

2021 Medium-Term Business Plan (MTBP)

(FY2021 – 2023)

October 30, 2020

Seiji Izumisawa, President and CEO

■ Issuing 2021 MTBP six months early

- Due to the COVID-19 impact, adverse changes in the thermal power business environment, and a strategic change in commercial aviation, we have decided to make a full update to 2018 MTBP with the publishing of 2021 MTBP

■ Main points of 2021 MTBP

- Rapidly return to and strengthen profitability
- Clear direction for strong growth going forward

■ Return to and strengthen profitability

- In addition to recovering from COVID-19 impact, address challenged businesses, decrease SG&A and achieve 7% business profit margin in FY2023

■ Opening up growth areas

- Focus primarily on Energy Transition and New Mobility & Logistics, invest 180 billion yen during 2021 MTBP into these areas, expand new businesses to 1 trillion yen by FY2030

- I . MHI Group Vision**
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- IV . Plan to Strengthen Profitability**
- V . Developing High Growth Businesses**
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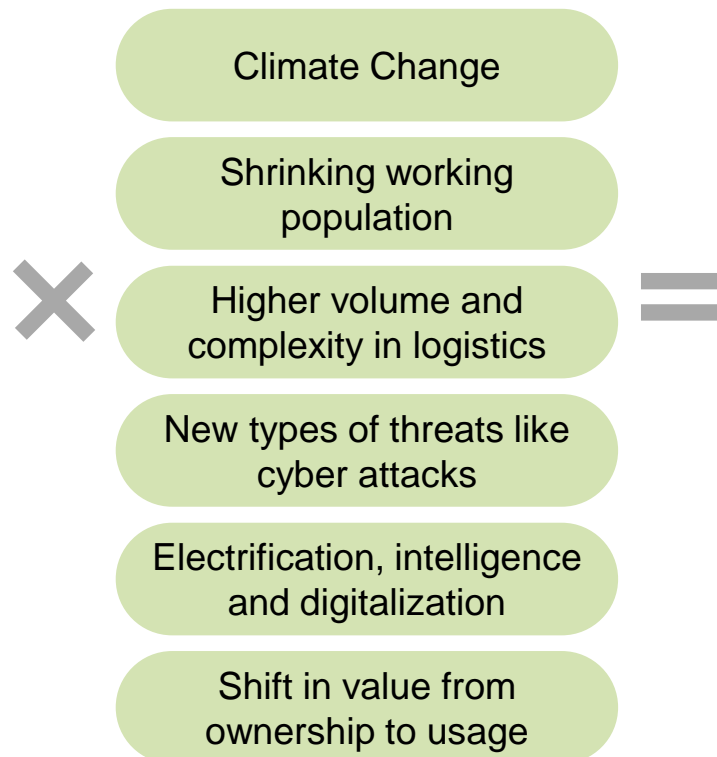
I . MHI Group Vision

Integrate cutting-edge technology into expertise built up over many years to provide solutions to some of the world's most pressing issues and provide better lives

Core strengths

- Infrastructure systems that support our modern lives
- Defense products that protect us on land, at sea and in the air
- Space and deep sea systems that open up unknown parts of our world and universe
- High performance, high reliability products
 - High temperature, high speed, high pressure
 - Complex and large-scale structures and systems
 - Optimized control of large-scale systems

Global Issues & Trends



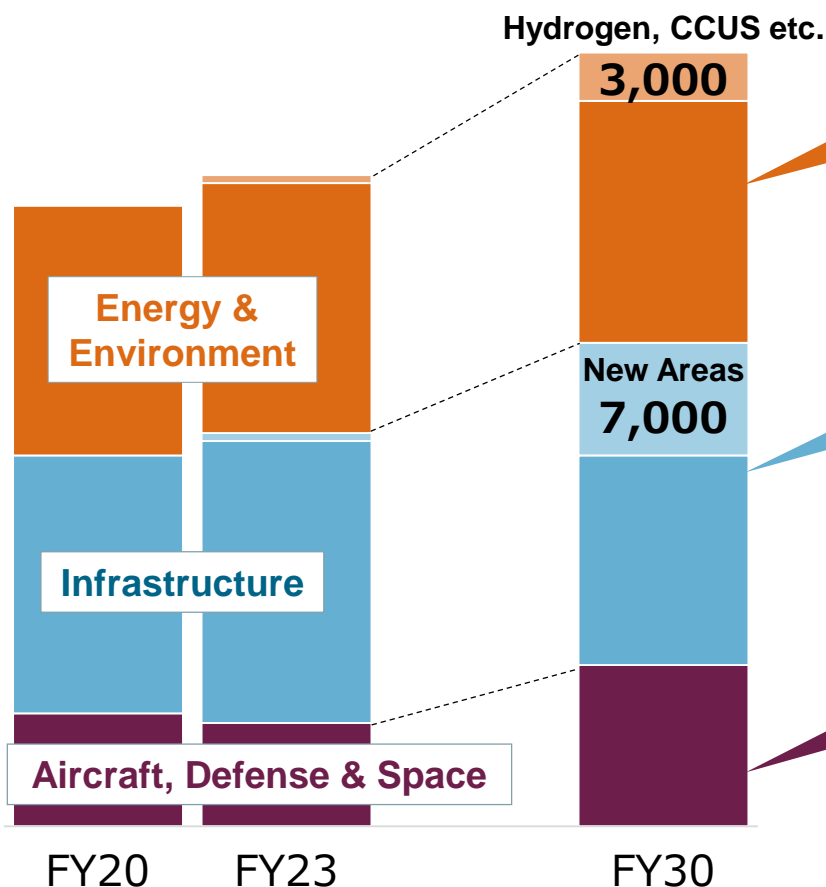
MHI Group's Key Focal Themes

- **Realize a carbon neutral world**
 - Upgrading of current infrastructure
 - Decarbonization and diversification of fuels
 - CO2 conversion and usage
 - Air conditioning and chilling with natural refrigerant
- **Improve quality of life**
 - Smart and networked machinery systems
 - Automation of logistics
 - Electrified and intelligent mobility and industry
- **Build a safer world**
 - Integrated defense
 - Cybersecurity

Drastically increase our corporate value through the primary growth engines of Energy Transition and New Mobility & Logistics while managing our portfolio

Business Areas & Scale

(in hundred million yen)



Energy & Environment

Work toward a carbon neutral 2050, by driving forward the energy transition through collaboration across internal disciplines, and externally

Infrastructure

Combine strengths in existing businesses and intelligent systems to expand our business into high growth areas like mobility and logistics, e.g. CASE, cold chain and electric components

Aircraft, Defense & Space

Aircraft and Space: Expand business areas
 Defense: Integrated defense systems across land, sea, air and space, unmanned and minimally manned technologies, and cybersecurity

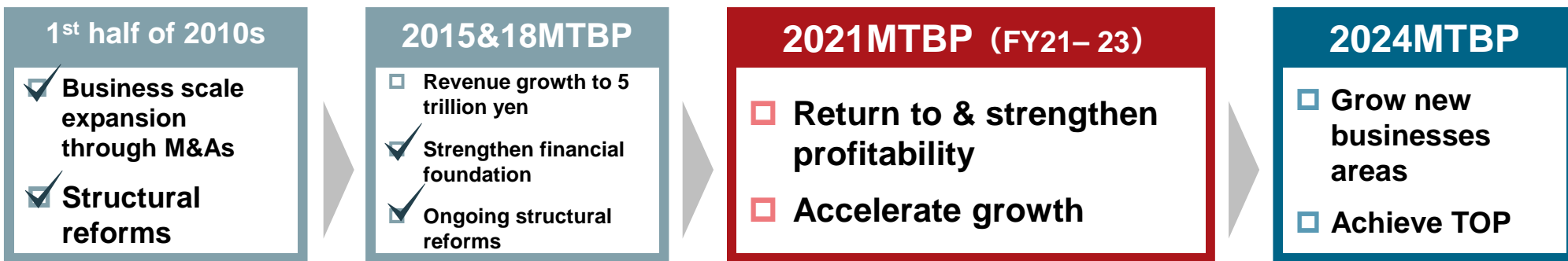
CCUS: Carbon dioxide Capture, Utilization and Storage

CASE: Connected, Autonomous, Shared and Electric

II. 2021 MTBP Positioning & Targets

Fundamental Principles of 2021 MTBP

Rapid transition to leap forward in 2024 MTBP and path to achieving TOP



Return to profitability

(Business profit margin 7%)

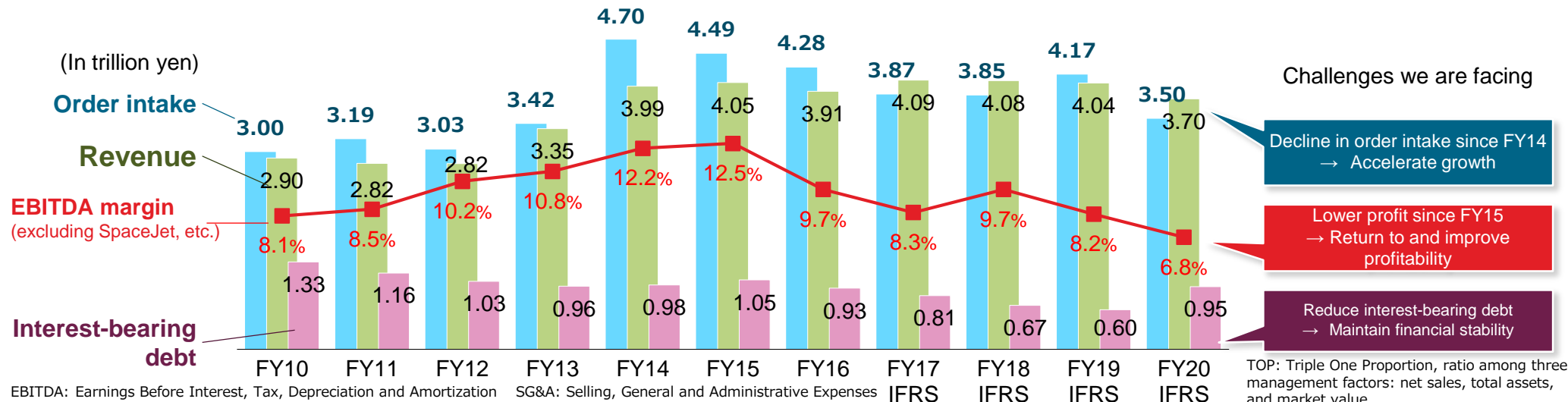
- Reduce fixed costs, improve productivity
- Increase after-sales service ratio
- Reduce SG&A and headcount

Accelerate growth

- Drastic resource re-allocation
- Strengthen investment into growth areas
- Strengthen cooperation within and outside the Group

Strengthen shared foundation

- Strengthen foundational core technologies
- Digitalization



FY2023 Targets

Profitability

Business Profit Margin 7%
ROE 12%

Growth

Create new businesses worth 100 billion yen in revenue through strengthened investment in growth
→ Expand to 1 trillion yen in revenue in FY30

Primary
investment
areas

Energy
Transition

New Mobility
& Logistics

Balance Sheet Financial Stability

Total assets turnover 0.9
Maintain interest-bearing debt level

Dividend

Record-high level of dividend per share

ROE: Return On Equity

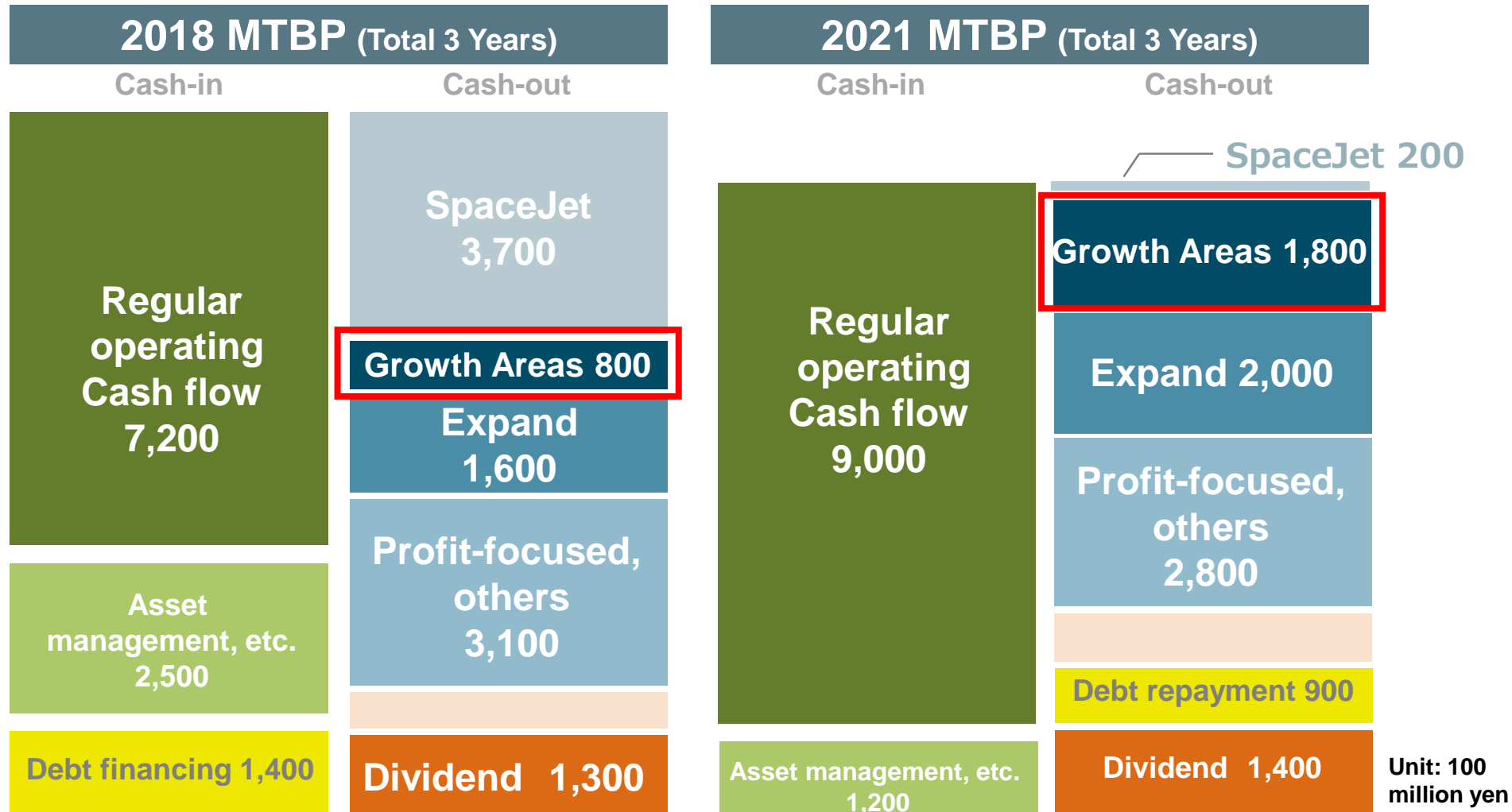
2021 MTBP Targets – Financial indicators over time

(In trillion yen)

	FY2018	FY2020	FY2023
Revenue	4.1	3.7	4.0
Business profit margin	5%	1%	7%
ROE	7%	2%	12%
Total Assets	5.1	4.8	4.5
Interest-bearing debt	0.67	0.95	0.9
Equity	1.7	1.3	1.5
D/E ratio	0.4	0.8	0.6
Equity ratio	34%	25%	33%
Dividend per share	150 yen	75 yen	160 yen

2021 MTBP Targets – Capital allocation plan

- Strengthen operating cash flow by improving profitability, continue to monetize through asset management
- Shift investment away from SpaceJet and into priority growth areas (energy transition, new mobility & logistics)



III. Measures for Commercial Aviation Systems

• **Covid-19 is temporarily depressing market, but long-term growth expected**

1. Aero Structures

In preparation for market recovery expected from 2024, MHI will increase production efficiency and drive forward new technology development to participate in future global aircraft programs

2. Commercial Aircraft

Expanding commercial aircraft business is MHI's long-term goal

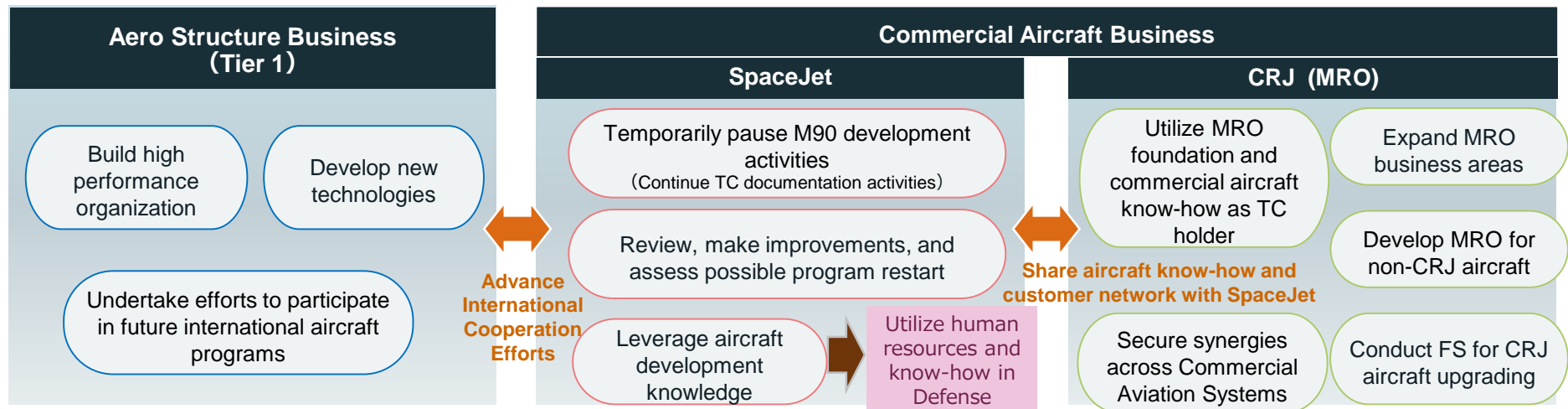
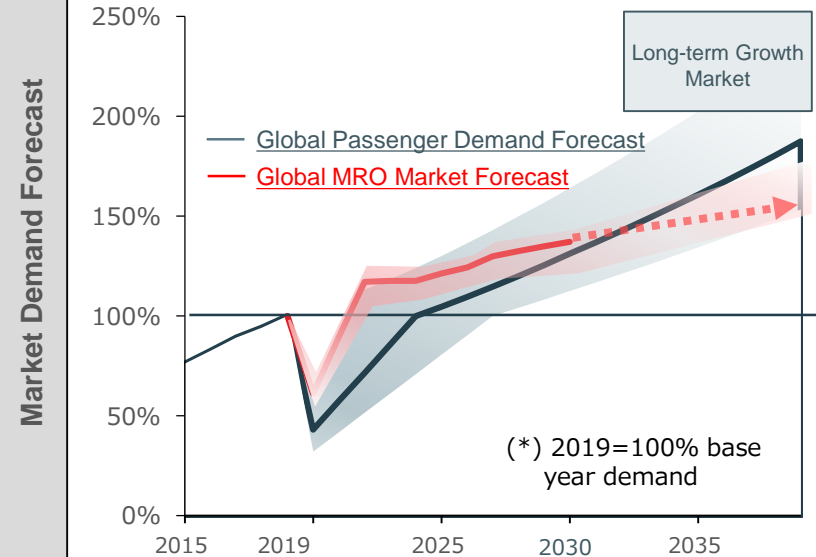
① SpaceJet

Given current development status and market conditions, we have no choice but to temporarily pause the majority of SpaceJet activities, except for TC documentation. We will work to review where we stand, make improvements, and assess a possible program restart.

② CRJ (MRO)

Expand resilient MRO business and utilize commercial aircraft business know-how

- Passenger demand recovery forecasted for around 2024
- MRO demand recovery expected to precede that of new aircraft



TC: Type Certificate; FS: Feasibility Study; MRO: Maintenance, Repair and Overhaul

IV. Plan to Strengthen Profitability

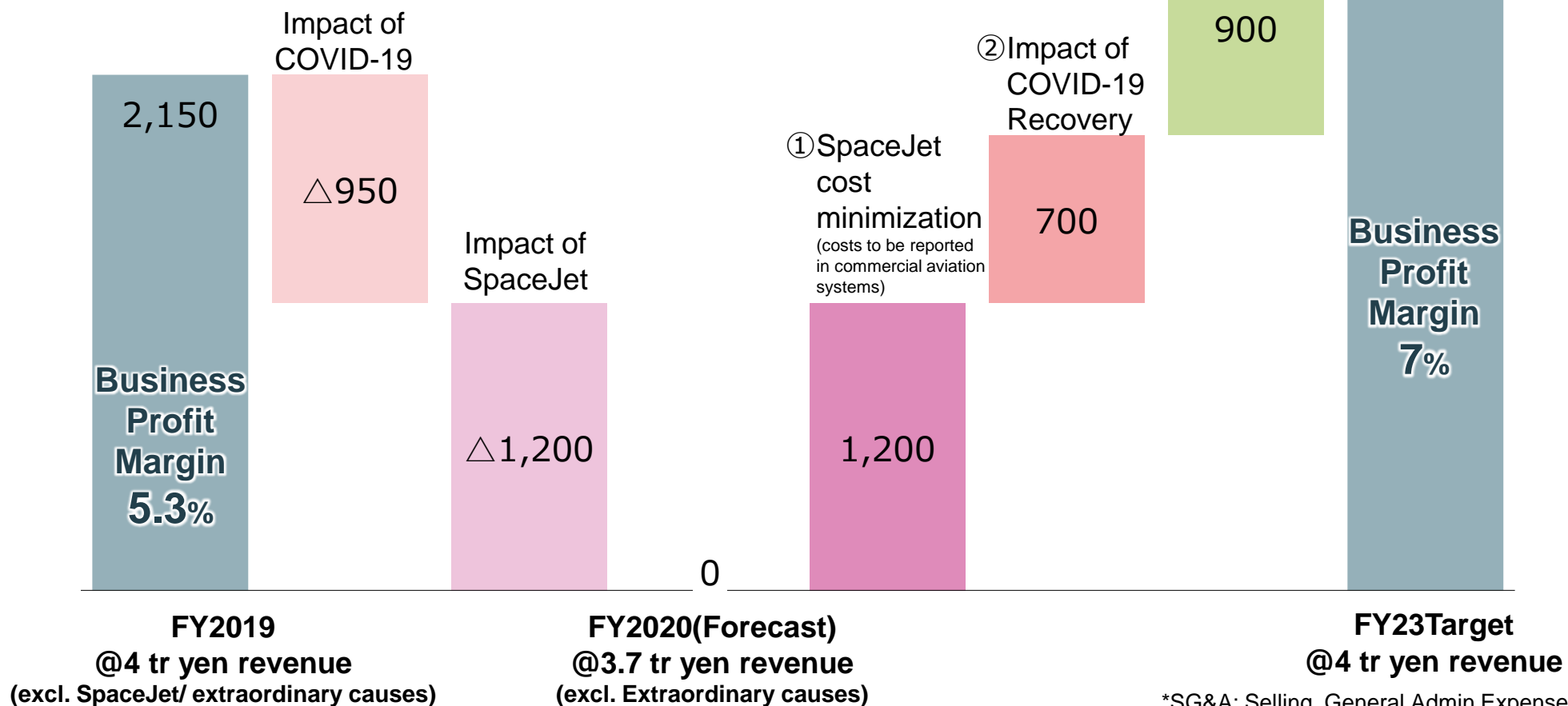
Plan to Strengthen Profitability (1/4)

Execute various measures to achieve 7% profit margin

- ③ Growth of existing businesses
- ④ Countermeasures/Structural shift
- ⑤ Cost reduction of SG&A*

Path to improve business profits

(In 100 million yen)



*SG&A: Selling, General Admin Expenses

Overcoming COVID-19 Impact

Measure 1:
Minimize SpaceJet Costs
+120 billion yen

Measure 2:
Recover from COVID-19 Impact
+70 billion yen

Business

SpaceJet

Commercial Aviation

CRJ

Aero Engines

Turbochargers

Engines

Car Aircon

Logistics Equipment

HVAC

Business Environment Outlook

- Real aerospace recovery likely in or after FY24

- Recovery of narrowbody aircraft will lead to faster recovery of CRJ and aeroengine businesses

- Recovery to Pre-COVID levels expected by FY23

Measures

- Minimize SpaceJet Costs

- Reduce fixed costs
- Drive forward manpower saving and automation during COVID period

- Optimize overseas production bases
- Prepare for market recovery by improving productivity

Grow existing businesses and solve pre-COVID challenges

	Business	Business Environment Outlook	Measures
Measure 3: Grow existing businesses +20 billion yen	Logistics Equipment HVAC	<ul style="list-style-type: none"> Quick recovery from COVID impact Growing market in environment-responsive and automation technologies 	<ul style="list-style-type: none"> Proactively invest in environment-responsive and automation technologies Strengthen sales network
Measure 4: Address challenged businesses, structural transformation; (including portfolio optimization) +30 billion yen	Steam Power Environmental Plants Metals Machinery Engineering Commercial Ships Machine Tools	<ul style="list-style-type: none"> Steep reduction in new-build coal power plants COVID has frozen customer investment, competition is growing and profitability hit 	<ul style="list-style-type: none"> Big shift to services Reduce fixed costs Reorganize and integrate organization and bases Shift to services to stabilize profits Eradicate losses in EPC projects Strengthen marine engineering business
Measure 5: Reduce SG&A +40 billion yen	HQ Corporate Business Units & Group Companies	<ul style="list-style-type: none"> Aim for 20% reduction in SG&A Improve work processes, integrate organization, reduce headcount Diversify employment formats, reduce external expenditure 	

Reduce workforce in line with business environment and embark on significant shift in workforce deployment

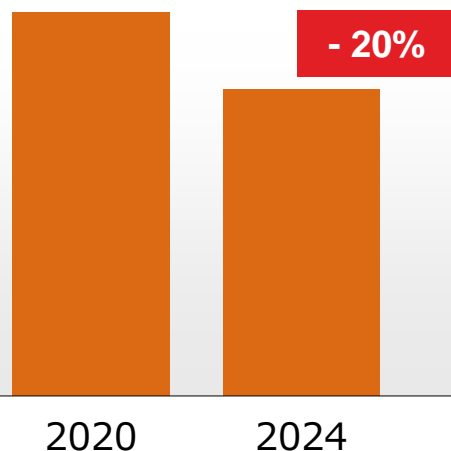
Global

- Reduced workforce due to lower production in steam power, metals machinery, turbochargers, logistics equipment, HVAC, commercial aerospace etc. (around 2,000 jobs)

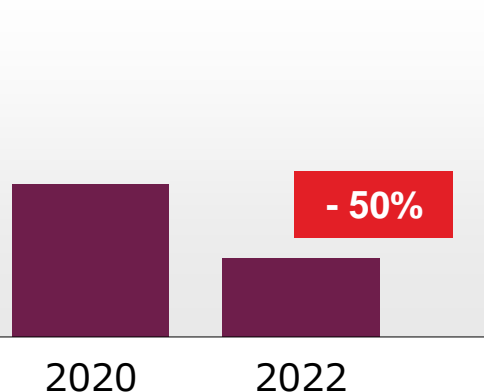
Domestic

- Reallocate around 3,000 of workforce due to expected reduction in steam power, commercial aerospace, commercial shipping
- Undergoing program to reassign workforce to growth areas, transfer to organizations outside of Group (approx. 1,000 in H1 FY20)

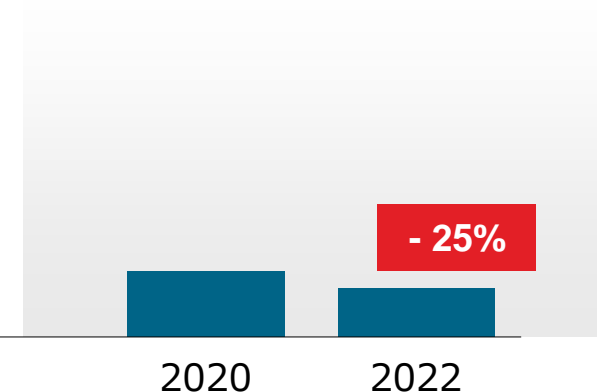
Thermal Power



Commercial Aviation



Commercial Ships



V. Developing high growth businesses

Energy Transition

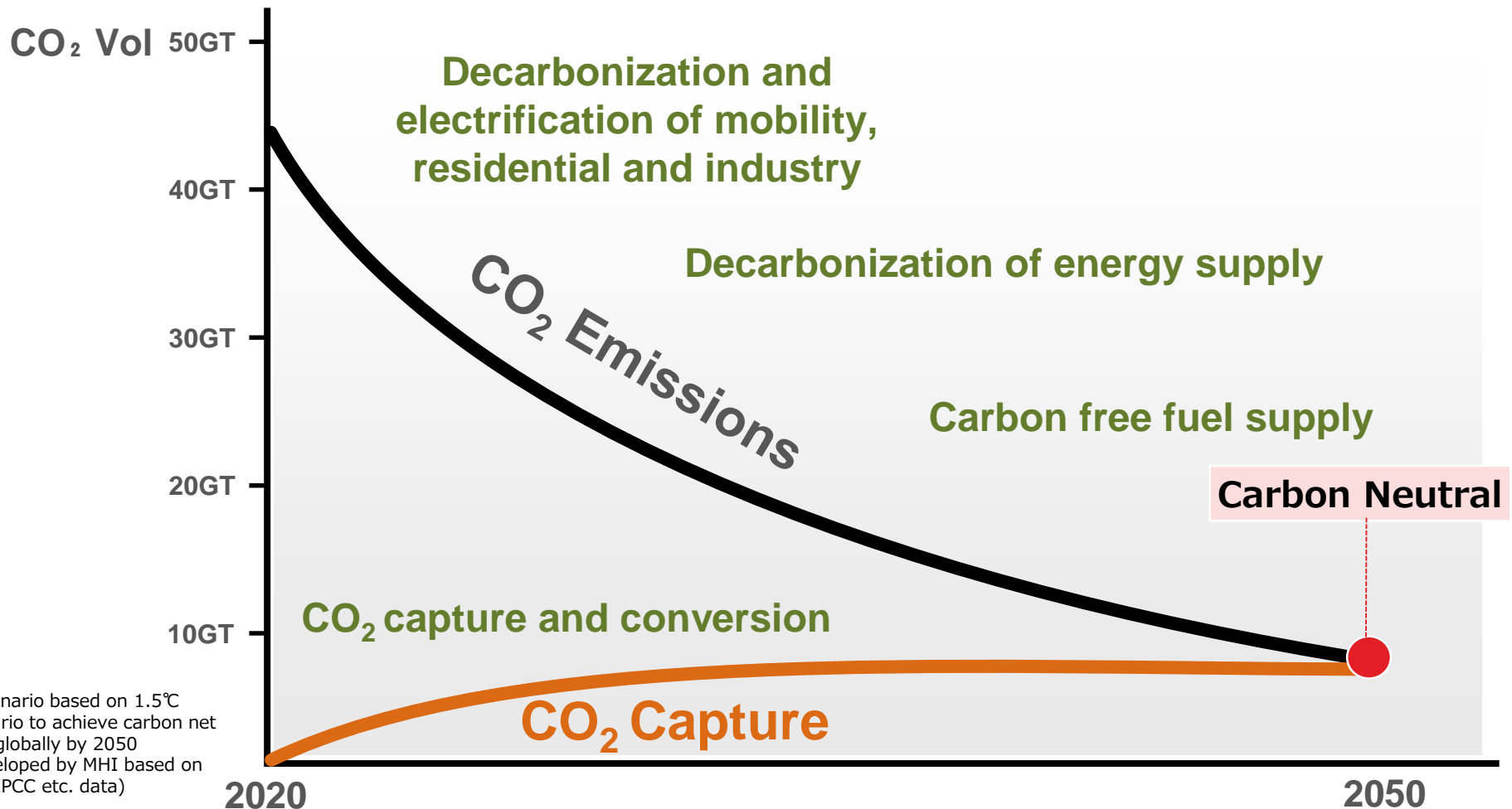
New Mobility & Logistics

Expansion of Services Businesses

Cybersecurity & Security

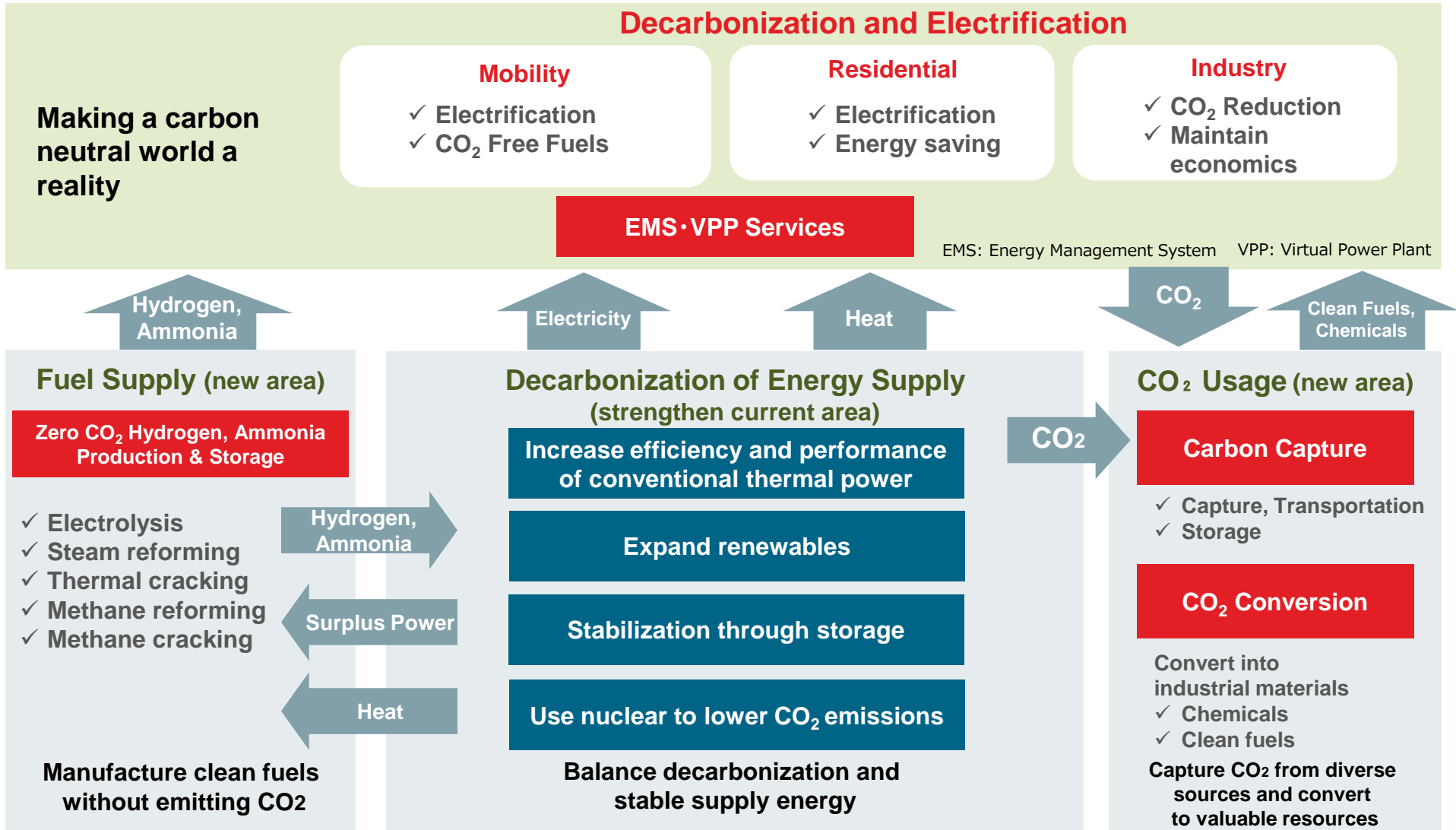
Technological Foundation to Support Growth Areas

MHI Group will use its technological strengths to lower and capture CO₂ emissions and achieve a carbon neutral 2050



※Scenario based on 1.5°C scenario to achieve carbon net zero globally by 2050 (Developed by MHI based on IEA, IPCC etc. data)

Combine MHI Group's wide-ranging products and technologies to make carbon neutrality a reality



New measures to achieve carbon neutrality

Measures

**CO₂ free hydrogen,
ammonia production
and storage**

**CO₂ Capture and
Conversion**

**Increase Efficiency
and Performance of
Thermal Power
(Hydrogen Gas
Turbines)**

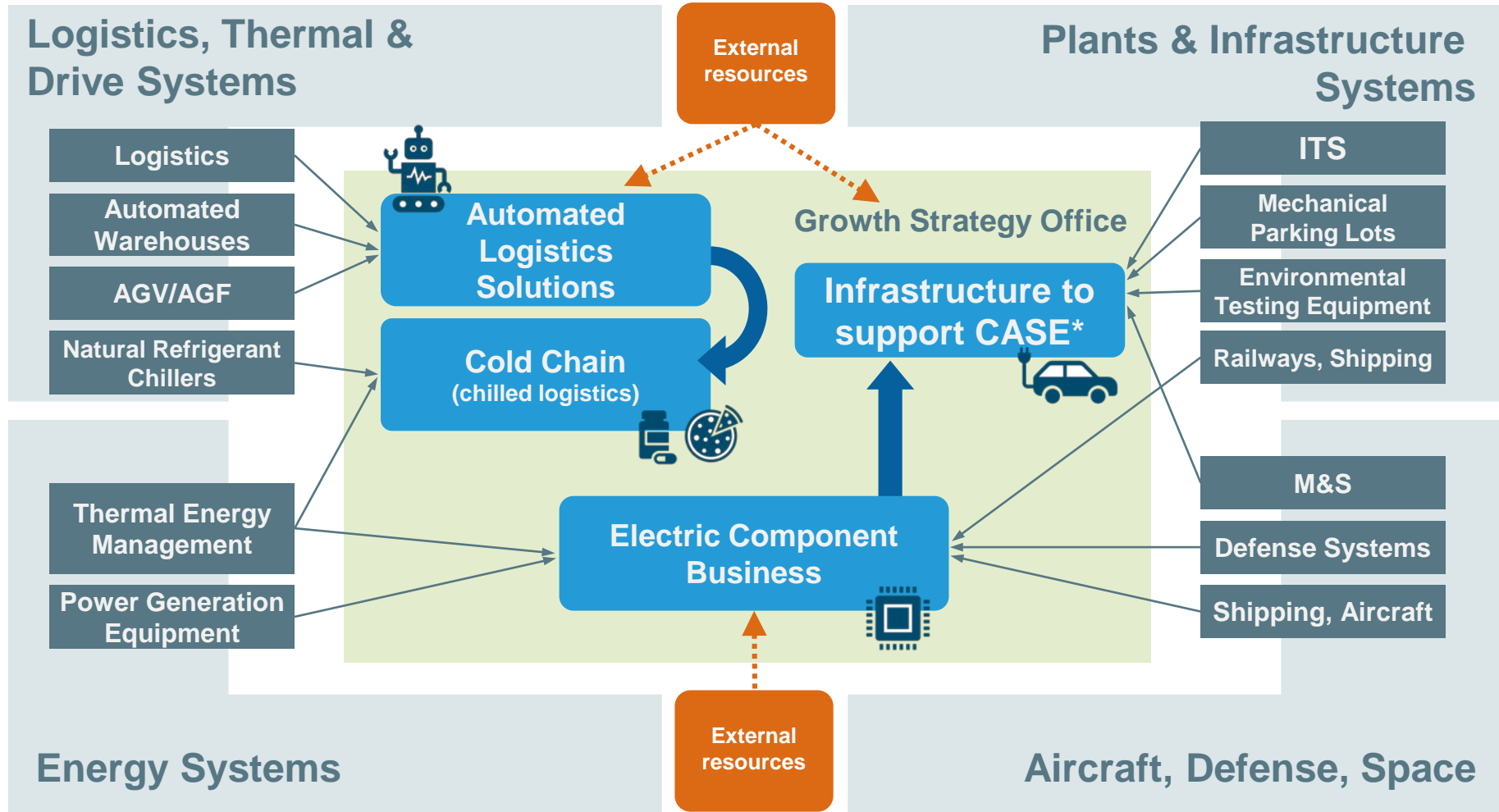
- **Develop efficient production technology (including venture investment)**
- **Build value chain**
- **Build out business based on our lead as global No.1 in volume of CO₂ captured**
- **Build out products and develop conversion technology**
- **Develop and test world's first pure hydrogen fueled advanced gas turbine**

New Mobility & Logistics (1/2)

- Deliver new value by systemizing diverse products leveraging digitalization and AI
- Open up new areas in mobility and logistics through cross-functional collaboration led by Growth Strategy Office

New Area

MHI Products / Technologies



AGV: Automated guided vehicle

AGF: Automated Guided Forklift

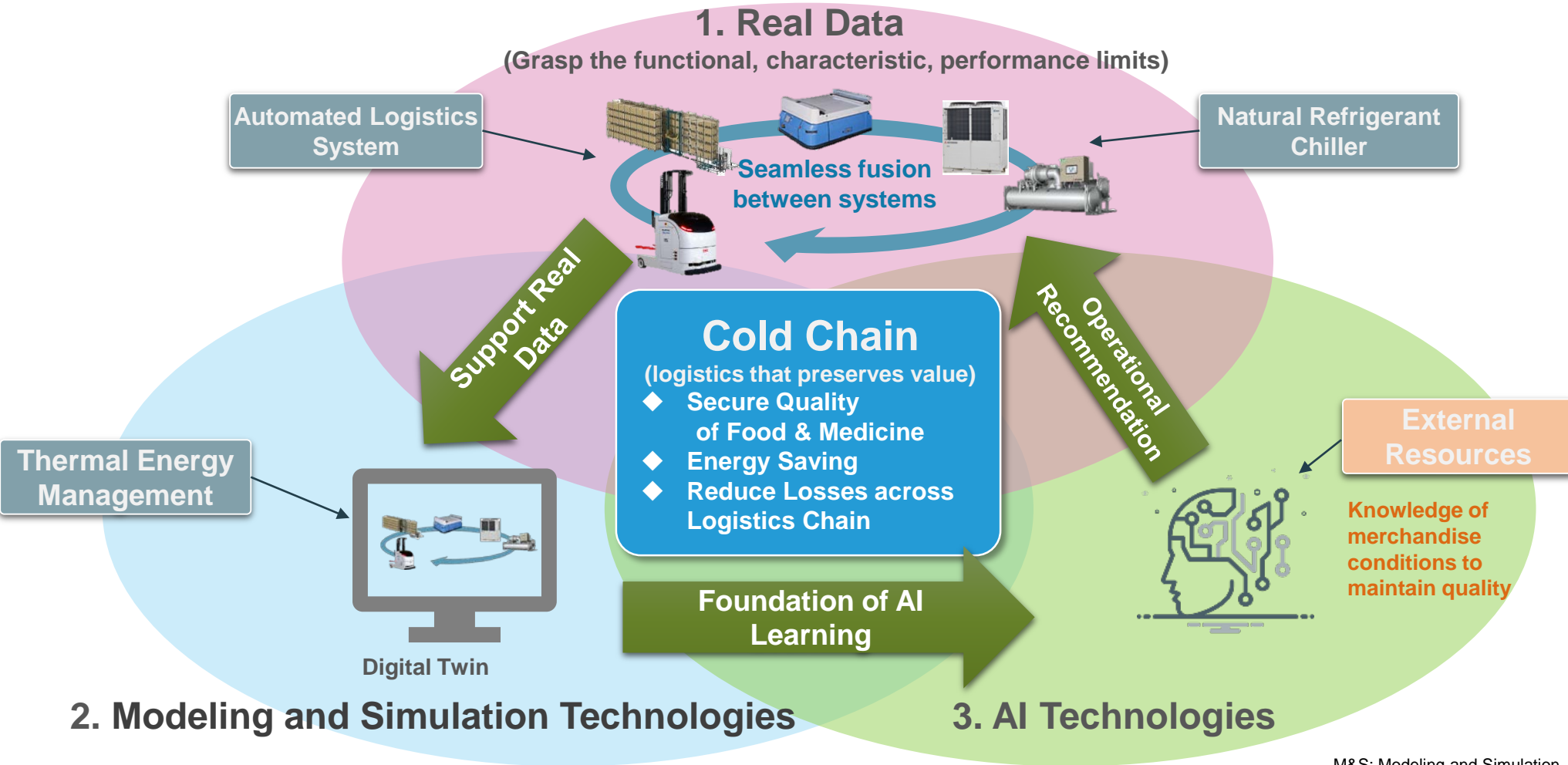
CASE: Connected, Autonomous, Shared and Electric

ITS: Intelligent Transport Systems

M&S: Modeling and Simulation

New Mobility & Logistics (2/2) – Example of Cold Chain

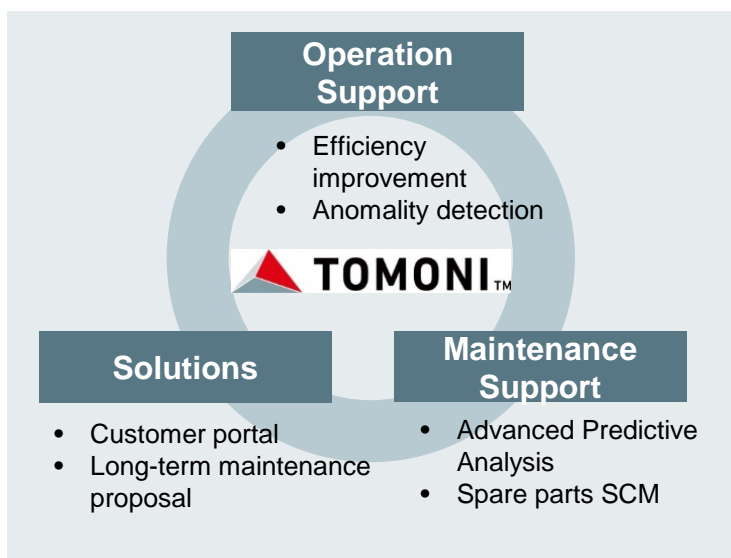
- Realize a seamless fusion between multiple systems by leveraging analytics technologies (M&S: Digital Twin), supported by real data accumulated through logistic & environmental equipment businesses
- Incorporate expertise from external resources, create safer & more secure services through intelligence, and contribute to a more sustainable environment



Leverage Digital Transformation (DX) to increase service business portfolio

Strengthen common platforms

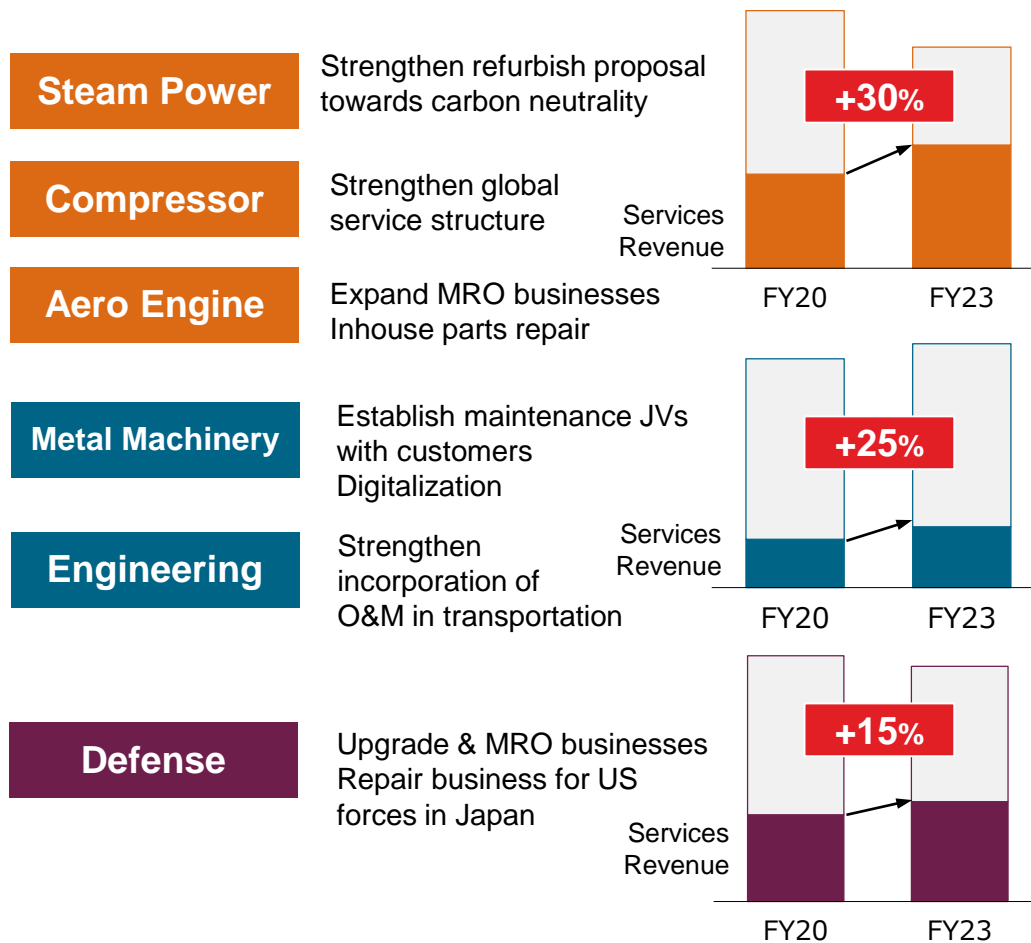
Advanced DX examples within MHI Group









Expand services business through DX

- Establish a taskforce to aggregate expertise within MHI Group, share best practices, and promote adoption of digital tools

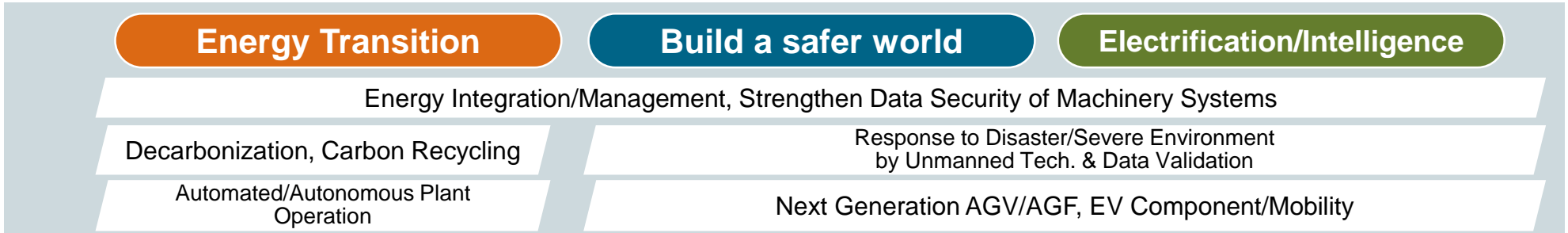
Activities of each businesses



- Promote measures adapted to changes in trends in defense and space, and expand dual use for private sector

	Environment Trend	Measures in Defense/Space areas	Dual Use for Private Sector
Leverage Space	<ul style="list-style-type: none"> • Utilization of information using space becoming more sophisticated 	<ul style="list-style-type: none"> • Strengthen the analytic technology of wide-area image data, "BRAINS" 	<ul style="list-style-type: none"> • Utilize analytic technologies for areas like disaster mitigation to contribute to a safer and more secure world 
Defend Cyberspace	<ul style="list-style-type: none"> • Cyber threats becoming more apparent • Urgent need to strengthen cybersecurity of defense equipment 	<ul style="list-style-type: none"> • Develop and expand the application of "InterSePT", a system to monitor the operation of defense equipment and detect anomalies 	<ul style="list-style-type: none"> • Provide more sophisticated services by applying systems to protect important infrastructure 
Utilize Unmanned Systems	<ul style="list-style-type: none"> • More difficulty in securing workforce due to declining birth rate • Utilizing unmanned systems to maintain or strengthen the defense capability 	<ul style="list-style-type: none"> • Develop "CoasTitan", an integrated control system for unmanned vehicles (UAVs, USVs and UUVs) 	<ul style="list-style-type: none"> • Utilize to monitor, inspect, and strengthen services for important infrastructure 

- Utilize and incorporate technologies accumulated from across broad business areas into strategic growth products by adjusting to the transition in customer needs and machinery systems



AI/Intelligence

Create new value by adding digital technologies

Digital Twin	Data Security	Data Science
Sensor Network	IoT/AI	Automation
Intelligence		

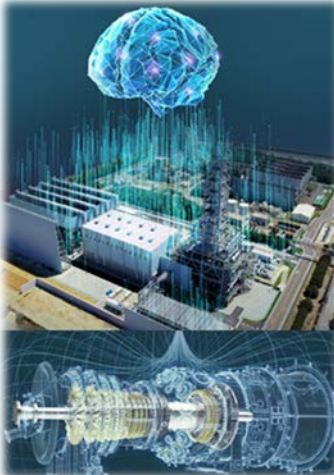
Deepening tech. foundation & creating new function

Operate certainly and efficiently complex machineries and plants

3D integrated Simulation	Sensing	Robotics
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Build unconventional functions

Elemental Conversion	Catalyst	H2 Production & Utilization	AM Utilization
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AM: additive manufacturing

New Activities to Realize Innovation

Innovation Promotion Research Institute
Develop unconventional functions built out from cutting-edge technology

Yokohama Hardtech Hub (YHH)
Open a “co-creation place” for start-ups to realize their ideas

Introduce Pivot Development
Grasp market needs/opportunities quickly, break down new technical issues, develop at a speed that surpasses start-ups



VI. Summary

- **2021 MTBP focuses on strengthening profitability, investing in and developing high growth businesses**
 - Return to and strengthen profitability coming out of COVID-19
 - Invest 180 billion yen in growth areas and create 100 billion yen in new businesses

- **Energy Transition and New Mobility & Logistics represent our primary growth engines**
 - Drive forward energy transition aiming for a carbon neutral 2050
 - Open and embed new business areas in mobility etc.
 - Nurture 1 trillion yen revenue in new businesses by 2030
 - Cross-functional measures led by Growth Strategy Office

Appendix

1. Energy Transition
2. Shared Foundation and Business Area
3. Energy & Environment
4. Aircraft, Defense & Space
5. Industry & Infrastructure (mass and medium lot manufacturing)
6. Industry & Infrastructure (build to order)
7. Materiality
8. TOP (Triple One Proportion)

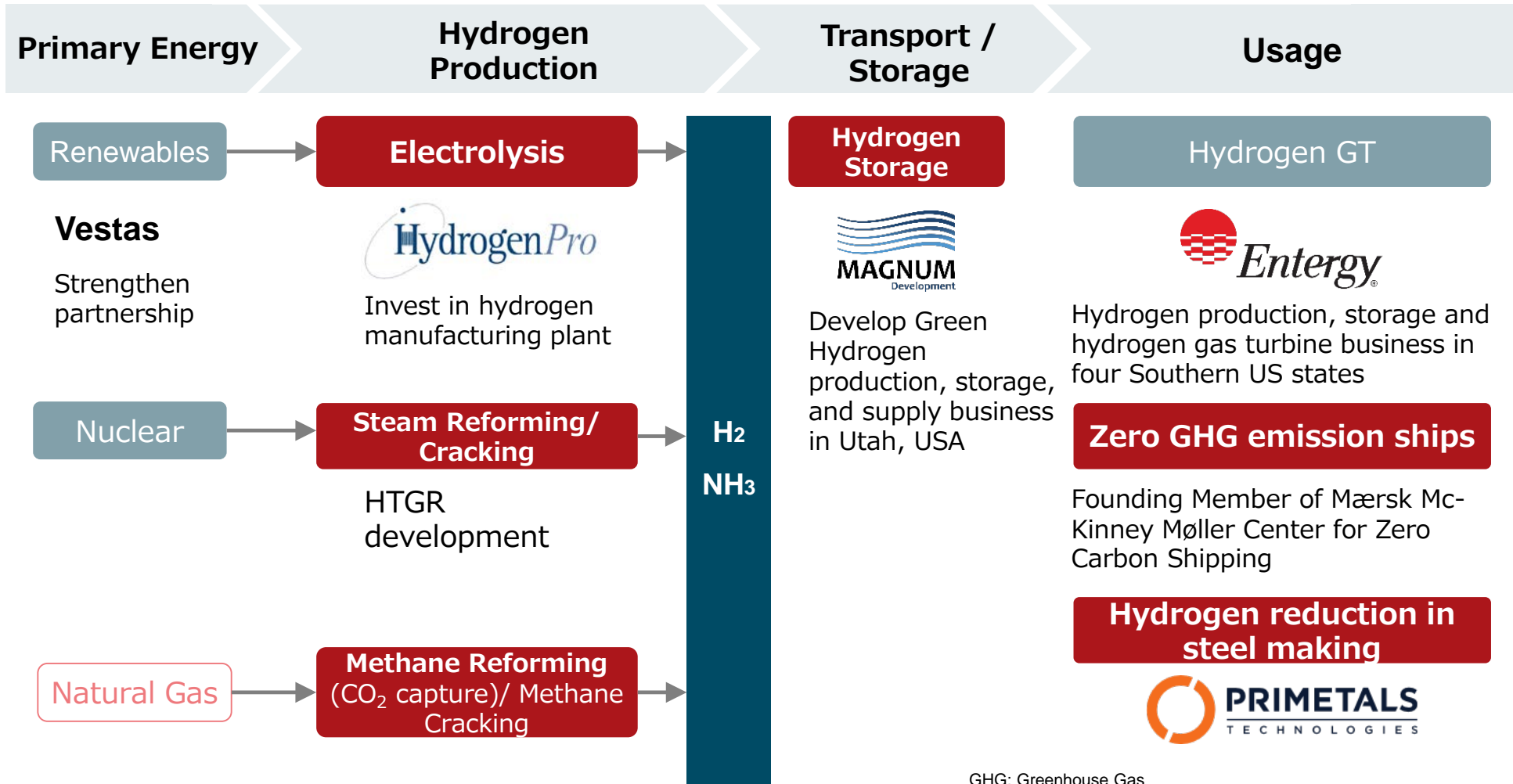
1. Energy Transition Zero CO₂ Fuels

Zero CO₂ Hydrogen and Ammonia Production and Storage

- Move beyond MHI's existing core strength in hydrogen and ammonia usage and build an entire value chain including production

Existing Products

New Areas



GHG: Greenhouse Gas

1. Energy Transition Carbon Capture, transport and converted usage

Carbon Capture

Carbon Conversion & Usage

- MHI Group is global No.1 in volume of CO₂ captured
- MHI will expand its product lineup and invest in conversion technologies to expand business

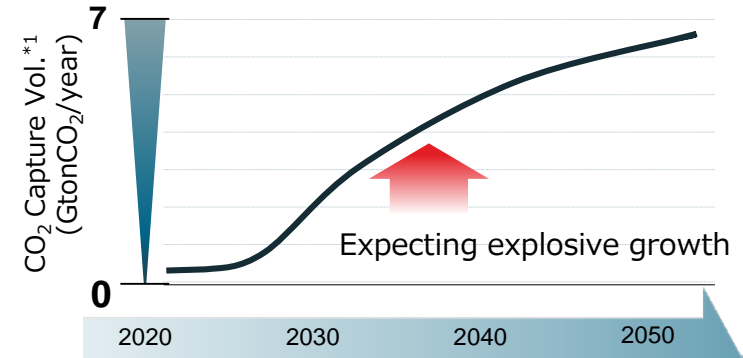
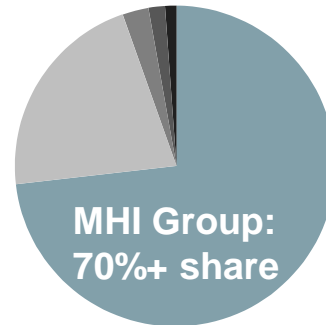
2016: World's largest Carbon Capture plant at steam power plant in Texas, USA



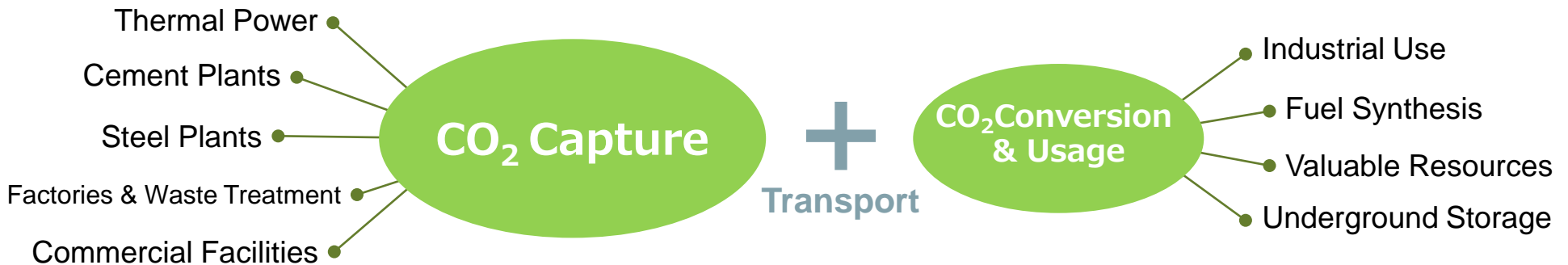
2020: World's largest bioenergy with carbon capture and storage (BECCS) pilot facility with Drax, UK



As of 2020, MHI has largest global installed base market share in carbon capture



*1: Predicted CO₂ capture vol. needed to achieve global carbon net zero at the earliest later than 2050, in accordance with the "1.5 °C Scenario"



Renewables

Storage

Increased energy-use efficiency

EMS: Energy Management System VPP: Virtual Power Plant

Increased energy-use efficiency

- ✓ Build energy solution provider business by combining large domestic market share in private industrial power generation and ENERGY CLOUD



EMS Services
Demand prediction and IPP



VPP Services
Aggregate market transactions and regional resources

IPP: Independent Power Producer

Energy Storage

- ✓ **BESS** (Battery Energy Storage Systems)

US orders totaling 220MW
(20MW in South California, 200MW in Texas)
Roll out to other regions



- ✓ **EBLOX** (triple hybrid stand-alone power generation system)
Expand renewables-linked products



Offshore Wind

- ✓ **Strengthen Partnership with Vestas**
 - Improve competitiveness through integration of offshore and onshore wind
 - Exchange MHI's shares in MVOW to Vestas shares, gain seat on Vestas board
 - Focus on MHI's areas of strength
 - Japan, APAC sales JV
 - Japan production and supply chain

MVOW: MHI Vestas Offshore Wind

- ✓ **Expand into New Areas**

- Explore joint development with Vestas in hydrogen
- Project development for offshore wind in Hokkaido with Copenhagen Infrastructure Partners (CIP)



1. Energy Transition

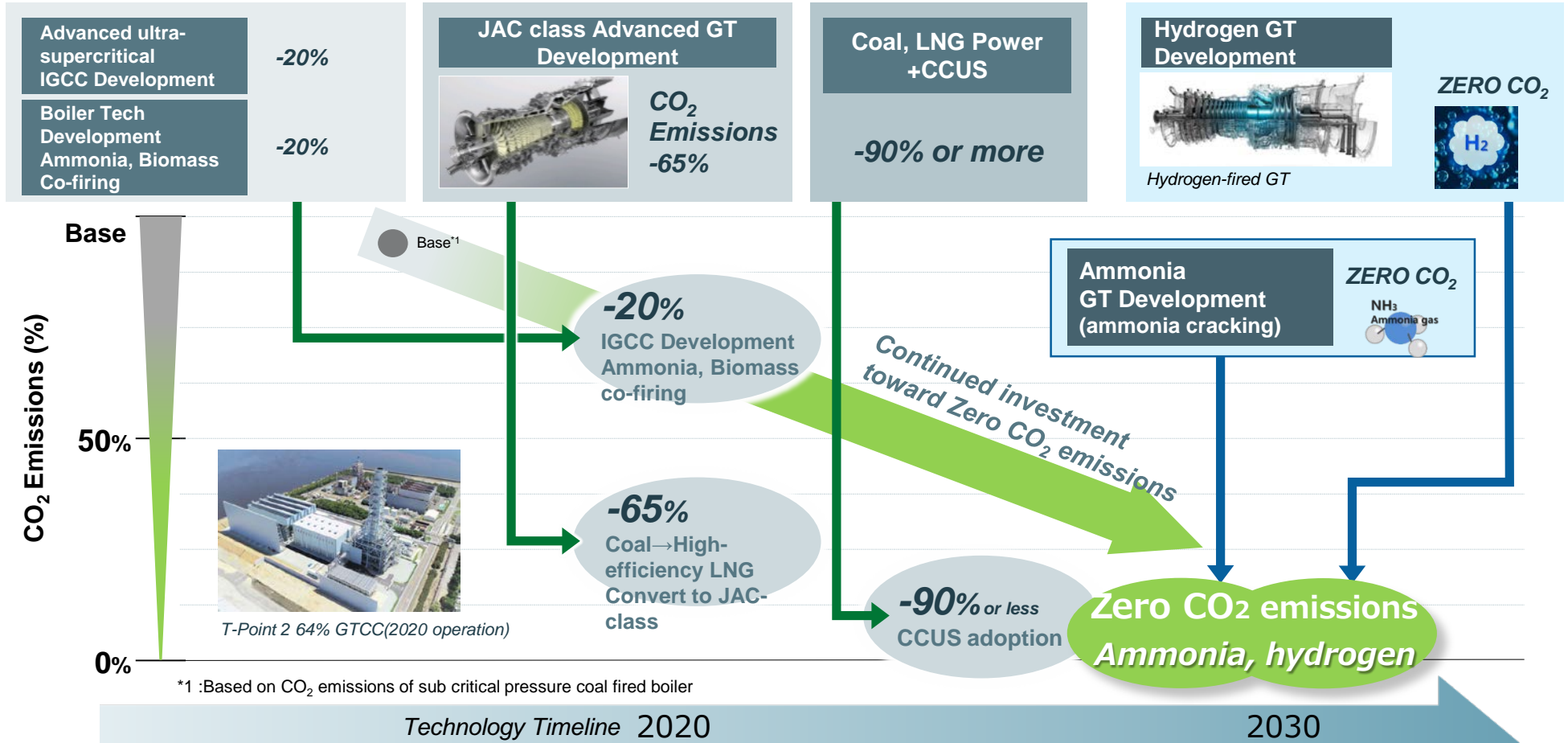
Investments and CO₂ reduction track record

Increase efficiency and performance of existing thermal power

- CCUS (carbon recycling) and conversion to hydrogen/ammonia fuels leading to zero CO₂ emissions
- Hydrogen Gas Turbines are catalyst for hydrogen demand (GT400MW = 2 million FCVs)

CO₂ Reduction

Increase efficiency and performance of current thermal power

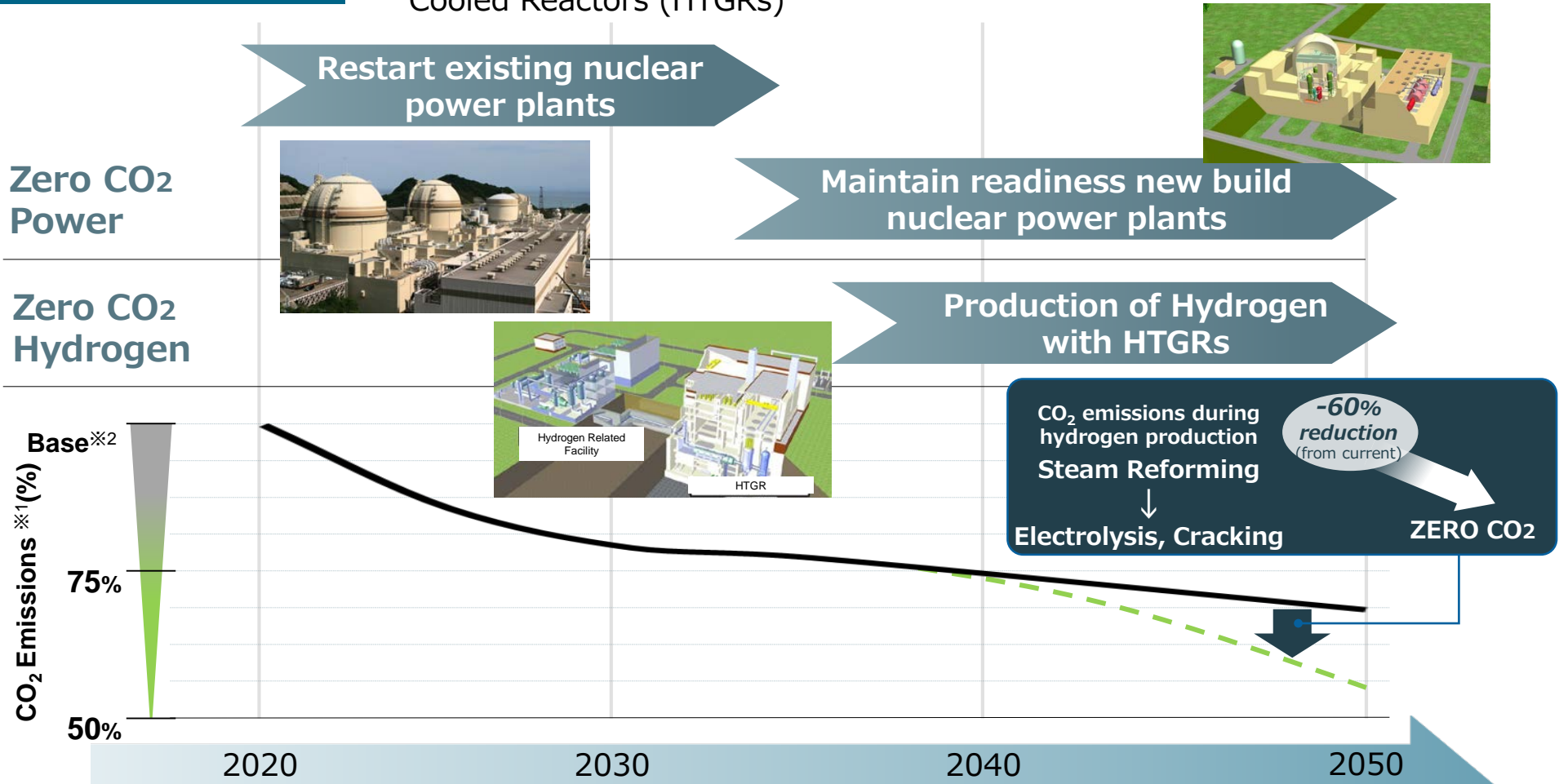


*1 :Based on CO₂ emissions of sub critical pressure coal fired boiler

1. Energy Transition Reducing CO₂ emissions with nuclear

Reducing CO₂ emissions with nuclear

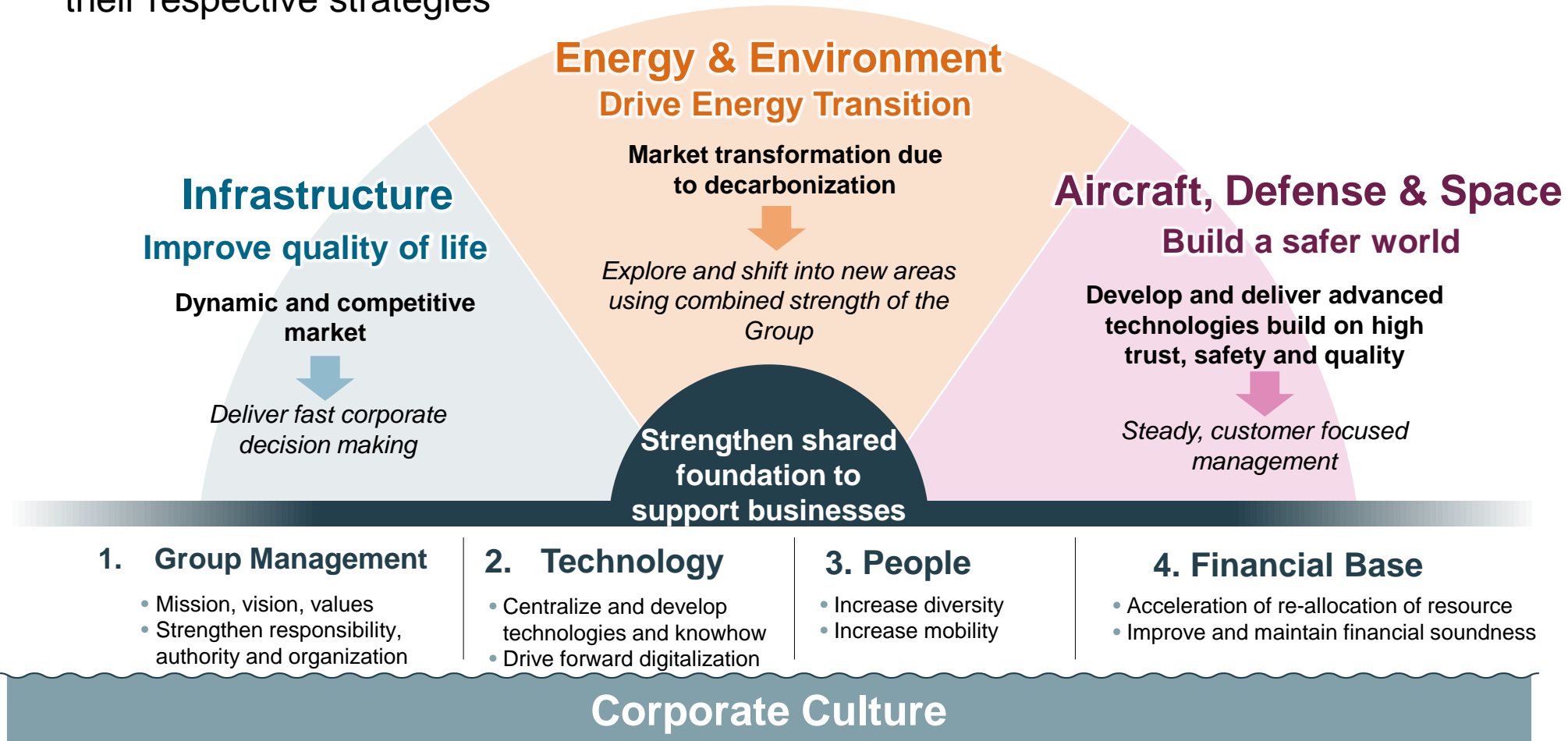
- Drastically reduce CO₂ emissions from power generation sector by restarting existing nuclear power plants and building new ones
- Stable and high volume production of Hydrogen with High Temperature Gas Cooled Reactors (HTGRs)



※1: Predicted CO₂ emission reduction if nuclear replaced steam power ※2: Total CO₂ emissions in power generation

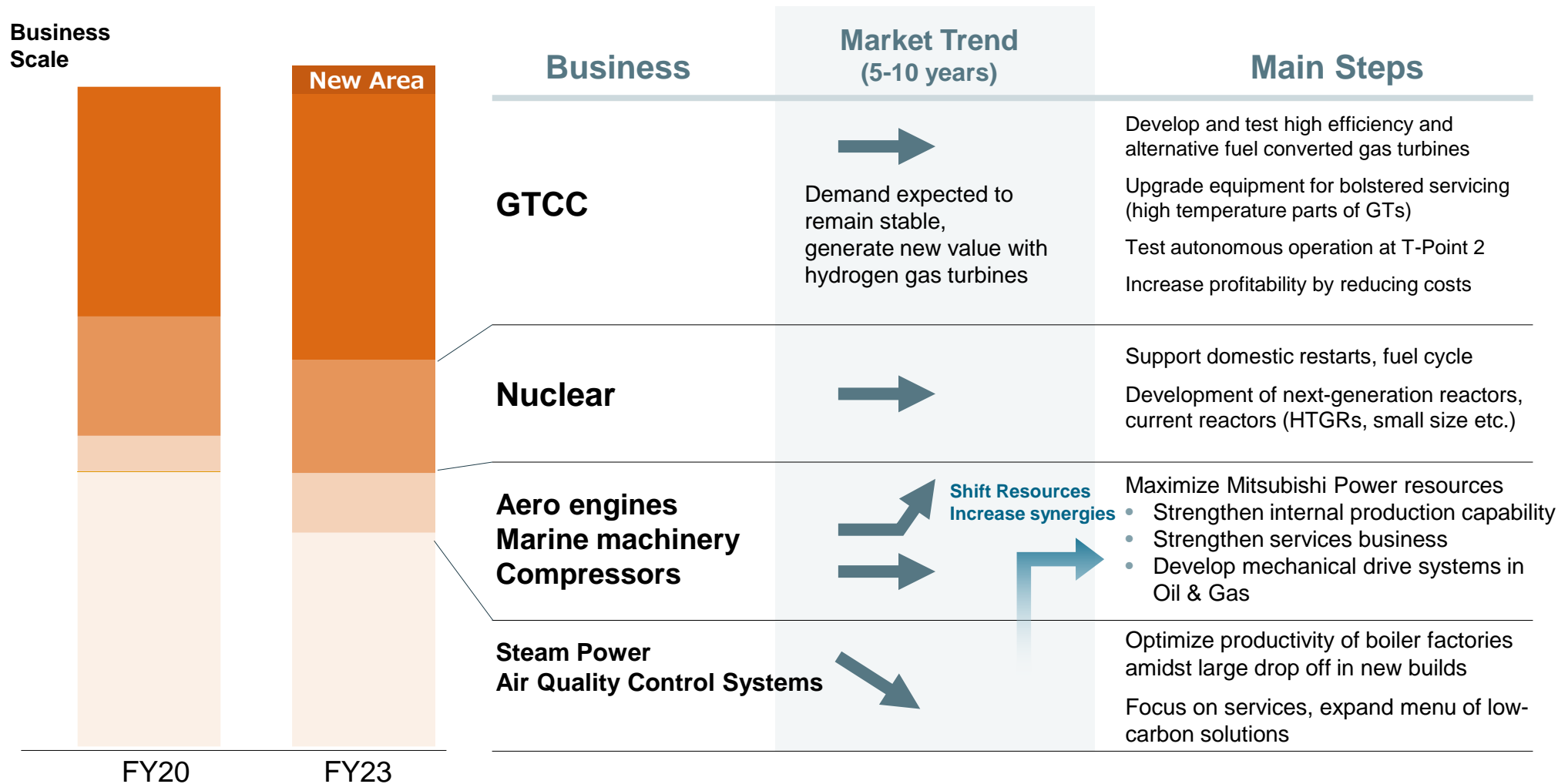
2. MHI Group Shared Foundation & Business Areas

- Accumulate technologies, expertise and personnel cultivated across a broad range of businesses in shared foundation
- Businesses will leverage strengths of the shared foundation to drive growth based on their respective strategies



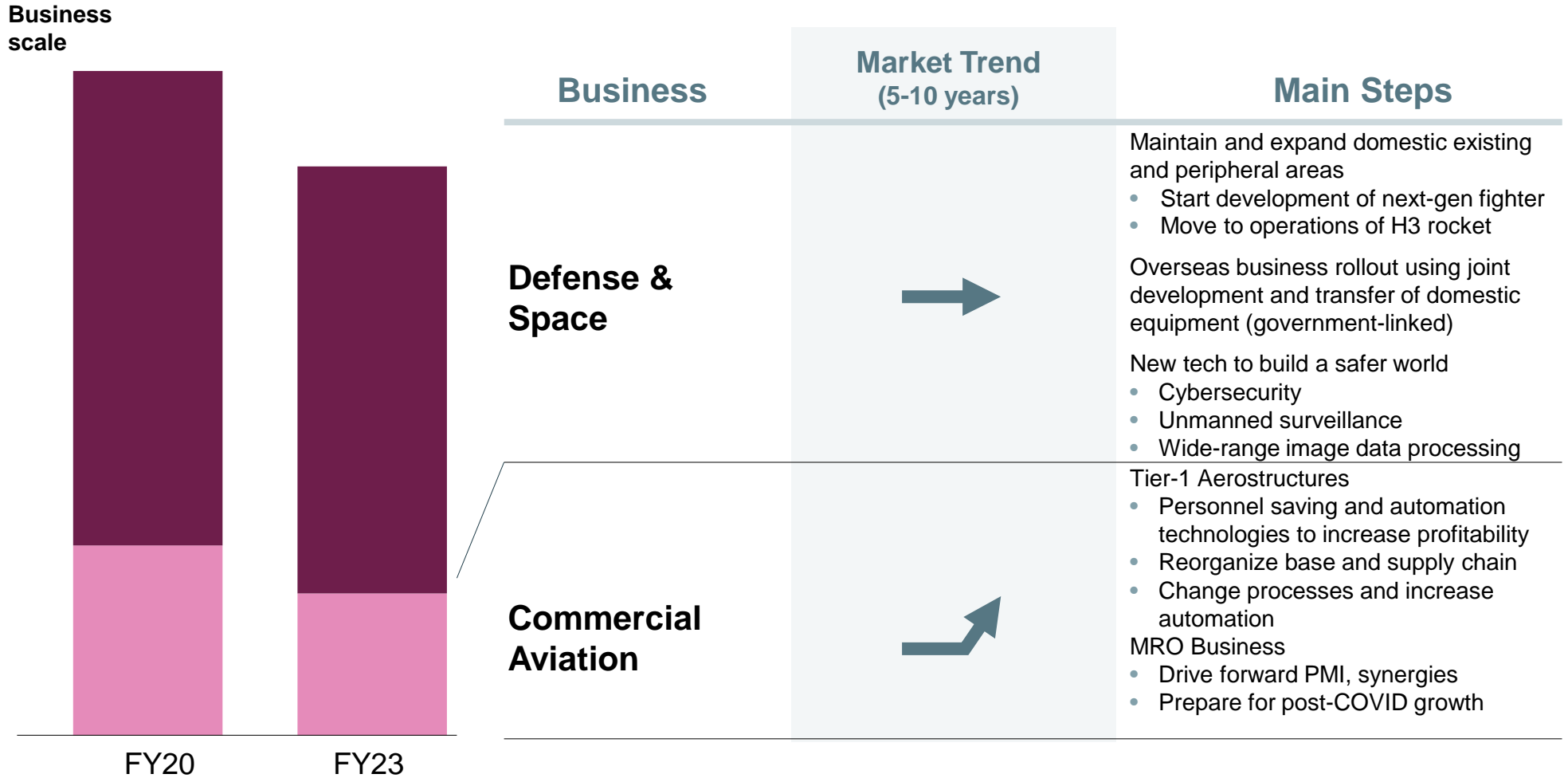
3. Energy & Environment

- Balance profitability and growth potential to adjust portfolio and achieve a carbon neutral world by 2050
- Maximize global foundation and resources within Mitsubishi Power across MHI Group



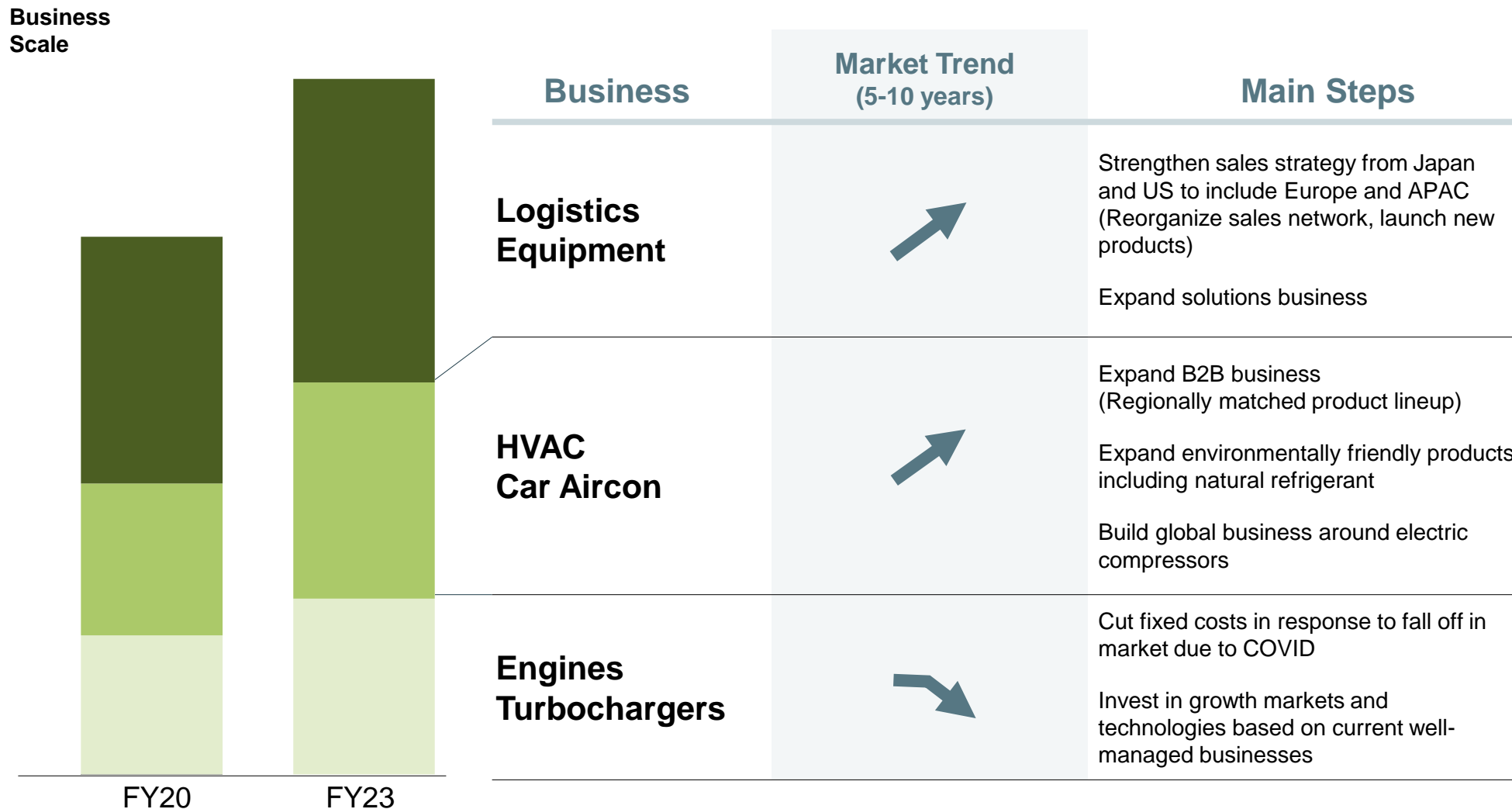
4. Aircraft, Defense & Space

- Maintain and expand dominant position in Defense & Space business, proactively develop new technologies
- Expect longer-term drop in aircraft market due to COVID-19, strengthen organization for future growth



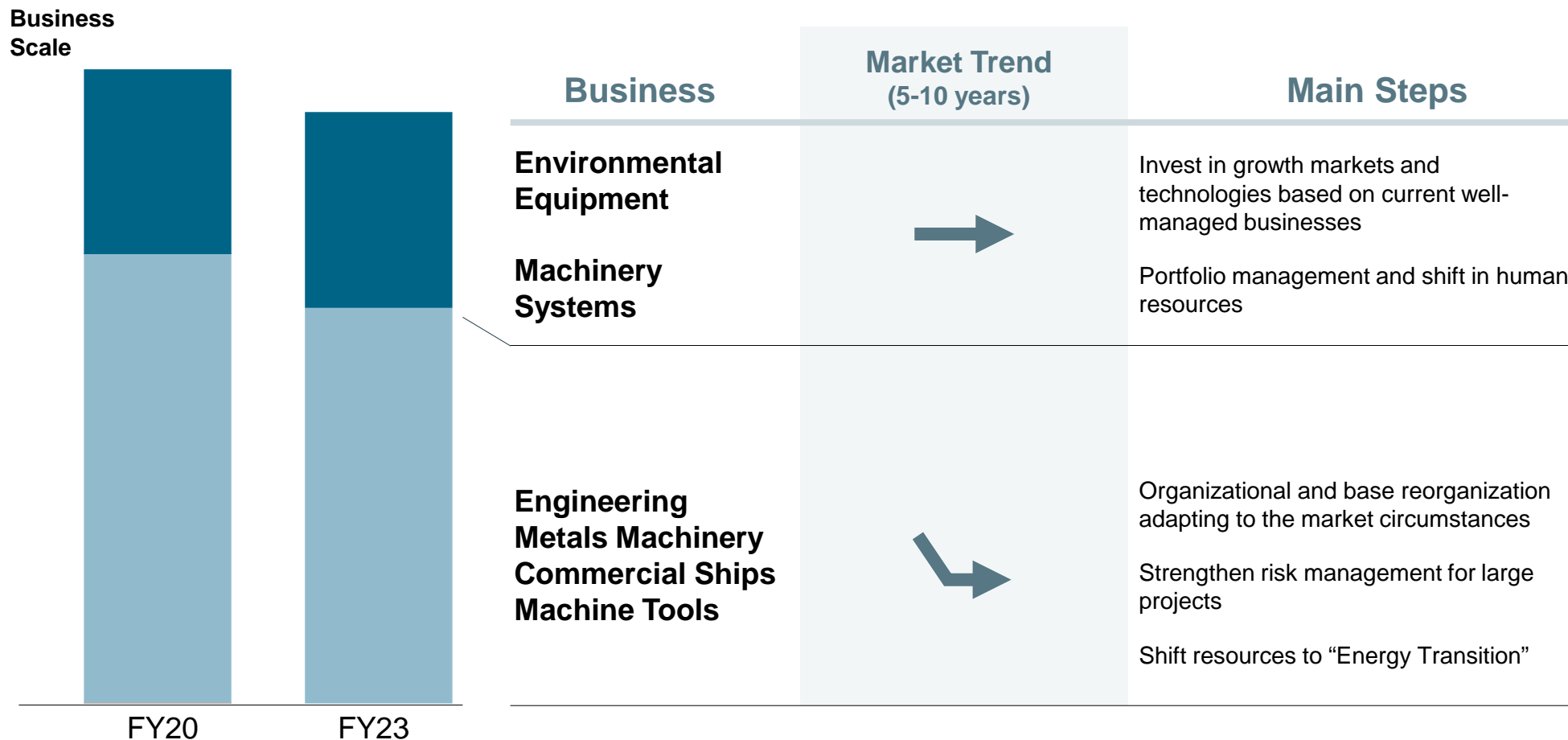
5. Infrastructure (Mass and Medium Lot Products)

- Recover from COVID crisis quickly and increase investment in growth businesses



6. Infrastructure (Build To Order Business)





















- Respond to change in market environment after COVID, and make structural improvements to increase profitability



7. Merging Non-Financial and Financial – Materiality

■ Defining Materiality for MHI Group

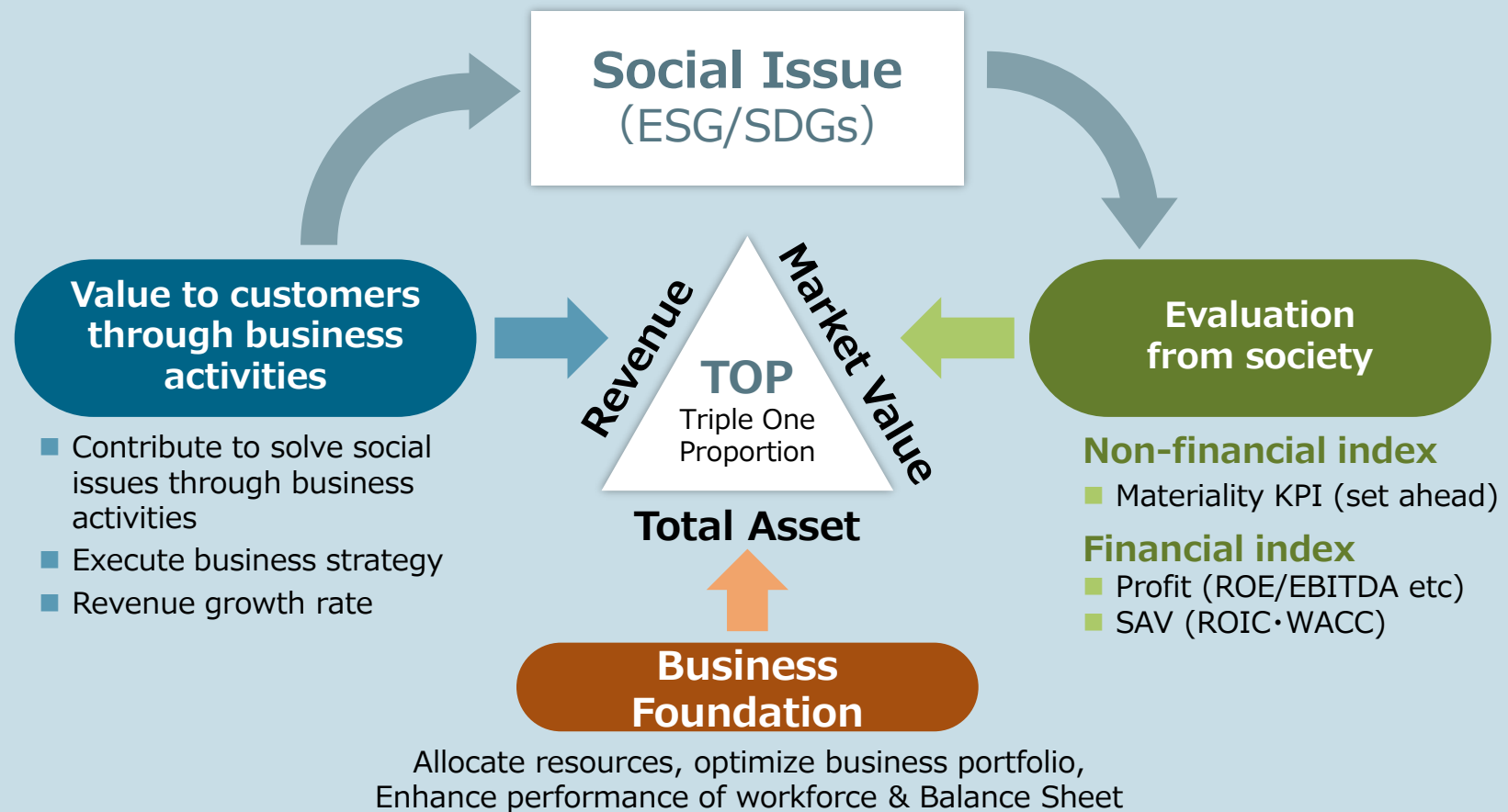
- Streamlined and analyzed the issues which MHI Group should prioritize to deal with, from both a “Social perspective” (e.g. recent rising focus on SDGs and climate change), and “Our perspective” (MHI Group’s vision). Through dialogue with stakeholders, the Materiality that MHI Group should tackle have now been defined
- Materiality progress will be monitored by mid- to long-term “targets” and “KPIs” set as milestones, and by linking business activities and non-financial indexes. In addition, we will communicate with a broad range of stakeholders our contribution to building a sustainable world

	Materiality	Social Issues		SDGs
Business Contribution (Business)	① Provide energy solutions to enable decarbonized world	<ul style="list-style-type: none"> Mitigate climate change Reduce GHG emission Stable energy/electricity supply 	<ul style="list-style-type: none"> Improve energy efficiency Popularize renewable energy Promote 3R*/circulation economy 	  
	② Transform society through AI and digitalization	<ul style="list-style-type: none"> Promote AI/digitalized society Enhance productivity to react to labor shortages Update outdated facilities 	<ul style="list-style-type: none"> Enhance transportation safety/convenience Decarbonize mobility Diversify transportation needs React to increased logistics 	    
	③ Build a safer and more secure world	<ul style="list-style-type: none"> National security by defense Adapt to climate change Enhance function/durability of infrastructure Rationalize infrastructure 	<ul style="list-style-type: none"> Interfere with cyber attacks on industrial systems / IoT Prevent pandemics & take appropriate measures 	    
Foundation to support Business (Corporate)	④ Promote diversity and uplift employee engagement	<ul style="list-style-type: none"> Nurture/secure workforces Respect human rights Promote diversity 	<ul style="list-style-type: none"> Enhance labor productivity Labor safety & hygiene Promote health management 	    
	⑤ Enhance Corporate Governance	<ul style="list-style-type: none"> Corporate governance Comply with law/international order 	<ul style="list-style-type: none"> Fair competition/business compliance Grasp overall corporate risk/management Timely disclosure 	 

*3R: Reduce, Reuse, Recycle

8. MHI Group Management KPI - Triple One Proportion (TOP)

- “TOP” is MHI Group’s overall management Key Performance Index(KPI) to evaluate the balance among value provision to customers, business foundation, and evaluation from society, aiming the equal balance -1:1:1- among three management factors: net sales, total assets, and market value.



MOVE THE WORLD FORWARD

**MITSUBISHI
HEAVY
INDUSTRIES
GROUP**