



# *CSR Report 2012*

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About CSR Report 2012

1. Editorial Policy

*This CSR Report summarizes the environmental management and preservation activities of MES group in the fiscal year of 2011 with reference to "Environmental Report Guidelines" issued by the Ministry of Environment. This report also gives a considerable portion referring to our corporate governance, social contributions and other social aspects. Latest topics on our products, business operations and services which contribute to the global environmental preservation are also introduced. We expect that many photos and diagrams and attentive design will make this report easier to read and approach.*

2. Period Covered

*This report covers MES group's activities from April 1, 2011 to March 31, 2012.*

3. Scope of Coverage

*This report covers the activities of MES and its subsidiary companies. The environmental performance data included in this report covers all works of MES and its subsidiaries in Japan.*

Greeting



In today's world economy, uncertainty over the recession is protracted due to a debt problem in euro zone and fear of possible world-wide budget austerity. Economic recovery in the Unites States is not proceeding smoothly and the business outlook of emerging nations and resource-rich nations is clouded. In particular, the economic growth of China has lost its momentum. The global economy is thus resulting in an uncertain prospect.

Economy in Japan, of which production and export dropped drastically due to the East Japan Great Earthquake, is now recovering gradually in line with the re-establishing of supply chain and post-earthquake reconstruction demand. However the speed of recovery is slow and Japan is still facing harsh economy condition shadowed by an aggravated employment status, increase of fossil fuel cost caused by halting of nuclear power plant and continuing higher appreciation of Japanese Yen.

Under these circumstances, last year, Mitsui group took its first actual step of the Mid-term Management Plan 2011 (Mid-term Plan 2011) declaring "Challenge and Development for the Future" to prepare for the difficult times and to solidify the foundation for developmental leap in the future toward the rebirth of new MES.

In the second year of Mid-term Plan 2011, we are committed to cope with various measures to enhance our productivity and cost competitiveness and further to innovate our business structure.

As our main strategy, we will step up our efforts to expand business by comprehensive power of our firm and development of environment-related technology and global business activities. Specific example of our achievement in the shipbuilding field is the development of new environment-friendly LNG carrier (Double Eco Max) in July last year which is installed with a gas-fired slow speed diesel engine reducing energy consumption and CO<sub>2</sub> emission by 30% and is already put into market. Our efforts in the machinery field are focused on the sales of high efficiency gas turbine co-generation equipment, which satisfies the customers' demand for reduction of environmental load and power supply security. In the field of recyclable energy, we are putting strength into the demonstration test project of a floating marine wind farm in the waters off Fukushima and the business expansion in the solar thermal power generation. In the engineering business field, we are offering environment-friendly social infrastructures to emerging nations including construction of highly efficient and energy-saving generation plant.

In order to expedite our global business expansion in the environment-related field, we carried out a revision of organization in June this year. We will continue to meet promptly the challenge in the solution of global environment and energy problems with all corporate power by combining our versatile products and technology in and outside of Japan. Under our corporate philosophy, "To continue working as a company trusted by society and individuals through products and services we offer," we will continue to offer, based upon the high technology, environment-related products and services which are friendly to the earth with a wide variety of technology. For this purpose, we are committed to focus our all-out efforts in terms of manufacturing of goods.

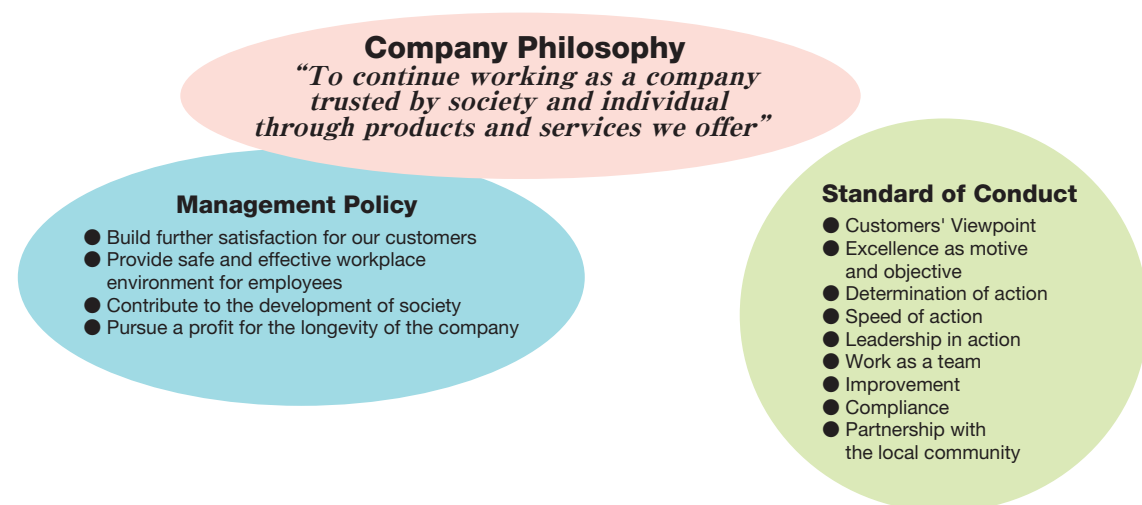
We believe such attitude of ours will ensure the trust of our stake holders and establish a strong bond with them.

We are looking forward to your stronger support and encouragement.

  
President Yasuhiko Katoh  
Mitsui Engineering & Shipbuilding Co., Ltd.

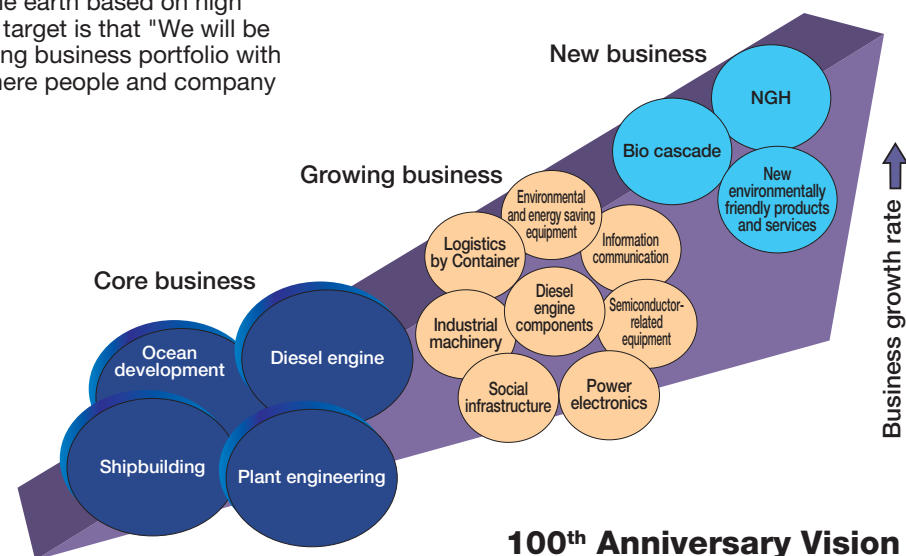
# Company Philosophy, Management Policy and Standard of Conduct

On the occasion of the 75th anniversary of the foundation, Mitsui Engineering & Shipbuilding Co., Ltd. (hereinafter called "MES") set out a "Company Philosophy". On April 1, 2005, it renewed Company Philosophy and established Management Policy and Standard of Conduct in association with the new Company Philosophy. This is in line with the recent rapidly changing management atmosphere where the demand for CSR (Corporate Social Responsibility) is increasingly required. MES group is a big group made of MES and its 118 subsidiaries (84 subsidiary companies for the consolidated account of MES and 34 affiliated companies subject to equity law) and the group is more and more required to have a common Company Philosophy to be shared by every and all such companies. Furthermore, it is very necessary to make the clarification of "Standard of Conduct" in order to change the corporate culture, "Management Policy" showing the direction of management to form the organization and human resources to cope with the rapid changing society and "Standard of Conduct" showing what the employees are ought to be. Company Philosophy, Management Policy and Standard of Conduct set out on April 1, 2005 are as follows:



## 100th Anniversary Vision

Taking opportunity of the 90th anniversary of foundation, MES has formulated "100th Anniversary Vision" to continue development for the next ten years and thereafter. Catchphrase of the 100th Anniversary Vision is "Towards the Hopeful Future with the Creditable Technology beyond 100 Years". In this "100th Anniversary Vision", we have indicated what we ought to be after ten years. First target is that "We will become a company known to the world with a creditable corporate brand sending environment-friendly products and services gentle to the earth based on high technological capability". Second target is that "We will be re-born as a company having strong business portfolio with the growth of new businesses, where people and company continue to progress coping with the environmental change and contribute to the society and will have the management with emphasis on CSR". We aim at being such a company that its employees are united to upgrade the mind and skill, ensure high profit and growth and adjust themselves to changes in the environment, to perform the corporate social responsibilities by growth spiral to enhance the company's credit-ability and competitive edge.

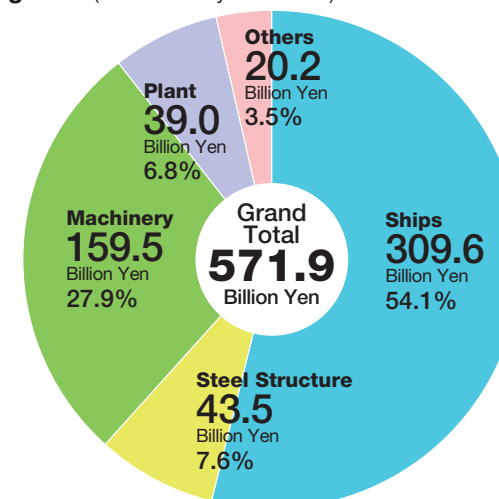


# Corporate Profile and Business Activities

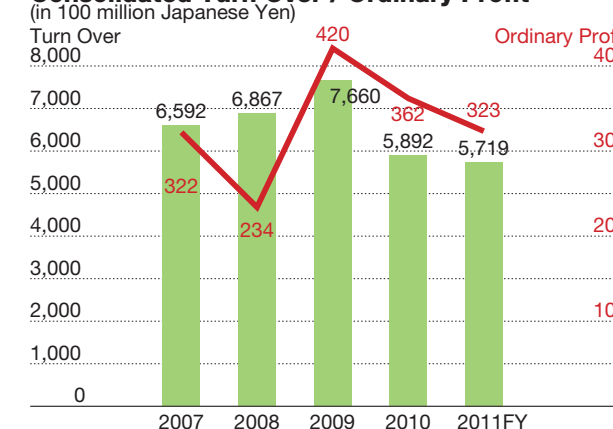
## Mitsui Engineering & Shipbuilding Co., Ltd.

- **Date of Foundation** November 14, 1917
- **Date of Establishment** July 31, 1937
- **Capital** 44,385 million yen
- **Head Office** 6-4, Tsukiji 5chome, Chuo-ku, Tokyo 104-8439, Japan  
Phone: 81-3-3544-3147 (Public Relations Dept.)
- **Makuhari Center** WBG Marive East, 6-1, Nakase 2-chome, Mihama-ku, Chiba 261-7128, Japan  
Phone: 81-43-351-9020
- **Tamano Works** 1-1, Tama 3-chome, Tamano, Okayama 706-8651, Japan  
Phone: 81-863-23-2010
- **Chiba Works** 1, Yawatakaigandori, Ichihara, Chiba 290-8531, Japan  
Phone: 81-436-41-1112
- **Oita Works** 3, Hiyoishibaru, Oita 870-0395, Japan  
Phone: 81-97-593-3111

## Consolidated Turn Over according to Business Segment (for the fiscal year of 2011)



## Consolidated Turn Over / Ordinary Profit

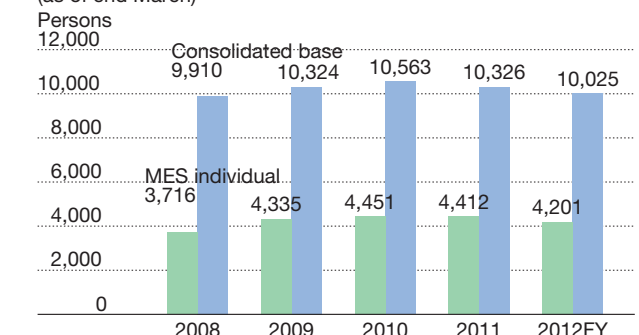


## Major Subsidiary Companies

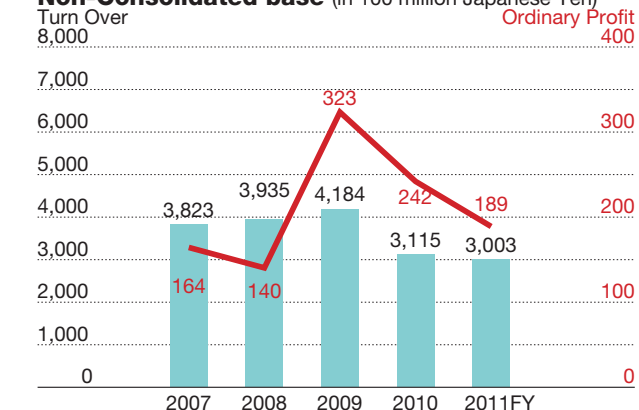
- MODEC, Inc.**  
for design, manufacturing and installation of offshore equipment  
2-3-10, Nihonbashi, Chuo-ku, Tokyo 103-0027, Japan  
Phone: 81-3-5390-1200 Capital: ¥20,185 millions
- Burmeister & Wain Scandinavian Contractor A/S**  
for engineering and installation of diesel engine power plant  
Gydevang 35, P.O.Box 235, DK-3450 Allerod, Denmark  
Phone: 45-48-140022 Capital: D Kr.150 millions
- Mitsui Zosen Systems Research Inc.**  
for development and sales of computer software  
1-3-D9, Nakase, Mihama-ku, Chiba 261-8501, Japan  
Phone: 81-43-274-6162 Capital: ¥720 millions
- Mitsui Meehanite Metal Co., Ltd.**  
for production, processing, import and sales of cast goods  
111, Kaminokawa, Okamachi, Okazaki, Aichi 444-0005, Japan  
Phone: 81-564-55-6638 Capital: ¥492 millions
- Niigata Shipbuilding & Repair, Inc.**  
for design, construction, conversion, repair and scrapping of ships  
3776, Chuou-ku Irifune-cho, 4-chome, Niigata 951-8011, Japan  
Phone: 81-25-222-6121 Capital: ¥475 millions

(Note)  
As of March 31, 2012, subsidiary companies of MES for consolidated account are 84 including above 5 major companies, and 34 companies are subject to equity law.

## Transition of Employee Numbers (as of end March)



## MES Turn Over / Ordinary Profit on Non-Consolidated base (in 100 million Japanese Yen)





# Works



## Tamano Works

Site area: 988,000m<sup>2</sup>  
Building area: 369,000m<sup>2</sup>

### Main line of products

- New shipbuilding
- Ship repair
- High-speed craft
- Offshore project
- Power plant
- Chemical plant
- Marine diesel engine
- Marine equipment
- Land machinery
- Others



## Chiba Works

Site area: 859,000m<sup>2</sup>  
Building area: 197,000m<sup>2</sup>

### Main line of products

- New shipbuilding
- Ship repair
- Offshore project
- Others



## Oita Works

Site area: 1,701,890m<sup>2</sup>  
Building area: 78,000m<sup>2</sup>

### Main line of products

- Bridge, Pontoon
- Material Handling Machineries

## Yura Repair Department

Site area: 142,000m<sup>2</sup>  
Building area: 11,000m<sup>2</sup>  
Repair dock: 65m x 405m

### Main line of products

- Ship repair
- Others



# Status of Environment in Our Management

MES laid out in 1999 "Environmental Charter" which is composed of "Basic Principles for the Preservation of Global Environment" and "Guidelines for Management of Global Environmental Preservation" in order to rank the environment as an important pillar of its management. In 2002, MES set out "2010 Vision" representing what it ought to be or what it wants to be in 2010. Under a rapid change in management environment represented by the development of emerging nations, rapid increase of oil price etc., MES formulated in 2007 the "100th Anniversary Vision" taking the opportunity of its 90th anniversary of foundation to indicate what MES should be after ten years. In this centenary vision, the main managerial target is that "MES will become a company known to the world with a credit-able corporate brand sending environment-friendly products and services gentle to the earth based upon high technological capability". In May 2011, MES set out "Mid-term Management Plan 2011" in which business expansion by enhancing corporate comprehensive power and the development of environmental energy related technology was aimed. Following products and services are the examples of what MES is offering to the society, by which MES aims "Corporate Management in harmony with Society and Economic Efficiency putting an emphasis on the Environment."

## Basic Principles for Preservation of Global Environment

MES recognizes that the preservation of the global environment is one of the most important issues in the world today and will contribute through every business activity to realize an affluent society in harmony with the environment by promoting the good health of mankind and preservation of the global environment.

## Guidelines for Management of Global Environment Preservation

1. Observance of regulations and reduction of environmental load
2. Encouraging material/energy saving and recycling to reduce the amount of waste
3. Contribution to environmental preservation by developing new technologies and products
4. Due consideration at overseas activities
5. Promotion of public relations activities and contribution to community
6. Enhancement of environmental consciousness education and participation in other social activities
7. Establishment of an Environmental Administration and Management System
8. Action in concert with subsidiary companies

## Accelerate the Development of Energy-saving Material Handling Machineries

### Energy Saving Portainer®



### New Hybrid Transtainer®



### Electrified Transtainer®



## Enhancing the Lineup of Energy-saving Products

### Saving Electric Power Consumption

- Container Handling Operation with Optimized Speed
- Use of Energy-saving Equipments
- Optimum Use of Auxiliary Equipments

### Dramatic Reduction of Fuel Consumption

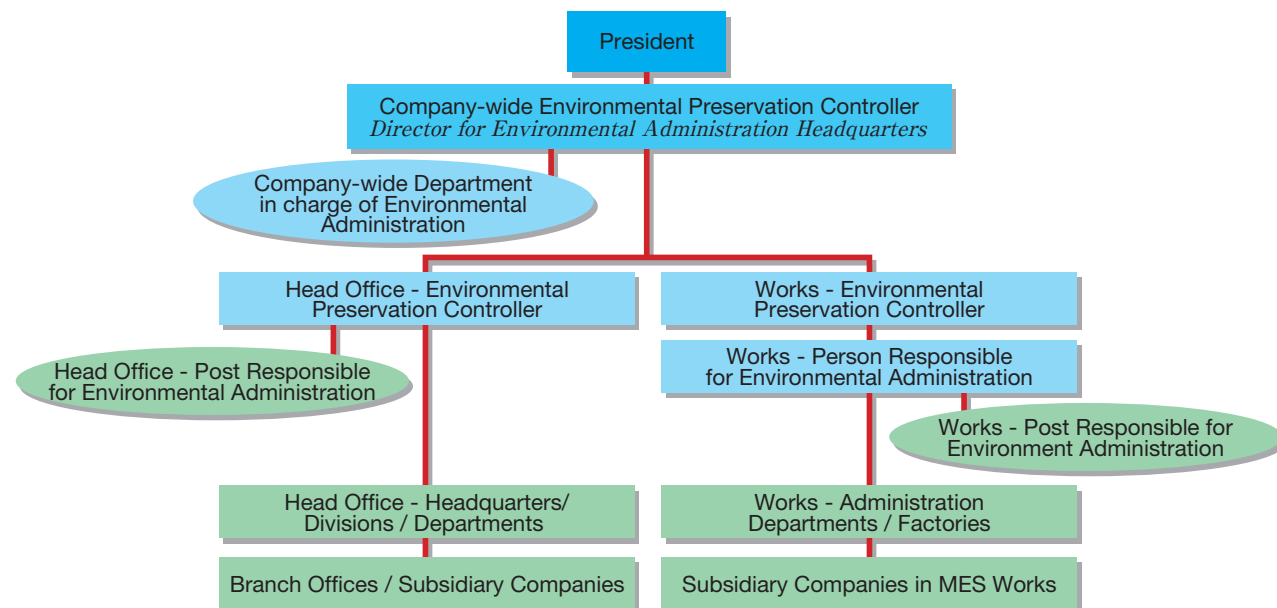
- Use of Regenerative Energy of Crane
- Rechargeable Battery with Large Capacity
- Small-size Engine

### Environmentally Friendly, Emission Free Transtainer

- Use of Regenerative Energy of Crane
- Shore Power Supply from Yard
- Smaller Engine / Battery for Lane charge

## Environment Administration Organization

The environmental administration organization of MES is shown as below. The organization is under the command of the president of MES to secure that MES goes about its business in order to be an environmentally friendly company.



## How We Enhance Environmental Management System

Tamano Works of MES acquired authentication of ISO 14001 in October 2000, and Chiba and Oita Works of MES acquired it in September 2001. All the Works of MES have renewed their authentication of ISO 14001 to 2004 version in the fiscal year of 2005. Tamano Works had a third renewal of the authentication in the fiscal year of 2009. In Chiba and Oita Works, third survey for renewal was conducted in the fiscal year of 2010 and the authentication was renewed. In each Works periodical biannual surveillance was conducted by an external certification body and the satisfactory operating condition of the system was confirmed. Photo shows the scene of periodical survey in Tamano Works.



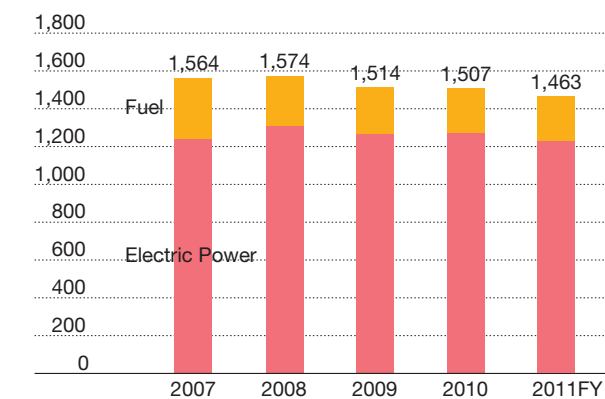
## How We Promote Environmental Preservation

Considerations to environmental preservation such as saving of resources, energy saving, reduction of wastes, or strict control of chemical substances in production activities are particularly important for MES as a manufacturing company. All works are respectively exerting intensive efforts for these activities.

### Energy Saving and Reduction of CO<sub>2</sub> Emission

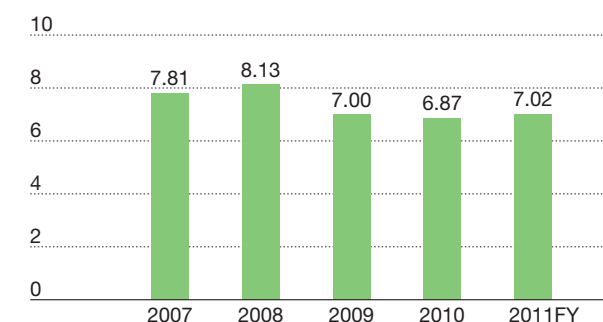
CO<sub>2</sub> emissions and total energy and power consumption by all works in the past five years are shown in the graphs below. Ships and marine diesel engines (core products of MES) have been continuing high level of operation in these years. Total energy consumption in the fiscal year 2011 decreased by 3% from the previous year. The fuel used in our in-house power generation facility was changed years ago from heavy fuel oil to natural gas as a part of activities to promote the CO<sub>2</sub> reduction. In the fiscal year 2011, energy consumption showed an increase of 2% from the previous year due to increase of CO<sub>2</sub> emission coefficient by power companies.

Total Energy Consumption (unit: TJ(\*))



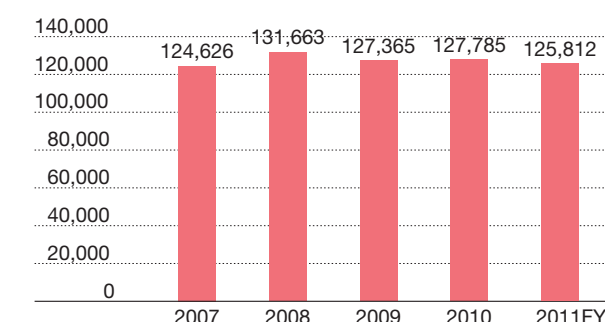
\* = TJ: Tera Joule (=10<sup>12</sup>J)

CO<sub>2</sub> Emission (unit: 10k ton)



- Calculation of Emission Amount  
According to the "Guideline for Calculation of Greenhouse Gas emitted by Enterprises" published by the Ministry of Environment
- CO<sub>2</sub> Emission Coefficient for Electric Power  
The CO<sub>2</sub> emission coefficient for electric power is in compliance with the "emission coefficient according to the Electric Enterprises" published by the Ministry of Environment.  
In the fiscal years of 2009 to 2011, emission coefficient after adjustment was adopted from two types of emission coefficients.

Purchased electric Power (unit: 1,000 kWh)

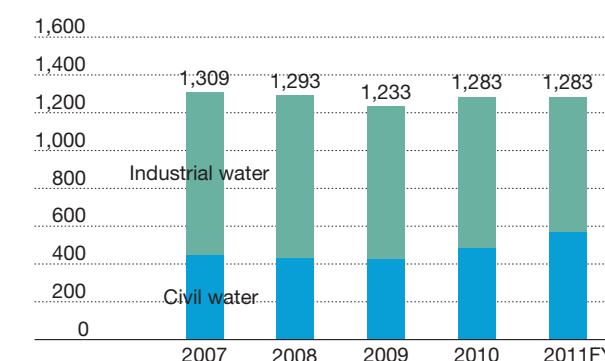


### Effective Use of Water Resources

Water usage in all works in the past five years is shown in the graph on right.

We use the civil water (purified water) and intermediate water (industrial water) supply. In the fiscal year of 2011, we made our efforts for water saving but the total usage of civil water and intermediate water remained same as for the previous year.

Water Consumption (unit: 1,000 m<sup>3</sup>)



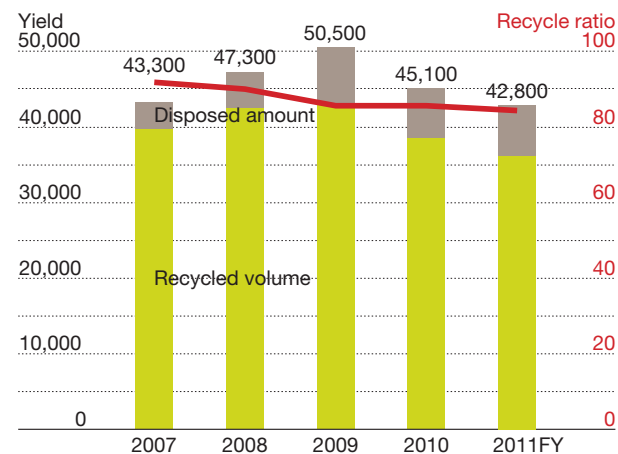


### Waste Reduction

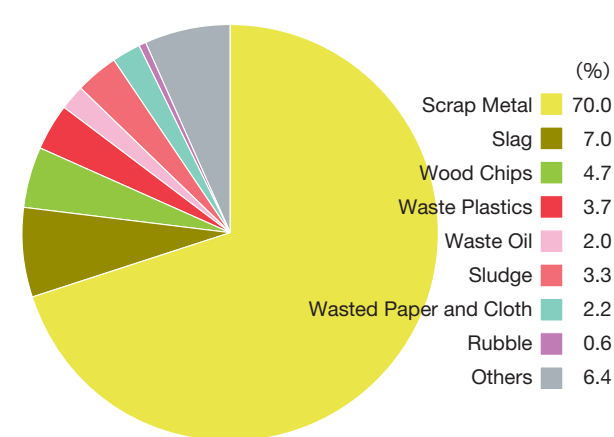
Illegal dumping of industrial waste is drawing attention as a social problem. MES, as a producer of industrial waste, is doing its utmost to fulfill its obligation. As one of such obligations, MES is making strict Manifesto Management in which MES makes periodical on-site inspection of waste processors. Furthermore, in order to reduce the waste amount, which is essentially important for waste management, MES is making a thorough segregated recovery of waste and recycling. Graphs below show the wastes generated in all works, recycle rate in the past five years and break-down of wastes in the 2011 fiscal year. We made efforts to decrease the amount of wastes and resultantly the amount decreased about 5% in comparison with the previous year. Rate of recycle was 84%. We will further strive to improve the waste reduction and recycle rate, while continuing a proper treatment of wastes under strict control.



Total waste and recycle ratios (unit: ton, %)



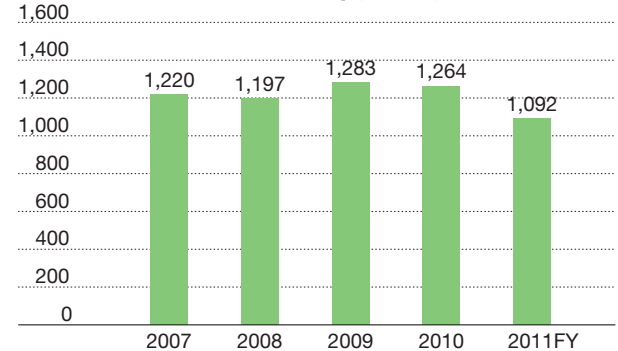
Breakdown of Wastes generated in the Fiscal Year of 2011



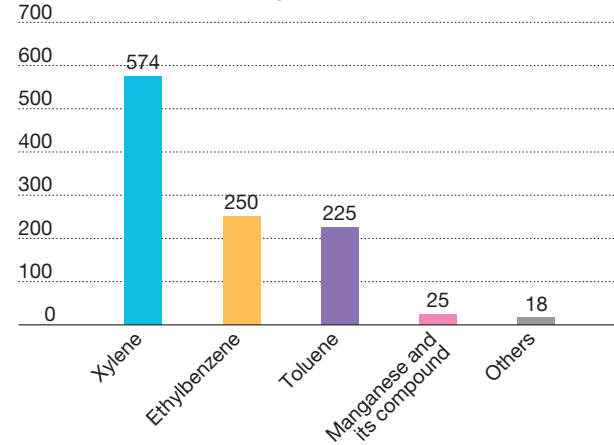
### Proper Control of Specified Chemical Substances (PRTR Substances)

Main specified chemical substances we are using are solvents and pigments contained in paint. Transition of output and travel amount of specified chemical substances in the past five years and breakdown of chemical substances in the fiscal year of 2011 are shown in the graphs below. "Air Pollution Control Law" was partially modified in May 2004. We are committed to make a strict control of the substances in line with such modified law and will make a positive use of airtight containers etc., by which we will try to reduce the amount of emission.

Specified Chemical Substances (amount of emissions + travel amount) (unit: ton)



Breakdown of Specified Chemical Substances (amount of emissions + travel amount) in the Fiscal Year of 2011 (unit: ton)



### Environmental Management Activities of Works

Tamano Works is a birth place of MES, and as a core works of MES, it is manufacturing various products including ships, marine engines, reciprocating compressors, axial flow compressors, reactors, pressure vessels, towers etc. Tamano City, where the Tamano Works is located, is in the southern part of Okayama Prefecture with a scenic beauty facing Seto Inland Sea. Under such environment, MES concluded Environment Preservation Agreement with Okayama Prefecture and Tamano City in 1973 to aggressively promote the environment preservation activities. Tamano Works, as the first works of the company, obtained the certificate of approval of ISO 14001 in 2000 and is leading other works in the field of environment preservation. Tamano Works go on decreasing the environmental load and reduction of energy consumption by means of promoting the business efficiency, and a few activities are introduced hereunder:

Replacement of conventional air compressor by new efficient type also contributes to the energy saving.



### Reduction of Industrial Waste

Tamano Works tackles industrial waste reduction mainly by means of thorough separation of valuables from the wastes and by their recycling. About 65% of its industrial wastes are metal scrap, all of which are sold as valuables for recycling. After all, about 80% of the industrial wastes including wastes other than metal scrap are recycled. Remaining wastes which cannot be recycled are properly treated under the agreement with subcontractors of high morals and control in compliance with the manifest system.



### Energy-saving Activities

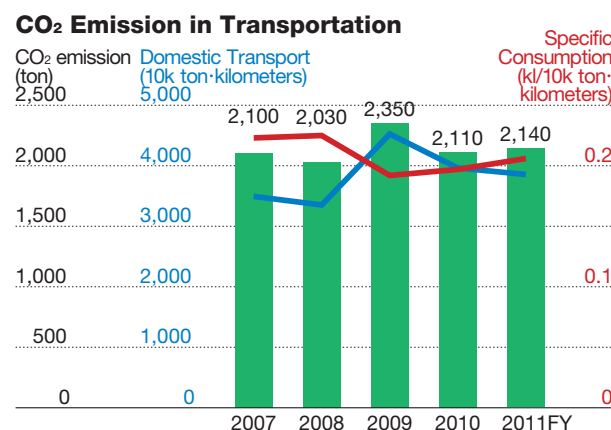
Electricity occupies more than 90% of energy used by Tamano Works, and therefore energy saving activity is mainly carried out in a form of electric power saving. Needless to say the light-off during noon recess, about 3,400 fluorescent lamps equivalent to 30% of lighting are removed to raise the awareness for the energy-saving. Another 10% electric power saving campaign is promoted this year to keep every employee informed about. 2,030 mercury lamps in the factory were replaced by metal-halide lamps, which reduced 730 kW, equivalent to CO<sub>2</sub> decrease of 939 tons per year.

### Environment-related Products

As for a shipbuilding business, which is one of main products of Tamano Works, we have developed a new type 66BC (bulk carrier of 66,000 deadweight tons) which reduces CO<sub>2</sub> emission by 30% and already obtained its orders. As for diesel engine manufacturing, which is also the main products of Tamano Works, we have been developing a new engine which can reduce CO<sub>2</sub> by 25% and NO<sub>x</sub> by 80%. Development of such engine will be completed in the fiscal year of 2012.

### Promotion of Environment-friendly Transportation

We are actively promoting the energy saving efforts in the transportation field as a cargo owner also. Specifically, we try to increase the cargo loading ratio, integrate the time schedule and destination in order to reduce the number of cargo shipment or to maximize the mixed cargo transport. These efforts help reduce the energy consumption and CO<sub>2</sub> emission. The graph on right shows our transportation volume (ton-kilometers), energy consumption and CO<sub>2</sub> emission in the past five years. Domestic transportation volume reduced by 3 % in the fiscal year of 2011 from the previous year and the transportation energy required for unit transportation amount increased by 5%.



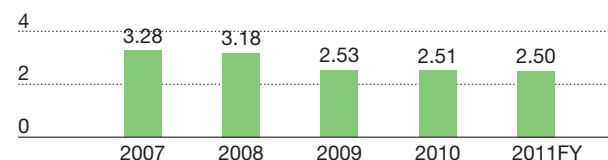
### Environmental Administration Data of Subsidiary Companies outside of MES Works

Environmental management data of our domestic subsidiaries with factories outside of MES works in the past five years are shown below.

#### (a) Energy Saving and Reduction of CO<sub>2</sub> Emissions

Energy consumption decreased continuously up to the fiscal year of 2009, but in the fiscal year of 2011 it increased by 2%. CO<sub>2</sub> emission continues to decrease in the fiscal year of 2008 to 2011.

#### CO<sub>2</sub> Emissions (unit: 10 k ton)

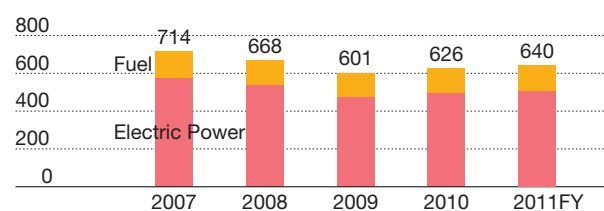


- Calculation of Emission Amount  
According to the "Guideline for Calculation of Greenhouse Gas emitted by Enterprises" published by the Ministry of Environment.
- CO<sub>2</sub> Emission Coefficient for Electric Power  
The CO<sub>2</sub> emission coefficient for electric power is in compliance with the "emission coefficient according to the Electric Enterprises" published by the Ministry of Environment.  
In the fiscal years of 2009 to 2011, emission coefficient after adjustment was adopted from two types of emission coefficients.

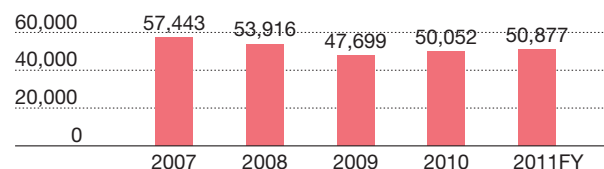
#### (b) Effective Use of Water Resources

Water consumption decreased continuously up to the fiscal year of 2010, but it increased by 1% in the fiscal year of 2011 from the previous year.

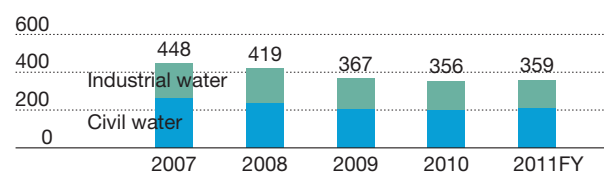
#### Total Energy Consumption (unit: TJ)



#### Purchased electric Power (unit: 1,000 kWh)



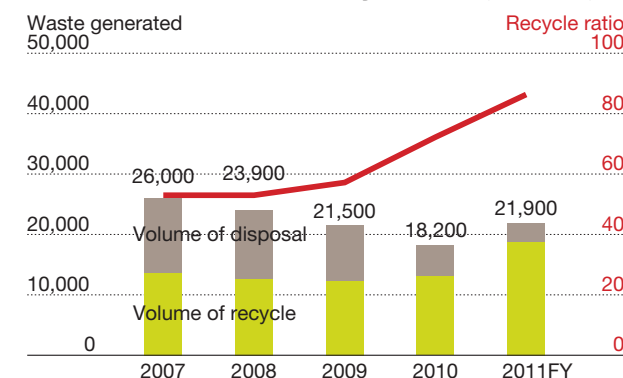
#### Water Consumption (unit: 1,000 m<sup>3</sup>)



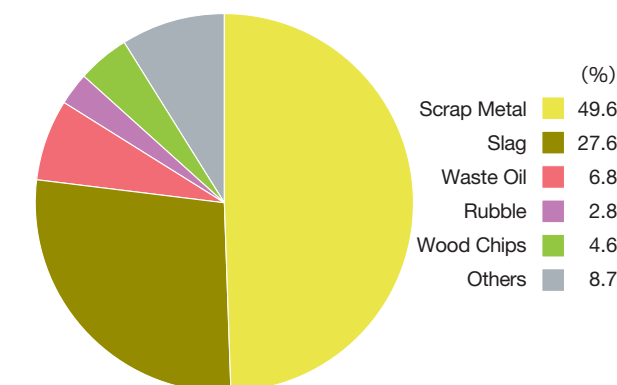
#### (c) Wastes

Wastes continued to decrease up to the fiscal year of 2010, but it increased by 20% in the fiscal year of 2011 from the previous year. Wastes from our domestic subsidiaries were composed of scrap metal by 50% (in the fiscal year of 2011) same as MES. Scrap metal was sufficiently recycled and the recycled ratio increased to 86%.

#### Wastes Generated and Recycle Rate (unit: ton, %)



#### Breakdown of Wastes generated in the Fiscal Year of 2011



## Environmental Accounting

The total amount of investment and expenses made for the preservation of environment was ¥4,180 million as more specifically mentioned in the table below. Costs for preservation of environment are classified according to the "Classification by the Business Activity" as described in the "Environmental Accounting Guideline 2005". The total investment amount was about ¥160 million, of which ¥90 million was allocated for research and development and ¥50 million for global environmental preservation including energy saving. The total expense amount was about ¥4,030 million, of which ¥3,240 million was for research/development of environment and energy saving products, ¥350 million is for resource recycling of wastes and others, ¥290 million was for pollution control and ¥100 million for management activities.

#### Environment Preservation Cost (unit: million Yen)

Classification of Environment Preservation Cost	Investment Amount	Expense	Main Activities and Performance Results
1. Cost within Business Activities			
① Pollution Control Cost	14.6	287.6	Exhaust Gas and Wastewater Treatment, Dust Control and other Pollution Control
② Global Environmental Preservation Cost	52.5	42.7	Energy Saving
③ Resource Recycling Cost	—	354.8	Waste Treatment
2. Cost for Up and Down Stream Activities	—	1.1	recycled paper used as copy paper
3. Management Activities Cost	—	98.5	Environmental Management System, Environmental Report and Environmental Education
4. Research and Development Cost	91.0	3,236.9	Development of Various Environment Friendly Products
5. Social Activities Cost	—	0.7	Support for Environmental Preservation
6. Environmental Damage Countermeasure Cost	—	3.7	Environmental Damage Countermeasure
<b>Total</b>	<b>158.1</b>	<b>4,026.0</b>	

Note) Classification of environmental preservation cost is according to "Environmental Accounting Guideline 2005" issued by the Ministry of Environment.

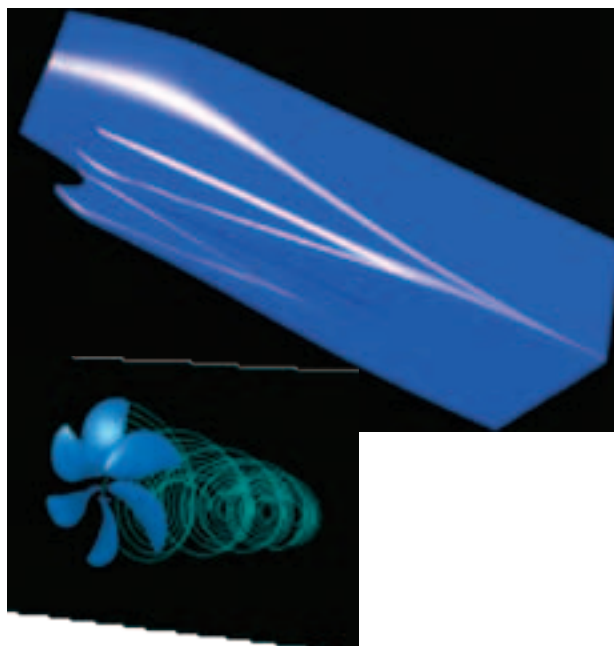


# Our Approach to Reduce Environmental Load with Products (Ships)

– Efforts to Realize Newest LNG Carrier (Double Eco Max) –

## Development and Designing of LNG Carrier

Reduction of fuel cost and CO<sub>2</sub> emission is an urgent issue for a shipping circle in recent years. In particular, LNG carrier consumes a lot of fuel and its reduction is drawing attentions worldwide. The LNG carrier conventionally has a device on board to process BOG (boil off gas) which comes out from the cargo tank, and therefore the carrier until now has adopted a steam turbine engine by a gas-fired boiler. The steam turbine engine propulsion, however, has its own limit in the efficiency. MES has developed a new type LNG carrier (Double Eco Max) installed with a gas-fired slow speed diesel engine. This new type LNG carrier has succeeded in reducing total energy consumption by about 30% compared with conventional steam turbine LNG carriers. In addition, an advanced system for ship performance development is established in MES making full use of state-of-the-art computer simulation technology, which contributes a lot to the development of high performance propeller and hull form type reducing fuel consumption dramatically. Figure shows an example of propeller and hull form development.



## Adoption of Gas-fired Slow Speed Main Engine

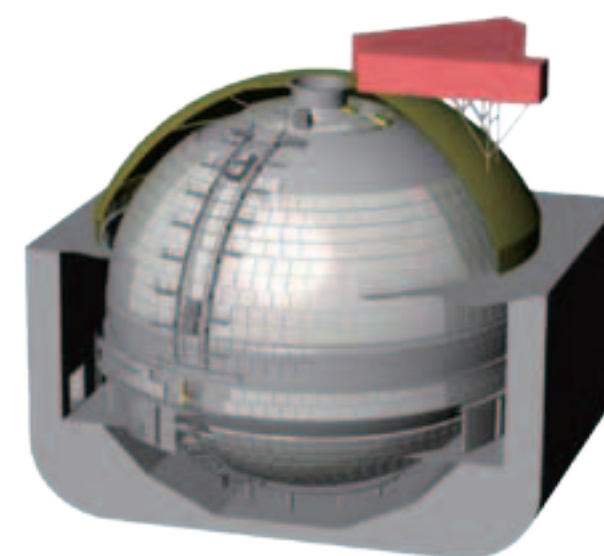
Slow speed diesel engine is a propulsion system widely adopted by commercial ships because it is originally a highly efficient engine and can be directly connected to the propeller. MES, together with its licensor, have been developing a new type diesel engine which can burn gas as "MEGI series project." Double Eco Max adopts this newly developed MEGI series engine. Since the natural gas is a clean energy, the new type gas-fired diesel engine can reduce CO<sub>2</sub> emission by about 25% compared with conventional oil fired diesel engine. Our gas fired slow speed diesel engine was initially installed in our Chiba Works since 1994 as a 40 MW generating plant for Independent Power Producer (IPP) and has an operation record of more than 20,000 hours. During such long operation, various verification and preparation have been made by us for its installation on board ship. We intend to have a shop test of a following MEGI engine in 2013.

The Figure shows MEGI engine.



## Realization of Lower BOR and BOG Process System

In the Double Eco Max development, processing system for BOG (boil off gas) was completely reviewed while minimizing the BOG coming out of cargo tank. In line with the improvement of machinery plant for better efficiency, the insulation of cargo tank was also improved to make the amount of BOG into two thirds of what was before. By this improvement, generation of BOG was reduced to match the engine load. In order to be environment friendly design, recyclable CFC-free foaming agent is adopted for insulation of cargo tank. Since the Double Eco Max has a re-liquefying device on board, it can liquefy all of the BOG. By this device, redundant BOG at the time of reduced main engine load, which used to be disposed by burning, can also be transported to the destination. Figure shows the Cargo Tank Insulation of MOSS type LNG carrier.



## New Type LNG Carrier (Double Eco Max)

In addition of the achievement of 30% reduction of energy consumption, Double Eco Max has various options of other cutting-edge facilities such as ballast management system, shore-based power supply system and ship recycling system to be the most environment friendly ship. Furthermore, since MEGI has identical basic design to the other slow speed diesel engine used by many other commercial ships, it is an entirely safe and reliable propulsion plant to the operating staff on board. Replacing the source of energy to LNG, as a clean energy, is increasing worldwide tendency and the supply of LNG carriers eventually contributes to the improvement of global environment. MES is committed to work for the further reduction of environmental load from the view point of improvement of ship performance, main engine, operation and others areas. Figure shows 180,000 m<sup>3</sup> MOSS type LNG Carrier.





# Technologies and Products Contributing to Environmental Preservation

MES contributes to the preservation of global environment through its technologies and products relating to the environment and is ready to do the same in the future. Parts of such contribution are briefly explained hereunder concerning energy saving, clean energy, recycling, waste treatment and others.

## ● Development of Environment Friendly 66,000 dwt Bulk Carrier (66BC)

In line with the global warming, countermeasures toward the reduction of greenhouse gas is now discussed in COP meeting and the framework for the reduction of CO<sub>2</sub> emission from ocean going ships is also being formulated mainly by International Maritime Organization (IMO). Under these circumstances, MES has developed 66,000 dwt type bulk carrier which is energy-saving and environment-friendly and has put it into the market. This new type bulk carrier aims the creation of new market following the good handling characteristics of our best-selling Handy Max type bulk carrier (56BC) while various improvements are made based upon the results of customer hearing surveys and of other trade surveys. Premium version of 66BC, of which orders are already received, achieves a reduction of CO<sub>2</sub> emission by about 21% in terms of ton-mile compared with the conventional 56BC, and the countermeasures toward the restriction of NO<sub>x</sub>, SO<sub>x</sub> and ballast water treatment system installation in the future are also considered for the preservation of marine environment. First ship of this 66BC is expected to be completed in 2013 to 2014. We will continue to exert our best efforts to reduce environment load in the international marine service by developing and building environment-friendly ships.



MES started wind power generation business in 2003 and has engaged in the construction of many large-size wind farm. We have completed Yura Wind Farm having 5 wind power generators of 2 MW in Yura-cho, Hidaka-gun, Wakayama Prefecture, where our repair department is also located, and delivered it to the client in August 2011. This power station can supply electricity equivalent to about 6,000 households and is expected to decrease CO<sub>2</sub> emission by 19,000 tons. Introduction of renewable energy is much expected to cope with the energy situation after Great East Japan Earthquake and to achieve sustainable society of less environmental load. Above all, wind power generation is expected to be built more extensively not only in the hilly district as was the case until today but also in the sea area contributing more and more to our life. We are determined to tackle the construction of wind farm availing the comprehensive engineering and various construction experience fostered over years.



## ● Sludge Recycling Center in Sakai (Sakai Clean Center)

Mitsui Zosen Environment Engineering Corporation (MKE), one of MES group companies, has a record of building more than 40 units of human excreta and septic tank sludge treatment facility contributing to the preservation of water resources and sludge recycling. Sakai Clean Center, which was completed in March 2011 in Sakai City, Fukui Prefecture was ordered as a package DBO contract (covering design, construction and 15 years operating) and is now operated by Aquapex Sakai (special-purposed company), a subsidiary company of MKE. Sakai Clean Center treats the human excreta and septic tank sludge by membrane separation high load denitrification system and discharge the treated water into sewers. Sludge remained after the treatment is converted into compost (called "Suku-suku Sakai") and is returned to the farm land. By this environment preservation facility, a resource recycling system is established in the local area in the following flow: human excreta and septic tank sludge → excreta treatment → convert into compost → return to farm land → vegetable for domestic consumption → excreta and septic tank sludge.



## ● Highly Efficient Gas Turbine Co-generation

In line with the recent social demand for reduction of CO<sub>2</sub> emission, MES has prepared a wide product lineup of seven highly efficient gas turbine cogeneration facilities ranging 3MW to 14MW to use clean natural gas as fuel. Since they burn natural gas, very little harmful component is generated and the attached state-of-the-art dry type lean premixed combustion system reduces the NO<sub>x</sub> content in the exhaust gas to a very low level. The environment friendliness and energy saving performance of the system at a higher level is greatly appreciated by the society. MSC70, the newly rated-up type from 7MW class, has a generating output of 7,700 kW and generation efficiency of 33.5% and achieves an overall efficiency of 88% with an increased steam flow by means of exhaust gas boiler attached with additional heating device. This MSC70 is put into the market in 2011. MES recognizes this highly efficient gas turbine cogeneration facility as the a principal pillar of generating business, and MES is determined to propose new system aggressively to cope with the increasing demand for power source security and for reducing environmental load by the customers.



## ● Natural Gas Hydrate (NGH)

Natural gas, as an abundant and clean energy source, is expected to expand its demand around the world in the following decades and would play a significant and substantial role in the global primary market. MES has been steadily working on development of natural gas hydrates (NGH) technologies as a new means of transporting and storing natural gas. MES is currently developing NGH technologies of its production, transportation, storage and gasification to establish the NGH supply chain. NGH is a solid material in icy state which is called a clathrate compound where natural gas molecule such as methane is trapped within the cages composed of water molecule. NGH can be stabilized at minus 20 degrees Celsius under atmospheric pressure. This unique characteristic so-called "Self Preservation Effect" enables the natural gas to be transported and stored under minus 20 degrees Celsius whereas Liquefied Natural Gas (LNG) would require cryogenic conditions around minus 160 degrees Celsius. This is expected to lead to reduction of total investment cost of NGH supply chain. For this reason, NGH is expected to contribute to monetization of small to medium natural gas reserves, which are currently abandoned due to economics reason. NGH would provide a solution to satisfy the growing global natural gas demands, which cannot be met by current existing natural gas transporting technologies.



We have started the sales of lithium iron phosphate as the cathode electrode material for the next generation lithium ion batteries. The raw materials of lithium iron phosphate (LiFePO<sub>4</sub>) are much less resource-constrained than the other cathode electrode materials now vastly used in lithium ion batteries, and the prices and the supply quantities of those raw materials are more stable. The demand of lithium iron phosphate is expected to expand by being used for cathode electrode material in medium to large size lithium ion batteries for plug-in hybrid cars, electric cars, smart grids, industrial power supply devices and also for stationary energy storage systems required for electricity demand equalization. MES will contribute to environmental conservation through production and sales of functional materials which are used for products leading to a reduction of CO<sub>2</sub> emission.





# Learn from Customers



## ● Commitment to Enhance Customers' Satisfaction

Corporate philosophy of MES is "To continue working as a company trusted by society and individuals through products and services we offer". The most important theme of management attitude is "to offer further satisfaction for our customers." Employee's attitude of "Think over yourself at the customers' point of view (consumer-oriented)" is considered essential in the employee's code of behavior.

We are making efforts to "attain development and offer differentiated products and services" from a new viewpoint based on the "customers' voice."

## ● History of CS Activities

Under the company-wide CS slogan, "Voice of customers is a gold mine. Let's look at, listen to, learn, and evolve it", we are promoting improvement and innovation of products and services. Particularly, we are making efforts to "provide thorough and systematic support for demands, feedback and solution of troubles" commented by customers on our products put out in the market. We will make it a habit to support customers quickly, make use of demands and feedback from customers for prevention of recurrence of troubles or new products and services, provide higher quality of products and services to customers and society, and seek "the three goods: the goods for the seller, the good for the buyer and the good for society."

## ● Policy for CS Activities in fiscal year 2012

Activities until fiscal year 2010 will be expanded. Under the objective of activities until 2013 as shown below, we will commit ourselves to the improvement of CS with distinct awareness for continuous improvement of products and services in the PDCA cycle incorporating the voice of customers:

**PDCA cycle to lead what we learned from "customer's voice" to improvement of products and services is daily put into execution with successful achievements.**  
(\*1 **PLAN, Do, CHECK, ACTION**)

< PDCA cycle >

- Plan (P) to improve products and services
- Do (D) the plan
- Check (C) the results of improvement of "services and quality" with customers realize
- Take action (A) to treat any plan which is found unsuccessful for the improvement of "services and quality". Repeating the above cycle continuously, we will improve the quality of products and services.

## ● Overview of CS Activities

Following measures are implemented to promote settlement and activation of CS activities

**[In-house Website on CS Activity]**

Customers' complaints, expectations and thanks and examples of CS activities are presented on this website.

**[In-House Distribution of CS News]**

Activities by CS advanced enterprises, topics on CS, in-house CS activities are introduced to enlighten employees.

**[How to take care of customers' claim]**

Customers' claim is an expression of their expectation to us, therefore we have to listen to their voice sincerely for better product quality and service.

**[Speeding-up of Handling of Customer's Complaint]**

To continue to be a company producing things under the trust from customers, we will carry out periodical follow-up and improvements.

**[CS Activity Promotion System]**

To ensure the PDCA cycle for the CS activities to repeat steadily, "systematic commitment" and "visualization" system was established.

[In-house Website on CS Activity]



# Going along with Shareholders and Investors

We consider IR as a part of the long term managerial and financial strategy by a top management, and are trying to send our business information to the public clearly to obtain the better understanding by shareholders and investors on the business activities by MES and its group companies.

## ● Disclosure of Information and IR

In order to establish a favorable relation with shareholders and investors, we will make disclosure of our management information on a timely basis and the top management will explain the management policy and offer specific outlook clearly.

## ● Release of Investors' Information

We update information on the website properly and timely. In this fiscal year, we renewed the website and added the introduction movie. We also renewed corporate guidance and issued annual report 2012.

## ● Explanation of Business Condition

We set up presentation to explain our 2<sup>nd</sup> quarter and year-end result to securities analysts and institutional investors. We also organized presentation to explain our 3 year business plan from fiscal year 2011 to 2013. We accepted 140 individual interviews and participated the conferences held in and outside of Japan to explain our present status and business outlook.

The photo shows the scene of our presentation.



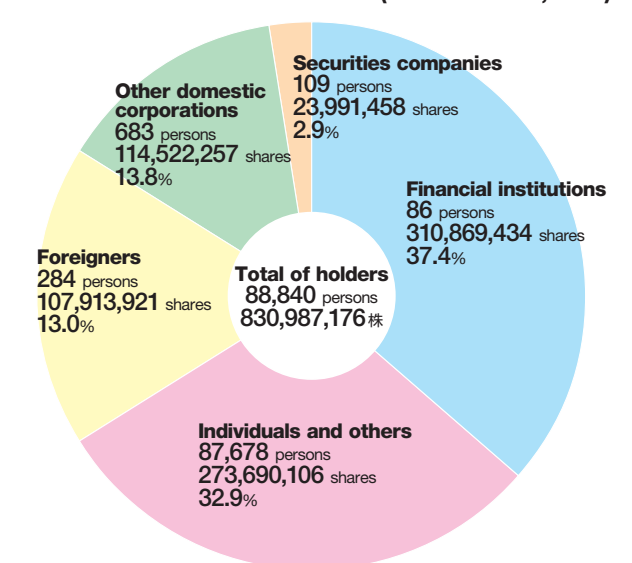
## Transition of annual dividends

Fiscal year 2007: ¥4.0  
Fiscal year 2008: ¥4.0  
Fiscal year 2009: ¥5.0  
Fiscal year 2010: ¥4.0  
Fiscal year 2011: ¥4.0  
(per share)

[Renewed Website]



Status of shares and shareholders (as of March 31, 2012)





# Going along with Business Partners

MES is seeking to provide high quality products with cost competitiveness as a "manufacturer". When procuring equipment and materials to make products, we achieve social responsibilities through fair business practice and mutual benefit with business partners.

## Basic Policy for Selection of Business Partner

MES established a company-wide operation procedure rules (Mitsui Administration Manual: "MAM") in 1994. The rules describe as a basic principle that, when a procurement department selects a business partner, "the department should give fair and even opportunity of participation to all companies which hope to be a transaction party of MES and fairly select one." Procurement activities are based on the rules.

## For Fair and Even Transactions

MES established "Ethics for procurement activities" in December 2002 indicating ethical and action guideline which employees engaged in procurement of materials affairs should try and observe. To behave with rectitude is intended and construction of fair and even relation is pursued.

## No Relation with Anti-Social Forces

We declared, "We absolutely exclude the relationship with underworld organizations and other anti-social forces" in the "Standard of Behavior" established in 2003. Our procurement activities also have no relation with anti-social forces and the "Basic Business Agreement" with business partners specifies the exclusion of relationship with anti-social forces as one of conditions for business.

Mitsui ADMINISTRATION MANUAL	資材・調達業務規定	MAM-GA 70012
三井物産株式会社		REV. 0 92-11-18
全社共通 業務規程		PAGE 1 OF 1

1. 目的  
当館における資材調達業務に関する倫理規定について定めたものである。
  2. 適用  
全社の発注業務に携わる管理系・担当者に適用する。
  3. 関連MAM  

MAM-GA 70001	資材管理規定
MAM-GA 70003	請負管理規定
MAM-GA 70021	下請代金支払遅延等防止法への対応要領
MAM-GA 70101	資材調達業務分掌一覧表
MAM-GA 70103	発注業務分掌分掌一覧表
MAM-GA 70103	事業部門における発注業務担当部署・管理者・担当者との役割に関する規定
MAM-GA 70111	資材調達往來金決済基準
MAM-GA 70301	新規取引先選定基準
MAM-GA 71101	受取処理手続要領
MAM-GA 71111	材料支給管理要領
MAM-GA 71121	大口資材発注に関する管理要領
  4. 倫理・行動指針  
資材・調達部門は企業活動における中核機能の一部を担っており、特に、その対外的関係において、事業部門と共に企業の名として位置づけられる。従って、資材・調達業務従事者はその担当する業務の重要性をよく認識し、業務遂行に必要な専門的知識と技能の向上を図ることに加え、企業の名として社内外からの信頼と尊敬を得られるに努めなければならない。以下は、資材・調達業務担当者とその業務遂行と人権尊重において、常に心がけなければならないべき倫理及び行動指針を示すものであり、社内「コンプライアンスガイドブック」も合わせて理解し遵守に努めなければならない。
- (1) 資材・調達業務担当者の心構え  
資材・調達業務担当者は資材・調達業務関連法規の遵守に努めなければならない。主な資材・調達業務関連法規は、民法、商法、下請代金支払遅延防止法、労働関係法、外貨為替法、外貨買付手続法（外為法）、工業所有権法、労働安全衛生法、消防法、消費税法等であり、資材・調達担当者はこれらの法規をよく研究し、その遵守につとめなければならない。又、経団連の「贈賄取引行動指針」、連合の「商賄性、内外無差別性を確保した調達活動のあり方について」及び公正取引委員会の「贈賄・取引慣行に関する禁止禁止法上の指針」等の指針をよく理解し遵守しなければならない。
- (2) 利益の追求  
製造原価の抑へ下げが材料費で占められていることから、企業が更なる利益の追求を図るためには、いかにこの材料費の低減を図るか、獲得すれば資材・調達部門の調達方法の巧拙が企業利益に大きく影響することになる。従って、資材調達担当者の役割は、事業部門で決められた仕様のものを取引先から発注の手続きを経て納期どおり購入するだけでは終わるべきでなく、資材・調達業務を通じて常に競争、製造、管理、財務及び営業等の関連部門と協力し、一挙一動が資材・調達機能の発展を促す「より安く」を目標に利益の追求に努めることにある。

Code of ethics for procurement activities

## Strengthening of Compliance

MES is conducting following activities to observe laws and regulation for procurement such as Act against Delay in Payment of Subcontract proceeds, Etc. to Subcontractors ("Law for Subcontract") or Construction Business Act.

- All employees of procurement department attended external training session for "Law for Subcontract".
- Data explaining the "Law for Subcontract" and Q&A on the "Law for Subcontract" were published on in-house website to publicize the "Law for Subcontract".
- Ten explanatory meetings were held in various locations of MES group companies in April to June 2011 concerning to the Construction Business Act
- Five training sessions in each place of MES group companies in February 2012 for strict compliance with the "Law for Subcontract" and the "Construction Business Act"

Photo shows the explanatory meeting for the "Business Act."



Procurement Dept. in-house website



## Internal Audit to prevent Illegal and Unfair Transactions

Functions for purchase requests, purchase order and acceptance inspections of procurement of materials are separated to restrain other sections mutually to prevent illegal transactions. The "internal audit" verifies check results every year by random sampling. Auditing department carried out "Check-up for appropriate control of purchase order and delivery acceptance" in 2011 fiscal year on all departments concerning procurement of materials to confirm their legal compliance.

Explanatory material for "Law for Subcontract" and "Q & A on the Law for Subcontract" on in-house website



# System to Support CSR Management

## ● Corporate Governance

### 1. Our Basic Philosophy

We have a company philosophy "To continue working as a company trusted by society and individuals through products and services we offer". Under this company philosophy, we commit ourselves in our company's management policy to supply products and services harmonizing complex technology brought up in wide range of business and experience fostered through various global business activities to meet the expectations of people and society and enhance public confidence as a "company producing things". Based upon such management policy, we, adopting the four management attitudes of "Build further satisfaction for our customers", "Provide safe and effective workplace environment for employees", "Contribute to the development of society" and "Pursue a Profit for the longevity of the company", are exerting our best efforts in order that all stakeholders can appreciate our company as having the value to sustain everlastingly. Thus, we seek higher enhancement of our corporate value while recognizing the corporate sociality. As the most important issues in our management we rank the establishment and the maintenance of the fair management systems, where decision can be made as quickly as possible to meet the rapid change of management circumstances and where emphasis is put on the interest of share holders.

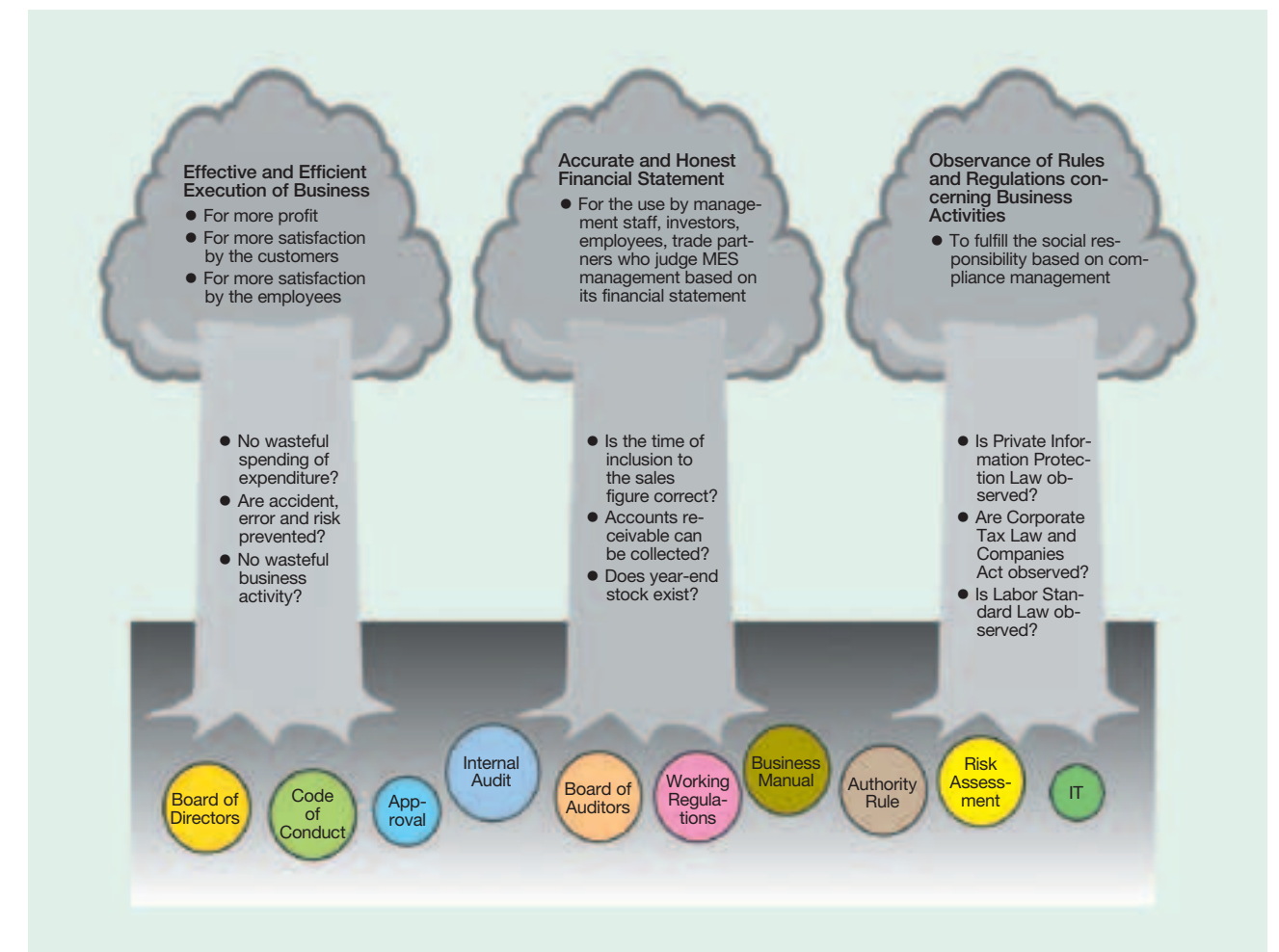
### 2. Framework

Corporate board of MES consists of 14 members but not of outside board member. Board of auditors

of MES consists of 4 auditors, and 2 out of them are part-time outside auditors. MES, while enhancing the effective auditing function by auditors, considers that this corporate governance framework having corporate board consisting of inside director who are familiar with the company business with the current system of board of auditors, is the most suitable form of management for MES as a manufacturing company. Based on this understanding for management, the term of director of the board is limited to one year in order increase the chance that the shareholders can assess their trust to the directors.

## ● Internal Control System

We recognize that the purpose of the internal control system is "to ensure the effectiveness and efficiency of the business (achievement of business purpose)", "to ensure the credibility of financial report" and "compliance with rules and regulations" and are strengthening and improving our internal control. In particular, the board of directors resolved the "basic policy for construction of internal control system" and monitors its progress for review every half a year and reassesses it at every fiscal year end. The Total Risk Management and Internal Control Committee was established to promote the upgrading, intensification and PDCA (Plan Do Check Action) process circulation, etc. To accomplish the objectives of the internal control, we have established the business execution system, risk control system, business ethic compliance system and internal control promotion system for the financial report, which systems are checked by the internal audit department for their effectiveness.

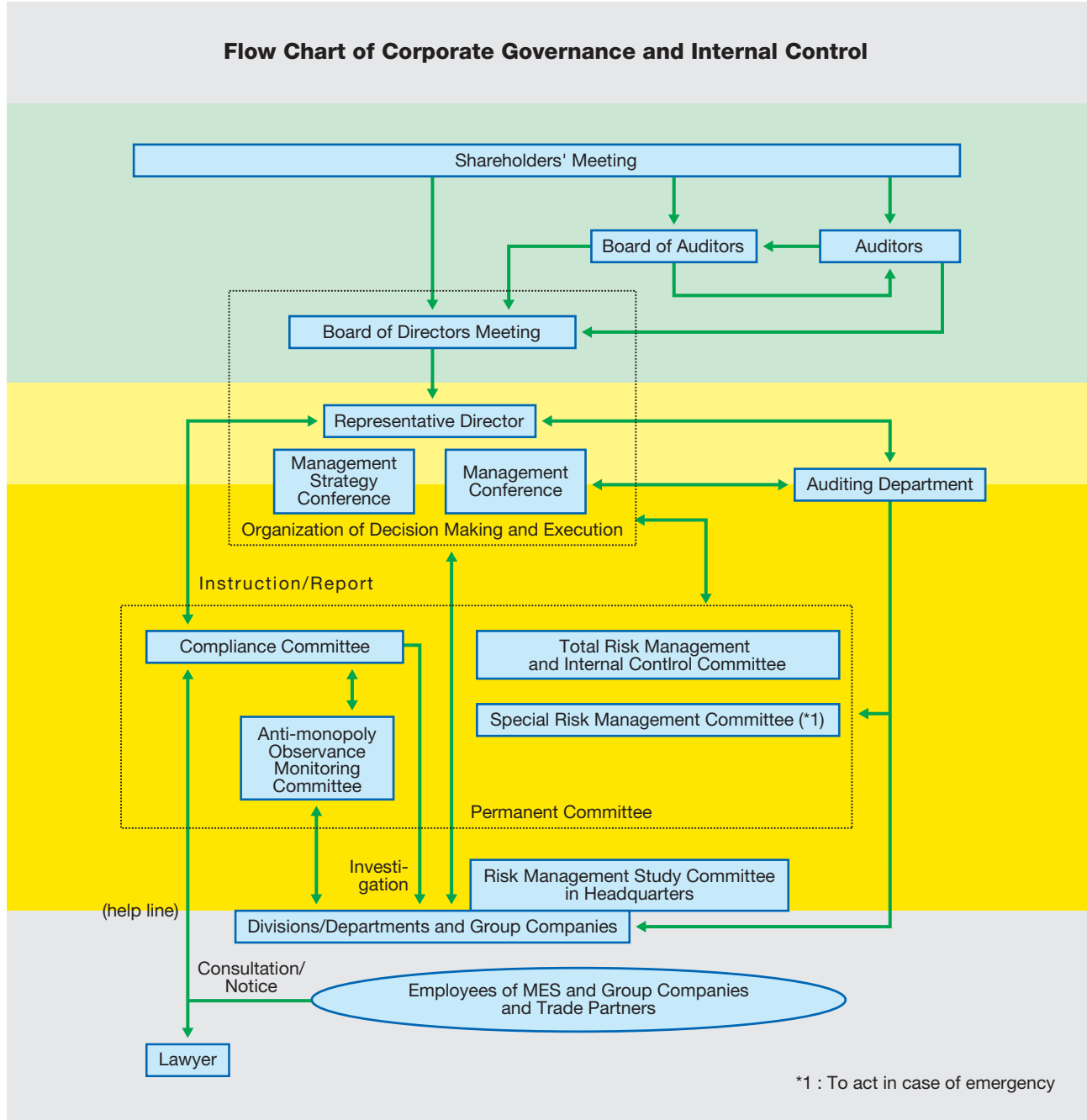


### 1. Business Ethics Compliance System

"Standard of Conduct" is set out and distributed to all officers and employees of MES and group companies to keep everyone well informed of it. As for overseas group companies, confirmation of their compliance framework and its activities is made to the president of such companies in a timely manner as the situation demands. The Compliance Committee headed by representative director of MES is established to promote the compliance measures and policies. "Help line" is provided for early finding of problems and the system

is prepared so that the secretary general of the Compliance Committee or lawyer directly accepts consultation from employees or outside. As for public work business activities, for further ensuring of law abiding behavior, voluntary checking is carried out by each business department, and such voluntary checking is monitored and supervised by "Anti-monopoly Law Observance Committee". In addition, the Compliance Committee supervises the activities of the Anti-monopoly Law Observance Committee upon their activity records.





## 2. Risk Control System

An internal integrated risk control system systematically grasps and evaluates various risks related with overall management activities and manages the operations of business within the range of reasonable risk taking limitations under the Enterprise Risk Management Committee.

As for risks in the business operation, "Risk Management Study Committee in Headquarters" is established in each headquarters for voluntary risk assessment by the headquarters, and risk control status of the headquarters is checked by audit-related departments. In case of the occurrence of an emergency, a "Special Risk

Management Committee" chaired by a representative director is held for a quick countermeasure action.

### 3. Internal Control Promotion System for Financial Report

To secure the credibility of financial reports, fundamental policies for the evaluation of internal control related with the financial reports are decided in the meeting of the board of directors every year. Maintenance and operation and effectiveness of internal control on financial report are evaluated through the Internal Control Promotion Committee for confirmation of its effectiveness and are corrected where necessary.

## ● Main Activities of Internal Control System in 2011

## 1. Decision of Key Challenges to be Addressed

In order to establish an effective internal control system and take substantial measures, we set up every year since fiscal year 2008 "Key Challenges to be addressed in MES group companies". In fiscal year 2011, settlement of total risk management and other issues were set and promoted. We intend to set out key challenges every year for better and steady progress in execution of control system.

## 2. Education for Corporate Philosophy, Corporate Governance and Internal Control System

Although we disclose various information to the public on our Corporate Philosophy, Corporate Governance and Education for Internal Control System by means of various disclosure media, there is no published document covering the whole picture of our Corporate Philosophy, Corporate Governance and Internal Control System partly due to legal constraint. Such condition has made it difficult to understand the relations among them.

Since it is inevitable for executives and regular employees of the MES group companies to understand and have sufficient knowledge on the Corporate Philosophy, Corporate Governance and Internal Control System to proceed PDCA concerning Internal Control System in their places of work, seminars on such Corporate Philosophy, Corporate Governance and Internal Control for managerial staff were started in fiscal year 2009. Since then, training workshop has been run the text book for the seminar, "Fundamental Rules for Corporate Governance and Internal Control" was revised. Enhancement of the infrastructure for education has been promoted.

### 3. Business Ethics Compliance Activities

In fiscal year 2011 also, compliance seminars were held for better understanding of our "Company Standard of Conduct" as well as its relative laws and regulations in the head office, works, branch offices and branch stores including group companies. In addition, e-learning was provided for officers, administrative professionals and administrative staff of office and technical employees on the general compliance as a part of education and enlightenment program.

We ask all directors, heads of division/department and the presidents of group companies to submit a written pledge to observe the business ethics every October, the month of ethic enhancement. In fiscal year 2011, derivative action for the bridge bid-rigging case was amicably settled. According to it, compliance verification and advisory committee was inaugurated. The committee compiled the results of activities for about one year and submitted recommendations. The recommendations and our correspondence to them were publicized on our website. We established a concrete plan and have been promoting improvement. Patient and continuous approach to compliance is required. Compliance system and its operation for the whole group will be further intensified hereafter. Photo shows the scene of compliance seminar.



# Creation of Lively Workplace

Employee is a valuable asset to the company. We aim to create a lively workplace through personal development and provision of comfortable work environment.

## ● Human Resource Development

We carry out human resource development in comprehensive manners at various hierarchical stages of the company with recognition that "Enhancement of individual employability (the ability to be employed) is an important task of the corporation."

- 1. Quick Fostering of Young Staff**  
For the object of "fostering new employees to be full-fledged in 5 years", employees receive freshman's Training and third year training. In each worksite, employees gain training to learn basic and professional techniques and skill early for their job category, in addition to usual OJT.
- 2. Mid-level Staff to gain First-Rank Capability**  
Mid-level staff who have acquired proficiency in their jobs and are now in most productive years are important to the company. In order for them to learn ways of thinking and skill required to play more active role, various training courses are provided for the staff of the foreman and assistant division chief classes.
- 3. Seminars to Managers**  
It is department managers (general managers, managers, section chiefs) that determine success or failure of the human resource development. Various trainings for managers are made to enhance the management capability including the human development capability of the managers.
- 4. Transfer of Skill and Technique**  
It is essential for business operation of the corporation to transfer professional skill and technique owned by veterans of 50's to mid-level staffs and young staffs. We have established "Technological Transfer Center" in our works where the skill masters transfer their high professional skill and technique to their juniors.

## ● Human Right Enlightenment

Every worker in the workplace is an indispensable existence in the corporate activity. Ability of worker will be exercised to the full extent and his working life will be worthwhile when human right is respected in the workplace.

Such will eventually lead to the improvement of productivity. We have formulated "Basic Principles of Human Right Enlightenment" and are making various enlightenment activities including human right enlightenment seminar etc. to achieve impartial working environment with no discrimination.

### MES Basic Principles of Human Right Enlightenment

Under the concept of respect for human rights, Mitsui Engineering & Shipbuilding Co., Ltd., as a member of enterprises having social responsibility, places the solution of human right infringement the most important issue and exerts its best efforts to create a corporate atmosphere where there is no discrimination in terms of sex, race and origin through its daily business activities.

## ● Commitment to Work Life Balance Promotion

MES has provided a work system, day-off system and other systems where each employee can work feeling worthwhile and sense of fulfillment, execute his/her responsibility, and can select and realize diverse ways of life depending on stages of their life such as child raising, middle-aged, etc. in their home and community life. We also promote for them to use vacation time.

- 1. Diversified Work, Holiday and Paid Leave System**  
Systems to use limited time effectively and realize well-disciplined working hours.
  - Flexible working hour system (office-related and technical workers)  
Workers determine working time zones by themselves according to a plan to perform their duties efficiently
  - Refresh Leave  
Employee with 10 years of service is eligible for the consecutive leave of maximum 2 weeks and allowance. After the first 10 years, the leave and allowance are granted at every decade.
  - Annual Leave  
All employees from the first year are eligible for 21 days of annual leave per year.
  - Memorial Leave  
All employees are encouraged at the beginning of the year to plan 4 to 6 days of annual leave as memorial leave.
  - Promoting taking annual leave (office-related and technical workers)  
Employees are encouraged to take one day of annual leave pre month and consecutive leave in the autumn.
  - Half-day Leave  
Employees can take half-day leave instead of full one day in using the annual leave.
  - Accumulated annual leave  
The forfeited unused annual leave is accumulated and can be used in case of sickness, childcare, nursing, volunteer activities.
  - Summer season flexible holidays (head office)  
Continuous summer season leave determined personally during July to September
  - No overtime day  
Employees are encouraged to leave the office on time once a week at minimum.
- 2. Balancing of work life and family life**

System to support balancing of child-raising or nursing care and work

- Child raising
  - Childcare Leave  
If a childcare leave is not taken, reduced working hours or other systems may be made available.  
Male employees also are recommended to take leave.
  - Pregnant women and nursing mothers are paid 50% of the base salary when attending a hospital.
  - Leave before and after childbirth
  - Maternity leave (when wife of an employee gives birth to a child)
  - Nursing leave (to take care of a child)
- Family care
  - Care Leave  
If a leave is not taken, reduced working hours or other systems may be made available.
  - Care day-off

## ● BPS Activity

BPS stands for Best Practice Sharing. This activity is defined in the company as "learning inside as well as from other companies, clients and competitors when addressing a hard challenge and widely sharing the results for higher accomplishment." It was started in 1999 by the manufacturing department intending to enhance the improving ability of employees or create climate for improvement in the workplace. As of 2011 marking its 13th year, BPS has become company-wide activities covering research and development, business development, sales and general administration departments.

BPS activities place a high value on the process (to grasp problems in the field, with actual thing, based on facts, and pursue real root cause using "Nazenaze method") as well as results of activities to enhance improvement ability essential to full members of

society. Eventually, it will lead to the improvement of employability of company members so that each employee becomes human resource who can widely active in the society, not only in the company. These activities are designed to allow everyone to discuss anything with anybody regardless of posts such as "Ikken Ichiyou" or "Kozen system." Members can mutually promote better understanding on tasks of other members in the workplace through the activities. Some subjects extend over several departments. Mutual understanding and shared awareness are fostered across departments and job categories. Subjects of activities cover a broad range of topics such as promotion of job efficiency or improvement of safety in the workplace, not only the conventional ones like cost reduction. These activities are also effective for the improvement of work environment. Photos show the presentation of BPS activity in Chiba Works.



## The Philosophy of BPS

### The Goal of BPS

**Become the excellent Individual, Team and Company**

*Continuous improvement and Share best practices*

### The Target of BPS

**Progress of the individual's mind & skill for improvement**

**Progress of the team's ability of execution**

**Progress of corporate competitiveness**

*"Execution" of BPS activity's effects in daily operations*

### Effects on BPS activities

- Attitude to think always "WHY"
- Skill to explore the cause founded on fact
- Attitude to learn best practices of others
- Feel interesting to improve

**"Effects" on the process**

- To exclude thoroughly waste operations
- To increase the profit by grasping the customer needs
- To excute cost-cutting
- To take measures against problems in the future

**"Effects" on the result**



# Safety and Health in the Workplace

## ● Safety and Sanitation are the Base for Corporate Management

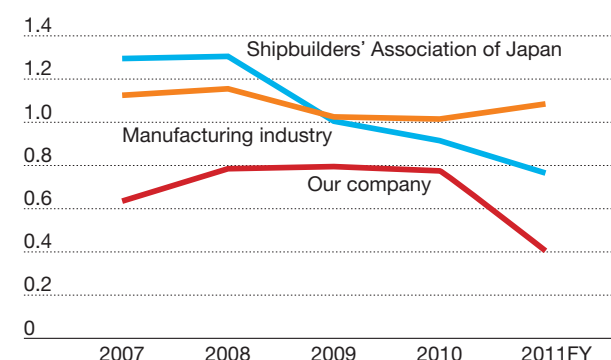
With the recognition that "Ensuring safety and sanitation based on the respect for human dignity is the base for corporate management," we publicized the "Principles for Management of Safety and Sanitation" and promoting safety and sanitation management with the following 2 basic ideas:

1. We come back to the spirit of "Safety First" and establish the system of Manufacturing with the Safety as the first priority.
2. We tackle aggressively the health management physically and mentally to realize "Comfortable Work Place".

## ● How We Tackle the Prevention of Labor Accident

1. Team-Safety II Movement  
"Team safety movement" for health and safety activities in the promotion unit of "workplace teams" has been continued since 2003 based on the spirit of "joint promotion and joint liability."  
In 2010, Team-Safety II Movement is newly started as an integrated safety movement in the work place under the slogan of "No Accident in Our Work Place".  
In this movement, we enhance the sensibility to danger and foster the ability to foresee danger and acquire the safety work especially by young and/or inexperienced workers with an active participation of managers and supervisors in a form of "man-to-man training" etc.
2. Decrease of Labor Accident by Risk Assessment  
Based upon the Occupational Health & Safety Management System, we will identify risks of labor accident in working places. We will estimate and evaluate the degree and frequency of accidents according to the risk assessment, and take countermeasures preferentially toward labor accident risk in descending order of risk. We will make continuous efforts to prevent labor accidents by reducing risk in this manner.

### Accident Frequency Rate



### Frequency Rate of Disasters resulting in Absence from Work

- Notes:
- 1). Frequency rate of accident resulting in absence from work indicates death and injury number per total 1 million actual working hours.  
Frequency rate of accident resulting in absence from work = Number of death and injuries requiring absence of one day or more in occupational accidents ÷ Total actual working hours) x 1,000,000
  - 2). Accident frequency rate of manufacturing industries is extracted from Japan Industrial Safety and Health Association.

3. Education to Enhance Sensitivity to Danger  
To cope with the retirement of skilled experts and increase of younger staff and subcontracting company workers, a safety training center was established in April 2007 in Tamano Works where trainees can experience 21 types of dangers, as a part of enhancement of safety education. Similar facilities were established in Oita and Chiba Works in 2008 to carry out and promote the danger experience education of employees and improve their sensitivity to danger.  
Photos show the scenes of risk experience training in Oita Works. Climbing ladder with 3 point touch, Hanging down by safety belt, Piece tension test of tack welding



## ● Support to Health Promotion

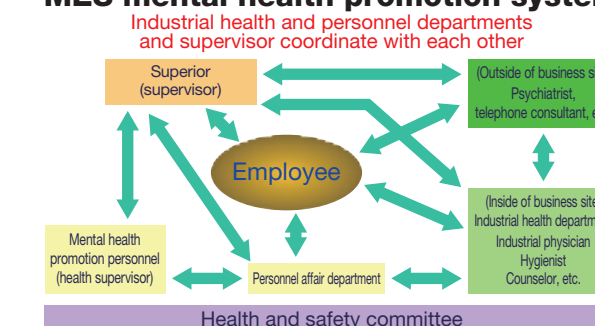
1. For promotion of health and to prevent disease of the employees, we carry out regular check-up of employees at the health management center in each Works and make medical advices based upon such check-up. We also support health promotion of employees in various ways including publishing of "Health Support" by industrial doctors and "Health News" by EAP Service.
2. Mental health lecture classes are opened and mental health news are issued to promote mental health of employees. Twenty-four-hour telephone consultation service is available for counseling by a vocational counselor and mental health measures such as return-to-work support program for employees of absence are carried out. Self stress check (by individual cheek sheet) by each employee encourages awareness of mental health care, confirm the health risk by stress in each workshop, which greatly works as an index for improvement of workshop environment.  
Photo shows the leaflet of around-the-clock telephone service and stress check sheet.



Figure shows the MES Mental Health Promotion System.

By this organization, comprehensive mental health care is carried out in collaboration with supervisor, mental health charging staff, industrial insurance staffs (including industrial doctor, nurse and counselor) and personnel department.

### MES mental health promotion system



In Tamano Works, as one of mental health activities, "Solution Focus" seminar is held for supervisors, where method of enhancing the communication quality between supervisors and employees are studied. Photo shows the scene of "Solution Focus" seminar.



3. "Health Attack" campaign has been carried out as a company-wide movement aiming at taking preventive measures against life-style related diseases of employees. Specific health guidance is given to owners of metabolic syndrome, thus health-promotion of employees is carried out.  
Photo shows the leaflet of Health Attack and Record Sheet in 2011.



## ● Prevention of Heat Stroke

In recent years, summer season starts early and continues longer. To cope with heat stroke occurring frequently in the summer season in each Works, we have designated May as a preparation period and the term between June to September is designated as an implementation period to prevent heat stroke. During such period, information on heat stroke is familiarized with every employee and the control of work and working condition is carefully made based upon WBGT (heat index) to prevent outbreak of heat stroke.  
Photo shows the notice of WBGT value in the work place calling attention for health care and heat stroke outbreak.





## Further information on volunteer activities in Eastern Japan great earthquake by MES group

MES group contributed relief money and provided rescue and other volunteer activities for the caused March 11, 2011 (Friday) in East Japan.

### Further information on dispatch of very large cargo ship, "Techno Super Liner (TSL)" to Ishinomaki

For two weeks from May 17 to 31, Techno Super Liner (TSL), a large cargo ship hold by MES, called at the Ishinomaki Port and offered dining, bathing and other services to people living in the place of refuge. Total 1,647 persons came on board during this term.

Before noon on June 1, the ship left Ishinomaki and returned to Tamano Works with both of the crew and the ship in safety. At the quay of Tamano Works, staff of the ship works greeted the returned TSL. (Photo shows Techno Super Liner (TSL) returned to Tamano Works.)



### Letter of thanks from directors of Kanto and Tohoku District Transport Bureaus for dispatch of very large cargo ship, "Techno Super Liner (TSL)"

MES dispatched TSL in May, 2011 to the Ishinomaki Port to support the people affected by the Eastern Japan greate earthquake. More than 1,600 persons used the ship. In recognition of this service, President Kato received a letter of thanks from the director of the Kanto District Transport Bureau of the Ministry of Land, Infrastructure, Transport and Tourism and Vice President Sakurai from the director of the Tohoku District Bureau.



### Sponsoring the assistance for disaster reconstruction, "Environment Education and Sports Exchange Meeting" (Chiba Works)

"Reconstruction assistance operation, environment education and sports exchange meeting" sponsored by Chiba Prefecture Industrial Waste Association was held on March 17 and 18 in the MES public health facility in the Tatsumidai district of Ichihara City.

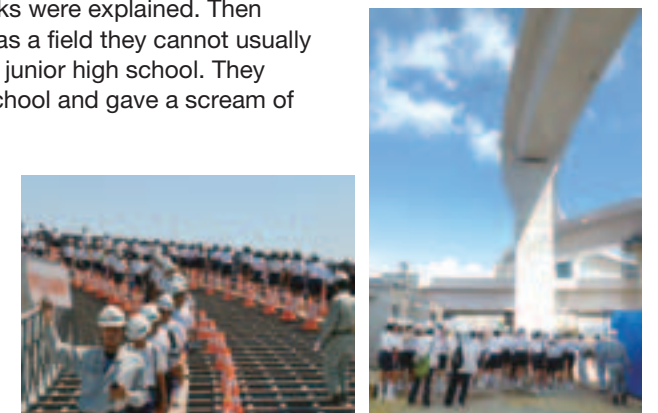
Under the slogan of "Unify and play out desire", boy soccer teams were invited from Asahi, Chiba, and Iwaki and Aizu, Fukushima affected by the Eastern Japan greate earthquake. They experienced effective use and disposal methods of various wastes as environment education. Gathering for familiar talk and Soccer competition were also held.

Sanzo Kosan, a subsidiary in Chiba Works, offered accommodation facility, study and training facility and soccer ground to sponsor this project.



### Tour of inspection by local junior high-school students to bridge construction site (Steel Structure & Logistic Systems Hq.)

July 15 (Friday), about 320 students in the 8th grade of local Junior high-school were invited for inspection in the field of Kakogawa City, Hyogo Prefecture where MES was constructing a bridge. Students of 4 classes investigated the bridge respectively in the morning and afternoon. In the hot summer heat, students walked about 30 minutes from the school, worn a helmet and visited the construction field. While the students looked up the bridge, substructure and superstructure works were explained. Then they climbed up to the bridge under construction, which was a field they cannot usually see. At the end of the half-built bridge, they could see their junior high school. They had their photo taken against a background of their high school and gave a scream of delight. After completion of the tour of investigation, students and teachers expressed their impression, "it was very interesting to walk on the bridge", "people who are constructing a bridge over which we walk indifferently are amazing" and so on. A letter of thanks was offered from the high school. The Kakogawa Central junction which the students visited is located where the Kakogawa bypass of the National Route 2 and the Higashi Harima Nanboku Road are connected. The construction was completed in March, 2012.



### Tour of inspection by local elementary school pupils to MES Yura (MES Yura)

November 18 (Friday), five third-year pupils and one fourth-year pupil, six in total, of the Yura municipal elementary school visited MES Yura factory as a part of the social studies class. In the field, the person in charge explained the outline of the company and the pupils took notes while listening to him. Then they observed the integrated factory, dry dock, and block yard in the factory. They were dazzled their eyes by the dry dock and large crane which they saw first. It was a good opportunity for local pupils to feel works to repair the ship close at hand, not only knowledge.



### Students of local national college of technology visited Oita Works for inspection

February 10 (Friday), third year students of Oita National College of Technology (43 students) visited the factory of Oita Works for inspection as a part of social science class. They were explained about products and facilities of Oita Works in the building and then they walked in the field to have firsthand knowledge of the size of actual products. Students expressed their impression, "surprised by the amazingly large size", "I felt it a challenging job" and so on from various points of view. It was a good opportunity for them to feel the Oita working place closer.



### Musical performance of brass band club, MES Swing Vessels, in the local community, "Joyful Dance party" (Chiba Works)

December 4 (Sunday), Swing Vessels played in the joyful dance party sponsored by the local community center in Chiharadai, Ichihara City, Chiba Prefecture. More than 250 dance lovers gathered together and 21 songs were played for 3 stages of 20 minutes each. The performance of this time was realized at the request of a person related to the community center who visited the "40th anniversary of club foundation memorial concert" of Swing Vessels held in the Ichihara citizen hall in June 2011.

Play of Swing Vessels in a dance party was for the first time in 15 years.







**Environmental & Safety Control Department**

This CSR Report appears on our website: <http://www.mes.co.jp/>

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