

Management Review of Progress with Project Change—Toward the Next Medium-Term Management Policies

IHI

November 8, 2022

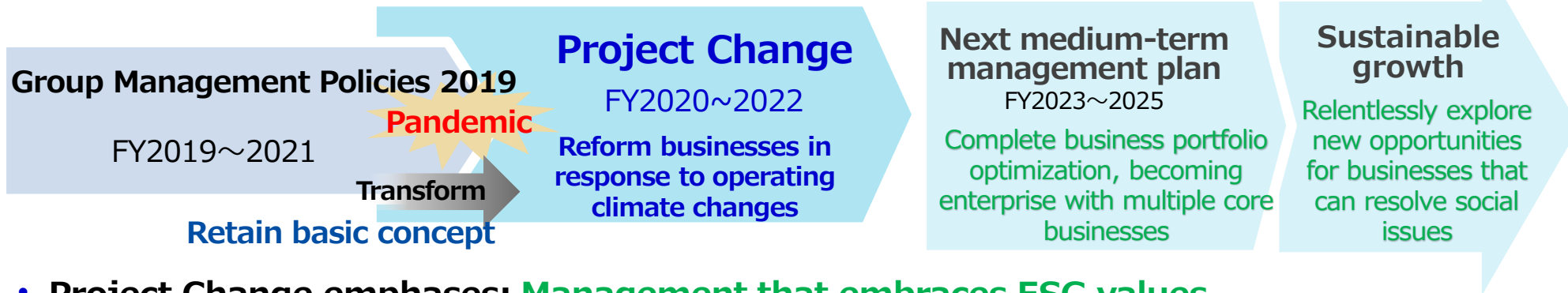
IHI Corporation

Hiroshi Ide, Chief Executive Officer

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- Positioning



- Project Change emphasizes: **Management that embraces ESG values**

Return to growth trajectory

Further strengthen earnings foundations
Expand lifecycle 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

Maintenance and disaster prevention and mitigation

Develop robust, economically and eco-friendly social infrastructure

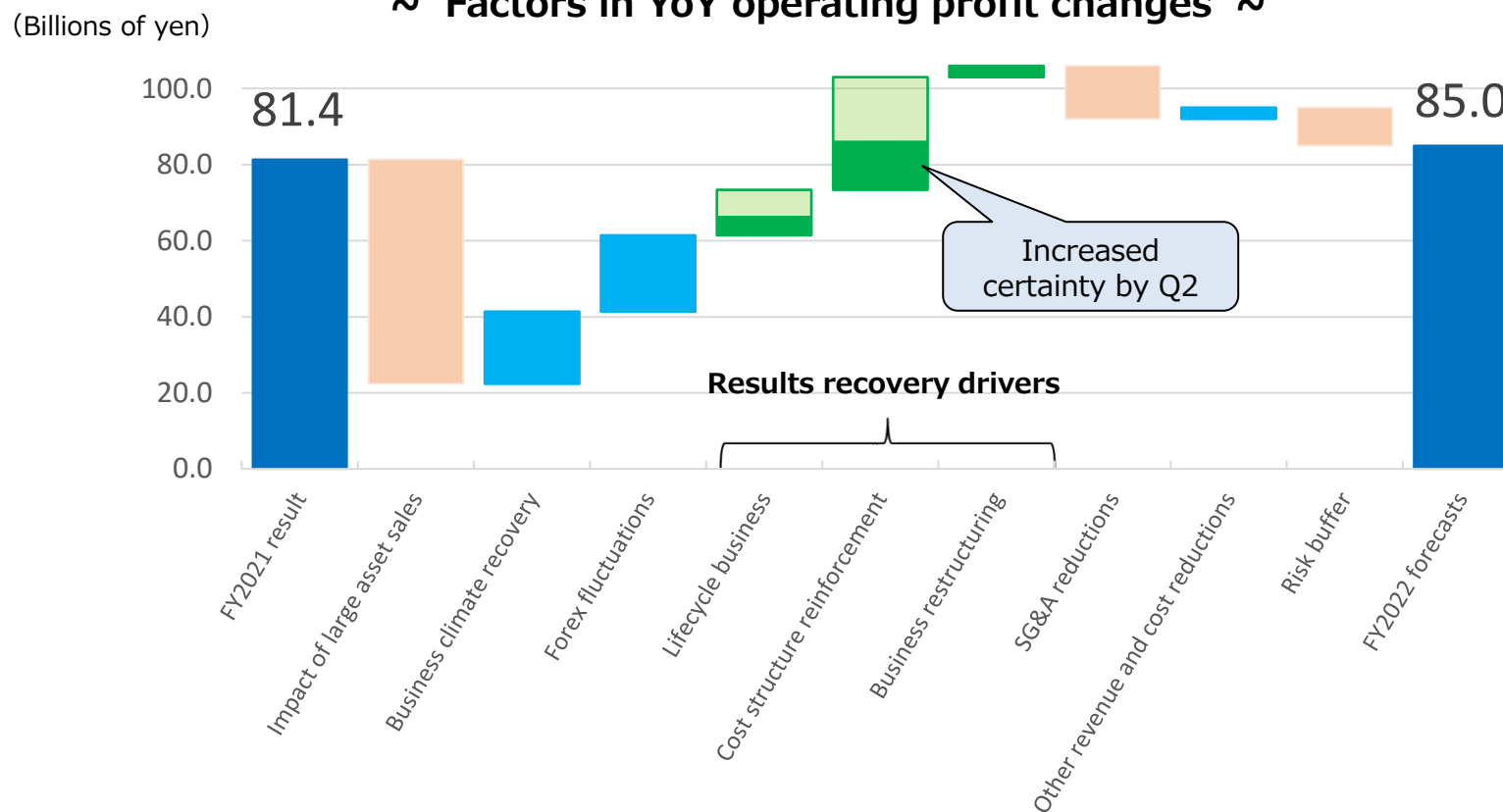
Become carbon-free

Prevent and mitigate disasters

Situation through Q2

- Aero Engine, Space & Defense business continuing to recover
- Revenues and earnings rose on lifecycle business expansion and stronger cost structure
- All segments back in black

~ Factors in YoY operating profit changes ~



Second-half initiatives

Targeting record operating profit by strengthening revenue bases of all businesses in light of changing operating climate and risks

Progress

Focused on after-sales service and reinforced cost structure to strengthen earnings foundations

Reinforce cost structure

- Aero engines: Steadily enhanced productivity
- Three onshore segments: Shortened lead times and streamlined overall production processes

Expand lifecycle businesses

- Nuclear power: Steadily implemented safety measures
- Bridges: Expanded upgrades and repairs on aging infrastructure
- Industrial machinery: Deployed smartphone-based FURNACE EYE system to remotely monitoring and control vacuum heat treatment furnace operations

FURNACE EYE

Visualize



Clearer production plant visualization

Convey



Digitally communicating about equipment operations

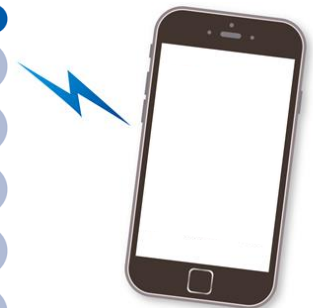
Decipher



Data-driven for deciphering engineering

FURNACE EYES capabilities

- Comprehensive equipment monitoring at each plant
- Equipment operational status monitoring
- Equipment schedule management
- Equipment usage monitoring
- Equipment parameter confirmation



FURNACE EYE remote monitoring and control system for vacuum heat treatment furnaces

Future initiatives

Expand lifecycle businesses (to increase environmental value and lower environmental impact) and extensively reinforce cost structure bolster (cut and streamline variable and fixed costs)

Creating Growth Businesses: Carbon Solutions

Progress

With potential of ammonia as decarbonized energy source gaining broad acceptance, accelerated efforts to explore fuel production and develop utilization technologies

- Japan**
- Continued 20% ammonia co-firing in demonstration project at Hekinan Thermal Power Station, and will bring forward launch of large-scale co-firing to FY2023
 - Achieved carbon dioxide-free power generation with liquid ammonia-fired gas turbine
 - Initiated R&D for floating ammonia storage and regasification barge with NYK Line, Nihon Shipyard, and Nippon Kaiji Kyokai
 - Established Co-creation Research Center with Tohoku University



JERA's Hekinan Thermal Power Station



IHI 2MW-class gas turbine

- Steering member of Hydrogen Council

- UAE**
- Demonstrated clean ammonia supply chain with INPEX and Mitsui O.S.K. Lines

- India**
- Initiated technical and economic feasibility research into ammonia co-firing under Japan-India Clean Energy Partnership

- Malaysia**
- Launched joint study with JERA Asia into expanding fuel ammonia usage to decarbonize thermal power plants in Malaysia
 - Conducted study with PETRONAS and TNB subsidiaries into applying co-firing technology and establishing supply chain for ammonia

- Singapore**
- Collaborating with Sembcorp to build green ammonia value chain for Singapore gov't Sustainable Jurong Island initiative

- Indonesia**
- Launched Southeast Asia's first ammonia co-firing pilot facility at operational power plant with PLN

- Australia**
- Participating in green ammonia production project in Tasmania
 - Awarded engineering procurement and construction contract for Kogan Renewable Hydrogen Demonstration Plant

Future initiatives

Establish global value chain covering production through utilization of ammonia as clean fuel and participate in upstream and downstream activities

Progress

Accelerated development of carbon cycle technology leveraging methanation* as key technology to attain carbon neutrality for industry

Developing synthetic methane production technology

- As part of Green Innovation Fund project, joined hands with Tokyo Gas and JAXA to start innovating methane production technology using low-temperature processes

Developing sustainable aviation fuel technology

- Began collaborating with Singapore government-affiliated research institute in technology to synthesize this fuel

Applying technology in general industry

- Launching compact methanation equipment to meet pilot operations needs of factories, laboratories, and business sites to attain carbon neutrality

* Methanation: Hydrogenation to convert carbon dioxide to synthetic methane



IHI concluded a joint research agreement with Singapore's Institute of Sustainability for Chemicals, Energy and Environment



Compact unit can synthesize 12.5 normal meters cubed per hour of methane

Future initiatives

Collaborate with customers in various industrial applications to upscale and accelerate commercialization

Progress

Developed weight saving and electrification technologies, starting with aero engine technology

Weight saving

- Applying carbon fiber reinforced polymers and ceramic matrix composites to aero engines
- Developing technology to apply new materials to airframes to help enhance aircraft fuel efficiency

Carbon fiber-reinforced polymer applications



Fan blades

Note: Undertaking joint research for JAXA's En-Core Project (2018 through 2023)



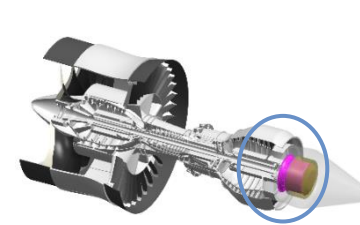
Composite panels for aircraft fuselage structures

©IHI Aerospace

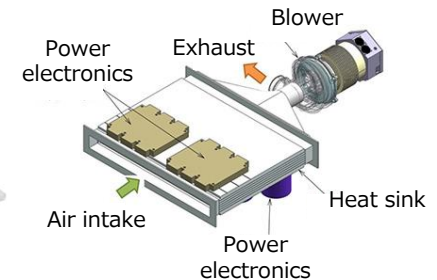
Electrification

- Developing world's first aircraft jet engine-embedded electric machine: Mounted directly on engine main shaft for high-capacity power generation
- Combining power electronics air-cooling and other systems to enhance aircraft energy efficiency through electrification

Electrification R&D



Jet engine-embedded electric machine



Power electronics air cooling system

Future initiatives

Further develop weight-saving and electrification technologies that help enhance the environmental performance of air transportation and build competitive edge

Creating Growth Businesses: Maintenance and Disaster Prevention and Mitigation

Progress

Built disaster prevention and mitigation systems in social infrastructure field and expanded uses of various types of data

Protective technologies

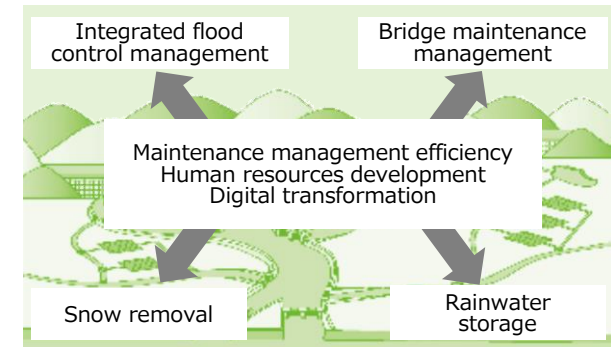
- Deployed bridge maintenance management system and GBRAIN® water gate inspection support system
- Established vessel location information consortium

Measurement technologies

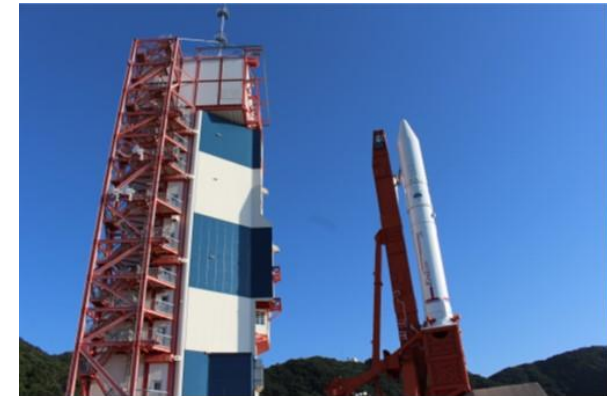
- Expanding scope of weather information provision by using POTEKA® high-density weather information service
- Preventing forest fires with groundwater level observation systems
- Developing environmental value platform

Rocket and satellite usage

- Augmenting launch services by providing satellite data-based solutions



Example of leveraging management systems to resolve local issues



Epsilon Launch Vehicle (©JAXA)

Future initiatives

Enhance resilience of infrastructure and natural resources by leveraging synergies between protection, measurement, and space-related technologies

Progress

- Took steps to respect human rights and promote diversity and inclusion, as vital ESG management challenges
- Developed human resources to drive digital transformation

Respecting human rights

- Undertook due diligence to identify key human rights issues and assess impacts
- Monitored supplier CSR procurement and engaged in dialogue with them

Promoting diversity

- Providing diverse experiences through in-house side-job program and career development to encourage new ideas

Selected as one of Digital Transformation (DX) Stocks 2022

- Recognition of business model business process reforms and digital transformation efforts in developing human resources

Future initiatives

- Develop and hire innovators who can address changes in operating climate
- Fulfill responsibilities in respecting human rights as business that tackles global issues



Side-job participants participating in NHK BS television show called Night of the Makaizo Society



DX銘柄2022
Digital Transformation

Project Change

Period of preparing to optimize business portfolio

Return to growth trajectory

Further strengthen earnings foundations
Expand lifecycle businesses

Create growth businesses that address social issues

Carbon solutions
Maintenance and disaster prevention and mitigation
Air transportation systems
Overcome operating environment changes to drive value creation

Financial strategies

- ◆ From preparatory transition period to one for investing to drive sustainable growth
- ◆ Leverage solid revenue base to generate cash in increasingly uncertain operating climate

Priorities of next medium-term management policies

Focus investments on growth businesses
Improve social and environmental value

Establish business foundations for investing in growth
Enhance cash generation capabilities

Business structure to overcome operating environment changes
Transformation

Digital transformation Innovators

Sustainable growth

IHI Group ESG management



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