of surface conditions and subsurface conditions of roads

#### Completion of Bridge No.1 on the Ota Kitsuki Line

Recent years have seen the aging of social infrastructure come to the surface, which has resulted in the growing necessity of investigations and inspections for the maintenance of infrastructure equipment throughout Japan. This has led to demand for investigation and inspection technologies that will compensate for the shortage of engineers. We have developed a system that permits the inspection of road subsurface conditions with radar (electromagnetic waves) and the measurement of road surface conditions with laser (a hybrid inspection system), jointly with Tonox Corporation. We will continue to provide consistent services from investigations to repairs, replacement, and renewal by making use of the MES Group's diverse technologies related to bridges.



Hybrid inspection vehicle

# Engineering



We will make efficient use of the Group's management resources and promote collaboration between Group companies with the aim of maximizing profit and achieving stable returns.

Director and Managing Executive Officer  
General Manager of Engineering Headquarters

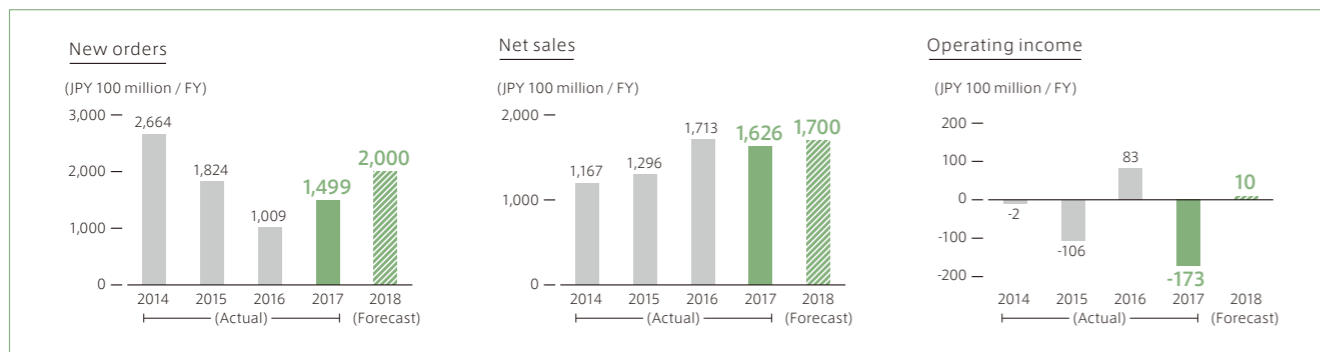
Shinsuke Nippo

## Business environment and performance

Customers in the field of chemical plants, a field in which we excel, have maintained a cautious stance. For example, oil- and gas-producing countries and major oil companies are reviewing their capital expenditure plans in response to the slumping crude oil prices. However, crude oil prices, which had been slumping, recovered gradually and are being stabilized, with signs of improvement seen in customers' motivation for investment. On the other hand, in the field of infrastructure, the chronic power shortage has yet to be overcome throughout Southeast Asia. In Indonesia and Vietnam, plans to construct coal thermal power plants, which had been delayed, have finally come into play. In the environmental energy field, capital expenditures on power plants using renewable energy and other facilities have continued to be made in Japan and other countries, and are expected to continue making steady progress.

In the midst of these conditions, orders received increased by 48.970 billion yen (+48.5%) year on year, to 149.893 billion yen, despite the impact of delays in capital expenditure plans in the petrochemical field, due in part to orders received in the field of overseas infrastructure for engineering work for a coal thermal power plant in

Indonesia and an order received in the environmental energy field for the construction of a wind power plant. Net sales decreased by 8.672 billion yen (-5.1%) year on year, to 162.598 billion yen, partly reflecting the steady progress of a petrochemical plant construction project for Singapore and power plant engineering work projects for Vietnam and Indonesia, and the completion of a wind power plant construction project. While we posted operating income of 8.297 billion yen in the previous fiscal year, we posted an operating loss of 17.333 billion yen in the fiscal year under review due to a decline in the profitability of plant construction projects being implemented by consolidated subsidiaries.



## Our Action

Initiatives for innovation based on the Mid-Term Business Plan

### Topics Handover of chemical plant in Turkmenistan

#### 69th sulfuric acid plant completed

In June 2016, we completed and handed over a sulfuric acid plant (annual production amount: 500,000 tons) to Turkmenhimiya State Concern, Turkmenistan's state petrochemical company. This was the 69th sulfuric acid plant completed by MES. We received the order for this project in September 2013 jointly with Renaissance Construction of Turkey. It was the first chemical plant that we handed over to Turkmenistan. Turkmenistan, which boasts the world's fourth-largest reserve of natural gas, undertook the project as part of measures for easing its heavy dependence on the export of natural gas. It is expected that the completed plant will help improve the added value provided by the use of natural gas resources and contribute to nurturing and developing industries in the country. We have a strong track record in the field of inorganic chemicals, including sulfuric acid. We will continue to pursue this business aggressively.



Sulfuric acid plant for Turkmenistan

### Topics Acquisition of a UK engineering company

#### Acquisition of Simon Carves Engineering Ltd., a UK engineering company

Engineers and Constructors International, Inc. (ECI), our plant engineering subsidiary in the United States, has acquired shares in Simon Carves Engineering Ltd. (SCEL), an engineering company in the United Kingdom, as a result of which SCEL has become a subsidiary of ECI. SCEL is a traditional company that has been providing design and engineering services for various plants in the UK and around the world for more than 100 years. The acquisition will enable the MES Group to provide consistent services throughout the lifecycle of plants, from project proposals for plant construction to Engineering, Procurement, and Construction (EPC), and trial runs, and even maintenance, equipment modifications, and the enhancement of existing plants. Through the acquisition, the MES Group has acquired a new base in Europe in the field of chemical plants. Moving forward, we will operate the business in more regions than ever.



SIMON CARVES Engineering Ltd.

### Topics Order received by BWSC for the ninth biomass power plant in the UK

#### Decision made to invest in the electric power sales business with a biomass combined heat and power (CHP) plant.

Burmeister & Wain Scandinavian Contractor A/S (BWSC), our subsidiary in Denmark, has received an order for the construction, operation, and maintenance of a large biomass power plant. It was the ninth order received for a power plant of this kind in the United Kingdom. This facility is a biomass CHP plant fueled by wooden fuel, and its capacity will be 27.8 MW. BWSC as a whole undertakes the business of the CHP plant, including engineering, equipment procurement, installation and construction, and test and commissioning. BWSC also received an order for a 20-year contract for its operation and maintenance (O&M), including a five-year option contract.



Rendering of the biomass power plant



# Research & Development



We will contribute to enhancing the competitiveness of the MES Group's core products with technologies for design and manufacturing innovations.

Director and Managing Executive Officer  
General Manager of Research & Development Headquarters  
Akira Nishihata

## Research and development

To achieve the MES Group 2025 Vision, we make development efforts aimed at enhancing product competitiveness and expanding our businesses in the domains of Environment & Energy, Marine Logistics & Transportation, and Social & Industrial Infrastructure.

### Initiatives in the Environment & Energy domain

In the field of ocean development and submersibles, we are developing a newly constructed floating production storage and offloading system (noah-FPSO) vessel for marine oil and gas, which will make it possible to respond to requests for delivery in a short turnaround period, and a dynamic positioning system (DPS) with redundancy that makes it possible to respond to various customer needs. As a result, we have obtained classification certificates. To meet the demand for fast, low-cost surveys of a wide seabed area, such as a preliminary survey for offshore oilfield development and a survey conducted before laying underwater communication cables for commercial use, we have launched a joint research project concerning ultra-wide area high-speed seabed mapping (Team KUROSHIO) in a team of eight organizations including the University of Tokyo. In addition, we are working on a survey technology using multiple small AUVs, which is aimed at the efficient investigation of seabed resources in a wide marine area, and a submarine methane hydrate production system, among others. In the field of renewable energy, we are developing facilities including floating and bottom-mounted offshore wind power generation facilities. In the field of environmental plants, we are developing fermentation technologies which are compatible with diverse materials for the purpose of expanding the scope of application of biogas power generation technologies.



A joint research project concerning ultra-wide area high-speed seabed mapping (Team KUROSHIO)

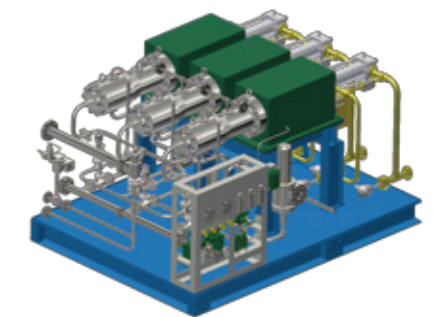


Container terminal automation system

### Initiatives in the Marine Logistics & Transportation domain

In the field of port cranes, we are developing remote/automatic operation of quay cranes and container yard cranes, a container terminal automation system, and other areas. In the field of merchant ships, we are developing new neo-series ships, or next-generation, environmentally friendly ships that

reduce CO<sub>2</sub> emissions. We are also developing a route recommendation system that considers weather and sea conditions and services including those of analyzing the propulsive performance of ships on commercial voyages, using ship-land communication technology. In addition, in the field of two-stroke marine diesel engines, we have completed the development of high-pressure EGR that meets the current IMO NO<sub>x</sub> (Nitrogen Oxides) Tier III regulation and dual fuel engines (ME-GI) for liquefied natural gas (LNG), ethane, and methanol, which comply with the sulfur oxide (SO<sub>x</sub>) regulations. We are now developing a dual fuel engine (ME-GI) for liquefied petroleum gas (LPG). We have also developed a high-pressure fuel pump to be used for the fuel gas supply system for ME-GI engines.



High-pressure fuel pump to be used for the fuel gas supply system for ME-GI engines

### Initiatives in the Social & Industrial Infrastructure domain

We are developing a radar inspection system for the maintenance of tunnels and roads, technologies for the large-scale maintenance and repair of bridges, and other related technologies. In the field of industrial machinery, we are developing a new co-generation system, which improves the energy efficiency of power generation facilities that use natural gas and complies with the standards for spreading and promoting distributed power supply. We also make use of IoT at our manufacturing sites to improve work efficiency and operate machine tools efficiently.

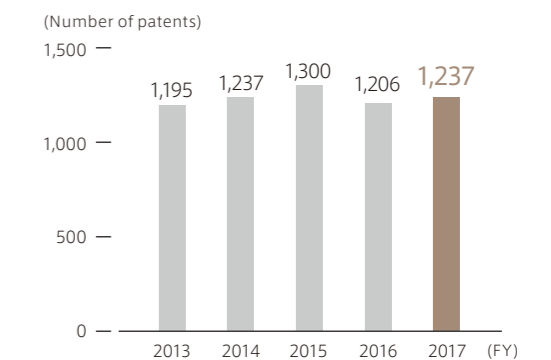


Radar inspection system for road maintenance

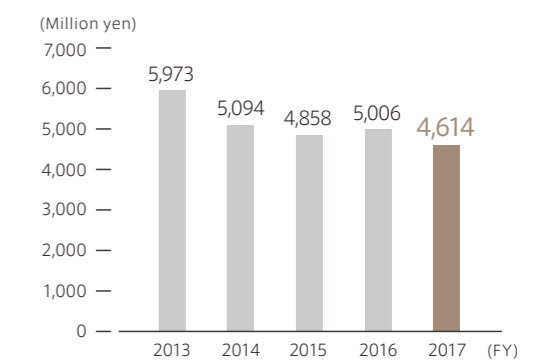
## Intellectual properties

The basics of initiatives for intellectual property lie in securing a competitive edge for our businesses through the acquisition of intellectual property rights and their application. The Intellectual Property Department and operational headquarters work together to promote the creation of intellectual property rights, such as inventions achieved through the development of products and technologies and trademarks attached to our products, and the acquisition of rights over the properties and their application. The Legal Department, Intellectual Property Department, and related departments also work together to handle contracts and disputes with other companies regarding intellectual properties. The intellectual property strategy cannot exist on its own, but must be implemented in an integrated manner with the business strategy and technological development strategy, forming a trinity of strategies. While we are apt to feel that the rights are acquired as a result of achievements in technological development, we must fully consider how to acquire, protect, and apply technologies when we start developing a business or product. At MES, we always try to formulate and implement intellectual property strategy in this way. In addition, in Japanese corporate society, where there is a tendency to avoid patent disputes, we have started to see a trend towards actively exercising intellectual property rights. This is believed to be the result of the great impact made by the progress of globalization. At the same time, however, it also reflects the fact that people are starting to have a greater awareness of how to apply these rights to gain profits. The importance of patent surveys and analysis, which aim to avoid infringing upon other companies' rights and exercise the intellectual property rights owned by MES, have been increasing, and we are taking measures to improve our capacity to conduct surveys.

### Changes in the number of patents

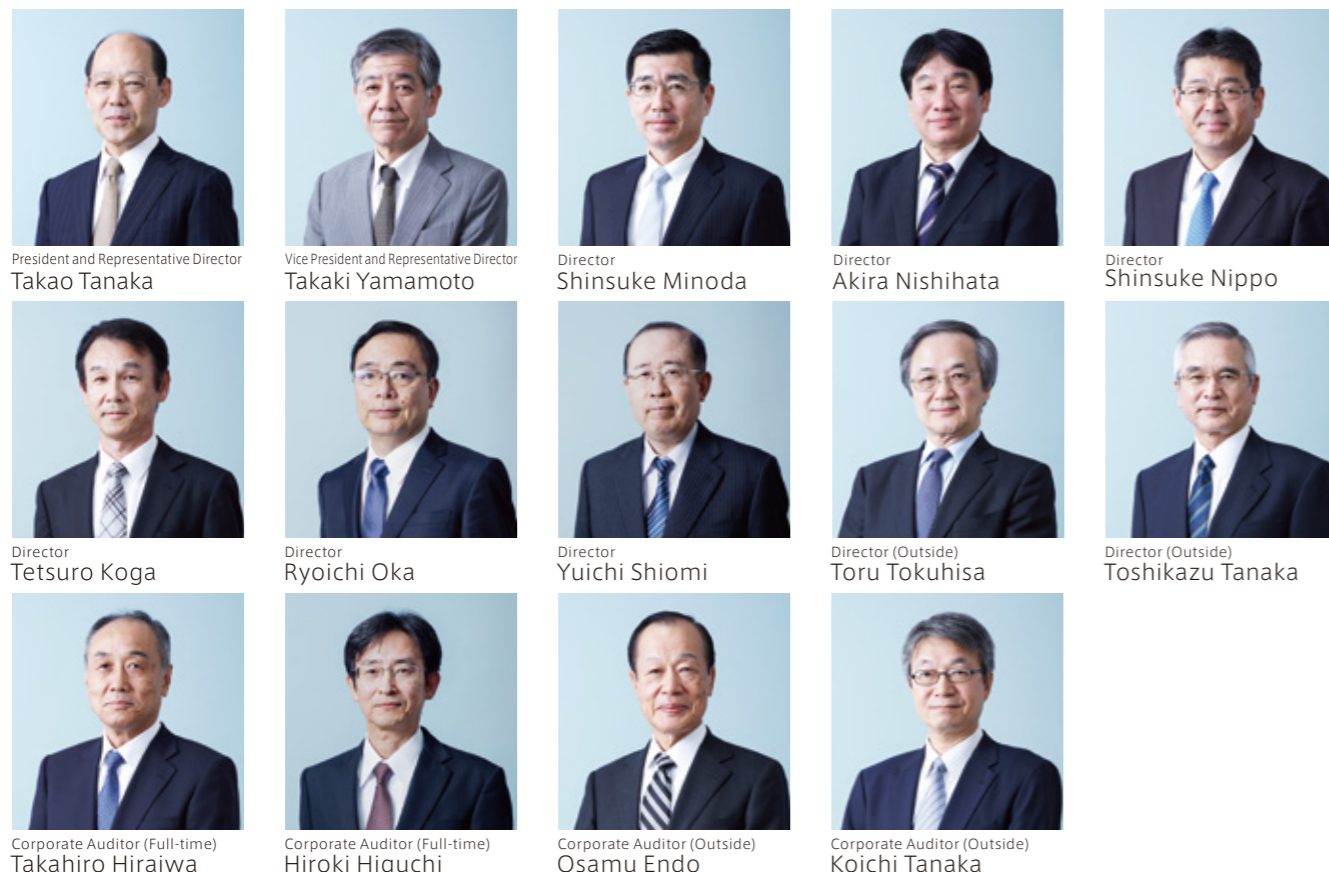


### Changes in the amount of R&D expenses



# Corporate Governance

## Directors / Corporate Auditors



## Directors / Executive Officers

President, Representative Director	Takao Tanaka	CEO
Vice President, Representative Director	Takaki Yamamoto	Assistant to President, in charge of Audit Dept. and personnel & general affairs, General Manager of Export Control Dept. and CCO <sup>※1</sup>
Director, Managing Executive Officer	Shinsuke Minoda	Supervising Engineering Hq., General Manager of Corporate Planning Hq., and CISO <sup>※2</sup>
Director, Managing Executive Officer	Akira Nishihata	In charge of procurement and environmental & safety control CTO <sup>※3</sup> and General Manager of Research & Development Hq.
Director, Managing Executive Officer	Shinsuke Nippo	General Manager of Engineering Hq.
Director, Managing Executive Officer	Tetsuro Koga	General Manager of Ship & Ocean Project Hq.
Director, Managing Executive Officer	Ryoichi Oka	General Manager of Machinery & Systems Hq.
Director, Managing Executive Officer	Yuichi Shiomi	CFO <sup>※4</sup> , in charge of IR Dept.
Director (Outside)	Toru Tokuhisa	
Director (Outside)	Toshikazu Tanaka	
Managing Executive Officer	Norihisa Fukuda	Director and Senior Managing Executive Officer, Minamippon Shipbuilding Co., Ltd.
Managing Executive Officer	Shoichi Taguchi	General Manager of Tamano Works and Special Mission by President (in charge of manufacturing)
Managing Executive Officer	Yasuki Kishimoto	Deputy General Manager of Machinery & Systems Hq. (President and Representative Director, an overseas subsidiary producing material handling machinery)
Executive Officer	Katsuhiko Yoshida	Deputy General Manager of Engineering Hq. (in charge of plant engineering)
Executive Officer	Toshiro Miyake	Deputy General Manager of Ship & Ocean Project Hq. and General Manager of Tamano Shipyard, Ship & Ocean Project Hq.
Executive Officer	Yuji Kozai	Deputy General Manager of Corporate Planning Hq. and General Manager of Corporate Planning Dept.
Executive Officer	Kiyohiko Murakami	Deputy General Manager of Machinery & Systems Hq. and General Manager of Machinery Factory, Machinery & Systems Hq.
Executive Officer	Keiji Kurosaka	Deputy General Manager of Engineering Hq. (in charge of energy solutions and infrastructure)
Executive Officer	Naokazu Fukui	General Manager of Business Planning Dept., Corporate Planning Hq.
Executive Officer	Shigeki Takitani	General Manager of Procurement Dept.
Executive Officer	Yasunori Iwamatsu	Deputy General Manager of Ship & Ocean Project Hq. and General Manager of Planning & Administration Dept., Ship & Ocean Project Hq.
Executive Officer	Mitsuru Yamada	General Manager of Infrastructure Business Dept., Machinery & Systems Hq.

## Corporate Auditors

Corporate Auditor (Full-time)	Takahiro Hiraiwa
Corporate Auditor (Full-time)	Hiroki Higuchi
Corporate Auditor (Outside)	Osamu Endo
Corporate Auditor (Outside)	Koichi Tanaka

※1 CCO stands for Chief Compliance Officer. ※2 CISO stands for Chief Information Security Officer.  
 ※3 CTO stands for Chief Technology Officer. ※4 CFO stands for Chief Financial Officer.

(As of August 1, 2017)

## Corporate governance

### 1. Basic philosophy

Based on its Company Philosophy, Business Policy, and Management Policy, MES aims to ensure its sustainable growth and further improve its medium- and long-term corporate value. It recognizes the importance of the social nature of a company and takes into account the global environment, working to ensure that all of its stakeholders find the company beneficial to society. To this end, we have established a system for making fair and transparent decisions promptly and boldly, under which we continuously strive to enhance our corporate governance.

#### <Company Philosophy>

To continue our role as a trusted company, and as a trusted member of society

#### <Business Policy>

To fulfill expectations and foster trust in people and society as a manufacturing company that offers products and services representing the culmination of our global business experience and years of advanced technology development in a wide range of fields

#### <Management policy>

Build further satisfaction for our customers

Provide safe and effective workplace environment for employees

Contribute to the development of society

Pursue profit for the longevity of the company

In accordance with the preceding basic philosophy concerning corporate governance, we will try to enhance our corporate governance based on the following basic policies.

(1) We ensure the substantive rights and equality of our shareholders.

(2) We collaborate appropriately with our shareholders and other stakeholders.

(3) We ensure the appropriate, voluntary disclosure of our corporate information and transparency.

(4) We clarify the roles and responsibilities of our Board of Directors, Corporate Auditors, and Board of Corporate Auditors.

(5) We hold dialogue with our shareholders to help support our sustainable growth and improve medium- and long-term corporate value.

### 2. Structure

MES is required by law to establish a Board of Corporate Auditors. The function fulfilled by the Board of Corporate Auditors together with the voluntarily established Personnel Advisory Committee and Compensation Advisory Committee form the structure for corporate governance at MES, and we have appointed accounting auditors. As of June 28, 2017, the MES Board of Directors consists of ten members. Two of these members are part-time outside directors. Moreover, our Board of Corporate Auditors consists of four members, two of which are part-time outside corporate auditors. We have also adopted an executive officer system to improve decision-making on vital matters by the Board of Directors, improve supervisory functions, and streamline business operations. The executive officers elected by the Board of Directors are given executive authority related to business

operations, and they perform their assigned duties under the supervision of the chief executive officer (CEO).

The Personnel Advisory Committee is chaired by the president and consists of four directors, including two outside directors. It improves the transparency of the procedure for nominating candidates for directors and electing executive officers, and ensures the fairness of the procedure. The Compensation Advisory Committee is chaired by an outside director, and consists of four directors including the two outside directors. It improves the transparency of the procedure for determining the compensation for directors and executive officers, and ensures the appropriateness of the compensation standards and fairness of evaluations.

## Internal control system

### Basic philosophy

We view the objectives of our internal control system as "Assuring efficiency and work performance (achieving objectives)," "Assuring the reliability of financial reports," and "Complying with the law (compliance)." We are making efforts to reinforce and improve our internal control more than ever. In our internal control system, the Total Risk Management and Internal Control Committee deliberates the basic policy regarding internal control required by the Companies Act, the Financial Instruments and Exchange Act, and other

matters. It also undertakes the company-wide promotion of measures based on the policy decided by management committees and other bodies.

To achieve our internal control objectives, we have established a business execution system, compliance system, a risk management system, and an internal control promotion system for financial reports. The internal auditing section (Auditing Department) confirms the efficacy of these systems.



# Outside Director Message

## Systems of corporate governance and internal control

### 1. Business execution system

To execute business operations in accordance with the basic policy decided by the Board of Directors, we have established two managing committees: the Management Strategy Committee and the Management Committee.

Deliberations are held based on the functions of each organization to promote rapid, flexible decision-making. As for the business execution system, we transferred the authority to execute business from directors to executive officers elected by the Board of Directors. This streamlines the execution of duties performed by directors.

### 2. Compliance systems

We operate our businesses by keeping legal compliance in mind, and continually review and reinforce our compliance systems. Specifically, we deliver the Corporate Code of Conduct to all officers and employees of the corporate group made up of MES and its domestic subsidiaries. We have also established a system in which guidebooks and collections of cases, which are materials used as references for daily operations, are available for review at all times. We distribute an English version of the Corporate Code of Conduct to our overseas subsidiaries and work with the presidents of those subsidiaries in a timely manner based on the situation of each area to confirm compliance systems and the status of their implementation. Likewise, we have established the Compliance Committee as an entity for promoting awareness of compliance policy and reporting results of surveys. To ensure legal compliance during activities aimed at winning new orders for public projects, each division and department conducts checks by themselves. We have also established

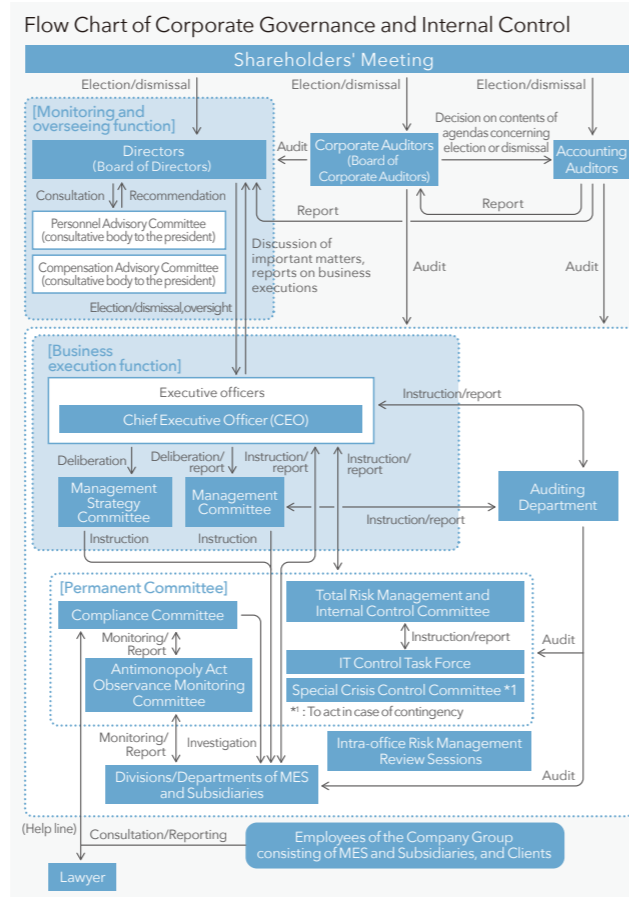
### 3. Risk management system

MES is promoting Total Risk Management System that systematically identifies and evaluates risks related to all aspects of business activities. This system is designed to ensure that we conduct business activities within the proper limit in which we can take risks. Under the Total Risk Management and Internal Control Committee, we promote group-wide risk management in line with the total risk management policy determined at the Management Strategy Committee.

In regards to risks related to business operations, each headquarters holds Intra-office Risk Management Review Sessions and conducts risk analysis on their own. For orders received and things such as investment and loan projects, key members of relevant divisions and departments examine

### 4. Internal control promotion system for financial reports

To assure the credibility of financial reports, basic policy concerning evaluation of internal control for financial reports is established at annual management committees



an Antimonopoly Act Observance Monitoring Committee. In addition, we have set up a "Help-line" to detect compliance problems in their early stages. Employees can directly consult or submit reports to either the Secretary General of the Compliance Committee or a lawyer.

the risk management status before they are submitted to the Management Committee for deliberation. To address information security risks, we have established the IT Control Task Force, a group-wide organization and subordinate body of the Total Risk Management and Internal Control Committee. This organization formulates basic policies on security measures. Following these basic policies, we promote specific measures such as formulating security policies, obtaining the latest information by cooperating with external organizations, monitoring network and IT equipment, taking countermeasures against attacks from the outside, and providing related education and training. In cases of contingency, the Special Crisis Control Committee stands ready to quickly cope with the problem.

and the Total Risk Management and Internal Control Committee evaluates the preparation and operation status of said internal control, and make corrections if necessary.

### Outside Director Toshikazu Tanaka

Mr. Tanaka served as a Director, Managing Director, Executive Vice President, and President and Chief Executive Officer of Mitsui Chemicals, Inc. and now serves as the Senior Advisor of the company. He became a Director of MES in June 2015.



### Outside Director Toru Tokuhsa

Mr. Tokuhsa worked for the Japan Bank for International Cooperation (JBIC) as the Chief Representative of Representative Office in Washington D.C., Deputy Director General of JBIC Institute, Director General of Country Economic Analysis Dept., and Resident Executive Director for the Americas. He then served as the Executive Vice President and Representative Director, Nusa Tenggara Mining Corp. until November 2016. He became a Director of MES in June 2013.

### Proceed to the next stage by taking actions quickly. Toru Tokuhsa

MES celebrates its centenary this year. I think that the mere fact that the company has survived for 100 years in this era of rapid change allows us to say that it is a blue-chip company whose value has been recognized by society. However, in the coming age, when the pace of change will only increase, our ability to respond to change will be even more important than ever.

From this perspective, we first developed the MES Group 2025 Vision in February 2016 and disclosed our vision for the MES Group in 2025. In February 2017, we developed the Mid-Term Business Plan 2017, which shows the specific business policy for the coming three years. To execute these plans quickly, we decided to change the management structure of the MES Group into a holding company structure in April 2018, receiving shareholder approval at the Ordinary General Meeting of Shareholders in June 2017. Moves to reform our Board of Directors, where these medium- and long-term business plans are finalized, have accelerated, with a particular contribution from the Corporate Governance Code that took effect in June 2015. We have instituted various reforms,

including the introduction of the executive officer system, the reduction of the number of Directors, the increase in the number of Outside Directors, and the enhancement of the supervisory functions that was made through a revision of the rules of the Board of Directors. I think that, as a result of these reforms, discussions at meetings of the Board of Directors have begun to be made from a company-wide perspective and in consideration of the standpoints of stakeholders, including our regular shareholders. The MES Group operates businesses related to infrastructure and energy, as well as a shipbuilding business. I believe that we have developed industry-leading technologies and experience in each of these fields. Previously, we were working in a so-called vertical organization, with the possibility of failing to maximize synergies. We were also leaning on each other in a way, in terms of revenues. Moving forward, however, I would like the Group to be managed quickly and flexibly under the holding company structure and evolve into a corporate group that will provide value and thus make an even bigger contribution to society.

### The framework has been laid out. Now we should take bold actions! Toshikazu Tanaka

The last two years have seen great reforms in the company, such as the introduction of the executive officer system, establishment of the Personnel Advisory Committee and Compensation Advisory Committee, and implementation of the Corporate Governance Code. I think we have achieved a major transformation to a management structure that is conscious of our stakeholders, with such elements as clear responsibility and authority and transparent management. We have also clarified our direction in the MES Group 2025 Vision and the Mid-Term Business Plan 2017 and have begun to plan a holding company structure aimed at achieving targets. In this way, we are about to finish laying out the framework for surviving the fierce competition that we face in the industry. On the other hand, I feel that we need to respond even more quickly and boldly to the radical changes in the environment, such as through business tie-ups and the management of subsidiaries, although we are blessed with technologies cultivated through 100 years of history and competent, hard-working employees. In addition, because our organization is vertical, we lack the strength that would

be felt from a company where all employees work together. I think this is an issue we should address. Today, our business environment is experiencing very real and sweeping change with the Fourth Industrial Revolution, including artificial intelligence and the Internet of Things, not to mention the chaos of world politics. The Environment & Energy, Marine Logistics & Transportation, and Social & Industrial Infrastructure domains, where we aim to grow, are not immune from this upheaval. I think that the only way to survive in this business environment, where our previous rules of thumb are not useful at all, is to try to trigger innovative change quickly and boldly with confidence. We have laid out the management framework for executing the strategies for our medium- and long-term goals, such as M&A and business tie-ups. Facing a truly critical stage, we now need to take quicker, more specific actions. As an Outside Director, I would like to help the company trigger innovative changes, from the perspectives of various stakeholders.

# Communication

## ● Together with customers

We work under our company philosophy of "To continue our role as a trusted company, and as a trusted member of society" In our management policy that supports the company philosophy, we have set "Build further satisfaction for our customers" as one of our most important objectives. In our specific standards of conduct for employees, we give top priority to "customer orientation" and "Diligently attend to our customer needs for creating value-added products" and strive to develop and provide differentiated products and services based on new findings from customers' voices.

## ● Together with shareholders and investors

We position IR activities as a part of the long-term business and financial strategies of senior management. We disclose our corporate information in a fair and proactive manner in our effort to deepen shareholders' and investors' understanding of the business activities of MES and the MES Group.

### Information disclosure and IR activities

To build better relationships with shareholders and investors, we strive to ensure timely, appropriate information disclosure and have our senior management explain our business policies and specific visions in our IR activities, so as to ensure highly transparent management.

### Provision of IR information

We publish information about our company on our website in a timely, appropriate manner. In addition to providing materials including those for results briefing sessions and those on mid-term business plans, we also provide video and other content aimed at providing shareholders and other investors with greater insight into MES. We will continue striving to provide easy-to-understand information promptly.



## ● Together with business partners

As a manufacturing and engineering company, we aim to provide cost-competitive, high-quality products. In the procurement of materials and equipment for our products, we strive to ensure co-existence and co-prosperity with our business partners through fair trade with them, so as to fulfill our social responsibility.

### Basic policy on the selection of business partners

We established the Mitsui Administration Manual (MAM) in 1994. Concerning the selection of business partners by the procurement department, MAM stipulates that "As a basic principle, we shall select business partners in a fair and square manner by providing all companies that desire to be our business partners with equal, fair opportunities for participation." We engage in procurement activities based on this principle.

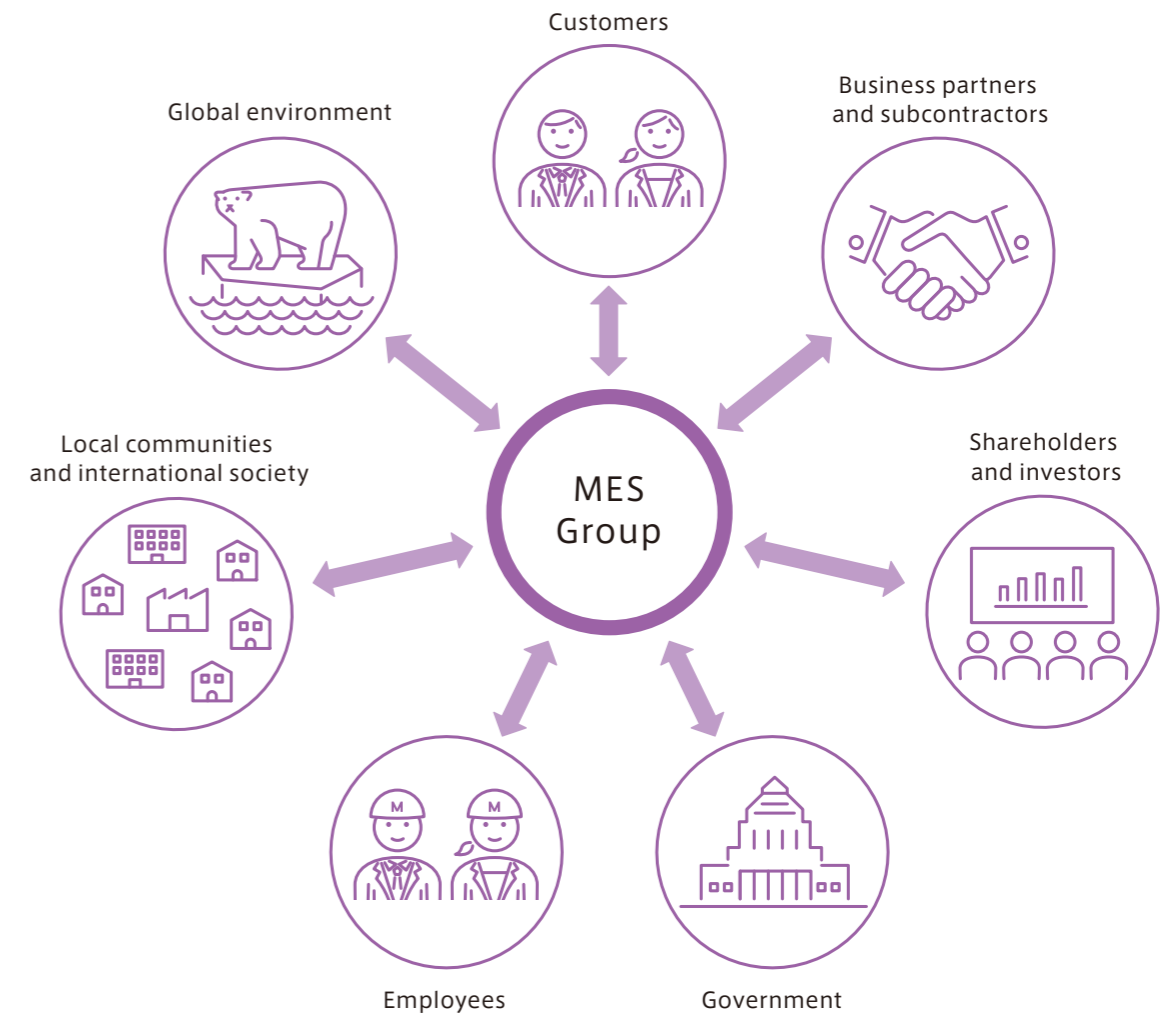
### For fair and equitable dealings

We established the Rules and Ethics for Material Procurement in November 2002. It shows the ethics and behavior and activity standards for all staff engaged in procurement activities. On the basis of the utmost integrity, we strive to build equal and fair relationships of trust with business partners.

## ● Together with local communities

We attach importance to communications with local communities. Employees in each of our business locations engage in environmental and social contribution activities locally, aiming to create a sustainable society. Information about initiatives taken at each business location is provided in this report and on our website.

## ● Stakeholders of the MES Group



## ● Ceremonial ship launching shown to the public at Tamano Works (about five times a year)

Featuring the spectacle of a huge ship launching into the sea, ceremonial ship launches at Tamano Works is received well by all those who observe it. Tamano City Tourist Association and other parties organize a popular industrial tour around Tamano City, the highlight of which is the chance to observe a ceremonial ship launch at Tamano Works (which is held irregularly). Information about the observation of ceremonial ship launches is posted to the official website of Tamano City as it becomes available.





# Environmental Preservation

## Topics Promoting diversification of biomass fuels

### Green Power Ichihara Co., Ltd. introduces pruned pear tree branches for the first time in Japan.

At Chiba Works, our subsidiary Green Power Ichihara Co., Ltd. operates a biomass power generation facility that is fueled mainly by wood chips from construction and demolition waste generated in the Kanto district. With an electricity-generating capacity of 49,900kW and transfer capability at 43,800kW, it is one of the largest biomass power generation facilities in Japan.

The construction and demolition waste as the main fuel of the facility is mostly from demolished wooden buildings. The amount of such waste available is susceptible to economic fluctuations. Accordingly, ensuring a stable fuel supply had been an issue for the facility. In an effort to achieve a diversification of fuels, Green Power Ichihara has added timber from forest thinning and imported palm kernel shells (PKS) to the construction and demolition waste as the main fuel.

Moreover, noting that the volume of production of pears in Chiba Prefecture, where the company is located, has been largest in Japan since 2016, the company began to use pruned branches of pear trees as a fuel by drying them. In a Japan



Power generation facility at Chiba Works of MES (Ichihara City, Chiba Prefecture)

first, it has turned pruned pear tree branches into a biomass fuel. Green Power Ichihara purchases pruned branches collected from pear farmers in Ichikawa City and Funabashi City. This allows the farmer to reduce the cost of disposing of the huge quantity of pruned branches generated every year. We will continue to promote a diversification of fuels that are not susceptible to economic trends, aiming for stable operation.

## Topics Power generation is now possible with a small garbage incinerator, something that used to be difficult.

### Small-scale power generation enabled by infrastructure improvement work for a general waste treatment facility

In May 2017, our subsidiaries Mitsui Zosen Environment Engineering Corporation (MKE) and Mitsui Zosen Machinery & Service, Inc. (MZM) announced that a small-scale steam power generation facility began operating following infrastructure improvement work to extend the service life of Karatsu-shi Seisou Center (Karatsu City Garbage Center), an order for which was received from the government of Karatsu City, in Saga Prefecture. In this project, MKE added exhaust heat boilers, and a small-scale steam power generation facility, which uses micro steam turbines manufactured by MZM, commenced operation.

This small steam power generation facility, developed by taking advantage of the easing of regulations related to power generation, has enabled the generation of electricity with a small-scale garbage incinerator, something that used to be difficult. It is also a groundbreaking system that provides a number of benefits, including a smaller scope of construction work, shorter construction period, the removal of the need to add workers, including qualified persons, and quick start-up and shutdown.



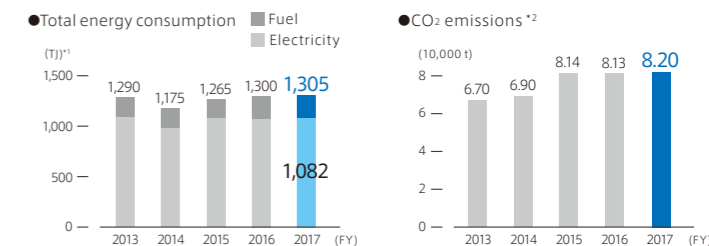
The small-scale steam power generation facility at Karatsu-shi Seisou Center

The introduction of this small steam power generator will enable Karatsu-shi Seisou Center (50 tons/day x 3 furnaces) to reduce CO<sub>2</sub> emissions by more than 40%. Accordingly, the project was subsidized under the Ministry of the Environment's subsidy program for projects to curb CO<sub>2</sub> emissions (program for promoting the introduction of advanced equipment). Making use of the engineering prowess of the MES Group, MKE and MZM will continue to pursue small-scale steam power generation with general waste treatment facilities.

## Environmental management data (non-consolidated)

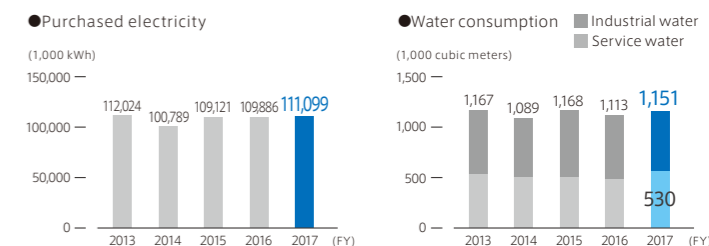
### Efforts to conserve energy and reduce CO<sub>2</sub> emissions

MES continues its efforts to reduce CO<sub>2</sub> emissions through activities such as switching the fuel for in-house power generation from heavy oil to natural gas. The graphs on the right show our total energy consumption, CO<sub>2</sub> emissions, and purchased electricity over the past five years. Corresponding with an increase in the manufacturing of ships and diesel engines, our mainstay products, total energy consumption for fiscal 2017 increased slightly year on year. As a result, CO<sub>2</sub> emissions rose approximately 1% from the fiscal 2016 level.



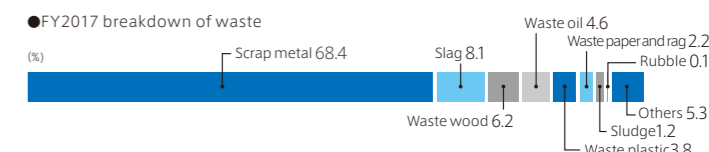
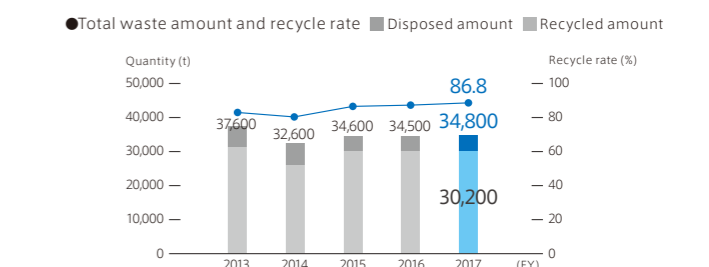
### Effective use of aquatic resources

The graph on the right shows the use of water by MES over the last five years. MES uses both service water (clean water) and industrial water (intermediate water). We strived to save water once again during fiscal 2017, but the amount of service and industrial water used was up approximately 1% from the previous year.



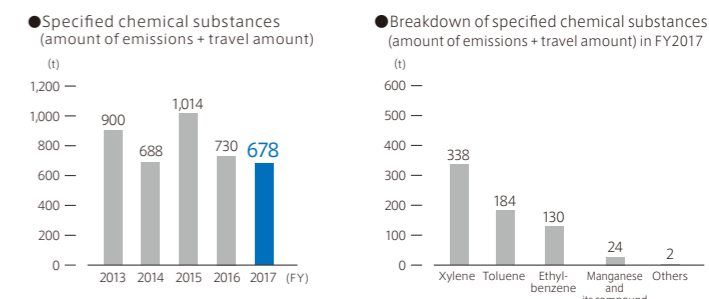
### Initiatives for reducing waste

The unlawful dumping of industrial waste has become a major social problem. As a producer of industrial waste, MES makes every effort to fulfill its responsibilities in this area. One of these efforts is our strict management of manifest. This is accomplished through periodic on-site inspections of disposal companies. Even more important is our effort to reduce the amount of waste itself. To achieve this objective, we work hard to recycle and thoroughly classify our waste. The graphs on the right show the waste amount and recycle rates over the past five years, and a breakdown of waste for fiscal 2017. We worked to limit waste, but fiscal 2017 saw an approximately 0.9% increase in waste from the previous fiscal year. In addition, the recycle rate decreased by approximately 0.2% to 86.8% because of the increased amount of waste oil and waste plastic that we generated. We will continue our efforts to reduce waste and improve our recycle rate. In addition, we will continue to properly dispose of our waste through strict management.



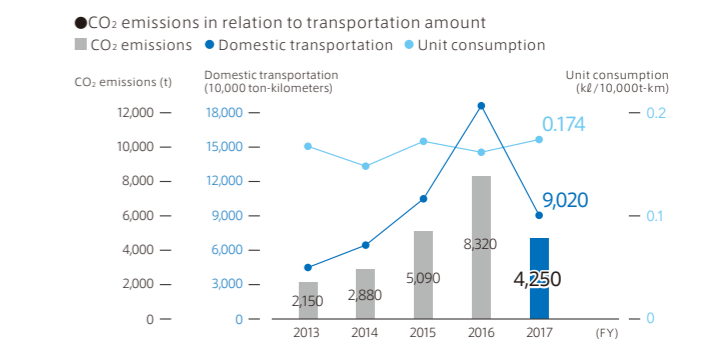
### Proper management of specific chemical substances (PRTR substances)

The majority of chemical substances used by MES are the solvents and pigments contained in paint. The changes in the output and travel amount of specific chemical substances over the past five years are shown in the graph on the right. The other chart describes the breakdown of chemical substances used by MES for fiscal 2017. In May 2004, a partial revision to the Air Pollution Control Act was officially announced. By maintaining strict control of usage levels and by using low-emission airtight containers, MES continues its efforts to conform to the objectives of this law.



### Promoting environmentally friendly transportation

As a cargo owner, MES is actively tackling the issue of energy conservation in the field of transportation as well. One way in which we are doing this is by increasing the transportation loading rates. We also aggregate aspects such as shipping dates and destinations to reduce the number of dedicated ships and expand the use of consolidated shipments. All of these activities are aimed at reducing both CO<sub>2</sub> emissions and energy consumption. The graph on the right shows MES's CO<sub>2</sub> emissions over the past five years, as well as domestic transportation (ten thousand tons-kilo) and unit consumption (= amount of energy consumed for transportation per amount transported). Domestic transportation in fiscal 2017 decreased by approximately 50% from the previous fiscal year, while energy use per transportation increased by approximately 6% year on year.



# Environmental Preservation

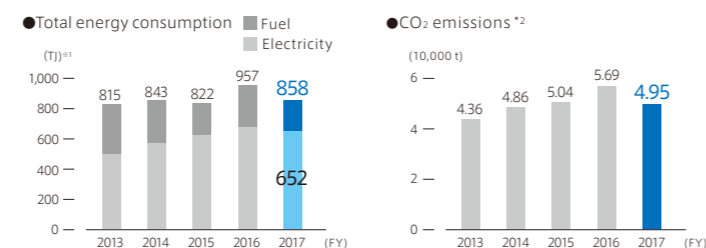
(As of March 31, 2017)

## Environmental management data of subsidiaries (Domestic factories of MES subsidiaries in Japan)

### Energy conservation and CO<sub>2</sub> emissions

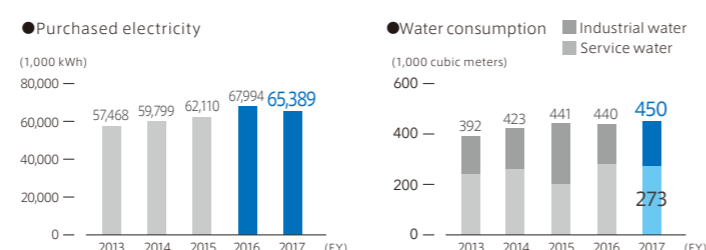
The total volume of subsidiary energy consumption for fiscal 2017 was down approximately 10% from fiscal 2016. During that same period, the amount of electricity purchased by subsidiaries decreased by no more than approximately 4% from the previous fiscal year.

CO<sub>2</sub> emissions in fiscal 2017 were down approximately 13% due to a decrease in energy consumption and CO<sub>2</sub> emission coefficient of electricity.



### Effective use of aquatic resources

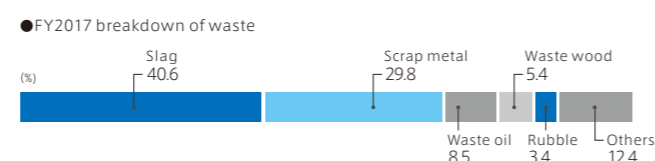
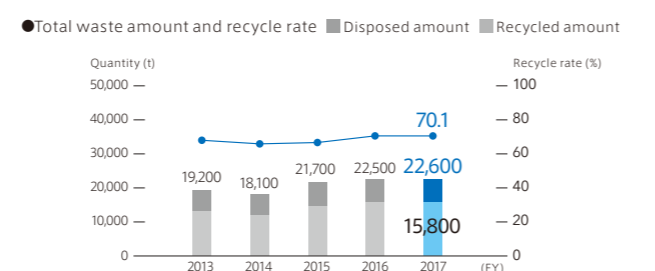
Water consumption has been increasing since fiscal 2013. In fiscal 2017, it was up approximately 2% from the previous fiscal year.



\*1 TJ: Tera Joule (=10<sup>12</sup>J) \*\*2 CO<sub>2</sub> emissions were calculated by following the Guidelines for Calculating Corporate Greenhouse Gases Emissions issued by the Ministry of the Environment. CO<sub>2</sub> emissions from electric power were calculated by using the adjusted CO<sub>2</sub> emission coefficient for designated electric enterprises that was also published by the Ministry of the Environment.

### Data related to waste

Compared to fiscal 2016, the amount of waste for fiscal 2017 increased by approximately 0.3%. Domestic subsidiaries include those involved in iron casting, steel casting manufacturing, and ship repair operations that differ from operations conducted by MES. As such, the breakdown of waste from our subsidiaries also differed from MES. Approximately 40% of the waste produced by domestic subsidiaries was slag (fiscal 2017). Due to the progress in the recycling of slag, the recycle rate increased 0.2% from fiscal 2016, to approximately 70%.



## Environmental accounting (non-consolidated)

MES spent a total of 4,010 million yen on investments and costs related to environmental preservation efforts. A detailed breakdown of these expenditures is shown on the right. The categories for environmental preservation costs are based on the Environmental Conservation Cost Categories shown in the Environmental Accounting Guidelines 2005. These expenditures included a total of 370 million yen spent on investment, consisting of 340 million yen spent on research and development, 20 million yen spent on pollution prevention cost such as exhaust gas measures, and 10 million yen spent on energy conservation of global environment conservation. Total non-investment costs came to 3,640 million yen, which included 2,490 million yen spent on the research and development of environmentally friendly energy-saving products, 680 million yen as the cost for preservation of the global environment, including energy conservation, 210 million yen allocated to resource circulation costs such as waste treatment, and 180 million yen for pollution prevention costs.

Environmental preservation cost (= sum of investment and cost: 4,014 million yen) (JPY million)			
Categories corresponding to business activities	Investment	Cost	Major initiatives and effects
<b>1. Business Area Cost</b>			
(1) Pollution prevention cost	19.4	177.8	Exhaust gas measures, wastewater treatment, dust control and other pollution control
(2) Global environmental conservation cost	9.5	683.6	Energy saving
(3) Resource circulation cost	0.0	210.7	Waste treatment
<b>2. Upstream / downstream cost</b>			
—			
<b>3. Administration cost</b>			
—			
<b>4. Research &amp; development cost</b>			
—			
<b>5. Social activity cost</b>			
—			
<b>6. Environmental remediation cost</b>			
—			
<b>Total</b>	<b>370.6</b>	<b>3,643.4</b>	

# Work Environment

## Efforts to prevent labor accidents

Based on the MES Occupational Safety and Health Management System Manual, we maintain our basic policy on occupational safety and health for the overall company declared by the employer (president). Based on this basic policy, we have developed and introduced the Company-Wide Occupational Safety and Health Management Plan. We also hold labor and management councils and conferences to discuss measures and to promote the plan. We also inform employees of the plan and collect their opinions through the safety and health committee of each works, workplace, etc. We provide training relating to programs in a company-wide manner or at each work or workplace, and also provide special training to young employees as necessary.

We also receive flash report of labor accident from subsidiaries and share the information to improve the safety level of the overall Group. Depending on the result of labor accidents, the safety and health inspection patrol may be conducted by the Company-Wide General Safety and Health Manager and the director in charge of the Environmental & Safety Control Department.

### Company-Wide Occupational Safety and Health Management Plan

- Basic policy
  - Regarding corporate behaviors relating to safety and health, we will achieve the followings by instilling a safety culture in each workplace and fostering human assets:
    - (1) Safety first principle, for manufacturing and engineering practices as top priority to safety
    - (2) Creating a comfortable workplace by proactively working on physical and mental health management
- High-priority issues
  - (1) Safety
    - 1) 2S3tei ("seiri" for orderly, "seiton" for tidy, "teiichi" for designated position, "teihin" for designated tools, and "teiryō" for discipline, and habit
    - 2) Transmission of the philosophy for safety
    - 3) Mutual warning and 3-nai management (3-nai literally means "3 don'ts," that is, "Don't allow unsafe behaviors," "Don't compromise by making excuses," and "Don't leave unsafe conditions unimproved.")
    - 4) With self checking with finger pointing
      - Particular emphasis shall be placed on the following:
        - i. Enhancing facilities for, and contents of, experiential safety training
        - ii. Assigning supervisors to positions exclusively for ensuring safety for a certain period
        - iii. Enhancing risk notice meetings before the starting of work
  - (2) Health
    - 1) Reinforcing the mental health care system
    - 2) Strengthening measures against overwork
  - (3) Each line manager shall set an example by declaring safety and health and implementing the workplace safety and health management plan and promoting the PDCA of the activities.

## Specific measures in 2016

- Concerning the Team Safety II activity, the president's prize were awarded two times during the year.
- Safety and health inspections are conducted by the central labor-management council every year at each work. Depending on the result of injuries of the previous year, intensive inspections were conducted at works with poor result.
- Safety and health inspection patrol of works were conducted by the president during the Safety and Health Promotion Months (July to August). Proposals for improvements were solicited during the period, and remarkable proposals were awarded by the president.
- The safety and health slogan for the year was solicited from the employees.

## Aiming to create workplaces that enable employees to enjoy working energetically – A message from the director in charge of the Environmental & Safety Control Department



Director and Managing Executive Officer Akira Nishihata

Under the company philosophy of "To continue our role as a trusted company, and as a trusted member of society" the company's corporate code of conduct is to provide a safe, comfortable and healthy workplace for its employees. In the field of safety, we have established the safety first policy, under which we make daily efforts to establish manufacturing and engineering practices that give top priority to safety, by positioning initiatives for preventing labor accidents as the most important tasks. In the field of health, we work together with the health insurance association to promote the data health plan aggressively, hold a range of seminars for preventing lifestyle-related diseases, provide individual employees with specific health guidance and instructions for preventing any increase in the severity of diseases, and take other measures. Recent years have seen an accelerating trend of companies seeking to promote good health among their employees. It is now commonly recognized that health-oriented management contributes to corporate growth and sustainability. At MES, the Environmental & Safety Control Department, which was established in 2003, is responsible for the environmental management, safety and health control, and the medical office's tasks, in an integrated manner. By working together with the safety and health section in the general affairs department of each facility, we strengthen the system for collaboration among the employer (MES), the insurer (health insurance association), and medical institutions. We aggressively pursue health-oriented management by establishing a system that enables a quantitative understanding of employees' health issues, responses to them, and achievements made through the responses. In 2017, when we celebrate our 100th anniversary, we will make efforts to create workplaces that permit all employees to communicate with each other and enjoy working actively in a comfortable environment.

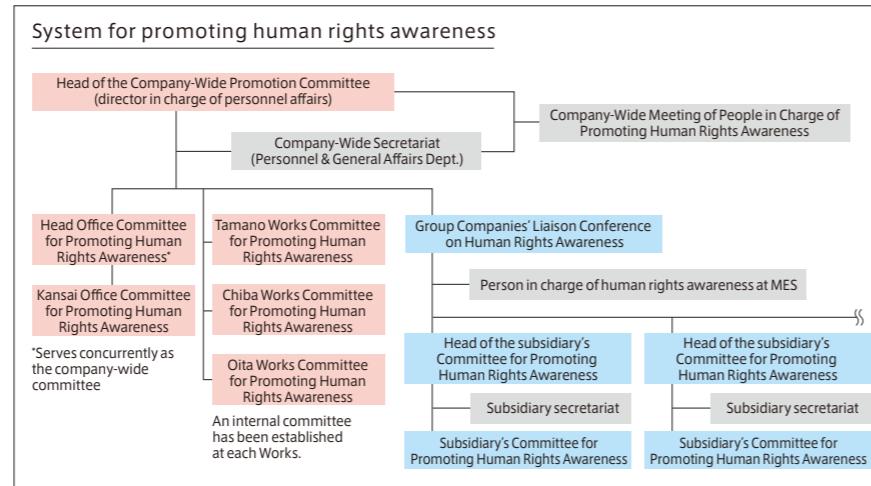


# Human Assets

## Initiatives for creating workplaces where every single employee is respected

In corporate activities, every single person working in a workplace is irreplaceable. We believe that a workplace environment with respect for human rights not only provides job satisfaction and creates something that employees live for, but also allows employees to show their abilities to the fullest, leading to greater productivity.

At MES, we have established a Basic Policy for Enlightening People about Human Rights. Under this policy, we carry out a variety of activities for raising awareness of human rights for specific job classes, including human rights awareness training for all directors, auditors, and officers, in our efforts to create an equal, discrimination-free workplace environment where human rights are valued.



## Initiatives for creating healthy workplaces

Under our basic policy on the safety and health management plan, we create comfortable workplaces by managing the physical and mental health of our employees in a proactive manner. We compile a database of the results of periodical health examinations, with which our occupational safety and health staff and health insurance association manage the health of individual employees thoroughly. To provide specific examples, they hold various seminars for preventing lifestyle-related diseases and provide individual employees with specific health guidance and instructions for preventing any increase in the severity of diseases. In addition, we operate the Health Attack program, which is aimed at helping all employees and their families, including those from MES Group companies, to improve their lifestyles. In this program, we have them select health challenges that are appropriate for each of them from among a wide variety of courses, and employees work on their assignment for two months. As a mental health policy, we conduct systematic workshops stress checks, mental health news publications, counselor interviews, etc. in a systematic manner. Further, the Environmental & Safety Control Department has concluded a blanket contract so that employees of the MES Group companies (approx. 10,000 employees) and their families can utilize an employee assistance program (EAP) service provided by an external resource (outsourcing service provider). In this service, consultations on physical/mental health and legal consultations are provided via telephone, website, facsimile, or in one-on-one meetings, 24 hours a day, with the privacy of the employees completely protected. We have provided this EAP service continuously for more than ten years.



Line care training session



Health Attack EAP service

## Initiatives for promoting work-life balance

We aim to ensure that all our employees, both men and women, show their abilities to the fullest in manners that are appropriate for various life events. We have established a Flexible Working Hours System without core time, as well as holidays and paid leave programs, so that employees raising children or providing nursing care to their families can continue working while achieving a balance between work and family. We also provide employees on Maternity Leave or Childcare Leave with support for education/training so that the period of their leave will not be a blank period in their career trajectory.

### Pickup

#### Encouraging male employees to take Childcare Leave

As a measure for promoting work-life balance, we work to increase the number of male employees who take Childcare Leave. We revised the leave systems for employees raising children or providing nursing care to their families and reached out to their superiors and the employees themselves. As a result, in 2016, five male employees took childcare leave and six took a leave of absence that may be taken for the purpose of childcare.

### Voice



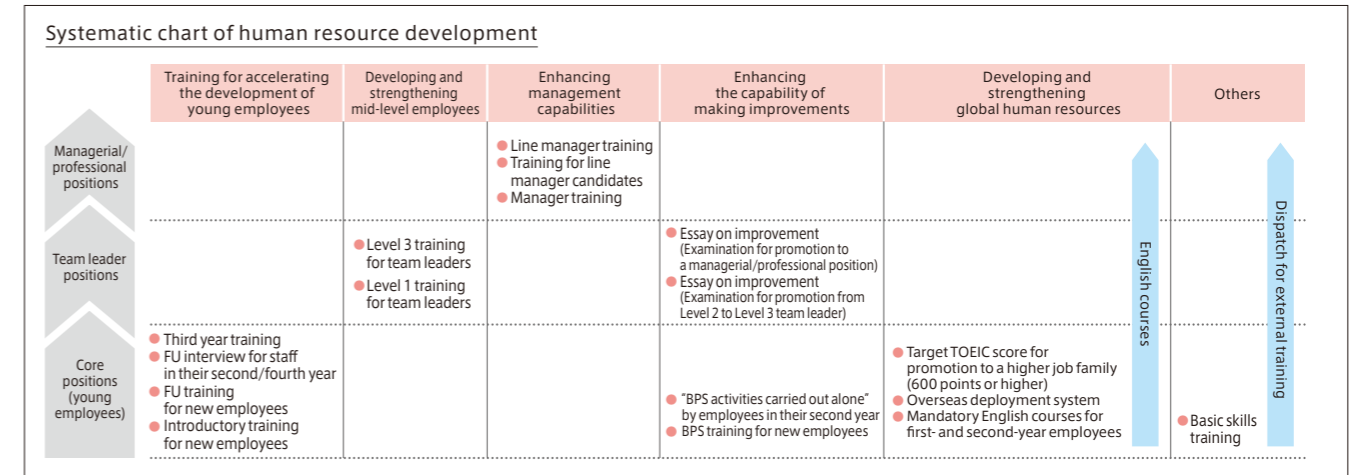
#### Takayasu Ekuni

Personnel & General Affairs Department  
 ○Period of leave: September 1, 2016 to February 28, 2017

It was a valuable experience for the three of us to spend time together immediately after our baby was born. I wondered what to do on many occasions, because I had never raised a child before. However, my baby has been growing steadily, growing more active, more self-assertive, and more lovely day by day. I really appreciate my co-workers, who helped me to take Childcare Leave. Thank you very much.

## Initiatives for developing human resources

We have set "making them full-fledged in five years" as the goal for training young employees. We provide them with group training in their first and third years at the company, training on basic skills for specific types of job, and other training programs. We also provide job-class-specific training programs, including one for mid-level employees and one for those in managerial positions. In addition, from the viewpoint of fostering global human resources, we offer English courses and training programs related to cross-cultural communications and deploy young employees to overseas business locations.



## Overseas deployment system

### Overview of the system

We established this system in 2015 in accordance with the following objectives and began operating it.

### Objectives

- Developing the international sensibility of trainees by having them experience working and living overseas as the groundwork for developing human resources who will manage overseas bases (including local subsidiaries) and projects in the future.
- The opportunities are provided to young employees (in their third to fifth year at the company) whose current jobs do not give them many opportunities to gain overseas experience.

### Required achievement/goal

The achievement as the target of this system is to develop a comprehensive mindset and skills for fulfilling duties overseas by experiencing operations (including legal affairs, accounting, tax affairs, general affairs, and personnel affairs) and daily life in an overseas country, broadly and shallowly. It is not aimed at developing specialists in the destination countries or in the businesses of the companies to which they are deployed.

○Average length of period of deployment: 6 months to 1 year

### 2016 results

First half of 2016: 2 employees were deployed

Destinations	Period
Vietnam: Project site	6 months
Singapore: Project site	1 year

Second half of 2016: 3 employees were deployed (including deployment under an internship program)

Destinations	Period
Singapore: Group company	6 months
China: Group company	6 months
Myanmar: Chamber of Commerce and Industry	6 months

### Voice



#### Chie Terashita

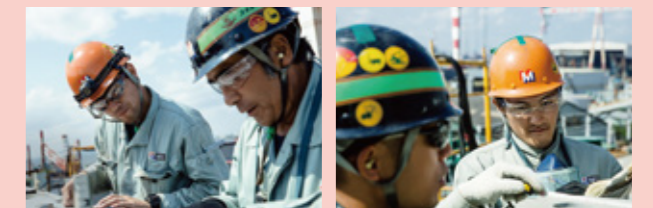
Business Planning Department, Corporate Planning Headquarters

I worked as an intern for a local Chamber of Commerce and Industry in Myanmar, which is attracting attention as the "last frontier in Asia," for a period of about six months from September 2016. I faced a range of difficulties in that country, including the fact that most people don't understand English. Moreover, people were not proactive in providing me with support, operations are not established, and local business customs differ from those of Japan. However, I was able to improve my communication capabilities and flexibility and grow more active than ever by expanding the range of my activities proactively in that environment. I was also able to consider how I should contribute to the country as a Japanese. It was an incredibly valuable experience for me.

### Pickup

#### Transfer of skills by Skill Masters

Transferring the high level of skills held by veteran employees to mid-level and young employees is essential for business operation. The Skills Transfer Center established at the Tamano Works in Chiba Prefecture recognizes veteran employees with a high level of skills as Skill Masters, who transfer their skills and techniques to young employees.





# Social Contributions

## ● Road cleaning at Oita Works

June is Environmental Month, and each year during this period we pick up litter on the premises of Oita Works and on prefectural roads around it (an approximately 1.5-kilometer section of the prefectural road adjacent to the facility). This activity is aimed at raising the environmental awareness of our employees as well as minimizing waste. We use the road for commuting, so the activity also reflects our intention to contribute to the beautification of the local community as much as possible.

We commenced this activity in 2001, when we acquired ISO 14001 certification. This means that as of 2016, we had carried out this annual activity for 15 years. It has become an important event at Oita Works.



**Masahito Ikeda**

General Affairs Department, Oita Works

We carry out this cleaning activity through cooperation across the entire facility. All of the participants carry out the same task for the same objective, which has led them to develop a feeling of fellowship and a sense of unity as an organization. We will continue this cleaning activity with the aim of contributing to the local community.



Cleaning activity

## ● Mitsui Zosen Summer Festival held at Tamano Works

In July 2016, we held the Mitsui Zosen Summer Festival (MES Summer Festival) at Tamano Works, inviting local residents as well as employees and their families. The events for the festival included a bus tour around the facility, during which the participants observed our marine diesel engines and other equipment, as well as snack food stalls operated by the employees, playground equipment prepared by them, and stage events such as singing and dancing shows.

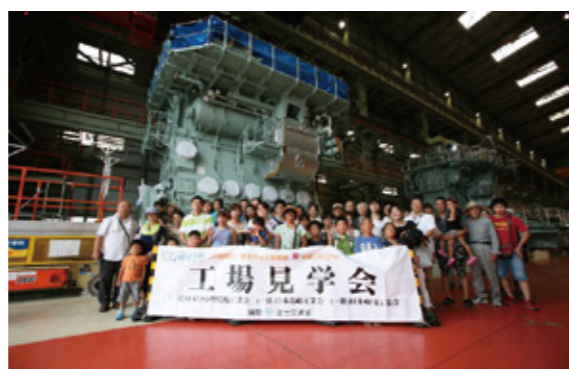
In 2016, we celebrated the 40th occasion of this summer festival, which is well established in the local community as an annual summer event. A total of 15,000 people (including MES employees) took part in 2016.



**Daisuke Yano**

General Affairs Department, Tamano Works

We hold the Summer Festival to repay our obligation to the local community. I was happiest to see the smiles of the families who live in Tamano as a company town. I was also glad that the event caused many children to yearn for the ocean and ships. In 2017, when we will celebrate our centenary, we would like to express our gratitude to Tamano City and Okayama Prefecture because we are very happy to have been with them.



The festival attracted about 15,000 people, including families.

## ● Performance of the Swing Vessels, the brass band club of MES, for local communities

The Swing Vessels is a jazz band of MES consisting of 21 members aged from their 20s to their 60s, including employees of Group companies. As the big band of MES, it performs at events including ship-naming ceremonies and parties of subsidiaries. It also performs at local festivals held around Chiba Works and dance parties hosted by local organizations, among other events.



**Mayu Nishioka**

Design Department I, Engineering Headquarters

I play trumpet in the band and act as MC at local events. Nothing makes me happier than the positive feedback I receive from the audience while emceeing and the favorable comments they give us after a performance. The band consists of a variety of people, including veterans and young players and both men and women, but we are united in enjoying playing during our performances. We will continue playing so that many more people will enjoy our performances.



An autumn concert held in November 2016



Performance at a local May Day event in Ichihara in April 2017

## ● Support for the activities of the Fureai Trio

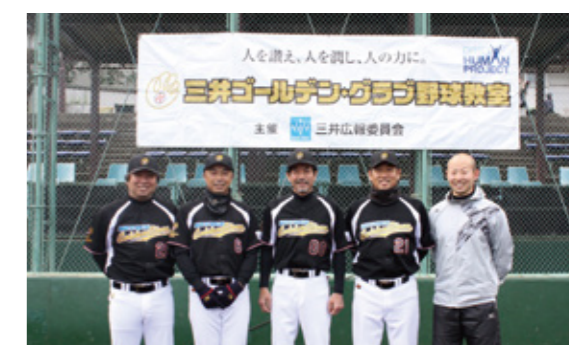
We support the activities of the Fureai Trio, a musical unit consisting of Ms. Kyoko Yoshida, a violinist, Mr. Mitsutaka Shiraiishi, a pianist, and Mr. Genichi Watanabe, a cellist. The activities of the Fureai Trio commenced in 2003 with a desire to expose children and people with disabilities, who have few opportunities to be exposed to classical music, to live classical music and enrich their lives spiritually. The trio gives public performances in about ten cities every year, two to three times each. It has given 439 public performances for approximately 101,000 people to date (as of March 31, 2017). Since the activities of the Fureai Trio started in 2003, we have not only co-sponsored its events, but have also provided volunteer services to support its concert activities.



A public performance at Tokyo in December 2016 (Venue: Tokyo Bunka Kaikan in Taito Ward)

## ● Activities of the Mitsui Public Relations Committee

At MES, we have co-sponsored a range of cultural activities as a member company of the Mitsui Public Relations Committee, which consists of 24 Mitsui Group companies. This committee carries out a variety of activities aimed at "enriching society by cherishing people and respecting diverse personal characteristics," working in line with the characteristics of the Mitsui Group described as "Mitsui is People." Examples include the MITSUI Golden Glove Award, an award that stresses the importance of fielding in professional baseball, and the Mitsui Golden Glove Baseball Class for boys' baseball coaches, which is held by inviting winners of the award to be instructors. The Mitsui Public Relations Committee is also proactive in cultural and art activities. For example, it created the MITSUI Golden Takumi Award in 2015 with a desire to create an opportunity to attract attention and admiration to people involved in "Tradition x Innovation."



Instructors for the 15th Mitsui Golden Glove Baseball Class



# Company Profile

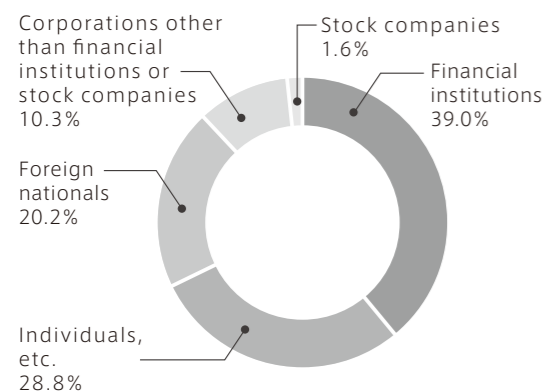
## Company Profile (As of March 31, 2017)

Company Name	Mitsui Engineering & Shipbuilding Co., Ltd.	Number of shares authorized to be issued	1,500,000,000 Shares
Head Office Location	6-4, Tsukiji 5-Chome, Chuo-ku, Tokyo 104-8439, Japan	Number of outstanding shares	830,987,176 Shares
Founded in	November 14, 1917	Number of shareholders	63,195
Established in	July 31, 1937	Employees	13,171 (Consolidated) 3,717 (MES Only)
Capital	44,385 million Yen		

## Major Group Companies

Ship	Machinery	Engineering	Corporate Management Divisions etc.
Niigata Shipbuilding & Repair, Inc.	Mitsui Zosen Machinery & Service, Inc.	Mitsui Zosen Plant Engineering Inc.	Showa Aircraft Industry Co., Ltd.
Shikoku Dockyard Co., Ltd.	MES Technoservice Co., Ltd.	Mitsui Zosen Environment Engineering Corporation	Mitsui Zosen Systems Research Inc.
Akushima Laboratories (Mitsui Zosen) Inc.	Mitsui Meehanite Metal Co., Ltd.	Sanzo Yuki Recycle K.K.	MES Facilities Co., Ltd.
MES TOKKI & Engineering Co., Ltd.	Sanzo Manufacturing & Construction Co., Ltd.	Hamamatsu Green Wave Co., Ltd.	
MES Shipping Co., Ltd.	Mitsui Zosen Steel Structures Engineering Co., Ltd.	Green Power Ichihara Co., Ltd.	
MES-KHI Yura Dock Co., Ltd.	MES Testing & Research Center Co., Ltd.	Betsukai Biogas Power Co., Ltd.	
	DPS Bridge Works Co., Ltd.		
Ocean Development	Kaji Technology Corporation		
MODEC, Inc.	Azuma Machinery Co., Ltd.		
	Tamano Machining Center Co., Ltd.		

## Shareholding situation by each category of shareholders (As of March 31, 2017)

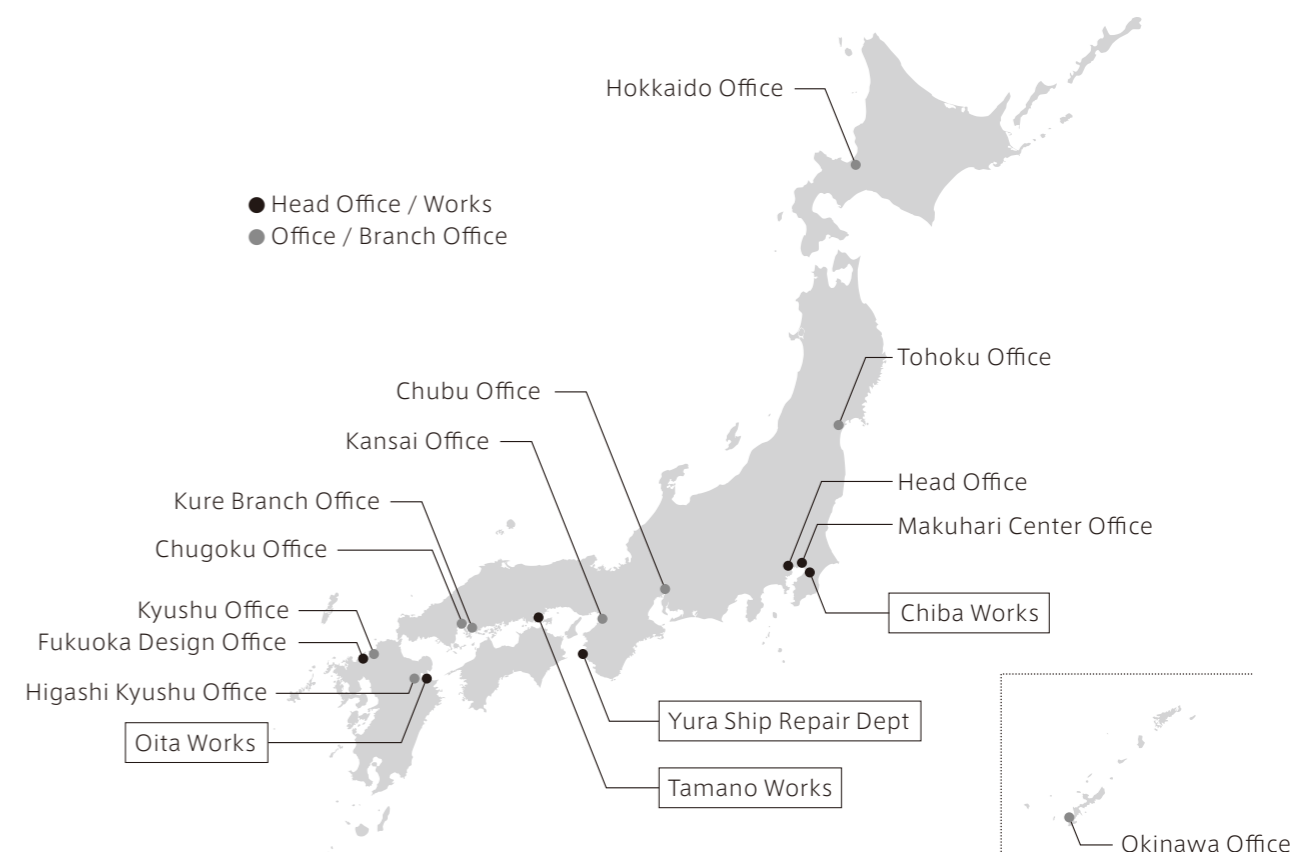


Category	Number of shareholders	Number of Shares Held	Shareholding Ratio (%)
Financial institutions	74	324,412,884	39.0
Individuals, etc.	62,286	239,527,129	28.8
Foreign nationals	314	167,977,507	20.2
Corporations other than financial institutions or stock companies	455	85,692,117	10.3
Stock companies	66	13,377,539	1.6

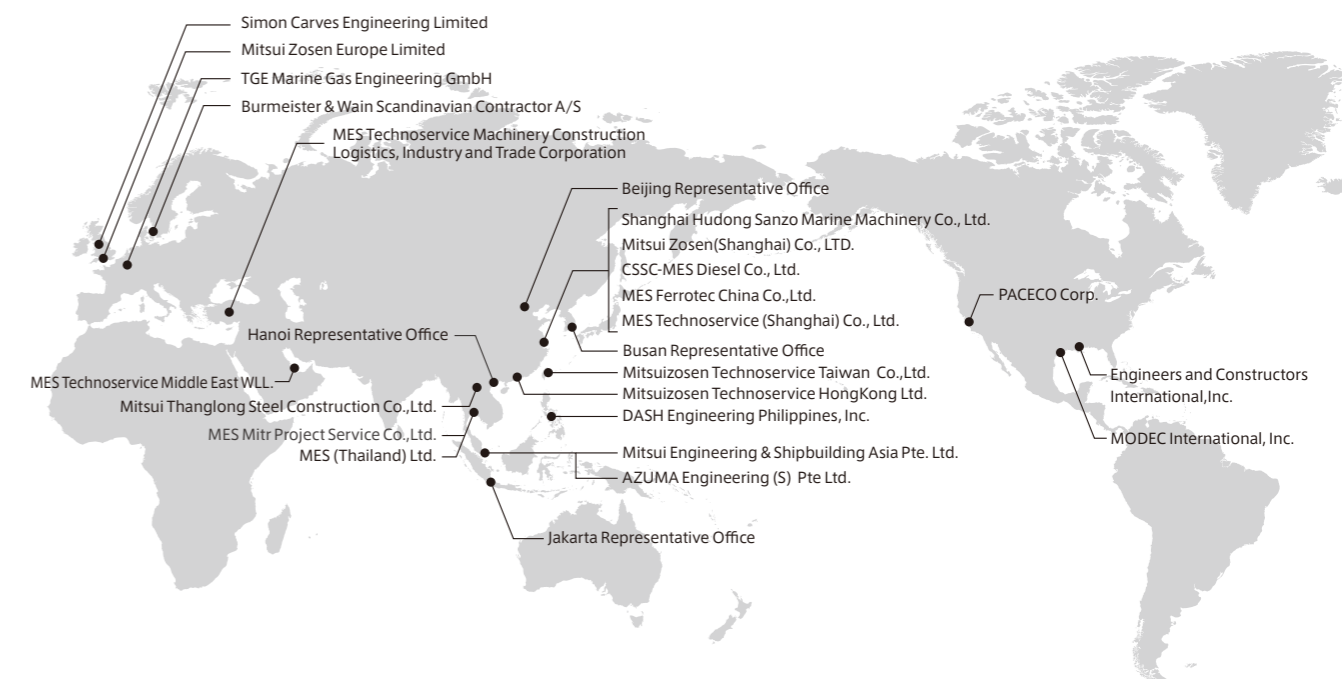
## Major 10 shareholders (As of March 31, 2017)

Name	Number of Shares Held (Thousand Shares)	Shareholding Ratio (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	42,970	5.31%
Japan Trustee Services Bank, Ltd. (Trust Account)	34,081	4.21%
Japan Trustee Services Bank, Ltd. (Trust Account 9)	28,088	3.47%
Mitsui & Co., Ltd.	25,500	3.15%
The 114th Bank	25,460	3.15%
Japan Trustee Services Bank, Ltd. (Trust Account for the retirement allowance for Sumitomo Mitsui Trust Bank, Limited)	23,316	2.88%
Mitsui Life Insurance Company, Limited	16,000	1.97%
DFA INTL SMALL CAP VALUE PORTFOLIO	14,505	1.79%
Japan Trustee Services Bank, Ltd. (Trust Account 4)	14,297	1.76%
Mitsui Sumitomo Insurance Company, Limited	13,647	1.68%

## Offices and Works



## Overseas Network





<http://www.mes.co.jp/>