MIURA CO., LTD.

Financial Summary and Growth Strategy

Daisuke MIYAUCHI, President & CEO
MIURA CO., LTD.
Caution

Each value mentioned in this document is based on the information currently available and the actual results may be changed and differ from what is stated herein, due to forthcoming various factors. The utmost care has been taken to provide the information publicized in this document. However, MIURA shall not be held responsible for any damages resulting from the information publicized in this document.
1. Company Profile
**Company Information**

**Location**  
7 Horie, Matsuyama, Ehime,  
799-2696 Japan

**Established**  
May, 1959

**Group Company**  
Japan  8 companies  
(Includes 7 consolidated companies)

**Abroad**  
15 companies  
(Includes 10 consolidated companies)

**Employees**  
Consolidated  4,855 employees

**Group Total**  
4,917 employees  
(Includes 1,323 employees abroad)

**Business**  
Manufacturing, Sales, and Maintenance of Equipment

**Rating**  
“A”  
(Rating and Investment Information, Inc., September 16th, 2016)

<table>
<thead>
<tr>
<th></th>
<th>FY2014</th>
<th>FY2015</th>
<th>FY2016 (Forecast)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales</td>
<td>90,424</td>
<td>99,019</td>
<td>104,000</td>
</tr>
<tr>
<td>Ordinary income</td>
<td>10,799</td>
<td>10,887</td>
<td>11,400</td>
</tr>
<tr>
<td>Profit</td>
<td>7,464</td>
<td>7,476</td>
<td>7,800</td>
</tr>
<tr>
<td>Capital Ratio</td>
<td>79.5</td>
<td>78.4</td>
<td>–</td>
</tr>
<tr>
<td>Net assets per share (JPY)</td>
<td>915.75</td>
<td>947.00</td>
<td>–</td>
</tr>
</tbody>
</table>
2. FY2017 2nd Quarter Summary Overview
### Consolidated Result

<table>
<thead>
<tr>
<th></th>
<th>FY2015 2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>FY2016 2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>FY2016 - Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>46,585</td>
<td>46,804</td>
<td>104,000</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td>27,549</td>
<td>27,622</td>
<td>61,600</td>
</tr>
<tr>
<td>SG &amp; A expenses</td>
<td>14,452</td>
<td>14,680</td>
<td>32,000</td>
</tr>
<tr>
<td>Operating Profit</td>
<td>4,584</td>
<td>4,501</td>
<td>10,400</td>
</tr>
<tr>
<td>Ordinary Profit</td>
<td>4,925</td>
<td>4,696</td>
<td>11,400</td>
</tr>
<tr>
<td>Net Income</td>
<td>3,254</td>
<td>3,028</td>
<td>7,800</td>
</tr>
</tbody>
</table>

### Overview of Financial Summary

**Domestic**  
Marine and Special equipment sales are increased.

- Marine equipment (Ballast water management system) and Special equipment sales are increased.
- Boiler, Food, and Medical equipment sales are slightly increased.

**Overseas**  
Sales are affected heavily by the currency exchange rate, but the maintenance business is increased.

- Sales of all countries is affected by currency exchange, but maintenance business is increased based in Yen.

Personnel and depreciation expenses are increased.
Analysis of Domestic Sales

Unit: 100 Million of Yen

Marine equipment sales increase (Ballast water management system・・・ increase 1,200 million Yen)

Special equipment sales increase・・・ 200 million Yen

※Others: New Business and Environment
Domestic and Overseas Sales

<table>
<thead>
<tr>
<th></th>
<th>FY2014 2nd</th>
<th>FY2015 2nd</th>
<th>FY2016 2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>405</td>
<td>466</td>
<td>468</td>
</tr>
<tr>
<td>Overseas</td>
<td>65</td>
<td>98</td>
<td>82</td>
</tr>
</tbody>
</table>

Unit: 100 Million of Yen

- Overseas sales are affected by currency exchange rate by 14~18%. Decrease is based on Yen.
- Domestic sales are increased by Marine and Special equipment.
Analysis

Overseas sales is affected by currency exchange rate and some sales delay to 3rd quarter and after. Seasonal factor of last year.

Unit: 100 Million of Yen

Actual increase

Currency exchange
Seasonal factor due to change in accounting period

Actual decrease

Currency exchange

<table>
<thead>
<tr>
<th>Currency exchange (average rate)</th>
<th>FY2015</th>
<th>FY2016</th>
<th>Planned rate in FY2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD</td>
<td>121.87</td>
<td>105.20</td>
<td>105.00</td>
</tr>
<tr>
<td>CAD</td>
<td>96.12</td>
<td>81.10</td>
<td>85.00</td>
</tr>
<tr>
<td>Yuan</td>
<td>19.45</td>
<td>15.92</td>
<td>16.00</td>
</tr>
<tr>
<td>Won (100W)</td>
<td>10.77</td>
<td>9.22</td>
<td>9.50</td>
</tr>
<tr>
<td>Rupiah (100Rp)</td>
<td>0.91</td>
<td>0.80</td>
<td>0.80</td>
</tr>
<tr>
<td>TWN</td>
<td>3.89</td>
<td>3.28</td>
<td>3.50</td>
</tr>
</tbody>
</table>
**Overseas Sales (Based on Yen)**

Unit: 100 Million of Yen

<table>
<thead>
<tr>
<th>Region</th>
<th>FY2014 2nd</th>
<th>FY2015 2nd</th>
<th>FY2016 2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>13</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>South Korea</td>
<td>26</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>China</td>
<td>15</td>
<td>15</td>
<td>32</td>
</tr>
<tr>
<td>ASEAN, Taiwan</td>
<td>10</td>
<td>12</td>
<td>10</td>
</tr>
</tbody>
</table>

- Sales increase based on local currency, decrease affected by currency exchange rate.
Main Overseas Sales (Based on local currency)

<table>
<thead>
<tr>
<th></th>
<th>USA</th>
<th>South Korea</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit: 10 Thousand USD</td>
<td>Unit: 100 Million WON</td>
<td>Unit: Million Yuan</td>
</tr>
<tr>
<td>14/9</td>
<td>1,235</td>
<td>244</td>
<td>117</td>
</tr>
<tr>
<td>15/9</td>
<td>1,301</td>
<td>328</td>
<td>167</td>
</tr>
<tr>
<td>16/9</td>
<td>1,180</td>
<td>330</td>
<td>172</td>
</tr>
</tbody>
</table>

U.S.A.

South Korea

China

FY2017 2nd Quarter Summary Overview
FY2017 2nd Quarter Summary Overview

Analysis by Segment

<table>
<thead>
<tr>
<th>Unit: 100 Million Yen</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2014 2nd</td>
</tr>
<tr>
<td>Domestic sales</td>
</tr>
<tr>
<td>215</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>125</td>
</tr>
<tr>
<td>50</td>
</tr>
</tbody>
</table>

Some products sales delay to 3rd quarter and after both in Domestic and Overseas markets. (△400 million Yen)

Maintenance business remained strong in Domestic and Overseas markets even affected by currency exchange rate. (+600 million Yen)
3. Profit Share and Stock
3 Profit Share and Stock

① Sustain Stable Dividends

② Targeting 30% of the consolidated payout ratio

FY2015
- Middle 10 yen
- End 11 yen
- Total 21 yen

FY2016
- Middle 10 yen
- End 12 yen
- Total 22 yen - Forecast

【Changes in dividend per share】

(Yen) 22

FY2012
- Middle 6.67 yen
- End 7 yen

FY2013
- Middle 11.33 yen
- End 11 yen

FY2014
- Middle 8.67 yen
- End 10 yen

FY2015
- Middle 11 yen
- End 10 yen

FY2016 (Forecast)
- Middle 12 yen
- End 11 yen

(Reference)

Holdings of treasury stock
※ As of September 30, 2016

- Total number of issued shares
  (Without Treasury shares)
  112,546,778 shares

- Treasury Share
  12,744,334 shares
4. Ballast Water Management System
Ballast water management convention

“Ballast water” is the seawater taken into a ship’s tank to provide stability to the ship.

Port of unloading

- No load
- Ballast tank
- Aquatic organisms

Water filled

Port of loading

- Full load
- Sailin
- Water discharged

3 to 4 billion ton seawater transferred per annum

Aquatic organisms transferred from the port of unloading to that of loading

Environmental problems such as ecosystem destruction

Ratified on September 8th, 2016
Effective on September 8th, 2017 according to the IMO

Approx. 170 countries of IMO members adopted

Reference: document issued by the MLIT
Market & Sales of the BWMS

Market size: Vessels in the world: 80 to 100 thousand

MIURA’s target: 19,000 vessels
(small/medium vessels of 20 to 60 thousand DWT*)

<Plan for FY 2018>
BWMS installation: 720 units
Sales expected: 10 billion JPY

Docking schedule of vessels in service

- Docking timing: Intermediate survey every 2 or 3 years and special survey every 5 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Convention in force</td>
</tr>
<tr>
<td>2018</td>
<td>Obtaining USCG TA</td>
</tr>
<tr>
<td>2019</td>
<td>Installation peak</td>
</tr>
</tbody>
</table>

New market born!

BWMS installation timing

<table>
<thead>
<tr>
<th>Type</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly built vessels</td>
<td>September 2017 or after</td>
</tr>
<tr>
<td>Vessels in service</td>
<td>Periodic inspection in September 2017 or after</td>
</tr>
</tbody>
</table>
## Ballast Water Management System

### Ballast water treatment methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Principle</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV</td>
<td>Sterilization by ultraviolet</td>
<td>• No chemical</td>
<td>• Sterilization difficulty for larger organism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No matter which of seawater or brackish water is used</td>
<td>• High electricity consumption</td>
</tr>
<tr>
<td>Electrolysis</td>
<td>Sterilization by chlorine generated from electro-chlorination</td>
<td>• No filter (depends on the conditions)</td>
<td>• Neutralization chemical required for discharge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Low electricity consumption</td>
<td>• High electricity consumption</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Temperature control required</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• No chlorine generated in freshwater area</td>
</tr>
<tr>
<td>Chemical</td>
<td>Sterilization by chemical</td>
<td>• Low electricity consumption</td>
<td>• Neutralization chemical required for discharge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Chemical stock &amp; temperature control required</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Environmental load possibility due to chemical</td>
</tr>
</tbody>
</table>
Ballast water management convention & USCG rule

USCG (United States Coast Guard) rule
Requires ballast water management to vessels sailing in the water area of North America (effective in January 2016)
→ Regardless of the effect of the ballast water management convention

Ratified on September 8th, 2016
Effective on September 8th, 2017

12 months after fulfilling ratification conditions

Ballast water management convention

Unique standards based on the ballast water management convention

USCG rule

AMS approval valid for 5 years after installation
(As a temporal measure before TA under USCG rule)

Fiducial installation date: January 2016

Freshwater testing

January 2016

January 2021

※ TA = Type approval
### Why USCG type approval (TA)?

<table>
<thead>
<tr>
<th></th>
<th>Other than North America</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMO</td>
<td>○</td>
<td>−</td>
</tr>
<tr>
<td>USCG</td>
<td>−</td>
<td>○</td>
</tr>
</tbody>
</table>

Vessels sailing worldwide need both TA of **IMO** and **USCG**.

IMO + USCG = Reassuring vessel’s owner

BWMS manufacturer with both TA → Competitive advantage

No manufacturer gained USCG type approval as of October 2016.
<table>
<thead>
<tr>
<th>Country</th>
<th>Manufacturer</th>
<th>IMO</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>MIURA CO., LTD</td>
<td>Filter + UV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>J F E</td>
<td>Filter + Chemical</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kuraray</td>
<td>Filter + Chemical</td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>TECHCROSS</td>
<td>Filter + Chemical + Electro-chlorination</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PANASIA</td>
<td>Filter + UV</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>Qingdao overseas</td>
<td>Filter + Electro-catalysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SunRui</td>
<td>Filter + Electrolysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Headway</td>
<td>Filter + Electro-catalysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BSKY</td>
<td>Filter + UV</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>Alfa-Laval</td>
<td>Filter + UV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optimarin</td>
<td>Filter + UV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ocean Saver</td>
<td>Filter + Chemical + Electro-chlorination</td>
<td></td>
</tr>
</tbody>
</table>

IMO approved 69 manufacturers including the manufacturers above (As of October 28, 2016).
MIURA’s approval acquisition

**Ballast water management convention**

Instead of the “CERTIFICATE OF BALLAST WATER MANAGEMENT SYSTEM” obtained in March 2014, the equivalent designation approval from the MLIT due to the domestic law amendment in April 2016 has been obtained.

**USCG rule**

Planning to obtain in FY2017

As for vessels sailing in the water areas of North America, the ballast water management has been required since January 2016. The ballast water management convention is applied to the requirements temporary. The equipment with AMS approval is essential.

**5-year-valid AMS approval (temporal measure before TA under USCG rule)**

Obtained in November 2014 (Seawater/brackish water) & March 2016 (Freshwater)

→ The AMS approval enables the vessel even without TA to sail in the various waters specified by the USCG for 5 years after installation.

TA = Type approval
World-class marine cities

Ship Machinery Department with its 50 year history – developing together with neighboring marine cities

- Murakami Hide Shipbuilding/Hakata Shipbuilding/Shimanami Shipyard
- Hiroshima Shipyard of Imabari Shipbuilding
- Onomichi Dockyard
- Tamano Works of MES
- Shikoku dock
- Kure Shipyard of JMU/Kegoya Dock/Kanda Shipbuilding
- Tsuneishi shipbuilding
- Marugame Shipyard of Imabari Shipbuilding
- Tadotsu Shipyard of Imabari Shipbuilding
- Innoshima Works of Japan Marine United/Naikai Zosen/Sanwa Dock
- MIURA CO., LTD. Matsuyama-city along with major marine cities
- MIURA CO., LTD. along with major marine cities
- IMABARI SHIPBUILDING
- MIURA CO., LTD.
- I-S Shipyard
- Imabari Shipbuilding HQ/Asakawa Shipbuilding/Higaki Ship Building/Shin Kurushima Dockyard
- Shikoku dock
- Onishi Shipyard of Shin Kurushima Dockyard
- Saijo Shipyard of IMABARI SHIPBUILDING
- Kurinoura Dockyard

According to MILT Chugoku and Shikoku Regional Department Bureau
## Major customers

<table>
<thead>
<tr>
<th>Country</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>IMABARI SHIPBUILDING/Japan Marine United Corporation (JMU)/ Oshima Shipbuilding/TSUNEISHI SHIPBUILDING/NAMURA SHIPBUILDING/SHIN KURUSHIMA DOCKYARD GROUP/ Mitsui Engineering &amp; Shipbuilding (MES)/Kawasaki Heavy Industries/Mitsubishi Heavy Industries</td>
</tr>
<tr>
<td>China</td>
<td>COSCO GROUP/CSIC GROUP/CSSC GROUP NANTONG COSCO KH SHIP ENGINEERING (NACKS)</td>
</tr>
<tr>
<td>Korea</td>
<td>DAE SUN SHIPBUILDING &amp;ENGINEERING Hyundai Heavy Industries/ HANJIN HEAVY INDUSTRIES &amp; CONSTRUCTION/ CO., LTD. STX Offshore &amp; Shipbuilding</td>
</tr>
</tbody>
</table>

※The present ranking may have changed due to factors such as the merger.

### Vessel construction ranking (2013)

- **CSSC**: 655
- **Hyundai**: 530
- **Daewoo**: 460
- **Samsung**: 439
- **CSIC**: 416
- **Imabari**: 384
- **Hyundai**: 320
- **JMU**: 251
- **Hyundai**: 191
- **Sungdong**: 175
- **STX**: 163
- **Oshima**: 133
- **Jiangsu**: 122
- **SPP**: 120
- **Namura**: 117
- **Jiangsu New**: 107
- **MES**: 97
- **NACKS**: 84
- **Shin**: 79
- **Tsuneishi**: 77
- **Yangzhou**: 75
- **Tsuneishi**: 69
- **Kawasaki**: 56
- **Jiangsu New**: 56

Reference: HIS (Former Lloyds) Unit: 10 thousand GT
4 Ballast Water Management System

Ship total solution (MIURA’s 4 item set)

- ① Composite boiler
- ② Incinerator
- ③ Water softener
- ④ Ballast water management system

Auxiliary equipment also made by MIURA
**Target**

**In-service vessels**
- 7% share
- Approx. 1,330 vessels
- \( \times 1.5 \) units = Approx. **2,000 units** of BWMS

**Newly-built vessels**
- Target: 32% share
- Units to be installed at shipyard: Approx. 1,000 units/year
- \( 1,000 \text{ units/yr} \times 0.32 = 320 \text{ units} \)

**FY2018**
- 400 units/year for in-service vessels
- 320 units/year for newly-built vessels

**Total: 720 units**

**Sales target:**
- **10 billion yen**
## Sales strategy

<table>
<thead>
<tr>
<th>Newly-built vessels</th>
<th>In-service vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marine boiler connection</strong></td>
<td><strong>Appealing to shipowners, operation/management companies</strong></td>
</tr>
<tr>
<td>→ Great trust between MIURA and its users (shipyard &amp; shipowner)</td>
<td>→ Branching out into the Netherlands to appealing to shipowners in Europe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Newly built vessels</th>
<th>Shipowner</th>
<th>Shipyard</th>
<th>BWMS manufacturer</th>
<th>Installation on newly-built vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-service Vessels</td>
<td>Shipowner</td>
<td>Operation/management companies</td>
<td>BWMS manufacturer</td>
<td>Installation at a dock</td>
</tr>
</tbody>
</table>

**Sale to shipowners in Europe**

**Sale to shipbuilding industry in China**

**MIURA NETHERLANDS established**

**Branch network expansion in Asia**
Marine maintenance

Expansion regarding worldwide installation & maintenance needs of BWMS

Present bases: 5 in Japan, 4 in China, each in Singapore, Taiwan, Houston, and the Netherlands
**Ballast Water Management System**

**Installation technique**

- **Installation on vessels in service**
  - Limited space
  - Limited installation time

**Installation technique on site is vital!**

**Installation process**

- 3D scanner
- Layout & drawing

**Installation drawing submission & classification society approval**

**Strength developed through boiler maintenance**
- Engineering
- Management
- Supervising
- After-sales service

**Installation in the specified process in a short time**

**MIURA’s strength**

**Superior to other companies**
Sales peak and forecast

Maintenance sales
Inspection/maintenance when docking

Docking cycle

In service

• Replacing consumables
• Checking operation history to suggest maintenance plans

Basically overhauling

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5. Reference
History

1959: Company established. Full scale production of the Z boiler begun.
1972: Development of high efficiency boiler. ZMP Contract started.
1974: Development of gas-fired boiler with Tokyo Gas Company
1977: Sale of Multiple Installation System begun
1978: Diversified business started
1982: Listed on the 2nd Section of the Osaka Stock Exchange
1984: Listed on the 2nd Section of the Tokyo Stock Exchange
1986: Patent received for MI (Multiple Installation) System
1989: Listed on the 1st Section of the Tokyo and Osaka Stock Exchange
1989: Development of AI controlled boiler
1991: ZIS Online Maintenance begun
1991: Development of low NOx boiler
2004: Sale of SQ-2500ZS, the world’s first gas-fired boiler with an NOx value of 25 ppm begun

(Million Yen)

Year

1959
1970
1980
1990
2000
2015
2016

Initial Period of Boiler Business
Growth Period of Boiler Business
Initial Period of the Best Partner Strategy
Rearing Period of Globalization

Patent received for Multiple Installation System
Online Maintenance started
Sale of Multiple Installation System begun
ZMP Contract introduced

2015 Result
2016 Sales target: 100 billion yen!
Domestic share

*Boilers for power generation excluded

Domestic boiler market

- Once-through boiler: 72%
- Fire tube boiler: 10%
- Water tube boiler: 18%

Total amount of steam output of the market
Approx. 220K t/h
(*) Estimated value

Domestic once-through boiler market

- Once-through boiler: 55%
- MIURA: Share No.1

Total amount of steam output
Approx. 160K t/h
(*) Estimated value

“Once-through-ism” movement

Competitors
- NIPPON THERMOENER CO., LTD
- IHI PACKAGED BOILER CO., LTD
- Hirakawa Corporation
- SAMSON CO., LTD.
- Kawasaki Thermal Engineering Co., Ltd.
- YOSHIMINE CO., LTD.

(Note) The share of once-through boilers is based on MIURA’s investigation and the actual results may differ from that.
Appropriate location, production, and sales to establish global network

15 companies, 7 factories, Sales and Maintenance in 19 countries

- **Netherlands**: Marine business development
- **Turkey**: Future sale in Europe and CIS* Countries
- **South Korea**: Sale in South Korea and export to Latin America
- **North America**: 11 locations
- **CHINA**: 103 locations
- **Taiwan**: Sale in Taiwan and export to ASEAN
- **Vietnam**: Maintenance service started
- **Singapore (2 companies)**: Hub in ASEAN
- **Indonesia**: Export to ASEAN
- **ASEAN 10 locations**
- **Canada**: Sale in North America
- **Mexico**: Sale in Mexico
- **Brazil**: New factory established in March 2016
- **New factory established in March 2016**

*CIS Countries: The abbreviation of Commonwealth of Independent States: Republic of Azerbaijan, Republic of Armenia, Republic of Uzbekistan, Republic of Kazakhstan, Kirghiz Republic, Republic of Tadzhikistan, Republic of Turkmenistan, Republic of Belarus, Republic of Moldova, Russia (Turkmenistan and Moldova are associate countries).
Boiler Market Share

*Based on steam volume

- **Japan**
  - Approx. 220K t/h
  - (Total amount of steam output)
  - MIURA 40%

- **U.S.**
  - Approx. 430K t/h
  - (Total amount of steam output)
  - 1%

- **South Korea**
  - Approx. 140K t/h
  - (Total amount of steam output)
  - 8.5%

- **ASEAN**
  - Approx. 175K t/h
  - (Total amount of steam output)
  - 2%

- **China**
  - Approx. 800K t/h
  - (Total amount of steam output)
  - 1.3%

- **Mainly Large, Low-efficiency boilers**

80% of the market is coal-fired boilers which is rapidly switching over to natural gas.
What is a Boiler?

Equipment which generates steam. It is necessary for factories, schools, hospitals and high-rise buildings.

Uses

- Heating, or process based power generation, sanitation etc...
- ※Same principal as a kettle.

【Steam Advantages】

- Five times more energy than hot water
- Compressible
- Easily acquired since it uses water
- Recyclable – Water to steam to water
- Sanitary

Types of boilers ~ Same capacity ~

- Once-through Boiler
- Water Tube Boiler
- Fire Tube Boiler
Types of Boilers ~ Same capacity ~

- Once-through boiler
- Water Tube boiler
- Fire Tube boiler

Reference

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## Merit of Once-through Boiler

<table>
<thead>
<tr>
<th>Capacity per unit</th>
<th>Efficiency at low load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>Low</td>
</tr>
</tbody>
</table>

- **Fire tube boiler**
  - Always in full operation

<table>
<thead>
<tr>
<th>Small</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once-through boiler</td>
<td>Only required number of boiler in operation</td>
</tr>
</tbody>
</table>

### Multiple Installation System
Multiple Installation System is the steam supply system which developed uniquely in Japan.

### Multiple installation
Multiple installation is to install a number of small-capacity boilers.
MIURA MI (Multiple Installation) System

Provides steam of required amount when needed, reducing operation costs and emission of CO₂ and NOx.

- One large capacity boiler
- Small capacity boilers in MI system

Why is MI system efficient?

- Same water content even if the number of potatoes reduced
- Water content reduced when the number of potatoes reduced

Energy Saving  Space Saving  Labor Saving  Low pollution
In 1986 MI system patented

MI system (Multiple Installation system)

Once-through boiler design makes energy savings a reality.

- Energy-saving
- Space-saving
- Labor-saving
- Low pollution

Provide steam when needed and only when needed, low operation costs and reduction of CO₂ and NOₓ.
What is ZMP Contract?

**Period**
- Update every 3 years
- 5 terms (15 years)

**Contents**
- 3 time inspections per year
  - Free replacement
- Remedy for sudden troubles
  - Free replacement parts
- Anomaly perception
- Trouble factor check in advance
- Water analysis
- Online maintenance

**Results**
- Customers’ safety & relief
- Early recovery

---

Reference
Online Maintenance

Maintaining high profitability with “IoT” for 27 years

Monitoring

User

Troubleshooting via Telephone (Data collection/analysis)

Approx. 56,000 units under contract
*Including equipment other than boiler (As of October, 2016)

Remote monitoring

Trouble factor grasped

Preparation in advance

Early recovery

Much more effective, easier maintenance work
Boiler Lifespan and MIURA Business Model

Not only the product sales, but maintenance & consumables sales

Assuming a boiler has a lifespan of 15 years,

<table>
<thead>
<tr>
<th>Sales result</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>...</th>
<th>15th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product sales</td>
<td>1,000</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Maintenance and chemical sales</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Securing repeat customers</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Continuous cash flow

High quality product + Reliable maintenance

No effect from economic fluctuations

Additional sales of MIURA products other than boiler

Good relationship with customer
5 Reference

Maintenance Brings Profits

<table>
<thead>
<tr>
<th>Sales ratio</th>
<th>Product sales</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68.7%</td>
<td>31.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Profit ratio</th>
<th>Product sales</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>37.2%</td>
<td>62.8%</td>
</tr>
</tbody>
</table>

*The whole MIURA group as of March, 2016

MIURA Maintenance Network

- Offices: Approx. 100 offices
- Service Engineers: Approx. 1,000 engineers

Reference
Mid-Term Management Planning

Ideal (business) model 3 years from now

Changes to business environment

Plan for next year

Mid-Term Management Plan for next 3 years

Annual correction

Rolling Plan

To respond to business environment changes, MIURA updates its three-years Mid-Term Management plan every year.

<table>
<thead>
<tr>
<th></th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>FY 2018</th>
<th>FY 2019</th>
<th>FY 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-Term Management Plan 2016</td>
<td>2016–2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-Term Management Plan 2017</td>
<td></td>
<td>2017–2019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-Term Management Plan 2018</td>
<td></td>
<td></td>
<td>2018–2020</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Mid-Term Management Plan for FY2016

### Unit: Billion Yen

<table>
<thead>
<tr>
<th></th>
<th>FY 2015</th>
<th>FY 2016 Plan</th>
<th>FY 2017 Plan</th>
<th>FY 2018 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net sales</strong></td>
<td>99.0</td>
<td>104</td>
<td>113</td>
<td>122</td>
</tr>
<tr>
<td><strong>Operating profit</strong></td>
<td>10.2</td>
<td>10.4</td>
<td>11.5</td>
<td>12.8</td>
</tr>
</tbody>
</table>

### Unit: Billion Yen

<table>
<thead>
<tr>
<th></th>
<th>16/3</th>
<th>17/3</th>
<th>18/3</th>
<th>19/3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overseas sales ratio</strong></td>
<td>20.0</td>
<td>21.0</td>
<td>25.0</td>
<td>29.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Overseas</th>
<th>Domestic</th>
<th>Overseas sales ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>16/3</td>
<td>79.0</td>
<td>20.20%</td>
<td>20.20%</td>
</tr>
<tr>
<td>17/3</td>
<td>83.0</td>
<td>20.19%</td>
<td>22.12%</td>
</tr>
<tr>
<td>18/3</td>
<td>88.0</td>
<td></td>
<td>24.18%</td>
</tr>
<tr>
<td>19/3</td>
<td>92.5</td>
<td></td>
<td>25%</td>
</tr>
</tbody>
</table>

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## Growth Strategy for Mid-Term Management Plan

<table>
<thead>
<tr>
<th></th>
<th>FY 2015</th>
<th>FY 2016 Plan</th>
<th>FY 2017 Plan</th>
<th>FY 2018 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domestic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>790</td>
<td>830</td>
<td>880</td>
<td>925</td>
</tr>
<tr>
<td>Boiler</td>
<td>550</td>
<td>555</td>
<td>560</td>
<td>565</td>
</tr>
<tr>
<td>Aqua</td>
<td>26</td>
<td>30</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>Marine equipment</td>
<td>75</td>
<td>97</td>
<td>120</td>
<td>140</td>
</tr>
<tr>
<td>Food &amp; Medical equipment</td>
<td>88</td>
<td>95</td>
<td>105</td>
<td>110</td>
</tr>
<tr>
<td>Special equipment</td>
<td>33</td>
<td>33</td>
<td>38</td>
<td>45</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td><strong>Overseas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>210</td>
<td>250</td>
<td>295</td>
</tr>
<tr>
<td>Americas</td>
<td>43</td>
<td>47</td>
<td>60</td>
<td>70</td>
</tr>
<tr>
<td>South Korea</td>
<td>66</td>
<td>60</td>
<td>60</td>
<td>65</td>
</tr>
<tr>
<td>China</td>
<td>67</td>
<td>73</td>
<td>90</td>
<td>110</td>
</tr>
<tr>
<td>ASEAN, Taiwan</td>
<td>24</td>
<td>30</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>990</td>
<td>1,040</td>
<td>1,130</td>
<td>1,220</td>
</tr>
</tbody>
</table>
MIURA awarded from the Japan Institute of Marine Engineering

The Japan Institute of Marine Engineering (JIME) held its 50th anniversary commemorative ceremony on September 27th, 2016. The JIME inaugurated in April 1966, aiming at the progress and development regarding engineering and technology of the marine engines and equipment. Not only contributing to the marine engine improvement and safety, the JIME has been working on environmental researches such as energy saving and marine pollution prevention. MIURA, who joined the JIME in 1974, has been awarded the contribution award for its remarkable contribution to the stable institute-operation fundamentals over the years, such as the international conference support and boiler-related study activities. MIURA will continue to serve our customers even better with various products including the “Ballast Water Management System HK” contributing to the world’s marine environment preservation, on the mission to “help customers all over the world in energy conservation and environmental preservation”.
Your best partner for Energy, Water, and Environment,

helping customers all over the world in energy conservation and environmental preservation,

to bring products with the best price and quality in the world in the fields of energy, water, and the environment!
The Best Partner of Energy, Water and Environment

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