Machinery, Equipment & Infrastructure
Business Plan

Member of the Board, Executive Vice President, President and CEO, Machinery, Equipment & Infrastructure

Kazuaki KIMURA

June 10, 2016

MITSUBISHI HEAVY INDUSTRIES, LTD.
1. Business Overview
   1-1. Domain Statement
   1-2. Business Overview
   1-3. Review of FY2015
   1-4. Major Projects and Orders in FY2015

2. FY2016 Business Policies and Strategies
   2-1. Business Policies and Strategies
   2-2. Forecast for FY2016

3. Business Strategies
   3-1. Independently Managed JVs
       • M-FET (Forklift trucks, Engine, Turbocharger)
       • Metals machinery
   3-2. Growth Businesses
       • Compressor, Environmental systems, Air-conditioning & Refrigeration system
   3-3. Restructuring and Integrating Small/Medium Scale Businesses

4. Summary
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4. Summary
Philosophy of Domain Statement

Built from elements of Group Statement announced on May 9, 2016 relevant to Machinery, Equipment & Infrastructure domain, as part of MHI Group Brand Story

Concept behind Machinery, Equipment & Infrastructure Domain Statement

Our diverse range of products, from machinery to industrial plants, social infrastructure and more, touch lives in countless ways, pushing the boundaries of prosperity in homes, businesses, factories and everywhere else imaginable.

With our products, we are creating a more unified, livable world for all. This is our mission and this is what we do.
We are creating a society that helps people live happier, more fulfilled lives.
We are creating a society that helps people live happier, more fulfilled lives. Every day, we are focused on finding solutions for industries and societies that create a more unified, livable world for all. Our diverse range of products touch lives in countless ways, pushing the boundaries of prosperity in homes, businesses, factories and everywhere else imaginable.

From machinery to industrial plants, social infrastructure and more, everything we create has a bigger purpose in mind. Whether visible or not, our products are designed to blend in with their surroundings, creating a link with society that enriches people’s lives and moves the world forward.
1-2. Business Overview

FY2015 Net Sales
1,432.3 billion yen

* M-FET: Mitsubishi Heavy Industries Forklift & Engine Turbocharger Holdings, Ltd.

* ITS: Intelligent transportation systems
1-3. Review of FY2015

Orders received
Increased due to merits from metals machinery business merger and sales expansion in turbocharger, air-conditioning & refrigeration, and material handling equipment.

<table>
<thead>
<tr>
<th>Category</th>
<th>FY2014 (Actual)</th>
<th>FY2015 (Actual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material handling equipment</td>
<td>1,344.7 (1,215.0)</td>
<td>1,392.5</td>
</tr>
<tr>
<td>Metals machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,344.7</td>
<td>1,392.5</td>
</tr>
</tbody>
</table>

Order backlog
Decreased due to business environment deterioration in metals machinery and compressor.

<table>
<thead>
<tr>
<th>Category</th>
<th>FY2014 (Actual)</th>
<th>FY2015 (Actual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>749.9 (718.8)</td>
<td>655.8</td>
</tr>
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</table>

Net sales
Increased due to merits from metals machinery business merger and sales expansion in turbocharger, air-conditioning & refrigeration, and material handling equipment.

<table>
<thead>
<tr>
<th>Category</th>
<th>FY2014 (Actual)</th>
<th>FY2015 (Actual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material handling equipment</td>
<td>1,347.4 (1,225.9)</td>
<td>1,432.3</td>
</tr>
<tr>
<td>Metals machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,347.4</td>
<td>1,432.3</td>
</tr>
</tbody>
</table>

Operating income
Down largely as a result of decreased compressor sales and lower profitability from metals machinery, currently in process of PMI*.

<table>
<thead>
<tr>
<th>Category</th>
<th>FY2014 (Actual)</th>
<th>FY2015 (Actual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>87.7 (776)</td>
<td>80.0</td>
</tr>
</tbody>
</table>

*PMI: Post Merger Integration

* Figures in parentheses exclude impact from changes in accounting periods, etc.
1-4. Major Projects and Orders in FY2015

- **Metals machinery**
  - Galvanizing line for China

- **Air-conditioning & refrigeration systems**
  - Centrifugal chiller for Saudi Arabia (80 units)
  - Waste incinerator facility for Singapore

- **ITS**
  - Toll collection system for Singapore
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4. Summary
2-1. FY2016 Business Policies and Strategies

2015 Business Plan Basic Policies

Create top businesses in global niche markets

Ⅰ. Expand scale and earnings of growth businesses

Ⅱ. Accelerate PMI of established joint ventures

Ⅲ. Restructure and integrate small/medium-scale businesses

Ⅰ. Expand business scale and profit

Accelerate PMI of independently managed JVs and strengthen growth businesses

Ⅱ. Achieve highly profitable structure

Strengthen earning capacity through restructuring of small/medium scale businesses, and pare down resource investing businesses
Transition of portfolio
Consolidate resources by restructuring and integrating small/medium scale businesses, and pursue expansion in scale and income of all businesses

2-1. FY2016 Business Policies and Strategies
### 2-1. FY2016 Business Policies and Strategies

**Machinery, equipment and Infrastructure Systems domain businesses**

- Accelerate PMI of independently managed JVs and strengthen growth businesses

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**Independently managed JVs**

- **MHI Forklift & Engine, Turbocharger Holdings M-FET**
  - **Forklift trucks**
  - **Engine**
  - **Turbocharger**

- **Primetals Technologies PT**
  - **Metals machinery**

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**Growth businesses**

- **Compressor**
- **Environmental systems**
- **Air-Conditioning & Refrigeration Systems**
- **Mechatronics system machinery, ITS**
- **Machine tool**

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**Restructured operations**

- Revitalize business through collaboration with other companies

**Agricultural machinery**

(Mitsubishi Mahindra Agricultural Machinery)

- Globalize business through synergies with Mahindra

**Industrial cranes**

(Sumitomo Heavy Industries Material Handling Systems)

- Expand through partner’s business

**Bridges**

(Miyaji engineering group)

- Achieve profitability and orders expansion
2-2. Forecast for FY2016

Orders received
Increase due to merger merits from metals machinery and material handling equipment, sales expansion in turbocharger

<table>
<thead>
<tr>
<th></th>
<th>FY2015 (Actual)</th>
<th>FY2016 (Revised target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material handling equipment</td>
<td>1,392.5</td>
<td>1,700</td>
</tr>
<tr>
<td>Turbocharger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metals machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>AC&amp;R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical systems, ITS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental systems</td>
<td></td>
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<tr>
<td>Machine tool</td>
<td></td>
<td></td>
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<tr>
<td>Others</td>
<td></td>
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</tbody>
</table>

Net sales
Increase due to merger merits from metals machinery, sales expansion in turbocharger

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<tr>
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<th>FY2015 (Actual)</th>
<th>FY2016 (Revised target)</th>
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<tbody>
<tr>
<td>Material handling equipment</td>
<td>1,432.3</td>
<td>1,700</td>
</tr>
<tr>
<td>Turbocharger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metals machinery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine</td>
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<td></td>
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<tr>
<td>Machine tool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
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</tr>
</tbody>
</table>

Operating income
Increased income from strengthened earnings capacity attributable to:
1) increased sales income
2) merits from integration of metals machinery and forklift truck businesses
3) restructuring of small/medium scale businesses

<table>
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<tr>
<th></th>
<th>FY2015 (Actual)</th>
<th>FY2016 (Revised target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating income</td>
<td>80 (5.6%)</td>
<td>110 (6.5%)</td>
</tr>
<tr>
<td>Margin</td>
<td></td>
<td></td>
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3-1. Accelerate PMI of Independently Managed JVs

Machinery, equipment and Infrastructure Systems domain businesses

Accelerate PMI of independently managed JVs and strengthen growth businesses

**Independently managed JVs**

- **Forklift trucks**
  - Expand scale and develop new businesses through integration synergies from 3 businesses

- **Engine**

- **Turbocharger**

**Primetals Technologies PT**

- **Metals machinery**
  - Reduce costs through PMI acceleration, and strengthen sales structure

**Growth businesses**

- **Compressor**

- **Environmental systems**

- **Air-Conditioning & Refrigeration Systems**

- **Mechatronics system machinery, ITS**

- **Machine tool**
  - Expand servicing operations
  - Expand overseas business
  - Promote thermal solutions business
  - Expand product mix by adding ITS business
  - Expand solutions business

**Restructured operations**

- Revitalize business through collaboration with other companies

**Agricultural machinery**

- (Mitsubishi Mahindra Agricultural Machinery)
  - Globalize business through synergies with Mahindra

**Industrial cranes**

- (Sumitomo Heavy Industries Material Handling Systems)
  - Expand through partner’s business

**Bridges**

- (Miyaji engineering group)
  - Achieve profitability and orders expansion

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3-1. Independently Managed JVs ① M-FET

Pursuing forklift truck PMI and management merits from integrating 3 mass and medium-lot manufactured machinery businesses

- Leverage expansion in forklift truck business (acquisition of UniCarriers Holdings) to consolidate engine and turbocharger businesses

- By strengthening manufacturing through integration of 3 businesses, promote synergy generation, organizational streamlining and bold development of new businesses, and expand business scale

- Target 1 trillion yen in total sales of M-FET

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M-FET (Mitsubishi Heavy Industries Forklift & Engine Turbocharger Holdings, Ltd.)

Mar. 2016 Established

Apr. 2016 Business launch

[Sales : approx. 730 billion yen/ Employees : approx. 16,000]

MHI

MHI Engine & Turbocharger

Engine • Energy

Turbocharger

Forklift trucks (Material handling equipment) businesses

Including unmanned material handling systems

Mitsubishi Nichiyu Forklift

UniCarriers Holdings

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By strengthening manufacturing through integration of 3 businesses, promote synergy generation, organizational streamlining and bold development of new businesses, and expand business scale

Expand sales to 1 trillion yen
3-1. Independently Managed JVs ①M-FET -Turbocharger-

- **Business environment**
  - Chinese market’s prospects are opaque, but turbocharger demand is expanding greatly thanks to merits of tax reductions on small cars.
  - Solid growth is expected to continue in the North American market amid response to tighter fuel standards.
  - Automakers’ development trends will need to be closely watched for stricter measurement methods following emissions irregularities.

- **Business strategies**
  - **Increase orders by strengthening technological capabilities**
    - Support customers through development of products responding to new fuel efficiency standard.
    - Develop new products through new development structure unified with research centers.
  - **Enhance profitability through strengthening of cost competitiveness**
    - Develop new suppliers in low-cost countries.
    - Promote cost reductions in biggest market (Europe).
  - **Increase production capacity of Chinese and North American bases**
    - Strengthen production structure through factory expansion at Chinese base.
    - Expand and improve production lines by launching full-scale mass production at North American base.

- **Basic management policies**
  - Put in place an 11 million unit production structure by 2017.
  - Build a global supply chain.
  - Enhance profitability further (expansion and improvement of production equipment and bases).

- **Orders received / Net sales**
  - Establish global production system (11 million units by 2017)
3-1. Independently Managed JVs ①M-FET -Engine-

Business environment
- Market for power generation engines is expanding globally from increased demand for distributed power generation and rising awareness toward BCP.
- Amid tighter environmental standards worldwide, demand is increasing for highly efficient, low-polluting engines.

Basic management policies
- With diesel engines as the business core, develop the market for gasoline-powered distributed power generators, a growth segment.
- Expand servicing operations and improve earning capacity.
- Accelerate development of cutting-edge technologies through operation of reciprocating engine development center.

Orders received / Net sales

<table>
<thead>
<tr>
<th></th>
<th>FY2014 (Actual)</th>
<th>FY2015 (Actual)</th>
<th>FY2016 (Target)</th>
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<tbody>
<tr>
<td>Orders received</td>
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</tr>
<tr>
<td>Net sales</td>
<td></td>
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</tbody>
</table>

Business strategies
- **Expand business scale in distributed power generator market**
  - Strengthen ties by working closely with domestic gas companies
    Joint development (450kW, 1200kW, 2000kW) and sales cooperation
  - Capture Asian markets
    Capturing large-scale IPP orders from Indonesia and sales expansion in Chinese distributed generator market

- **Strengthen diesel business**
  - **Power generation segment**
    - Expand lineup of power generator sets, targeting data centers in Asia.
    - Launch new models in U.S. market through joint development with leading American OEMs.
  - **Vehicle-mounted engine segment**
    - Expand sales of engines meeting exhaust gas standards in Asia (launch models clearing China III and IV standards).
  - **Ship engine segment**
    - Expand local rigging (in collaboration with distributers) in competitively superior Southeast Asia, and strengthen response to new markets (Vietnam, Indonesia, etc.)
    - Launch newly developed higher-output engines.

IPP: Independent Power Producer
3-1. Independently Managed JVs ① M-FET -Forklift trucks-

**Business environment**
- Global demand for forklift trucks is generally holding steady, with some variance among countries and regions.
- With the acquisition of UniCarriers Holdings, the MHI Group’s forklift truck business has expanded, now ranking 3rd in business scale worldwide.

**Basic management policies**
- Establish a management foundation as a global player
- Pursue maximum synergies within the structure of cooperation between Mitsubishi Nichiyu Forklift and UniCarriers.
- Maintain and develop friendly relationships with business partners.
- Delve into new business areas.

**Business strategies**
- **Establish a management foundation as a global player**
  - Set platforms adopting globally consolidated management, etc., and raise the independent management of all bases
  - Enhance cooperation and elevate the Group’s overall earning capacity
  - Further expand overseas business (65% of total net sales)

- **Pursue maximum synergies within the structure of cooperation between Mitsubishi Nichiyu Forklift and UniCarriers**
  - Enhance efficiency and speed through scale merits
  - Mutually reinforce areas of strength and weakness
  - Cooperate in initiatives into growth areas
  - Improve factory productivity by streamlining product lineup

- **Maintain and develop good relationships with suppliers, etc.**
  - Maximize partners’ capabilities
  - At each juncture, set the direction on time
  - Concentrate on jointly developing business with the pride and conviction of a world-leading group

- **Delve into new business areas**
  - Integrate logistics and energy networks
  - Make an all-out environmental response → expand use of lithium battery-powered forklift trucks and enhance business in fuel cells
  - Proactively enter into the market for unmanned material handling equipment and unmanned warehouses (nuclear power plants, etc.)

**Orders received / Net sales**

<table>
<thead>
<tr>
<th>FY2014 (Actual)</th>
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**Lithium battery-powered forklift**

**Fuel cell-powered forklift**
Accelerate PMI at Primetals Technologies

1 Improve business structure

- **Reorganize business segments**
  - Consolidate and reorganize from 26 to 9 divisions (reorganization completed April 1, 2016)

- **Consolidate and reorganize Global functions**
  - Consolidate and reorganize from 10 to 7 segments (reorganization completed April 1, 2016)

- **Reorganize group companies**
  - Enhance customer satisfaction through consolidation of resources

- **Promote PMI**
  - Optimization from approx. 8,000 employees to approx. 7,000
  - Reduce SG&A and R&D expenses
  - Achieve optimal workforce scale
  - Cost reduction

2 Strengthen project management and sales functions

**Strengthen project management**
- Nominate CPO (Chief Project Officer)
- Establish organization dedicated to specific project management

**Unify sales functions and Reorganize sales base structure**
- Single authority through nomination of CSO (Chief Sales Officer)
- Nominate Area CSO
3-1. Independently Managed JVs ② Primetals Technologies

**Business environment**

**Market scale / trend**
- Global market scale contracted from approx. 2.4 trillion yen in FY2014 to approx. 2 trillion yen in FY2015.
- Recovery is projected in the mid & long term, but it will take considerable time.

**Market share, competitive status**
- Share in 2014: 11% (own data)
- Fierce competition to win the limited number of pre-projects available

**PT's competitive superiority**
- Capability to respond market needs as the portfolio full-liner from upstream (blast furnace) to downstream (galvanizing line)
- Market presence through utilization of global business bases (24 countries)

**Basic management policies**
- Meet the ever-increasing customer needs for value chain by providing state of the art technologies, high quality products and life cycle services.
- Accelerate integration synergies and secure position of the world leader in metals machinery plant solution provider.

**Orders received / Net sales**

* FY 2014 include impact from integration with Siemens VAI (3 months)

- Orders received
- Net sales

<table>
<thead>
<tr>
<th></th>
<th>FY2014 (Actual)</th>
<th>FY2015 (Actual)</th>
<th>FY2016 (Target)</th>
<th>FY2017 (Target)</th>
</tr>
</thead>
</table>

**Business strategies**

- **Promote the following strategies as core measures to expand business scale and strengthen profitability**
  1. Strengthen profitability and competitiveness through further reductions in SCM costs
  2. Promote optimal design for cost reduction by decrease of equipment weight
  3. Expand electrical and automation businesses (strengthen sales promotion in the Japanese market; penetration into business other than metal plants)
  4. Strengthen the financial structure through introduction of an asset management program
  5. Secure profitability through assured project execution (strengthen project management; prevent reoccurrences of non-conformance cost/claims; reflect lessons learned before contracts)
  6. Accelerate initiatives toward expanding servicing business and strengthen profitability

- **Secure order intake with concerted effort**
  - For each pre-projects, analyze competitors (technology/cost competitiveness) and set bidding strategy
  - Enhance maintenance and service business (expand order intake for small/medium-scale revamp work and spare parts)
  - Introduce and expand sales of former Siemens’s upstream/non flat products into the Japanese market

- **Promote development of new technologies (including environmental technologies) based on customer needs and future technological trends**
  - ECO (Low Emission)
  - High Productivity & Quality Process
  - Smart Production (Industry4.0, Robot, Sensor)
3-2. Strengthen Growth Businesses

Machinery, equipment and Infrastructure Systems domain businesses

Accelerate PMI of independently managed JVs and strengthen growth businesses

**Independently managed JVs**

- MHI Forklift & Engine, Turbocharger Holdings **M-FET**
  - Forklift trucks
  - Engine
  - Turbocharger

  Expand scale and develop new businesses through integration synergies from 3 businesses

- **Primetals Technologies** **PT**
  - Metals machinery

  Reduce costs through PMI acceleration, and strengthen sales structure

**Growth businesses**

- Compressor
- Environmental systems
- Air-Conditioning & Refrigeration Systems
- Mechatronics system machinery, ITS
- Machine tool

Expand servicing operations
Expand overseas business
Promote thermal solutions business
Expand product mix by adding ITS business
Expand solutions business

**Restructured operations**

Revitalize business through collaboration with other companies

- **Agricultural machinery** (Mitsubishi Mahindra Agricultural Machinery)
  - Globalize business through synergies with Mahindra

- **Industrial cranes** (Sumitomo Heavy Industries Material Handling Systems)
  - Expand through partner’s business

- **Bridges** (Miyaji engineering group)
  - Achieve profitability and orders expansion
3-2. Strengthen Growth Businesses

Business environment

Market scale / trend
Both IOCs and NOCs are paring down investments due to the drop in oil prices.

![Market scale / trend chart]

- Shrinkage of market
- Growth in the long term

Basic management policies

Secure significant business expansion and high profits, to successfully compete in the global market

- Improve Japanese and U.S. production/service structures
- Expand service business ratio

Orders received / Net sales

<table>
<thead>
<tr>
<th>Year</th>
<th>Orders received</th>
<th>Net sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2014</td>
<td>0.0</td>
<td>5.0</td>
</tr>
<tr>
<td>FY2015</td>
<td>5.0</td>
<td>6.0</td>
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<tr>
<td>FY2016</td>
<td>10.0</td>
<td>7.0</td>
</tr>
<tr>
<td>FY2017</td>
<td>15.0</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Business strategies

- **Build up track record and expand market share in oil & gas**
  - Forge collaborative structures with major players liaising with Oil & Gas Business Development Dept. (Strengthen Houston sales base)
  - Respond as package incorporating gas turbine (MHPS H-100) for LNG

- **Strengthen competitiveness and further increase market share in chemical plant business**
  - Maintain top market share in ethylene/fertilizer/methanol by strengthening competitiveness through application of world’s shortest delivery method (30% reduction in lead time)

- **Strengthen sources of stable earnings through expansion of service business (net sales ratio: 40%)**

Operations at U.S. production base launched in April 2015, processing facility completed in June 2016

- **Strengthen structures to achieve global growth**
  - Establish tri-polar (Japan/U.S./Europe) global business structure.
  - Establish local subsidiary in Brazil (MCOB) and streamline servicing base in Saudi Arabia.
  - Improve and enhance efficiency of business processes through introduction of global standards systems.
3-2. Strengthen Growth Businesses

② Environmental systems

**Business environment**

**WtE : Waste-to-Energy**

**Market scale / trend**
- Domestic market for waste incineration plants is holding steady; biomass energy market is expanding.
- In overseas, WtE market is expanding in China, Southeast Asia, etc.

**Market share, competitive status**
- Markets are being developed aggressively: in Japan, by Hitachi Zosen, JFE Engineering and Takuma; overseas, by Keppel Seghers, etc.
- MHI’s domestic market share is near 10%, approaching shares of Hitachi Zosen and JFE Engineering.

**Competitive superiority**
- In waste incineration plants, MHI has a portfolio of technologies in stoker furnaces and gasification-and-melting furnaces.
- MHI also has high-efficiency, stable WtE plant design capability leveraging the Company’s comprehensive abilities.

**Orders received / Net sales**

- Orders received
- Net sales

<table>
<thead>
<tr>
<th>FY2014 (Actual)</th>
<th>FY2015 (Actual)</th>
<th>FY2016 (Target)</th>
<th>FY2017 (Target)</th>
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</table>

**Basic management policies**

Achieve a continuously developing company through further strengthening of domestic businesses, expansion of overseas businesses, and business diversification.

**Business strategies**

- **Further strengthen domestic businesses**
  1. Initiatives into private-sector businesses and new business areas
     - Primarily through collaboration between MHI Nuclear division and general contractors, participate in decontaminated waste disposal, interim storage facilities and reactor decommissioning.
     - In response to expansion of the feed-in tariff (FIT) market, make moves in the wood biomass power generation and torrefaction businesses.

- **Expand overseas businesses**
  1. Proactively participate (including EPC and business investment) in overseas PPP projects, especially in Southeast Asia, with a view toward business participation also.
  2. Undertake full-scale initiatives into overseas servicing business ⇒ Proactively propose life extension, large-scale improvement, or maintenance of previously delivered plants.

- **Diversify businesses**
  1. Further enhance and strengthen waste treatment and WtE technology portfolios, and grow into the provider of the best solutions in waste energy.

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Broad-based association of local municipal offices in central Iwate Prefecture/ Iwate central Clean Center 182t/day (91t/day × 2 units) Completed Sep. 2015

Singapore Government National Environment Agency/TUAS-SOUTH Completed Mar. 2000 4,320t/day (720t/day × 6 units)
3-2. Strengthen Growth Businesses ③Air-Conditioning & Refrigeration Systems

**Business environment**

**Market scale / trend**
Gross demand for air-conditioning & refrigeration systems worldwide is close to 20 trillion yen, and expansion is expected to continue through the long term amid environment protection moves (energy conservation, reduction of CO2 emissions), etc.

**Market share, competitive status**
MHI has the top domestic market share in refrigeration systems.

**Competitive superiority**
- MHI possesses unrivaled technologies in high-efficiency heat pumps and rotors, based on its world-class energy and environment technologies.
- MHI can propose total systems in collaboration with other products in the Machinery, Equipment & Infrastructure domain.
- World’s No.1 product lineup responding to customer needs (Centrifugal chiller/heat-pump water heaters, low/high temperature systems, stationary/mobile systems)

**Basic management policies**
- Grow the thermal solutions business, reduce energy use and CO2 emissions, and contribute to use of unutilized energy
- Pursue stronger earning capability through growth of overseas businesses and servicing sales, and enhanced management efficiency

**Orders received / Net Sales**

<table>
<thead>
<tr>
<th></th>
<th>FY2014 (Actual)</th>
<th>FY2015 (Actual)</th>
<th>FY2016 (Target)</th>
<th>FY2017 (Target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orders received</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net sales</td>
<td></td>
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</tr>
</tbody>
</table>

**Business strategies**

- **Expand thermal solutions business** (business expansion in refrigeration/cold storage equipment and high-temperature heat pumps)
  - Improve lineups of refrigeration/cold storage equipment and high-temperature heat pumps; strengthen engineering and after-sale servicing capabilities.
  - Improve added value through integrated control systems, including peripheral equipment, using IoT.
  - Expand sales of heat-pump water heaters through collaboration with a major European boiler manufacturer (Atlantic Group)

- **Expand and strengthen global business**
  - Launch high-performance, low-GWP refrigerant products (air-conditioning systems, centrifugal chillers, water heaters) responding to new coolant standards
  - Order received from the Middle East for a turbo chiller for one of the world’s largest wide-area air-conditioning systems; sales expansion to continue in Asia and the Middle East.
  - Strengthen the refrigerated transport equipment (truck refrigeration) business in Europe and Asia (launch new products, enhance sales/servicing networks)

- **Enhance management efficiency**
  - To achieve agile management and decision making to respond to global market, AC&R business will be transferred to MHI Thermal Systems (Oct. 1st 2016).

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**Refrigeration/heating capacity (kW)**

<table>
<thead>
<tr>
<th>Temperature (℃)</th>
<th>Refrigeration/cold storage</th>
<th>Centrifugal chiller</th>
</tr>
</thead>
<tbody>
<tr>
<td>-100</td>
<td>PAC</td>
<td>RAC</td>
</tr>
<tr>
<td>0</td>
<td>refrigerated transport (truck refrigeration) technology</td>
<td>refrigerated transport (truck refrigeration) technology</td>
</tr>
<tr>
<td>100</td>
<td>High temperature heat-pump technology</td>
<td>High temperature heat-pump technology</td>
</tr>
</tbody>
</table>

**Heat-pump chiller technology**
- Centrifugal chiller delivering world-class energy savings through adoption of new low-GWP refrigerant
- "EXCEEDHYPER" series packaged air-conditioner featuring one of the industry’s highest levels of energy efficiency through the adoption of R32 refrigerant
- Substantial energy savings through upgrade from building-use gas-fired air-conditioning system and boiler for industrial use

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3-3. Restructuring and Integrating Small/Medium Scale Businesses

Machinery, equipment and Infrastructure Systems domain businesses

Accelerate PMI of independently managed JVs and strengthen growth businesses

**Independently managed JVs**

- MHI Forklift & Engine, Turbocharger Holdings **M-FET**

  - **Forklift trucks**: Expand scale and develop new businesses through integration synergies from 3 businesses
  - **Engine**
  - **Turbocharger**

**Primetals Technologies PT**

- **Metals machinery**: Reduce costs through PMI acceleration, and strengthen sales structure

**Growth businesses**

- **Compressor**
- **Environmental systems**
- **Air-Conditioning & Refrigeration Systems**
- **Mechatronics system machinery, ITS**
- **Machine tool**

**Restructured operations**

Revitalize business through collaboration with other companies

**Agricultural machinery**
(Mitsubishi Mahindra Agricultural Machinery)

- Globalize business through synergies with Mahindra

**Industrial cranes**
(Sumitomo Heavy Industries Material Handling Systems)

- Expand through partner’s business

**Bridges**
(Miyaji engineering group)

- Achieve profitability and orders expansion

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3-3. Restructuring and Integrating Small/Medium Scale Businesses

- Globalize growth businesses and accelerate PMI
- Expand scale and strengthen earning capability of whole domain through business structural reforms effected by promoting measures aimed at reform and small/medium scale businesses

- Growth businesses: Expand scale through M&A's; improve agility through conversion to business companies
- Reform, small/medium scale businesses: Pursue synergies through development and consolidation outside the Group, through collaboration with other companies

Machinery, Equipment & Infrastructure Domain

- Siemens-VAI
- UniCarriers Holdings
- PT: Primetals Technologies, M-FET: Mitsubishi Heavy Industries Forklift & Engine Turbocharger Holdings, Ltd, MCO: Mitsubishi Heavy Industries Compressor, MHIEC: Mitsubishi Heavy Industries Environmental & Chemical Engineering Co., LTD, MHI-MS: Mitsubishi Heavy Industries Mechatronics Systems, Ltd., ITS: Intelligent Transport Systems

Circle size indicates business scale.

PT: Primetals Technologies, M-FET: Mitsubishi Heavy Industries Forklift & Engine Turbocharger Holdings, Ltd, MCO: Mitsubishi Heavy Industries Compressor, MHIEC: Mitsubishi Heavy Industries Environmental & Chemical Engineering Co., LTD, MHI-MS: Mitsubishi Heavy Industries Mechatronics Systems, Ltd., ITS: Intelligent Transport Systems

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3-3. Restructuring and Integrating Small/Medium Scale Businesses

Streamlining of SBUs and organization through restructuring

<table>
<thead>
<tr>
<th>FY2013 (Before domain establishment)</th>
<th>FY2015 (Now)</th>
<th>FY2017 (2015 Business Plan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metals machinery</td>
<td>Metals machinery</td>
<td></td>
</tr>
<tr>
<td>Material handling system</td>
<td>Material handling system</td>
<td></td>
</tr>
<tr>
<td>Engine</td>
<td>Engine</td>
<td></td>
</tr>
<tr>
<td>Turbocharger</td>
<td>Turbocharger</td>
<td></td>
</tr>
<tr>
<td>Compressor</td>
<td>Compressor</td>
<td></td>
</tr>
<tr>
<td>Environmental systems</td>
<td>Environmental systems</td>
<td></td>
</tr>
<tr>
<td>AC&amp;R</td>
<td>AC&amp;R</td>
<td></td>
</tr>
<tr>
<td>Machine tool</td>
<td>Machine tool</td>
<td></td>
</tr>
<tr>
<td>Mechatronics system</td>
<td>Mechatronics system</td>
<td></td>
</tr>
<tr>
<td>Hydraulics &amp; Machinery</td>
<td>Hydraulics &amp; Machinery</td>
<td>(integrated with Mechatronics system)</td>
</tr>
<tr>
<td>Industry and Precision Intrument</td>
<td>Industry and Precision Intrument</td>
<td>(integrated with mechanical systems)</td>
</tr>
<tr>
<td>Advanced mechanical systems</td>
<td>CAC</td>
<td></td>
</tr>
<tr>
<td>Machinery/Equipment</td>
<td>Machinery/Equipment</td>
<td></td>
</tr>
<tr>
<td>Bridge (collaboration with other companies)</td>
<td>MHI Parent</td>
<td>Business companies</td>
</tr>
<tr>
<td>Farm machinery (collaboration with other companies)</td>
<td>16 SBU</td>
<td>13 SBU</td>
</tr>
<tr>
<td>16 SBU</td>
<td>13 SBU</td>
<td></td>
</tr>
</tbody>
</table>

Further streamlining

(Number of SBUs)

[Organizational] Enhance agility through total conversion to business companies

Trend of sales/income structure by business position

**Net sales**

*(in billion yen)*

- Low profitable businesses
- Reform businesses
- Grow/ Maintain businesses

**Operating income**

*(in billion yen)*

- Margin
- Reform businesses
- Grow/ Maintain businesses
- Low profitable businesses
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       · Metals machinery
   3-2. Growth Businesses
       · Compressor, Environmental systems, Air-conditioning & Refrigeration system
   3-3. Restructuring and Integrating Small/Medium Scale Businesses

4. Summary
4. Summary

Medium/long range business development goals

Expand and strengthen individual businesses through further growth of core businesses and development of next-generation businesses

1. Accelerate PMI of independently managed JVs and harvest results
- Expand business scale and develop new businesses through M-FET’s integration synergies
- Strengthen business through completion of PMI at Primetals Technologies

2. Further strengthen growth businesses
- Expand scale and earnings through response to overseas EPC and servicing business
- Promote solutions businesses through packaging, including peripheral equipment
- Expand and enhance after-sale servicing operations through customer response employing IoT
- Proactively participate in overseas infrastructure investments
- Expand and strengthen businesses through alliances