

# Results for the Fiscal Year Ended March 31, 2015 Management Review

May 8, 2015

### **IHI** Corporation

Tamotsu Saito, President and Chief Executive Officer

## **Contents**



1.	Management Overview	. 3
	Review of 2 <sup>nd</sup> Year of Group Management Policies 2013	4
	Review of Fiscal 2014.	7
	Earnings Outlook for Fiscal 2015	8
	Numerical Targets for Group Management Policies 2013	10
	Outlook for Reaching Numerical Targets of Group Management Policies 2013	11
	Materializing Three Tsunagu Growth	.12
	Managing Risks of Major Investments and Orders	.13
	Reinforcing Portfolio Management	15
2.	Progress of Group Management Policies 2013	. 17
	Progress in Large Overseas Projects	18
	Resources, Energy and Environment	21
	Social Infrastructure and Offshore Facilities	23
	Industrial Systems and General-Purpose Machinery	25
	Aero Engine, Space and Defense	27
	New Business Development	. 29



## **Management Overview**

## Review of 2<sup>nd</sup> Year of Group Management Policies 2013 (1)



	FY2013 Results	FY2014 Results	FY2015 Target	Initial FY2015 Target
Net Sales	¥1,304.0 billion (¥99.05/US\$)	¥1,455.8 billion (¥110.31/US\$)	¥1,580.0 billion (¥115/US\$)	¥1,400.0 billion (¥80/US\$)
Operating Income	¥53.2 billion (¥99.05/US\$)	¥63.2 billion (¥110.31/US\$)	¥90.0 billion (¥115/US\$)	¥70.0 billion (¥80/US\$)
Total Investment (in plant and equipment, R&D, investments and loans)	¥108.1 billion (Investment in plant and equipment ¥54.6 billion R&D ¥33.5 billion Investments and loans ¥20.0 billion)	¥114.8 billion (Investment in plant and equipment ¥63.9 billion R&D ¥37.0 billion Investments and loans ¥13.9 billion)	175.0 billion (Investment in plant and equipment ¥90.0 billion R&D ¥45.0 billion Investments and loans ¥40.0 billion)	FY2013–2015 total: ¥400.0 billion (Investment in plant and equipment ¥190.0 billion R&D ¥110.0 billion Investments and loans ¥100.0 billion)
D/E Ratio	0.99	1.14	0.99	1.2 or less
ROIC	5.3%	5.8%	8.0%	6.5%
ROE	10.5%	2.6%	13.4%	-
Dividends	¥6 per share	¥6 per share (¥3 interim, ¥3 year-end) (planned)	¥6 per share (¥3 interim, ¥3 year-end) (planned)	¥6 per share

<sup>\*</sup> D/E ratio = Interest-bearing debt / Total net assets

#### **Assessment**

- Progressed toward growth goals during second year of Group Management Policies 2013 but profitability deteriorated in some major projects
  - ✓ While net sales were in keeping with initial forecasts, operating income (the second highest on record) and operating margin were lower than initially forecast
  - ✓ Posted extraordinary losses on Brazilian investments. Will endeavor for foreseeable future to minimize such losses
- Focused capital and R&D investments on businesses offering growth potential
- Attained D/E ratio target for second straight year

<sup>\*</sup> ROIC (Return On Invested Capital) = (Operating income + Interest and dividend income) after tax / (Owners' equity + Interest-bearing debt)

## Review of 2<sup>nd</sup> Year of Group Management Policies 2013 (2)



## 1 Strengthening and deploying shared Group functions

out on guild ining and deproying on a roap ranotions							
The Three Tsunagu	Action	Tasks for FY2015					
Solutions/Enginee ring	<ul> <li>Entrenched solutions sales and expanded projects</li> <li>Projects progressed steadily</li> </ul>	<ul> <li>Roll out successful approaches throughout Group</li> <li>Contribute to growth by realizing projects</li> </ul>					
Intelligent Information Management	<ul> <li>Expanded adoptions of common control system platform/common remote maintenance platform</li> <li>Leveraged sensing-related business and ICT to start upgrading manufacturing and services</li> </ul>	<ul> <li>Maintain systems and secure resources to acquire and analyze big data</li> <li>Leverage sensing technologies and ICT to create new business models</li> </ul>					
Global Business	<ul> <li>Built multilayered networks with customers, particularly in key countries</li> <li>Regional headquarters conducted regional internal audits</li> </ul>	<ul> <li>Build business models that match regional needs and reinforce required marketing functions</li> <li>Set up human resources development and optimal placement framework</li> </ul>					

#### 2 Secure orders stably

#### Accurately assessed project progress, strengthened ties with customers, reinforced intragroup collaboration, had senior management promote sales, and conducted forums in various countries

Action

#### Posted ¥1,664.3 billion in orders received, with overseas order ratio reaching 50%

#### Tasks for FY2015

- Manage projects in keeping with orders
- Identify community-based needs
- Increase accuracy of estimates

## Review of 2<sup>nd</sup> Year of Group Management Policies 2013 (2)



#### 3 Enhance Profit Structure

#### Action

Began transforming business models in several areas, one step being to expand overseas power systems plant maintenance

#### Tasks for FY2015

 Collaborate using shared Group functions to accelerate efforts to transform business models

#### 4 Allocate resources strategically

#### Action

- Allocated 70% of total investments businesses with growth potential
- Undertook activities to improve cash flow, using the cash conversion cycle as a benchmark
- Reformed Group headquarters businesses (consolidating back office operations within Group Business Process Platform Div.)

#### Tasks for FY2015

- Prioritize allocations to business with growth potential
- Build investment capacity through cash flow improvement initiatives
- Reinforce strategic functions of Group headquarters
- Properly attract, cultivate, and deploy global talent

#### 5 Improve manufacturing capabilities

#### Action

- Pushed ahead with I-Project, a companywide business improvement initiative, to enhance operational quality and productivity
- Leveraged ICT technologies to improve efficiency of plants and construction sites and enhanced safety standards

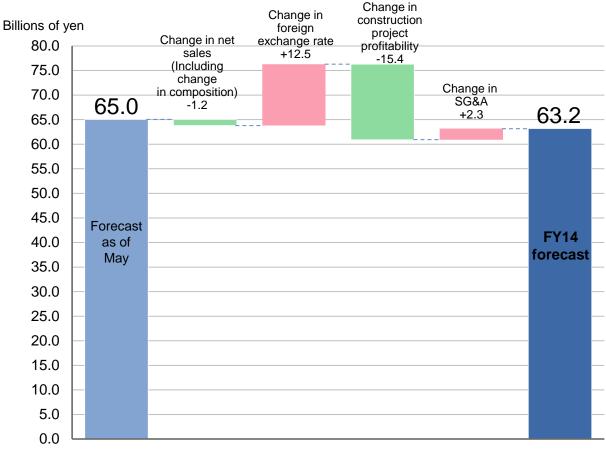
#### Tasks for FY2015

- Draw on I-Project to improve groupwide technological capabilities and help improve performance
- Increase open innovation through IHI Tsunagu Lab

#### **Review of Fiscal 2014**



Analysis of of operating income fluctuations (compared with forecast as of May 2014)



- Forecast as of May 2014: Using official announcement of May 8, 2014 (assumed exchange rate of ¥100/US\$)
- Exchange rate assumption for FY14 forecasts: ¥110.31/US\$

#### Forecast assumptions

- Change in foreign exchange rate
  - Resources, Energy and Environment
  - Aero Engine, Space and Defense
- Positive or negative changes in construction profitability
  - Negative: Social Infrastructure and Offshore Facilities (bridges)
  - Positive: Aero Engine, Space and Defense (civil jet engines)
- Change in SG&A
  - Aero Engine, Space and Defense

## Earnings Outlook for Fiscal 2015 (1)



Analysis of change in operating income forecasts (compared with initial target)



- Forecast as of May 2014: Using official announcement of November 2, 2012 (assumed exchange rate of ¥80/US\$)
- Exchange rate assumption for FY14 forecasts: ¥115/US\$

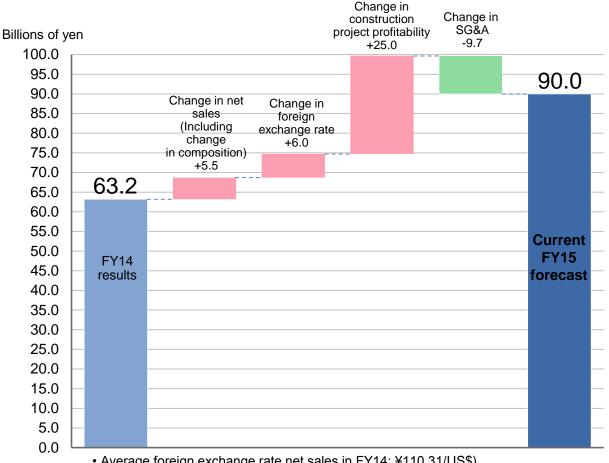
### Change from initial target

- Lower yen
- Deteriorating profitability in Social Infrastructure and Offshore Facilities

## **Earnings Outlook for Fiscal 2015 (2)**



Analysis of change in operating income forecasts (compared with Fiscal 2014 results)



- Average foreign exchange rate net sales in FY14: ¥110.31/US\$)
- Exchange rate assumption for current FY15 forecast: ¥115/US\$

#### Change from FY14 results

- Higher net sales on construction progress in large overseas projects
- Improved construction profitability and rebound from deteriorated profitability in FY14
- Increased SG&A expenses owing to greater R&D and other costs

## Numerical Targets for Group Management Policies 2013 (Net Sales, Operating Income)



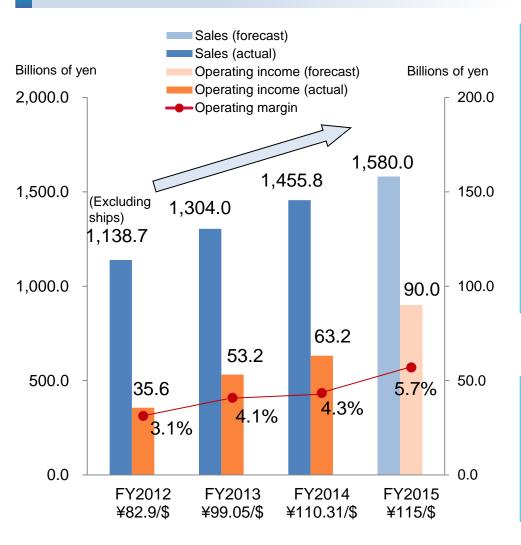
(Billions of yen)

									(5	ons or you
	Net Sales				Operating Income					
			FY2015					FY2015		
	FY2013 (Results)	FY2014 (Results)	Initial Targets	Outlook as of May 2014	Current outlook	FY2013 (Results)	FY2014 (Results)	Initial Targets	Outlook as of May 2014	Current outlook
Resources, Energy and Environment	344.0	415.3	440.0	490.0	480.0	11.6	24.0	21.0	29.0	31.0
Social Infrastructure and Offshore Facilities	150.3	188.6	160.0	170.0	180.0	2.3	-3.2	10.0	11.0	7.0
Industrial Systems and General-Purpose Machinery	397.8	411.7	430.0	420.0	430.0	15.1	10.2	23.0	17.0	14.0
Aero Engine, Space and Defense	406.0	434.8	380.0	430.0	470.0	36.7	39.5	19.0	33.0	43.0
Others	58.9	62.8	60.0	70.0	70.0	1.9	1.2	1.0	2.0	2.0
Adjustment	-53.2	-57.5	-70.0	-50.0	-50.0	-14.4	-8.6	-4.0	-2.0	-7.0
Total	1,304.0	1,455.8	1,400.0	1,530.0	1,580.0	53.2	63.2	70.0	90.0	90.0
Exchange rate	¥99.05/\$	¥110.31/\$	¥80/\$	¥100/\$	¥115/\$	¥99.05/\$	¥110.31/\$	¥80/\$	¥100/\$	¥115/\$

## Prospects for Reaching Numerical Targets for Group Management Policies 2013



#### Results and outlook



#### **Key growth initiatives for fiscal 2015**

- Produce results through shared Group functions collaboration
- Stably secure orders that help enhance customer value
- Accelerate reforms to create highly profitable structure through business model innovations
- Generate growth by allocating management resources
- Reform business processes to generate value

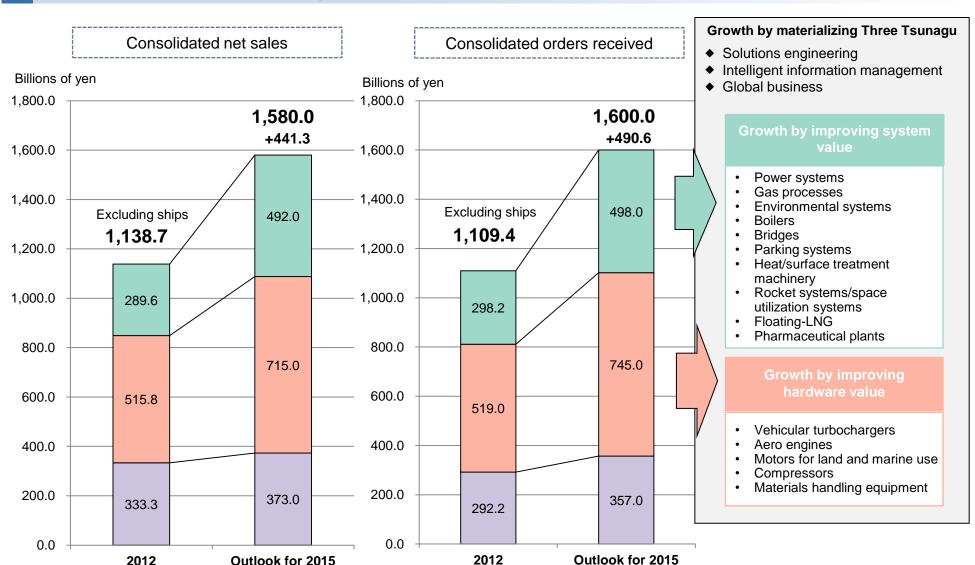


- Materialize growth through Three Tsunagu
- Manage risks of large investments and orders
- Reinforce portfolio management

## Materializing Three Tsunagu Growth



#### **Growth under Group Management Policies 2013**



## Managing Risks of Major Investments and Orders (1)



#### Deteriorating profitability in offshore structure projects in Fiscal 2014 and responses

- Main causes of profit deterioration
  - Profitability worsened on work on first drillship for Singapore because of numerous factors, including design change and drawing delays
  - Aichi Works incurred operational losses owing to design changes and drawing delays

#### Responses

- Improved estimate process and stepped up pre-order screening
- Reinforced project management structure



Aichi Works



Drillship

## Managing Risks of Major Investments and Orders (2)

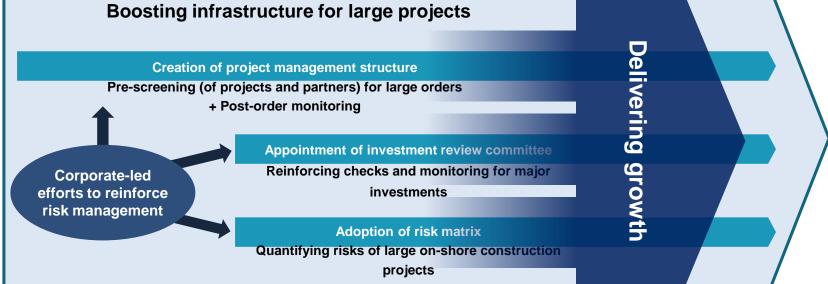


#### Strengthening risk management

- We have constantly enhanced the risk control technique approach (shown below) that we set up in 2007, notably by improving estimate procedures and incorporating partner assessments in pre-order screenings
- For orders and investments exceeding certain amounts, we created a monitoring structure in which specialist departments assess whether plans are appropriate
- We repeat assessments to reinforce monitoring. We will roll out improvements that build on our experiences in fiscal 2014

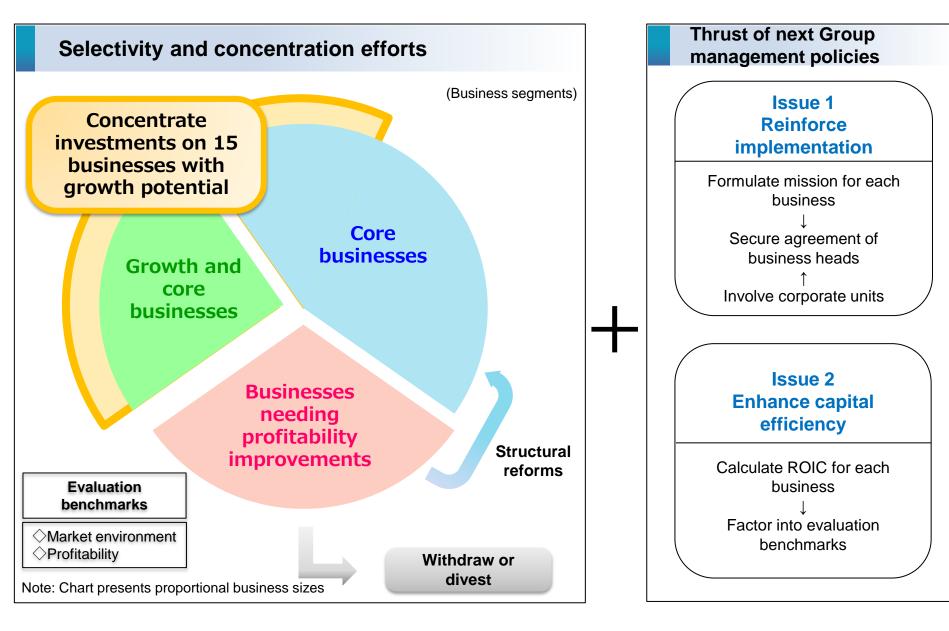
Support framework for large projects

Boosting infrastructure for large projects



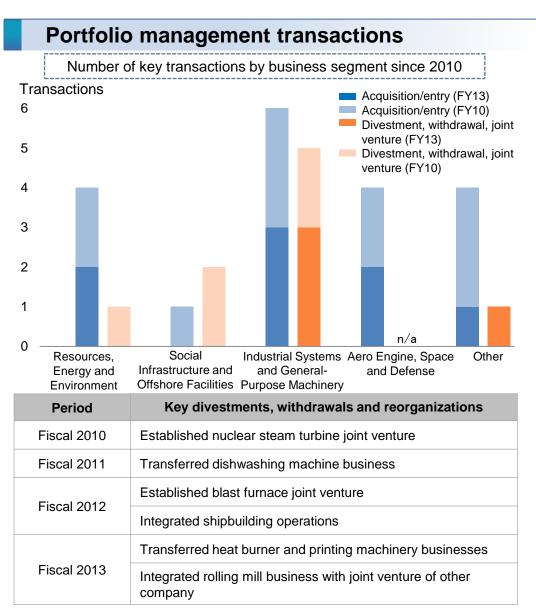
## Reinforcing Portfolio Management (1)

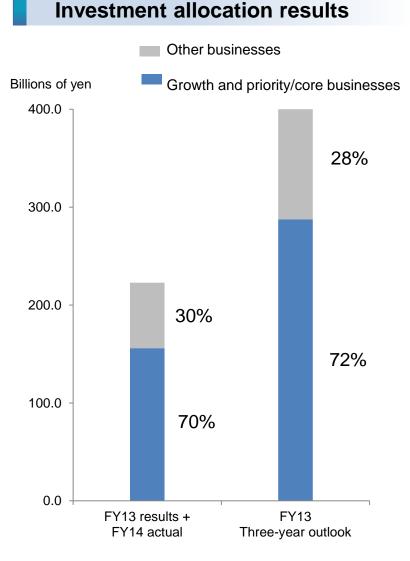




## Reinforcing Portfolio Management (2)









## **Progress of Group Management Policies 2013**

## **Progress in Large Overseas Projects (1)**



#### Dominion Cove Point LNG Expansion project









IHI E&C International Corporation and Kiewit Energy Company, have entered into an engineering, procurement and construction contract to develop the Cove Point liquefied natural gas facility located on the Chesapeake Bay in Lusby, Maryland. The IHI/Kiewit joint venture will design, construct, commission and start up the estimated 5.25 million tonnes per annum liquefaction facility.



(Groundbreaking Ceremony)

(Sound wall drilled-shaft installation)

#### **Key milestones**

April 2013: Contract award

September 2013: DOE authorization to export to non-

Free Trade Countries

September 2014: FERC Order received & accepted March 2015: Groundbreaking Ceremony held

Late 2017: Substantial Completion and commencement of operations

#### **Current status (March 2015)**

- Engineering is approximately 80% complete
- Procurement of equipment is 96+% complete
- Equipment deliveries have started
- Key bulk materials contracts have been awarded; fabrication of piping and structural steel has begun
- · Subcontracts for early site activities have been awarded
- Underground construction activities are underway

Copyright © 2015 IHI Corporation All Rights Reserved.

## **Progress in Large Overseas Projects (2)**



#### Izmit Bay Crossing Bridge in Turkey



Artist's impression of Izmit Bay Crossing Bridge



Location of Izmit Bay Crossing Bridge



Completed main towers

On December 17, 2014, we erected the upper beams of the north and south main towers, completing their construction. In January 2015, we started constructing a catwalk between these towers for the erection of the main cables. On March 21, the tension rod linking the catwalk to the south main tower broke, with the catwalk falling into the sea. We apologize deeply to the Turkish people and many other stakeholders for the concern and disruption that this accident has caused. The IHI Group set up an emergency headquarters to investigate the accident, and is

Corporate Research and Development sent a team of structural and materials experts to the site to investigate structural and materials causes, while we are pushing ahead carefully with restoration.

doing its utmost to complete construction and regain trust.

#### **Project Overview**

- Type of bridge: Road suspension bridge
- Span: Approx. 3,000m
- Construction site: Izmit Bay, Turkey
- Total cost of contract: Approx. USD 1.1 billion (consortium of IHI Infrastructure Systems and Itochu Corporation)
- Areas of responsibility: Construction covering a full set of design, production and erection of superstructure and substructure of suspension bridge on a full turnkey basis

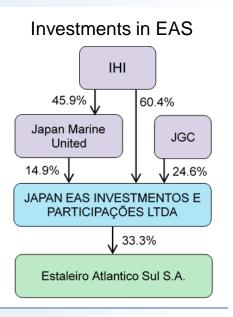
## **Progress in Large Overseas Projects (3)**



#### Estaleiro Atlântico Sul S.A. (EAS) in Brazil

#### Backdrop and purpose for investment in EAS

- In 2013, investments in offshore structures and plants rose amid increasing global demand for oil and natural gas. Brazil led the world in investing in offshore resources development.
- In 2013, EAS was the sole Brazilian shipyard able to construct offshore structures, with a solid order backlog and further growth potential amid plans to help build floating production storage and offloading vessels.
- IHI invested in EAS as part of Group Management Policies 2013, which we set up to accommodate social needs through offshore resources development. We responded to a request from Brazilian shareholders to invest in EAS, which was then positioned to offer solid investment returns.



#### **Assessment of current situation**

 Declining oil prices and a major corruption case involving Petrobras hurt the Brazilian economy recently. Corruption allegations in the press regarding an order for a drilling ship that IHI had agreed to invest in led banks to halt funding in Sete Brasil, which ordered the vessel. It thus became unclear whether outstanding payments to shipbuilders would be resolved, imperiling the cash flows of EAS and causing its financial position to deteriorate.

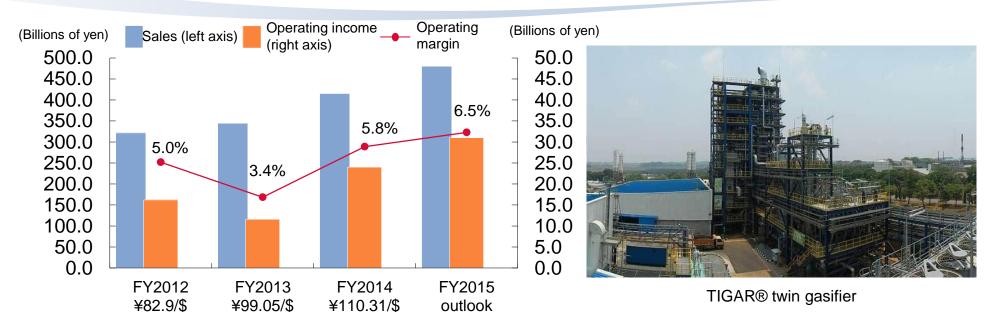


EAS shipyard

 Brazil could experience a prolonged political and economic downturn, making it necessary to obtain Brazilian government support and restore the financial structure of EAS.

## Resources, Energy and Environment (1)





#### Solid global progress and orders

- Awarded a contract in Morocco to supply Africa's first ultra-supercritical coal-fired boilers.
- Niigata Power Systems licensed its 28AGS series medium-speed gas engine generator to Korea's STX Engine.

¥115/\$

 Diesel United received an order for the X-DF, Japan's first low-speed two-stroke, dual-fuel marine engine to employ pre-mixed lean-burn combustion.

#### Accelerating development of eco-friendly, energy-efficient products

- Started demonstration operations with the TIGAR® twin gasifier, accelerating efforts to use lignite effectively.
- Completed the world's first integrated oxyfuel combustion and carbon dioxide capture demonstration at a power station as part
  of the Callide Oxyfuel Project.

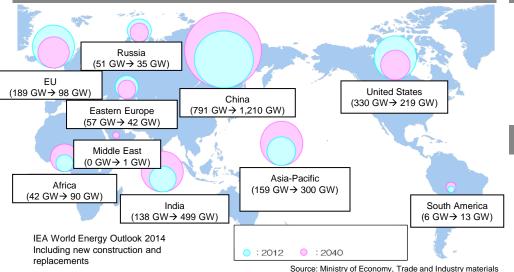
## Resources, Energy and Environment (2)



Growth factors for this business

#### **Coal-fired thermal power initiatives**

World coal-fired thermal power generation demand outlook

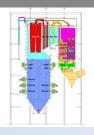


#### Acquisition to accelerate low-grade coal business



Acquired Steinmüller Engineering GmbH of Germany, which has numerous lignite-fired boiler technologies, to accelerate development of such boilers and swiftly enter this market.

#### Order for Africa's first ultra supercritical boilers

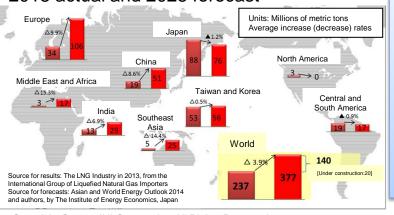


- ✓ Awarded a contract to supply two ultrasupercritical 693MW boilers for SAFI of Morocco thermal power project in Africa.
- ✓ New facilities will generate 3 million metric tons less carbon dioxide annually than conventional subcritical setups.

#### IHI's superior position in LNG tanks

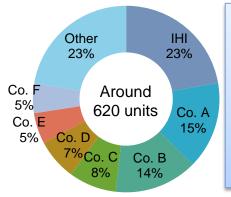
#### World LNG demand outlook

#### 2013 actual and 2025 forecast



World LNG demand increasing, reflecting higher Southeast Asian gas demand and European LNG imports to reduce reliance on Russia.

#### Global LNG tank market share

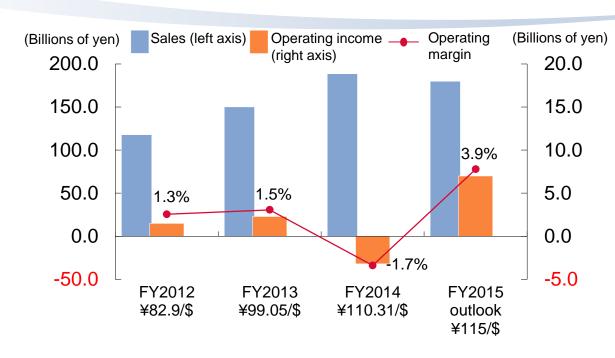


Number of LNG storage facility installation projects steadily increasing with LNG demand. IHI currently constructing 13 tanks for 8 projects (including in Japan, India, and Thailand).

(Including in Japan and abroad and including facilities under construction)

## **Social Infrastructure and Offshore Facilities (1)**







Nhật Tân Bridge

#### Full-scale involvement in marine businesses

- Began manufacturing IHI-SPB tanks for Floating LNG Storage and Regasification Unit for China's WIson Group.
- Equity method affiliate Japan Marine United received an order for large LNG carriers employing IHI-SPB tanks.

#### Globally cultivating large bridge and floodgate businesses

- Completed IHI Group's first Vietnamese plant, in Hai Phong. The facility will fabricate steel bridges and other structures.
- Nhật Tân Bridge opened as link between Noi Bai International Airport and Hanoi.
- Received floodgate pipe construction order for Nam Ngiep 1 Hydropower Project, the largest such initiative in Laos.

#### Smart social and urban infrastructure initiatives

 Completed and opened Toyosu Foresia, a large anti-seismic office complex with diverse disaster prevention capabilities constructed as part of a Toyosu area redevelopment project.

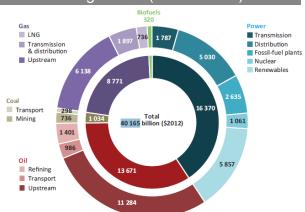
## Social Infrastructure and Offshore Facilities (2)



Growth factors for this business

#### Market potential of oil and gas offshore development

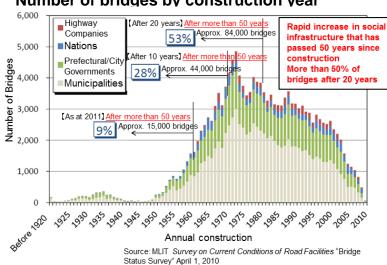
## Global energy investments for 2014 through 2035 (Source: IEA)



- ✓ Oil and gas development likely to shift from existing onshore and offshore gas fields to exploration, development, and production in highly challenging areas.
- ✓ The deep sea, Arctic, and other offshore sources account for about 40% of recoverable oil reserves. Oil and gas development investments from 2014 through 2035 should reach around \$17 trillion. This would include an estimated \$7 trillion in total offshore resources development investments.
- ✓ Japan has the world's sixth largest exclusive economic zone, offering strong market potential in terms of offshore resources development.

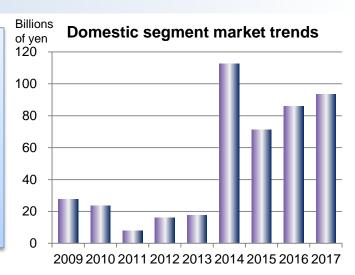
#### Domestic infrastructure market growth

#### Number of bridges by construction year



In domestic bridges, strong demand prospects for disaster prevention or mitigation investments in large upgrades in Tokyo

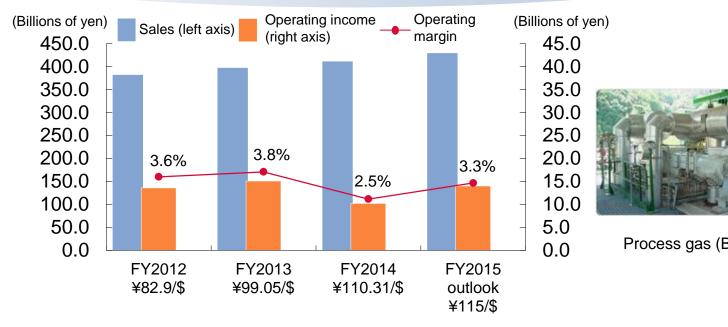
In segment businesses, demand set to increase in new infrastructural projects (including in peripheral ring road projects and the Linear Chuo Shinkansen).



Source: Survey by IHI Construction Materials Co., Ltd.

## **Industrial Systems and General-Purpose Machinery (1)**









Process gas (BOG) reciprocating compressors

#### **Expanding vehicular supercharger business**

- Total turbocharger production at plants worldwide reached 50 million units.
- Orders solid for new projects in North America, China, Thailand, Japan, Korea, and other countries.
- Established Clover Turbo to enter aftermarket for vehicular superchargers.

#### **Progress in compressor business**

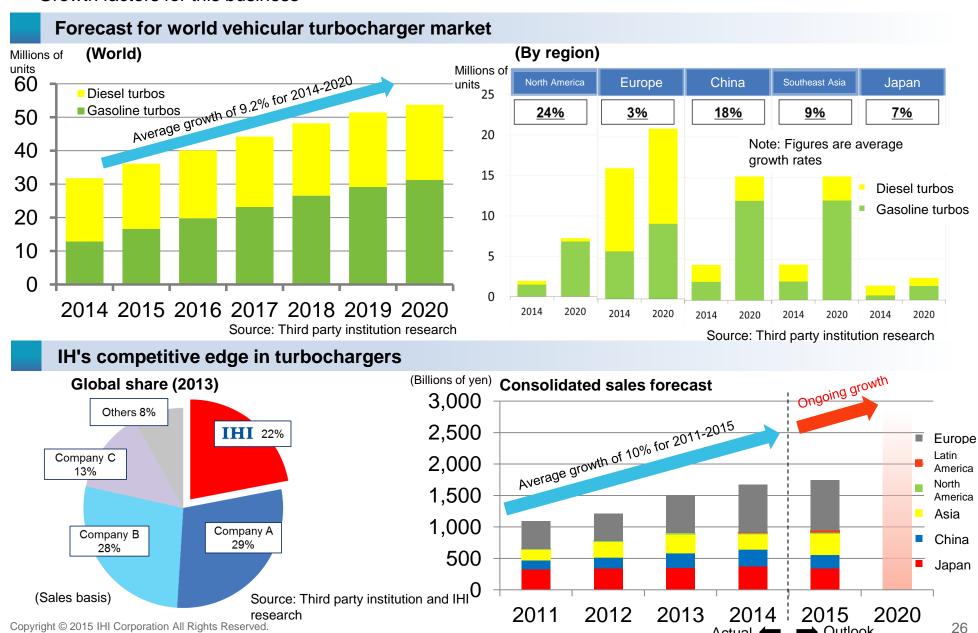
- Received orders in Europe and India for process gas reciprocating compressor.
- Developed upgraded model of GP series water-flooded oil free screw compressor.

## **Industrial Systems and General-Purpose Machinery (2)**



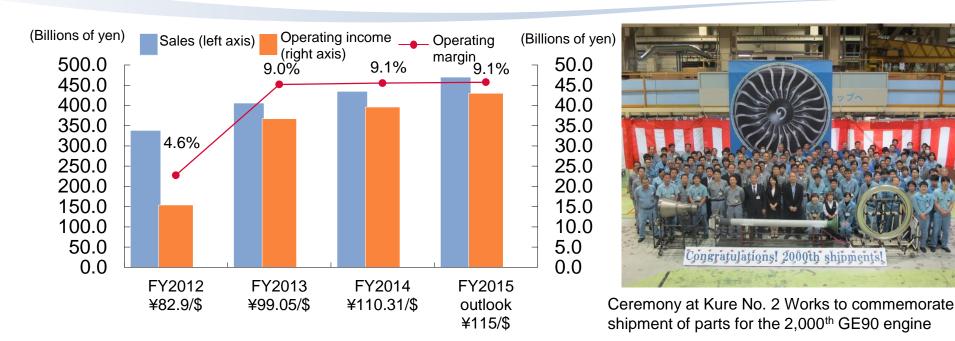
→ Outlook

Growth factors for this business



## Aero Engine, Space and Defense (1)





#### Robust civil aero engine demand

- Obtained type approval for PW100G-JM engine for Airbus A320neo.
- Cumulative parts shipments for GE90 engine, the world's most powerful turbofan engine, reached 2,000 units.
- Started joint research for JAXA's advanced Fan Jet Research Project to verify high-efficiency light fan turbine technologies.

#### **Expansion in aerospace**

IHI Aerospace Put Hayabasa 2 asteroid probe into orbit as part of program to develop a reentry capsule and an impacter for collecting samples from asteroids.

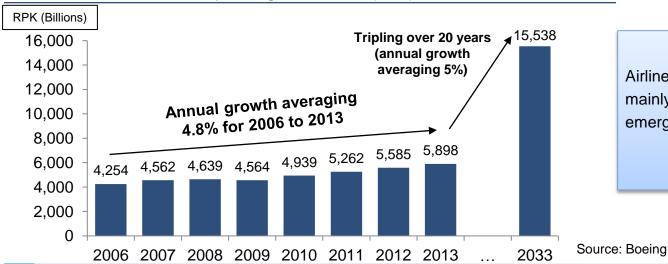
## Aero Engine, Space and Defense (2)



Growth factors for this business

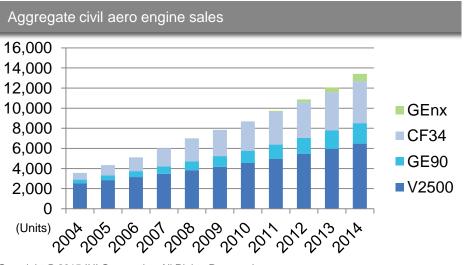
#### Global airline passenger traffic expanding solidly

Global revenue passenger kilometers (RPK): 2006 to 2033



Airline passenger volume to remain solid, mainly because of economic growth in emerging nations and rising populations.

Solid demand for civil aero engine programs involving IHI



Development and deliveries of engines from programs involving IHI Note: Number of units sold IHI Total represents number delivered to content number 1980's 1990's 2000's 2010's airframe makers and not number of units shipped from plants. sold engines PW1100G-JM 15% **GEnx** 15% 751 **CF34** 27% 4,156 **GE90** 9% 2,039 V2500 14% 6,469 (End of March 2015) Initial production Full-fledged production Parts and maintenance Development stages increases expansion

Participating in many best-selling programs, covering small to large engines

## **New Business Development (Current Major Initiatives)**



 Strengthen/accelerate creation of new businesses that can become growth/core businesses, centered on Corporate Business Development Division

#### **Exploring new business areas**

 Started collaborating with Draper Nexus, a cross-border venture capital firm based in Tokyo and Silicon Valley with a strong record in cultivating startup firms and began stationing staffers in Silicon Valley to explore new businesses, particularly in the life sciences, food, and water fields in keeping with Group Management Policies 2013.

#### **Biofuel from algae**

- Established IHI NeoG Algae with Gene & Gene Technology and Chitose Laboratory (formerly, Neo-Morgan Laboratory) to manufacture and sell biofuel by mass cultivating the fast-growing Botryococcus braunii algae.
- In fiscal 2013, successfully grew biofuel algae outdoors at 100 m² part of Yokohama Works.
- In fiscal 2015, completed and started operations at a 1,500m<sup>2</sup> biofuel algae pond at a test facility (see photo on right) in Kagoshima Prefecture for a NEDO-commissioned project.



#### Agricultural information service

- Leveraging Field Touch, an agricultural production support system that focuses on crop and environmental sensing, to supply information on trial basis to monitoring producers in the Tokachi Obihiro area.
- Exhibited at 33<sup>rd</sup> International Agricultural Machinery Show in Obihiro in July 2014 and at Agro Innovation 2014 (see photo on right) in November.



#### Manufacturing active pharmaceutical ingredients for influenza vaccines

- Collaborating with UMN Pharma, whose cell culture technology makes it possible to manufacture vaccines in one-third the time of conventional methods. Using cell culture technology to make active pharmaceutical ingredients for influenza vaccines. Sharing findings with IHI Group's pharmaceutical plant operations and seeking advances for business.
- Completed test production program at UNIGEN Gifu plant. UMN Pharma and Astellas Pharma attained the primary endpoint in Phase III clinical trials of a seasonal influenza vaccine, applying for marketing and approval in May 2014.



Forward-looking figures shown in this material with respect to IHI's performance outlooks and other matters are based on management's assumptions and beliefs in light of the information currently available to it, and therefore contain risks and uncertainties. Consequently, you should not place undue reliance on these performance outlooks in making judgments. IHI cautions you that actual results could differ materially from those discussed in these performance outlooks due to a number of important factors. These important factors include political environments in areas in which IHI operates, general economic conditions, and the yen exchange rate including its rate against the US dollar.