

Management Review of FY2020 Results and Progress with Project Change

IHI

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IHI Corporation

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Overview of Project Change

• Positioning



• Project Change emphasizes: Management that embraces ESG values

Return to growth trajectory

Further strengthen earnings foundations
Expand lifestyle businesses

Overcome operating environment changes to drive value creation

Reallocate personnel
Pursue diversity and inclusion
Adopt new work practices

Financial strategies

Strengthen cash flow generation
Allocate funds optimally
Build solid financial position

Create growth businesses that address social issues

Materialize fulfilling lifestyles

Air transportation systems

Safe, comfortable, economical, and eco-friendly

Carbon solutions

Materialize carbon-free, circular economies and comfortable and secure decentralized communities

Become carbon-free

Maintenance and disaster prevention and mitigation

Develop robust, economically and eco-friendly social infrastructure

Prevent and mitigate disasters

Summary of First Year of Project Change

Goals

Return to growth trajectory

Create growth businesses

Optimize business portfolio and pursue sustainable growth

Situation assessment

Recognition

- Civil aviation demand recovery delayed, decarbonization and electrification accelerated
- Rapidly changing business environment and ongoing uncertainty about future

Results

- Except in Aero Engine, Space and Defense, lifecycle business revenues and earnings up on higher operating profit
- Establish structure and framework to create growth businesses (moves included setting up Strategic Technology Headquarters)

Issues

- Strengthen cash generation capabilities
- Swiftly create growth businesses
- Tackle risks and further business climate changes linked to business reforms

Operating Profit

FY2020 results

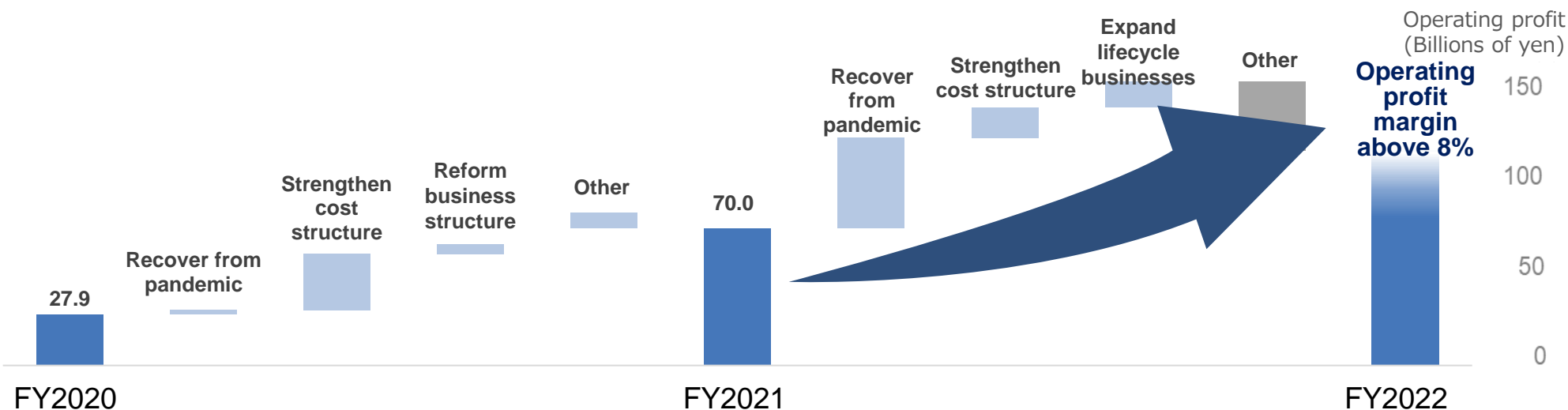
- Civil aero engine revenue and earnings plunged owing to pandemic
- Increased earnings on expanding lifecycle businesses and strengthening cost structure, principally in Resources, Energy and Environment

FY2021 forecasts

- Despite aviation demand recovery being slower than initially anticipated, reinforce revenue base to generate ¥70 billion in operating profit

	FY2020	FY2021 forecasts
Revenue	¥1,112.9 billion	¥1,180 billion
Operating profit	¥27.9 billion	¥70.0 billion
Operating profit margin	2.5%	5.9%
Profit attributable to owners of the parent	¥13.0 billion	¥35.0 billion

Strengthen cost structure, expand lifecycle businesses, and accelerate business structure reforms
Target 8% operating profit margin in FY2022



Operating Profit

Aviation demand trends

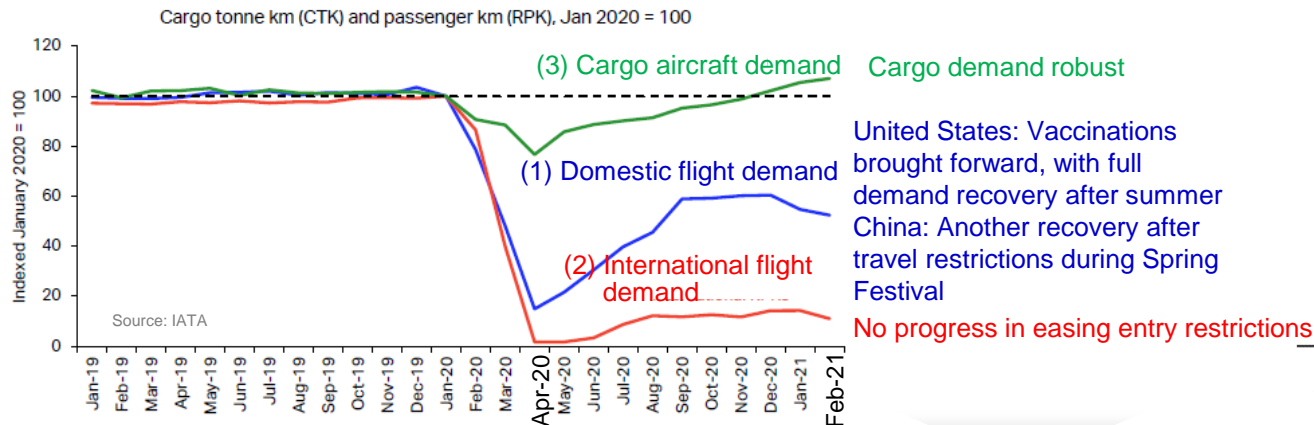
FY2021

- Signs of domestic passenger demand recovery after summer in North America and elsewhere in which vaccinations progressed
- International passenger demand recovery delayed owing to slow progress in easing entry restrictions
- Cargo demand high and above pre-pandemic levels

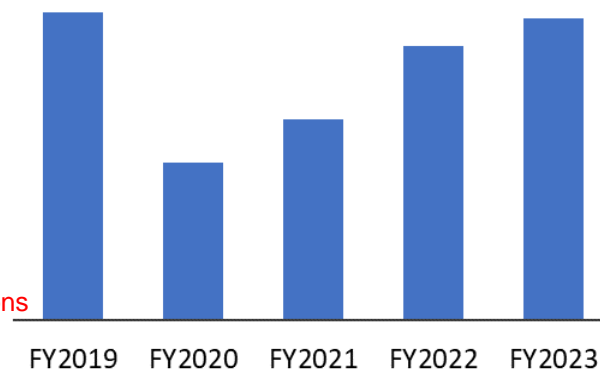
Post FY2022

- International passenger demand to recover in developed countries in which vaccinations progress, while domestic flight demand to recover
- Engine maintenance demand to recover as parked aircraft restart operations

Segment demand*



Forecast for number of engines serviced**



* Segments for IHI aero engine-equipped aircraft

1) Small and mid-sized aircraft, (2) Large aircraft, and (3) Cargo aircraft

** Number of aero engines serviced in the global market for key segments in which IHI participates (FY2019 = 100%)

Civil aero-engine
business
operational policy

Reinforce cost competitiveness and build lean structure that matches demand fluctuations

Cash Conversion Cycle

Challenge

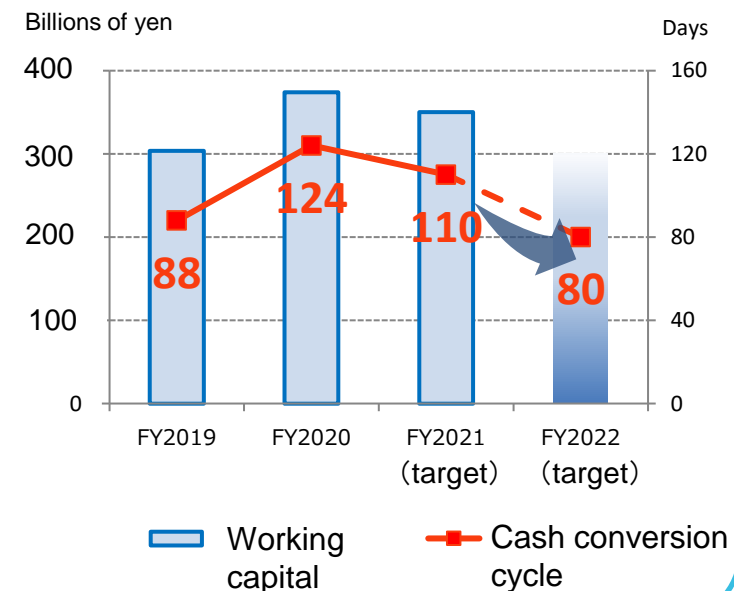
Strengthen cash generation by improving cash conversion cycle

Transition to cash generation-centric business operations

Priorities

Reduce working capital to streamline overall supply chain

- Cut surplus inventories, procure just in time, and more strictly manage payments and receipts as part of intensive efforts to cut working capital
- Undertake reforms extending to business models and processes and production management
- In civil aero-engine business, optimize ideal production lead times and procure parts just in time by end-FY2021, with these efforts bearing fruit in FY2022.



Reach targeted cash conversion cycle of 80 days in FY2022 and generate more than ¥120 billion in free cash flow in remaining two years of Project Change

Expand Lifecycle Businesses

Results

Lifecycle business revenue up 13% year on year
(except in Aero Engine, Space and Defense business)

Challenges

Expand across Group and deploy globally



20 years of operations and maintenance service for biomass power plants

Repair key power plant boiler parts made by other companies in Indonesia

SPC No.	Item Name/Qty	Unit Price	Total Price	Stock	Lead Time	Order Date	Order Qty	Order Status	Order Type	Order Date	Order Qty	Order Status	Order Type
1	TERAL CEREKA *WITZER	894830	839129	AL21002	N/A	T06	29-10	N/A	000	000	000	000	000
2	TERAL CEREKA *WITZER	894830	839129	AL21002	N/A	T06	29-10	N/A	000	000	000	000	000
3	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000
4	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000
5	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000
6	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000
7	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000
8	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000
9	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000
10	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000
11	WITZER MANGEL	675710	822131	AL21002	N/A	W01	29-11	N/A	000	000	000	000	000

Use e-commerce framework to offer swift service responses

Boost lifecycle business revenues by 30%

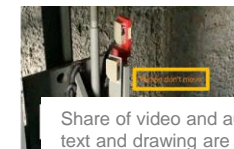
Expand remote support employing information and communications technology

Capture robust demand for bridge maintenance work in Japan

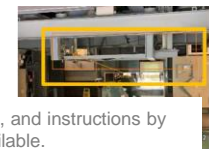


Propose inspections and replacements based on equipment damage data analysis

Site



Share of video and audio, and instructions by text and drawing are available.



Remote Support Service

Home



Structural reforms

- Establish Lifecycle Business Digital Transformation Department to drive change and expansion
- Expand lifecycle businesses by sharing and shifting resources across operations

Shift Resources

Results

Have progressed steadily with companywide and domain-wide resource shifts in response to business structure changes

Structural
reforms

Focusing away from
manufacturing toward
solutions

Around 800 employees
(Considering 100 more people)

Lifecycle
businesses

Digitize
processes
globally

Highly profitable
businesses

Growth
businesses

Mechanism for streamlining resource shifts

Framework



Harness plant facilities and service sites effectively across Group and properly allocate resources



Clarify business processes to eliminate dependence on individuals and develop skill maps



Identify talent and match work and skills

Planning and
management



Monthly manage engineering, manufacturing, and construction stockpiles and resources

Support



Enhance individual support programs to foster diverse, self-driven career development

Strengthen Cost Structure

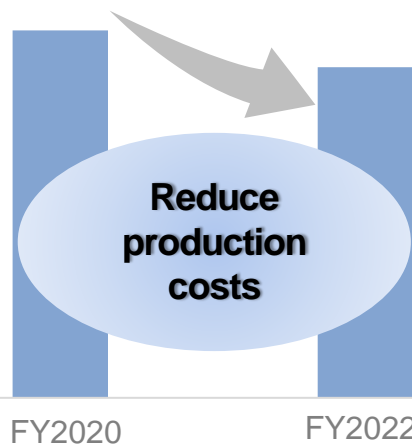
Results

Made steady progress, including to improve productivity and streamline business processes

Challenges

Roll out successful approaches to entire Group and establish more efficient structure

Improve breakeven point

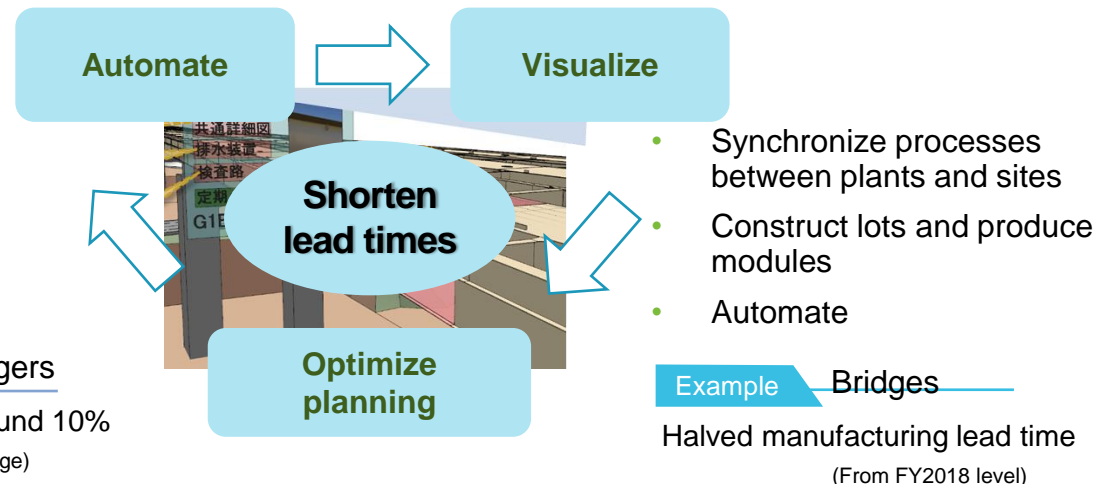


- Undertake design-to-cost initiatives
- Global procurement integration
- Global production system

Example Vehicular turbochargers

Improved breakeven point by around 10%
(During Project Change)

Enhance productivity



Example Bridges

Halved manufacturing lead time
(From FY2018 level)

Project risk management: Eliminate downside risks

- Completed deliveries for large projects with which risks were concerns
- Scrutinized risks of small- and mid-scale projects from formation stages

Create Positive Workplaces

Result Created inclusive workplaces for diverse people

Employ diverse people

Integrate differing values, experience, and expertise

- Local employees of overseas subsidiaries, women, mid-career hires, and those reemployed after retirement
- Second jobs and internal side jobs

Use new work practices

Smart Work Empowerment Division spearheading business reforms

- Create work environments that are free of distance and location restraints through teleworking becoming the norm
- Automate processes



Disseminate policies

Dialogue between management and employees to share issue awareness



Foster creativity

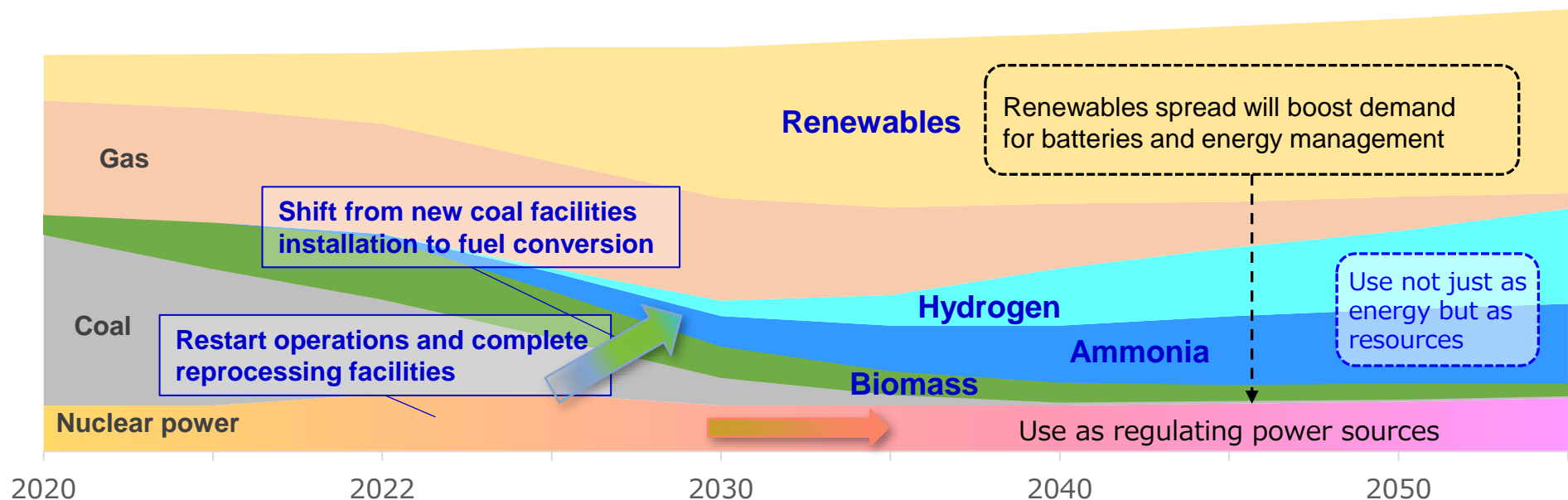
Create a corporate culture that encourages employees to embrace new challenges



Progress in Deploying Carbon Solutions

Scenario for becoming carbon neutral by 2050

- Assume transition to **economy reliant on hydrogen and ammonia and renewable energy**
- Focus on **fuel usage of ammonia**, making whole ammonia supply chain carbon-neutral (production and logistics systems already in practical use and can be employed at existing power generation facilities, with immediate effect on reducing carbon emissions)
- Undertake **carbon capture and storage and carbon dioxide valorization** to streamline transition from hydrocarbon-centric economy



Anticipated energy source balance by around 2050

Progress in Deploying Carbon Solutions

IHI Group's efforts

Results

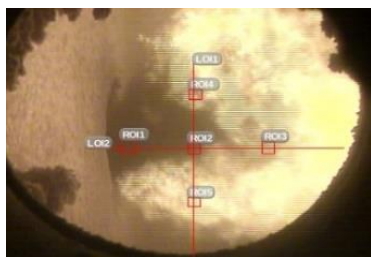
- Accelerated business development in energy field to eliminate carbon emissions
- Progressed in mulling businesses to expand use of fuel ammonia
- Fully engaged in industry-academia-government partnerships



Hydrogen and ammonia



- Undertake joint development with domestic and overseas companies to swiftly establish ammonia value chain and help formulate standards



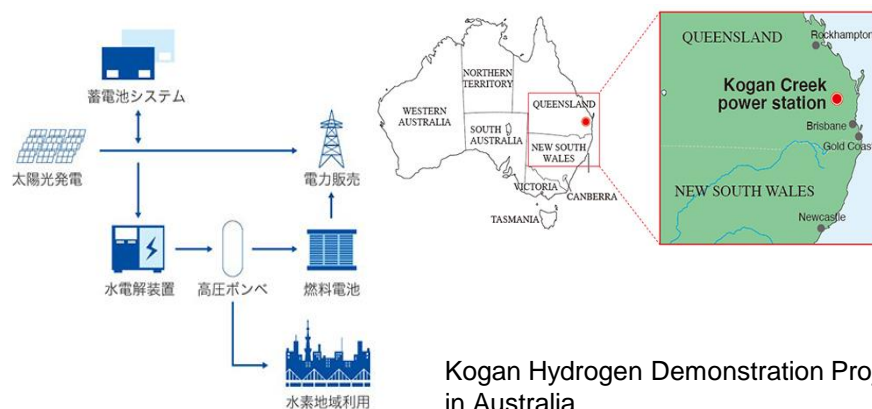
Coal and ammonia co-firing



2-megawatt-class ammonia co-firing gas turbine

Renewables and Power to X

- Optimize renewable energy usage controls



Kogan Hydrogen Demonstration Project in Australia

Carbon recycling



- Explore high value-added carbon-derived materials after methane, olefins, and e-fuel



Methane, olefin, and e-fuel conversion



Hydrogen production

Carbon capture and utilization technologies



Chemical absorption

Carbon capture

Efficient mobility

- Fuel cell powertrains

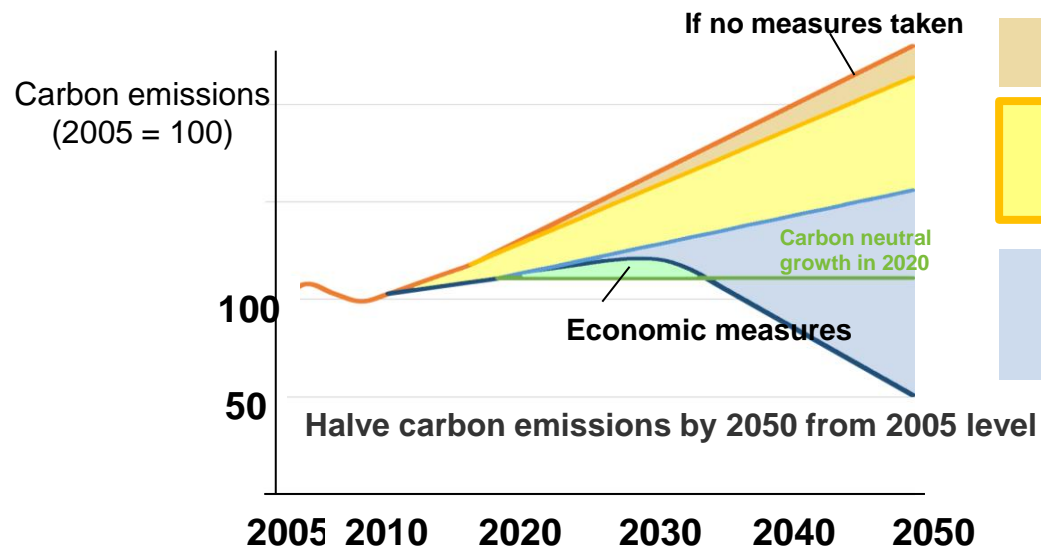


Electric turbocharger for fuel cell systems

Progress in Deploying Carbon Solutions: Air Transportation Systems **IHI**

Direction for aviation industry carbon reduction efforts

- Reduce carbon emissions by improving operational efficiency, **innovating aviation technologies**, and **introducing sustainable aviation fuel** to reach 2050 carbon emissions targets



Streamline operations

Innovate aviation technologies

Sustainable aviation and hydrogen fuels

Based on Figure 4 of International Air Transport Association's Aircraft Technology Roadmap to 2050

IHI Group's efforts

Results

Progressed steadily in developing technologies for aero-engine and rocket systems businesses and expanded into aircraft systems



© JAXA

2020

Developing engines for advanced fighters

Rocket lineup (H3, Epsilon S, and Space One)

New aero-engine maintenance facility in Tsurugashima


Innovate aviation technologies

Engine efficiency improvements and weight reductions

Systems electrification



For NEDO* project

Sustainable aviation and hydrogen fuels

Biofuel and other sustainable aviation fuels

Hydrogen-fueled aircraft



Conservation, Disaster Prevention, and Disaster Mitigation Progress **IHI**

IHI Group efforts

- Globally provide systems to optimally run social infrastructure (rivers and transportation) and minimize damage from increasing number and variety of disasters stemming from climate change



Normal circumstances

- Equipment monitoring
- Detect and repair abnormalities

Disaster prevention and mitigation system

Meteorological information

River monitoring

Environmental information

Infrastructure, water gate, and dam monitoring

Public data

Disaster prediction

Before disasters

- Disaster prediction
- Operations in event of disaster (warnings and evacuation advisories)

Preparations

- Earthquake-resistant infrastructure
- Flood control and snow removal facilities (including dams, weirs, snow plows, and stormwater storage pipes)



Recovery and restoration

- Damage assessments
- Provisional restoration and repair enhancements

Structure for Creating Growth Businesses

Results

Optimized Group overall beyond existing business framework
Established Strategic Technology Management Headquarters
under the direct control of CEO (on April 1, 2021)

Challenges

Strengthen ability to anticipate changes in operating environment and
flexibly adopt business scenarios

Japan

2050 Carbon Neutral Declaration

Green Growth Strategy industrial policy

Green Innovation Fund development support

Overseas

Long-term national strategies

Climate change measures
Low-carbon and decarbonization
Clean growth

Roles of Strategic Technology Management Headquarters

Under IHI Group's vision for a **carbon neutral economy** by 2050, formulate
long-term growth strategy and roadmap and collaborate internationally to
materialize them

Consolidate internal technological
development resources based on
strategy

Carbon solutions
Electrification

Swiftly materialize strategy by
collaborating with partners worldwide

Structure for Creating Growth Businesses

Making Meisei Electric a wholly owned subsidiary

- Concluded share exchange agreement on May 13, effective August 1
- **Meisei Electric's innovative sensing and communication technologies connect land, sea, air, and space and will be central to efforts to create growth businesses**

Meisei Electric's key businesses

Meteorology and disaster prevention

Space and defense

Meteorology



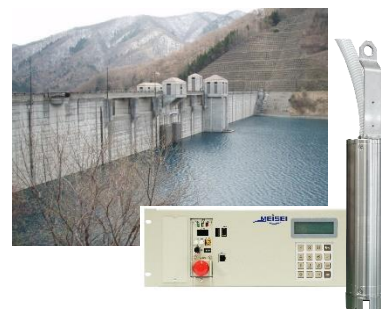
POTEKA, an advanced community-based observation system

Disaster prevention



QCAST series earthquake early warning receivers

Water management



Water level gauge system



Near-infrared spectrometer and separation camera for Hayabusa2

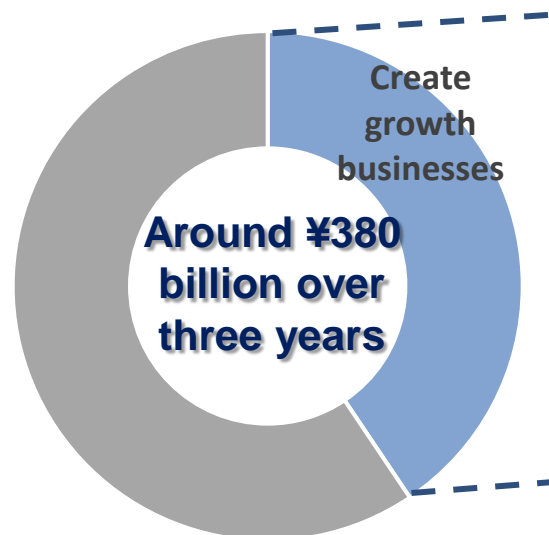
Investment Stance

Results

Focus investment allocations on growth businesses
Produce cash in timely manner from asset portfolio and divest unutilized assets

Investment plans

- Allocate at least 30% of investments to creating growth businesses



Strengthen R&D and deploy inorganic measures to create growth businesses

- Develop hydrogen and ammonia-related technologies
- Develop electrification technologies, including for aero engines and fuel cells
- Develop new materials and advanced manufacturing technologies, notably for carbon fiber reinforced polymer and ceramic matrix composites
- Develop technologies related to digital transformation and artificial intelligence
- Invest strategically, including through acquisitions

- Flexibly transfer fixed assets in line with major funding needs to transform business portfolio

Summary

Mobilize the collective strengths of the IHI Group to drive sustainable growth

- ✓ **Swiftly return to a growth trajectory by reinforcing our cost setup, expanding lifecycle businesses, reforming our business structure, and enhancing our ability to generate cash while becoming more competitive to capitalize on an anticipated demand recovery**
- ✓ **Formulate a roadmap to create and rapidly deploy growth businesses that resolve social issues**

IHI

Realize your dreams