

2021 Medium-Term Business Plan Progress (FY2021-2023)

May 12, 2022

Seiji Izumisawa, President & CEO

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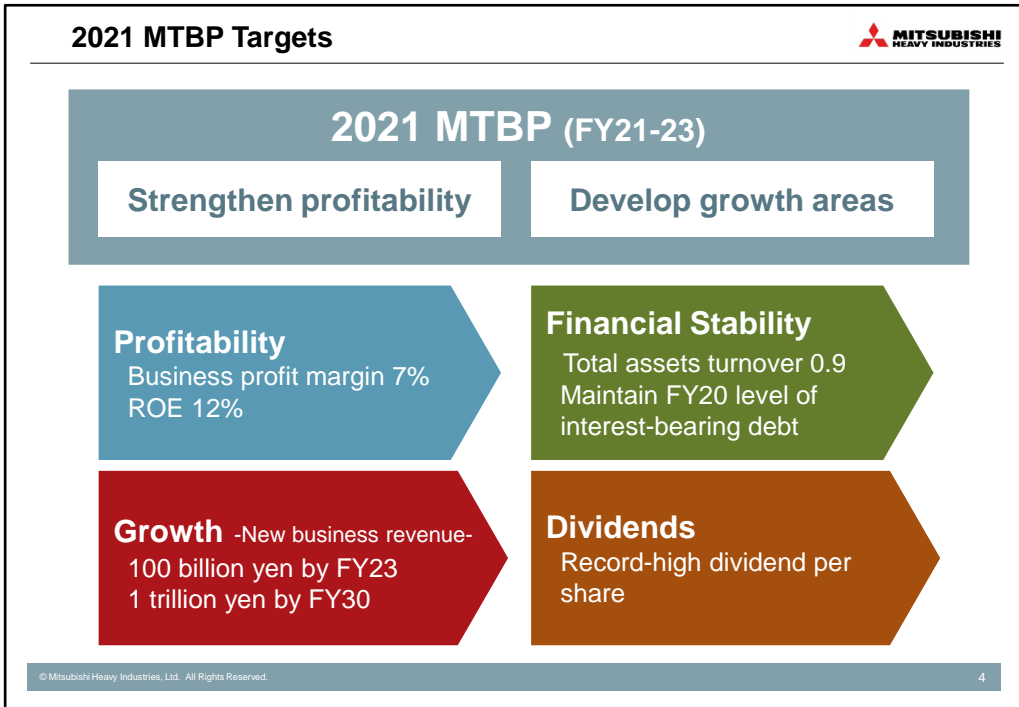
Allow me to speak about the progress we have made in our 2021 Medium-Term Business Plan (MTBP).

- I. 2021 MTBP Overview**
- II. Strengthening Profitability**
- III. MHI Sustainability Initiatives & Carbon Neutrality**
 - III-1. Energy Supply**
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I. 2021 MTBP Overview

First, I will provide an overview of the 2021 MTBP.



This page restates the goals of the 2021 MTBP.

We are working to achieve four target indicators with the goal of strengthening profitability and developing growth areas.

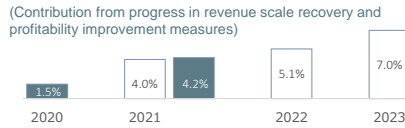
FY21 Results



- Overcame negative impact from delayed COVID-19 recovery in Aero Structures as well as semiconductor shortages and materials cost inflation with successful profitability improvement measures to achieve all KPI targets
- Impact from Russia/Ukraine conflict currently limited. Will continue to closely monitor situation.

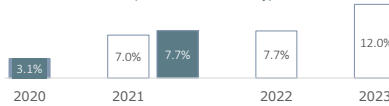
Profitability

Business Profit Margin: ✓



ROE: ✓✓

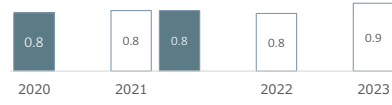
(Same as Profitability)



Financial Stability

✓✓ Exceeded plan ✓ Achieved Plan

Total Asset Turnover: ✓



Interest-Bearing Debt: ✓✓

(Contribution from increased cash flow due to profit increases and working capital management)



Growth

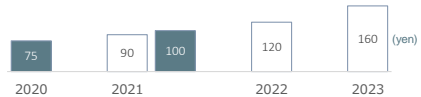
Good progress toward meeting FY23 targets

See III. MHI Group Sustainability Initiatives for details

Shareholder Return

Dividends per Share: ✓✓

(Contribution from Profitability and Financial Stability results exceeding plan)



This page summarizes the FY2021 results.

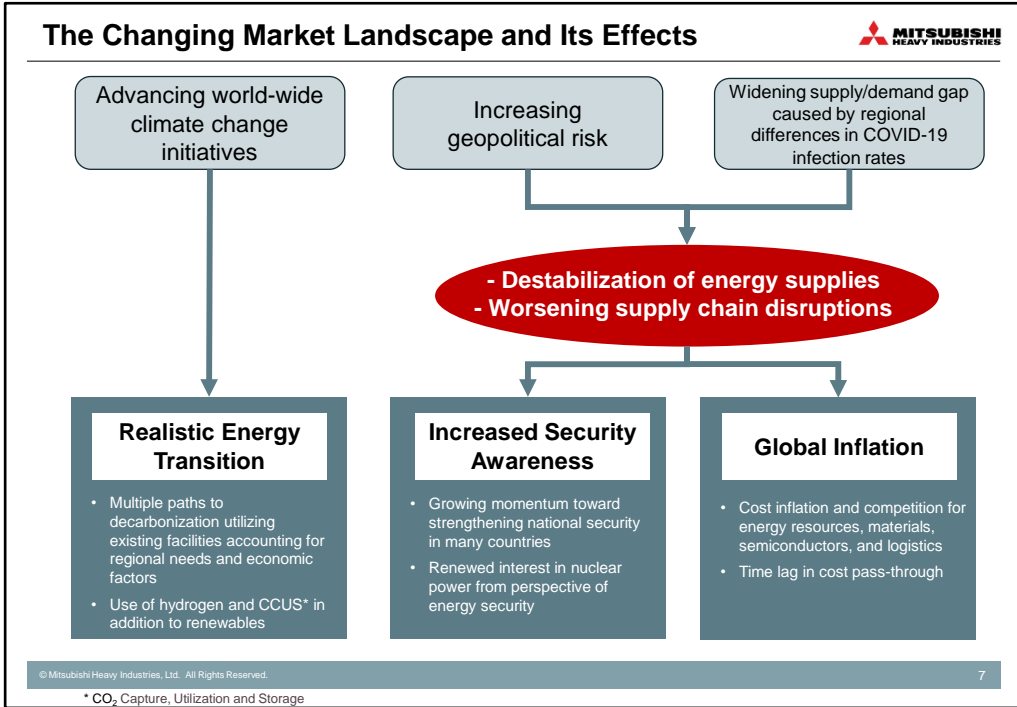
In FY2021, we were affected by semiconductor shortages and materials cost inflation, in addition to the impact of COVID-19, but we were able to achieve all of our targets through a variety of initiatives.

To summarize, recovery in Logistics, Thermal & Drive Systems and Aero Engines was largely in line with our expectations. However, recovery in the Aero Structures business has been somewhat delayed, and we plan to compensate for this by continuing the measures we have taken to date.

Although the impact from the Russia/Ukraine conflict on our businesses is currently limited, we will continue to closely monitor the situation and take steps to minimize any effects.

II. Strengthening Profitability

Next, I will discuss the strengthening of profitability.



This page shows changes in the market landscape since the 2021 MTBP was originally formulated and their impact on the Company.

First, world-wide climate change initiatives are advancing. Energy is an integral part of life, and needs are beginning to appear for optimal solutions taking into consideration characteristics of each region and local industry in addition to economic factors.

In order to respond to these needs, rather than a single, unified solution, realistic solutions tailored to the situation in each region are being explored, and a phased approach to make effective use of existing facilities is under discussion. Going forward, we believe that not only renewable energy but also utilization of hydrogen and CCUS will increase.

A supply/demand gap has emerged caused by regional differences in COVID-19 infection rates and countermeasures as well as increasing geopolitical risk stemming from the Russia/Ukraine conflict. This has led to instability in energy supplies and disruptions in supply chains, and uncertainty about the future is increasing.

These changes to the business environment have had two main effects on MHI Group:

The first is related to heightening awareness of security issues. There is growing momentum in many countries to strengthen national security. Furthermore, a re-appraisal of nuclear power from the perspective of energy security is underway. As a leading company in the areas of nuclear power and defense, we recognize that society expects us to respond in these areas.

The second is related to responding to global inflation. We are seeing impact on our

businesses from inflation in energy resources, materials, and logistics costs, as well as from semiconductor shortages. To respond to these challenges, we will further work to strengthen our competitiveness in areas such as supply chains and manufacturing capabilities. We will also work to increase sales prices.

Path to FY23 Target Achievement



- Continue timely response to changes in business environment and position FY22 as a springboard for further profit improvement
- Determined to achieve 7% business profit margin in FY23, the final year of the 2021 MTBP period, as the culmination of our key initiatives

		FY21 Results	Actions to Achieve FY22-23 Targets
2021 MTBP Initiatives	COVID-19 Recovery	<ul style="list-style-type: none"> Logistics, Thermal & Drive Systems and Aero Engines recovered as forecasted Aero Structures recovery delayed 	<ul style="list-style-type: none"> Aero Engines to strengthen internal manufacturing capabilities by opening new Nagasaki Plant Further fixed cost reductions in Aero Structures
	Existing Business Growth	<ul style="list-style-type: none"> Strengthened sales networks and service organizations in anticipation of market recovery 	<ul style="list-style-type: none"> Grow businesses with improved sales networks and service bases (Europe, Asia [incl. China], and Australia)
	Profitability Improvements & Organizational Transformation	<ul style="list-style-type: none"> Pivoted to services Consolidated organization and locations. Continued pursuing business divestments. 	<ul style="list-style-type: none"> Grow services by strengthening DX organization Continue business portfolio optimization
	Fixed Cost Reductions	<ul style="list-style-type: none"> Cut SG&A (excl. innovation investments) Increased corporate function efficiency by integrating with Mitsubishi Power 	<ul style="list-style-type: none"> Further optimization through DX and other initiatives. Shift human resources. Continue underutilized asset sales
Adapt to Changing Business Environments	Realistic Energy Transition	Little direct impact in FY21, but recognized as important medium-term trend	<ul style="list-style-type: none"> Increase business opportunities by proposing Energy Transition initiatives tailored to each region's needs
	Increasing Security Awareness		<ul style="list-style-type: none"> Contribute to Japan's national security Strengthen support for both Japan domestic and international new nuclear power plant installations (next-generation reactors, component export)
	Global Inflation		<ul style="list-style-type: none"> Began appropriate cost pass-throughs in response to negative impact of materials cost inflation and semiconductor shortages
			<ul style="list-style-type: none"> Pursue appropriate cost pass-throughs. Revisit contract terms.

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This page summarizes our initiatives to achieve our FY2023 targets in light of the changing business environment.

In FY2022, we will steadily implement each of the initiatives outlined in the 2021 MTBP. We will also strengthen our organization while monitoring and responding to changes in the market. In this way, FY2022 is positioned as a year during which we will solidify our fundamentals in the leadup to FY2023 target achievement.

In FY2021, we made progress in strengthening our service bases and organizations. In FY2022, we will achieve concrete results in our services businesses.

We have to some extent completed consolidation of organizations and locations as well as divestments of businesses with issues. Going forward, the new Aero Engines plant in Nagasaki will strengthen in-house manufacturing capabilities and contribute to higher profits.

We will further expand our services businesses by strengthening our DX organization. We are also considering the next steps in business portfolio optimization.

In response to the changes in the business environment since the MTBP was originally formulated, we will develop business opportunities by making contributions to national security, strengthening our nuclear energy initiatives, and proposing an Energy Transition tailored to local needs.

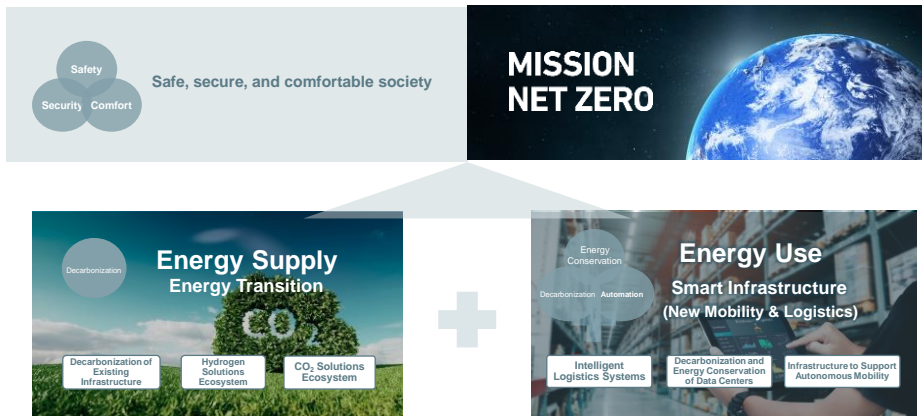
III. MHI Group Sustainability Initiatives & Carbon Neutrality

Over the next several pages, I will discuss MHI Group initiatives toward realizing a sustainable society.

MHI Group Sustainability Initiatives



- Achievement of Carbon Neutrality is essential to realizing a sustainable society that is safe, secure, and comfortable
- MHI Group will promote decarbonization of energy supplies through the Energy Transition together with energy conservation, automation, and decarbonization of energy use with Smart Infrastructure



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We recognize that achieving Carbon Neutrality is essential for realizing a sustainable society that is safe, secure, and comfortable.

MHI Group believes that it is important to promote both the decarbonization of energy supplies through the Energy Transition, and energy conservation, automation, and decarbonization of energy use with Smart Infrastructure.

Energy Transition	<ul style="list-style-type: none"> ■ Carbon Neutrality commitments, which began in Europe, spread to U.S., China, and rest of world ■ In response to this, the consideration of specific measures for a variety of regions and industries is accelerating <ul style="list-style-type: none"> • Awareness level of the importance of diverse paths to Carbon Neutrality is rising as a reflection of recent urgency of energy security concerns. Multiple paths should be developed with a view to S + 3Es¹, without limiting to a renewables-only approach • Interest took off in specific projects in the CCUS space, which will enable Carbon Neutrality in hard-to-abate industries², such as steelmaking, cement, and chemicals
Smart Infrastructure (New Mobility & Logistics)	<ul style="list-style-type: none"> ■ Due to prolongation of COVID-19 pandemic, e-commerce experienced explosive growth driven by consumer demand during lockdowns. Labor shortages in the logistics industry are becoming more severe, and the trend toward automation in logistics and manufacturing is accelerating ■ Demand for data centers is booming as the digitalization of society accelerates ■ Further demand for decarbonization and energy conservation of energy use

1 Safety + Energy Security, Economic Efficiency, and Environment, the basis of Japan's energy policy since 2014

2 Industrial or energy sectors which are considered difficult to decarbonize

This page summarizes recent developments in the energy supply and use areas.

Carbon Neutrality commitments are spreading from Europe, which has been a leader in this area, to the U.S., China, and the rest of the world. In response, specific measures for a variety of regions and industries are now being considered at an accelerated pace by businesses.

Additionally, growing energy security awareness requires a variety of paths with a view to S + 3Es, without limiting to a renewables-only approach. CCUS inquiries are beginning to emerge in hard-to-abate industries such as the steelmaking, cement, and chemicals.

Next is energy supply. In response to increased demand from lockdowns during the prolonged pandemic, rapid growth in e-commerce has further exacerbated labor shortages in the logistics sector. In this context, automation in logistics and manufacturing are accelerating. Demand for data centers is booming as the digitalization of society accelerates. Conventional systems consume large amounts of energy, so we believe there is a growing need for solutions to decarbonize and conserve energy in this area.

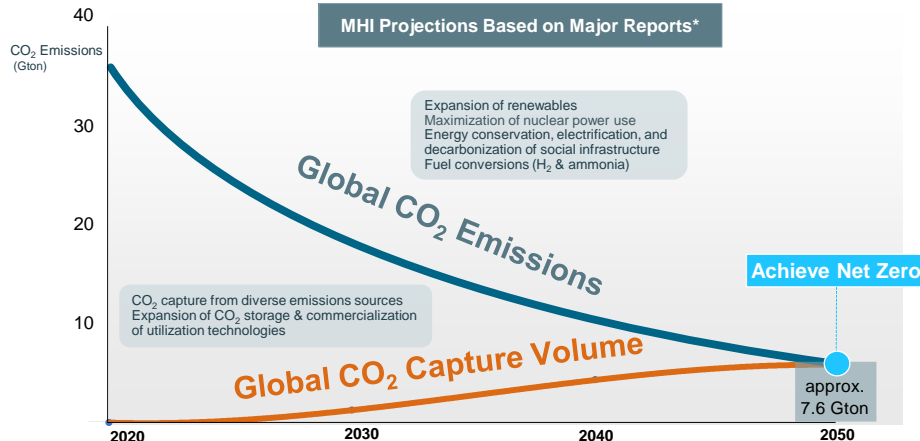


In the energy supply side area, we have been promoting the decarbonization of existing infrastructure and the realization of hydrogen and CO2 solutions ecosystems. Today I would like to focus on the CO2 solutions ecosystem.

Realizing a CO₂ Solutions Ecosystem



- CO₂ capture (1/4 of current emissions) combined with emissions cuts is essential to achieve Carbon Neutrality
- Need increasing for compact CO₂ capture systems for industrial plants in addition to large scale capture systems for energy and chemical sectors
- Initiatives in capture, transport, storage, and utilization are gaining momentum



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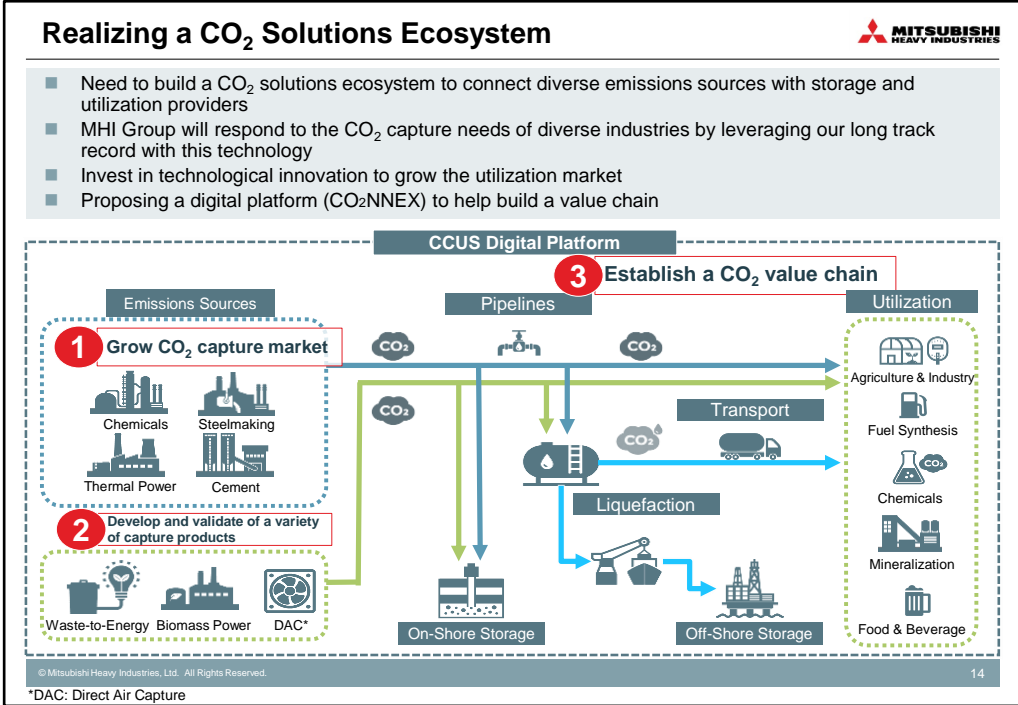
*Includes IEA Net Zero by 2050 and McKinsey 1.5C Scenario reports

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Along with emissions reductions, CO₂ capture is essential to achieve Carbon Neutrality.

Global CO₂ emissions will be significantly reduced under the 1.5° C Scenario through expansion of renewable energy, utilization of nuclear power, electrification, fuel conversions, and other measures. However, the continued use of existing power generation facilities and the need to address hard-to-abate sectors require a certain amount of CO₂ capture. Studies estimate that about one-quarter of current CO₂ emissions will need to be captured.

For this reason, demand is expected to grow for compact CO₂ capture systems for industrial plants, in addition to large scale capture systems targeting the energy and chemicals sectors. In order for CO₂ capture technology to become established, storage and utilization of the captured CO₂ is needed, and we anticipate increased activity in these areas.



This page depicts the CO₂ solutions ecosystem that MHI Group hopes to realize.

We are escalating efforts in each of the areas shown. CO₂ capture from not only conventional large-scale emissions sources but also a wide variety of facilities is now being considered. We are investing in the development of innovative technologies mainly through start-up companies in both the storage and utilization areas.

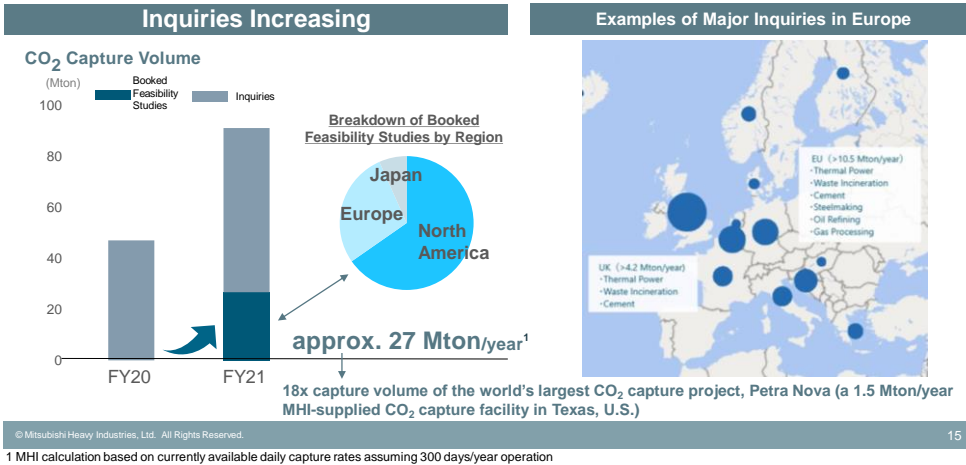
In addition, Proofs of Concept (PoC) have been initiated for a digital platform to help build this value chain.

Starting with the next page, I will discuss the progress in CO₂-related businesses within the framework of the 2021 MTBP in the following three categories: 1. Trends in the CO₂ capture market, 2. MHI Group's response to these trends, and 3. Our efforts to build a CO₂ value chain ecosystem.

1. Grow CO₂ Capture Market



- Inquiries for CO₂ capture increasing in North America, Europe, and Japan
- Booked orders for feasibility studies representing approximately 27 Mton/year of CO₂ leveraging MHI Group's proven track record, unique technologies, and capability to operate across sectors
- Will continue responding to customer inquiries and maintain world's top market share



The market for CO₂ capture is growing in North America, Europe and Japan.

In recognition of our proven track record in CO₂ capture, we booked orders for feasibility studies equivalent to approximately 27 million tons per year in FY2021. This is roughly equal to 18 times the amount collected by the world's largest CO₂ capture project (Petra Nova).

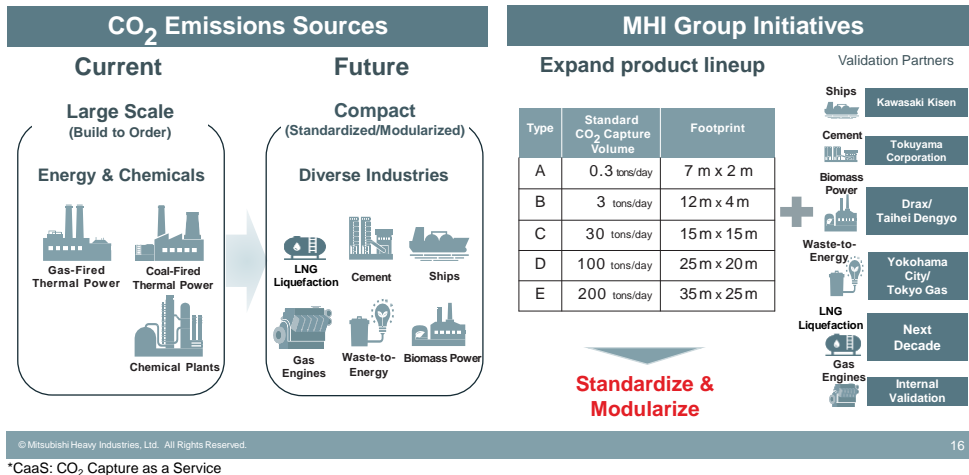
As shown in the figure to the lower right, inquiries in Europe cover a wide range of industries.

MHI Group will convert these inquiries into orders by leveraging our abundant experience, unique technologies, and ability to operate across sectors.

2. Develop and Validate a Variety of CO₂ Capture Products



- Expand product lineup by standardizing and modularizing CO₂ capture systems to address projected growth in compact capture systems for diverse industries (including hard-to-abate sectors). Finish validation testing with partners by end FY23.
- Proposing new service businesses, including automated and remote operation as well as CaaS* and working to build a CO₂ solutions ecosystem. Commercialize starting in FY24.



CO₂ capture needs are projected to grow not only for conventional large-scale capture facilities to be installed at conventional thermal power and chemical plants, but also for a variety of other industries. We are developing standardized, modular systems to address these needs.

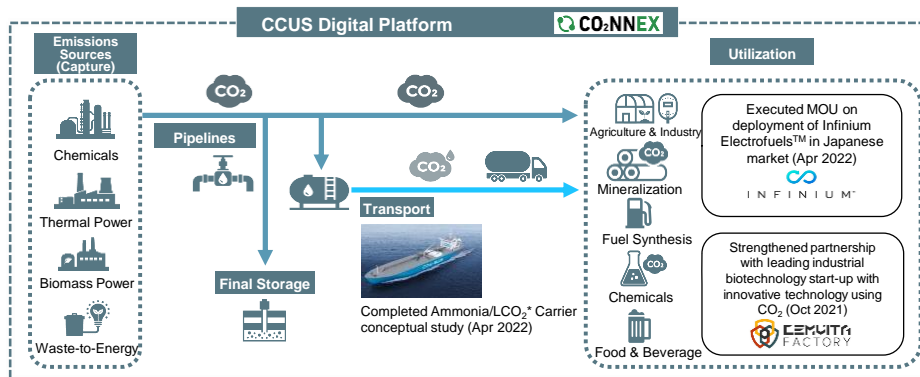
We are planning to conduct validation testing of these systems in cooperation with various partners with completion scheduled for the end of FY2023. After completing validation, we will start to respond to business inquiries.

We will also develop new solutions, such as automated and remote operation services.

3. Establish a CO₂ Value Chain



- Need to utilize and store CO₂ in order to drive growth in CO₂ capture. Exploring and applying technological innovation through open innovation.
- Need to connect capture, transport, storage, and utilization to build a complete value chain
- MHI proposes the CO₂NNEX digital platform as a way to achieve this and is planning several Proofs of Concept (PoC) mainly in Japan
- Executing feasibility study on commercialization of transport portion of value chain



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*LCO₂: Liquefied CO₂

This page shows our efforts to build a CO₂ value chain.

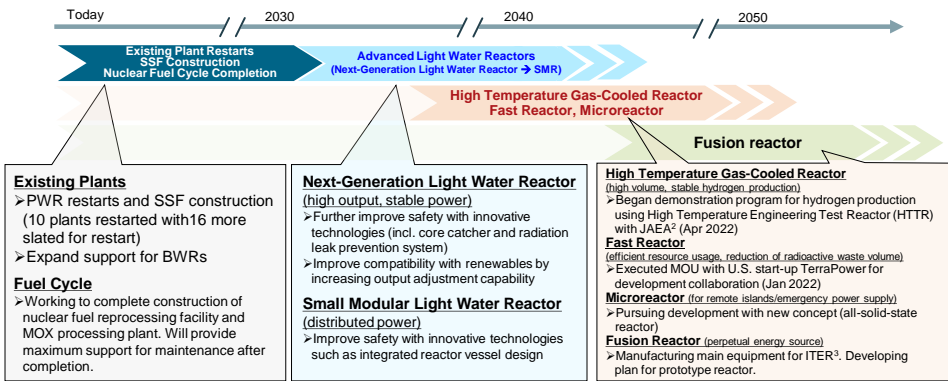
CO₂ capture requires storage and utilization as well as capture technology. We will promote open innovation to explore and commercialize new technologies, especially in the utilization domain. As one example, we are collaborating with several companies on the development of carbon-recycled fuels and biotechnologies which utilize CO₂.

We are also developing a digital platform called CO₂NNEX, which aims to link emitters with transportation, storage, and utilization providers. We have high expectations for this as a new business. Additionally, we recently started a conceptual study in the transportation area.

**Decarbonizing Existing Infrastructure
Nuclear Power's Contributions to Decarbonization (1/2)**



- Renewed interest in nuclear power from decarbonization and energy security perspective has led several countries to announce plans for new installations
- Within Japan, the latest Strategic Energy Plan aims to increase percentage of national power generation from nuclear to 20-22% by 2030
- As a leader in the nuclear power technology space, MHI Group will pursue the following initiatives:
 - Continue existing plant restarts and construction of SSFs¹. Complete the nuclear fuel cycle.
 - Design a next-generation light water reactor with further safety improvements
 - Other initiatives including development of a high temperature gas-cooled reactor for hydrogen production and collaboration with U.S. start-up TerraPower on fast reactor development



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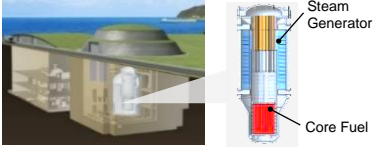
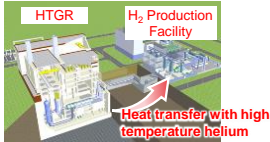


1 SSF: Specialized Security Facilities 2 JAEA: Japan Atomic Energy Agency 3 ITER: International Thermonuclear Experimental Reactor

Recently, there has been renewed interest in nuclear power from the perspective of decarbonization and energy security. Japan's Strategic Energy Plan, issued last October, aims to increase the nation's share of nuclear power to between 20% and 22% by 2030. MHI Group will continue to support the restart of existing plants and the completion of the fuel cycle while leveraging our many achievements in this sector.

Furthermore, design work is underway on a next-generation light water reactor with improved safety features aiming for realization in the 2030s.

In the future, we will make further contributions as a leading nuclear energy company, including with high temperature gas-cooled reactors which can produce hydrogen and cooperation with U.S. start-up TerraPower on the development of fast reactors.

Advanced Light Water Reactor Series

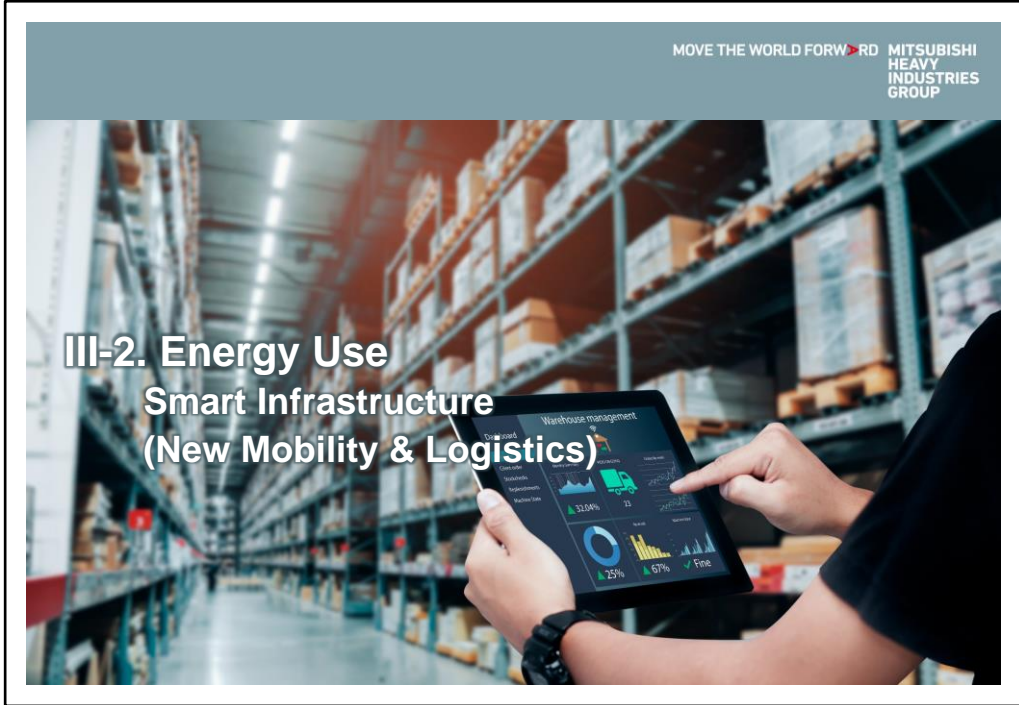
Next-Generation Light Water Reactor	Small Modular Reactor (SMR)	
<ul style="list-style-type: none"> ✓ Power generation for existing grids (power output: max 1.2 GW) ✓ Targeting commercialization in mid-2030s. In addition to great economics, will realize the world's safest nuclear reactor with innovative technologies 	<ul style="list-style-type: none"> ✓ Power generation for distributed, small-scale grids (power output: 300 MW) ✓ Fully passive safety systems and integrated reactor vessel design 	
<h4>High Temperature Gas-Cooled Reactor</h4> <ul style="list-style-type: none"> ✓ Achieve high volume, stable hydrogen production using high core temperature (over 900°C) ✓ Contribute to decarbonization of steelmaking and other industries 	<h4>Fast Reactor*</h4> <ul style="list-style-type: none"> ✓ By completing the nuclear fuel cycle, fast reactors can be used to efficiently utilize nuclear resources and reduce the volume and hazard level of high-level radioactive waste 	<h4>Microreactor</h4> <ul style="list-style-type: none"> ✓ Portable nuclear reactor which can be used as a power source for isolated islands and remote areas as well as after natural disasters ✓ MHI proprietary all-solid-state reactor design 

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*Part of this presentation includes development results from the Technology Development Regarding International Cooperation on Fast Reactors Program, under contract from the Japan Ministry of Economy, Trade and Industry

This page shows some examples of our nuclear power initiatives, but allow me to omit a detailed explanation.



On the next few pages, I will explain our efforts in the energy use area.

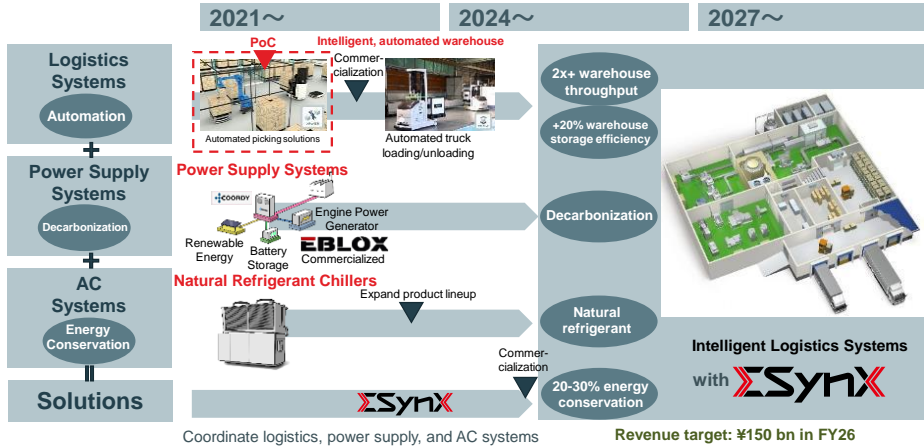
We had previously positioned this area as New Mobility & Logistics, but we have reconceptualized it as Smart Infrastructure in the energy use space.

In the Smart Infrastructure area, we are working on intelligent logistics systems, energy-conserving data centers, and infrastructure to support autonomous mobility. Today I will speak about intelligent logistics systems and energy-conserving data centers.

Intelligent Logistics Systems



- Commercialized highly maneuverable Automated Guided Forklift (AGF) and natural refrigerant chiller to meet market needs for automation and decarbonization
- Developing intelligent logistics to achieve smooth coordination among humans and multiple logistics systems
- Achieve large-scale energy conservation and decarbonization by optimizing operation of logistics, power supply, and air-conditioning (AC) systems



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Our Logistics, Thermal & Drive Systems segment has already commercialized highly maneuverable AGFs and natural refrigerant chillers that meet automation and decarbonization needs. As the next step, we are working on an automation platform which will link multiple systems together to intelligently transform logistics.

In the future, we will combine electric power supply and air-conditioning systems, linking them through the SynX integrated platform. This is expected to significantly increase throughput and save energy.

Validation of Intelligent, Automated Warehouse Logistics



- Developing automated picking solutions, which will coordinate highly maneuverable AGF, Automated Guided Vehicles (AGV), and palletizers in beverage or refrigerated warehouses. Will begin validation at Yokohama Hard Hub (YHH) in FY22.
- Increase throughput by efficient swarm control of multiple systems and optimized picking plans using Σ SynX core technology



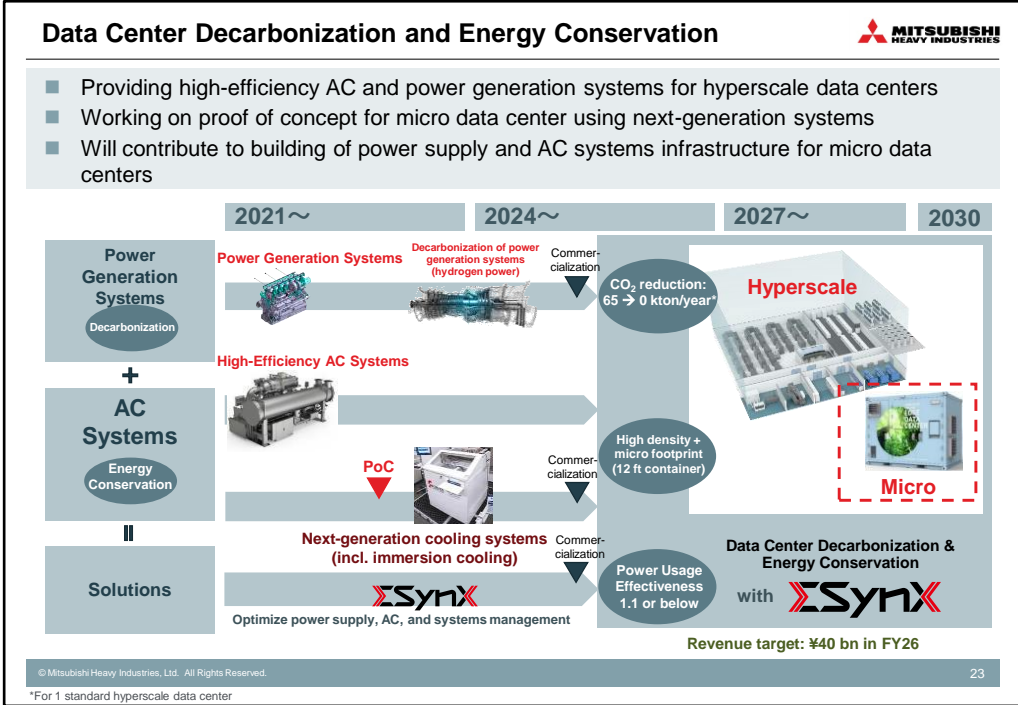
Connect Intelligently
 Σ SynX



Σ SynX: MHI's common platform designed to synchronize and coordinate between a variety of machinery components, transforming them into a single, intelligent system

This page shows an example of an intelligent and automated warehouse logistics solution, which is currently in the PoC phase. It is an automated picking system for beverage or refrigerated warehouses linking AGFs, AGVs, and palletizers.

We will validate this system at YOKOHAMA HARDTECH HUB (YHH) this fiscal year. During this process, Σ SynX will optimally control multiple systems to achieve a significant improvement in throughput. We believe this will also help solve the shortage of logistics operators. This system can provide flexible logistics solutions, and we are planning to introduce it to multi-tenant warehouses, which are currently the mainstream.



This page introduces initiatives regarding the decarbonization and energy conservation of data centers.

Demand for data centers is growing as digitalization progresses. However, reduction and decarbonization of power use is a challenge in this area. We have focused on cooling systems, which account for 30% of data centers' electricity consumption.

MHI Group has accumulated advanced cooling techniques at our various plants in parallel with development of HVAC systems. Utilizing these technologies, we will provide high-efficiency air-conditioning and power generation systems for hyperscale data centers.

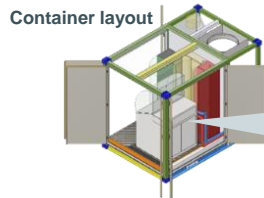
Furthermore, we are working on a PoC for a micro data center using next-generation cooling systems. We believe that by commercializing micro data centers, we can achieve significant space and energy savings.

In the future, we are aiming to create a decarbonized data center by combining the micro data center with our hydrogen power generation technologies.

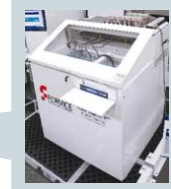
- Achieve data center miniaturization and energy conservation with immersion cooling systems
- Demonstrated 43% decrease in micro data center energy consumption during tests at YHH in FY21
- Will begin testing at Japanese telecommunications company KDDI's Oyama Technical Center in FY22, aiming to contribute to decarbonization by commercializing the technology in FY24



Container Type Micro Data Center



Container layout



Immersion cooling system

Validation testing ongoing since June 21, 2021 at MHI YHH with 50 kVA equivalent IT equipment (incl. servers) and an immersion cooling system in a 12 ft container. (Joint effort with KDDI and NEC Networks & System Integration)

■ **Increase cooling efficiency**

Achieved 43% decrease* in server cooling system energy use and PUE of 1.07 with immersion cooling

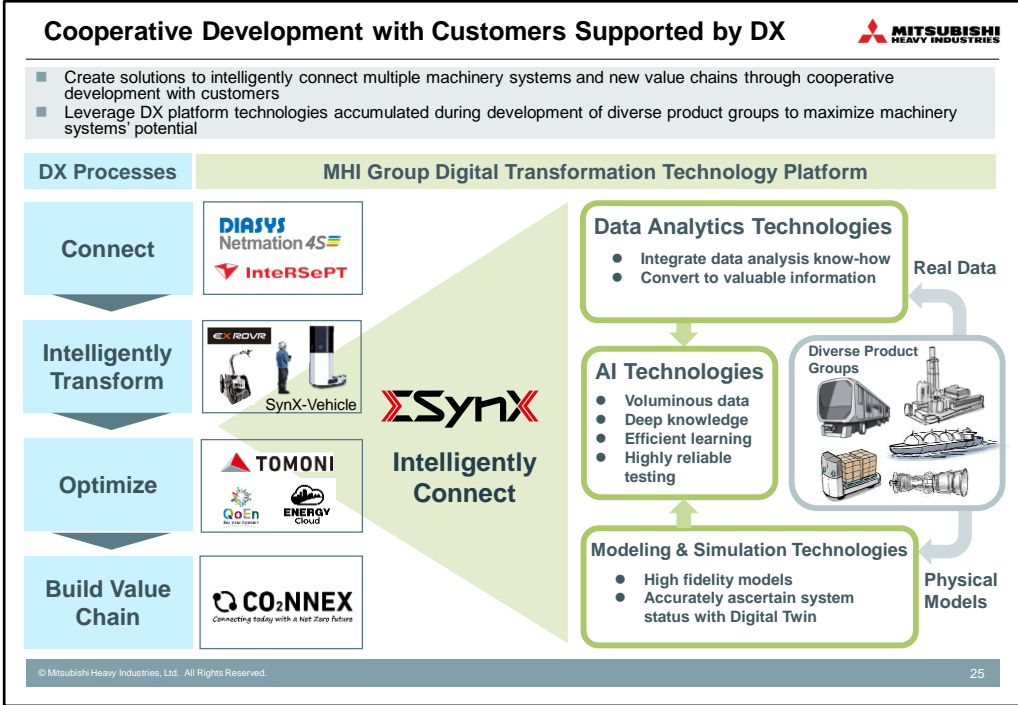
■ **Miniaturize the data center**

Fit entire data center including an immersion cooling system (immersion cooling unit + radiator) and ventilation equipment into a 12 ft small-size container using innovative package design and miniaturized systems

*When comparing data center total power use of PUE 1.7

This page shows an example of validation work we are doing for a container type micro data center.

During ongoing testing at YHH, we succeeded in reducing power consumption by 43% in FY2021. From this fiscal year, we will begin testing at KDDI's Oyama Technical Center, with the aim of commercializing the micro data center in FY2024.



Next, I will talk about the Digital Transformation (DX) we will use to advance our efforts in these growth areas.

MHI Group's goal for DX is to connect, intelligently transform, and optimize systems in order to build value chains.

The following three technology categories will form the basis of our DX platform: 1) Modeling and simulation technologies based on many years of R&D and field validation, 2) Data collection and analytics technologies based on extensive operation and maintenance experience, and 3) AI technologies used in a wide variety of products.

By optimizing these technologies, we will maximize the potential of machinery systems. Furthermore, by combining with security technologies developed in Defense and other businesses, we aim to provide safe and reliable solutions. To this end, we are planning to launch a new organization by July in order to share this technology base and develop it within MHI Group.



Key Takeaways



- Overcame COVID-19 impact with a variety of countermeasures and achieved FY2021 plan. Despite uncertainty in global markets, we will further increase profitability with an adaptive and proactive approach.
- Carbon Neutrality is an essential step toward attaining a truly sustainable society, and a realistic Energy Transition will be an important tool to help achieve this. MHI Group will make great contributions to this global effort with a variety of products and solutions in both energy supply and use areas.
 - In the energy supply area, we will provide a wide range of solutions tailored to the needs of each country and region, including fuel conversions of existing infrastructure, nuclear power, and CCUS.
 - In the energy use area, we will provide innovative energy conservation, automation, and decarbonization solutions by intelligently connecting systems through our DX technology platform, ΣSynX
- MHI Group will contribute to the realization of a sustainable society through our Carbon Neutrality initiatives, which balance Energy Security, Economic Efficiency, and Safety

Here are the key takeaways from today's presentation.

Although there was impact from the COVID-19 pandemic in FY2021, we were able to overcome them with a variety of successful countermeasures and achieved the plan. Although there is some uncertainty about the future, we will continue working in a flexible manner to further improve profitability.

We believe that achieving Carbon Neutrality is essential to realize a sustainable society. MHI Group will contribute to Carbon Neutrality with our diverse products and solutions.

With an eye to achieving Carbon Neutrality, we will pursue initiatives in both the energy supply and use areas. Through these initiatives, which will balance the three aspects of energy security, economic efficiency, and safety, we hope to contribute to the realization of a sustainable society.

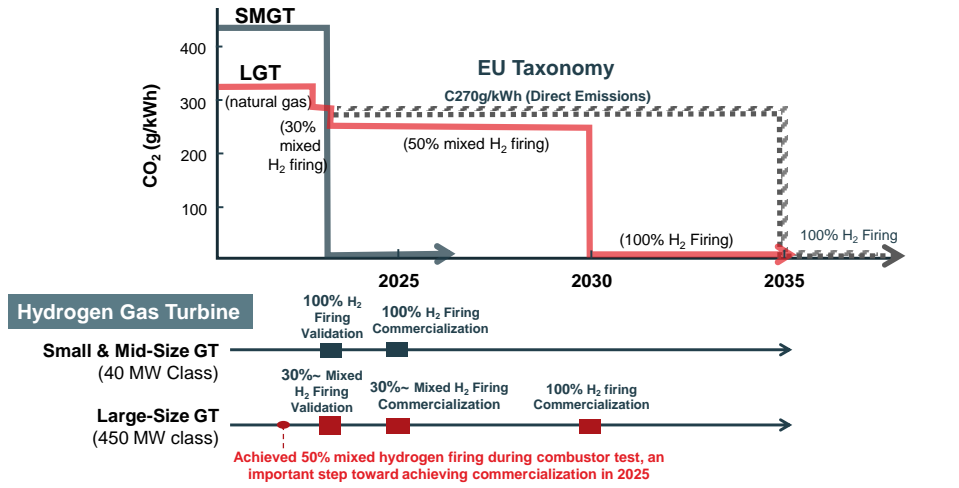
This concludes my presentation. Thank you for listening.

V. Appendix (Energy Supply)

Decarbonizing Existing Infrastructure: Thermal Power



- Progressing with validation testing with the goal of commercializing carbon-free power generation using hydrogen
- Achieved 50% mixed hydrogen firing during combustor test, an important step toward achieving commercialization in 2025



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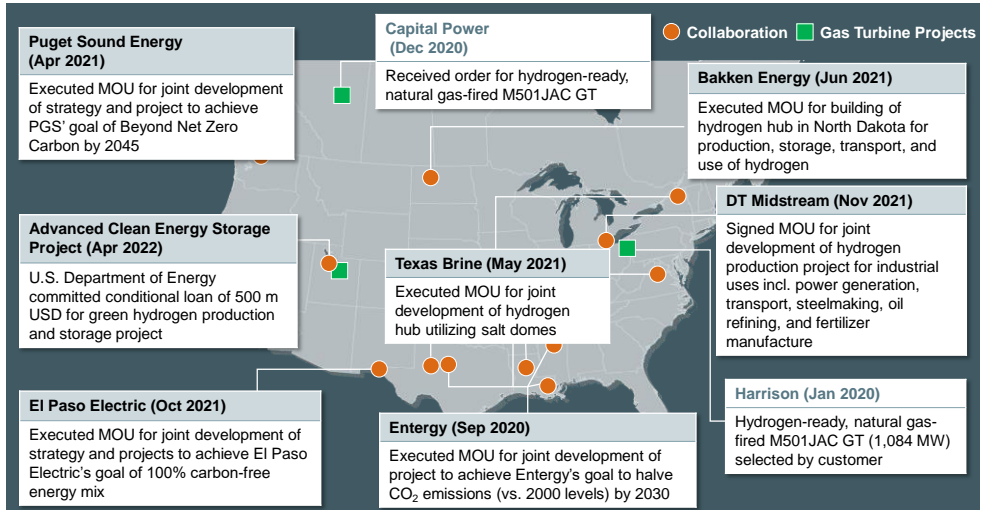
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*Part of this presentation includes development results from the National Laboratory New Energy and Industrial Technology Development Organization (NEDO) programs.

Building a Hydrogen Solutions Ecosystem: Projects under Development in U.S.



- Marked progress in the Advanced Clean Energy Storage Project in Utah, U.S.
- Progress in order intake and development through strategic partnerships



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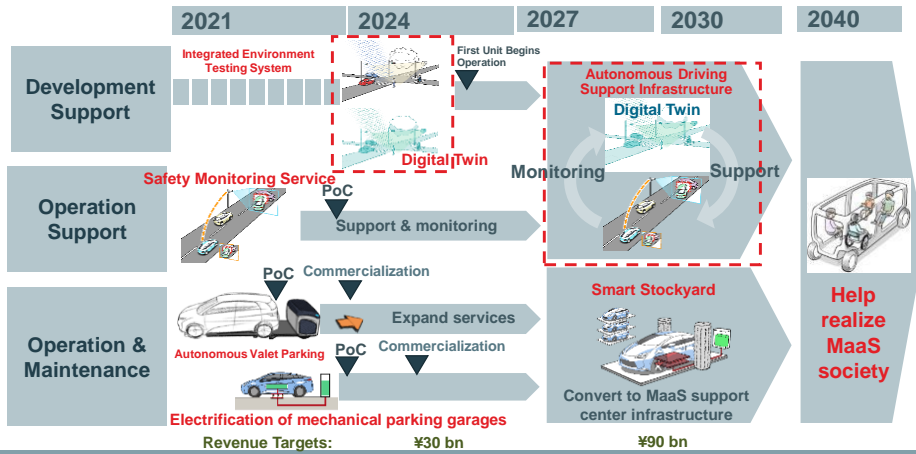
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V. Appendix (Energy Use)

Infrastructure to Support Autonomous Mobility (1/2)



- Support the development of autonomous mobility with environmental control and digital twin technologies
- Support autonomous mobility with road infrastructure featuring monitoring and communications technologies
- Convert mechanical parking garage technology to operation and maintenance infrastructure able to support Mobility as a Service (MaaS)



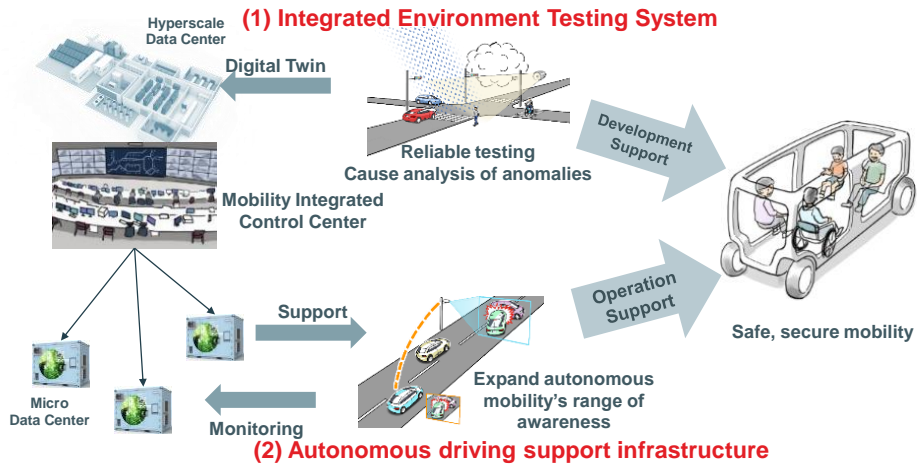
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Infrastructure to Support Autonomous Mobility (2/2)




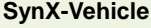







- Support efficient development and validation of autonomous mobility using high-level environmental control and digital twin technologies
- Support autonomous mobility with road infrastructure featuring monitoring and communications technologies accumulated during the development of diverse transportation systems



MHI Group DX Platform



 <p>Reliably operate</p>	<p>A control system used in various infrastructure products and industrial facilities. Complies with international functional safety standard IEC 61508: 2010 (SIL 3).</p>	 <p>Safely connect</p>	<p>Cybersecurity technology for critical infrastructure (social infrastructure) control systems. Enables real-time error detection and response to unknown cyber-attacks.</p>
 <p>A proxy for dangerous tasks</p>	<p>Performs inspections day or night under conditions which could create an explosive atmosphere, contributing to improved worker safety, operational efficiency, and facility utilization</p>	 <p>Coordinate humans and machines</p>	<p>Automated logistics equipment featuring action planning technology for swarm control and non-verbal human interface technology for human-machine coordination</p>
 <p>Intelligently operate</p>	<p>Provides services utilizing remote monitoring and high-precision analysis functions to monitor signs of trouble and propose necessary corrective measures at an early stage, improving plant reliability and profitability</p>	 <p>Efficiently supply energy</p>	<p>Forecasts energy demand with high accuracy and ascertains facility conditions to support improvements in energy procurement and power generation efficiency using data measurement and analysis from facility operation monitoring</p>
 <p>Evaluate with diverse criteria</p>	<p>Supports sustainable growth in energy infrastructure with quantitative evaluation from the perspectives of societal impact, economics, and the environment</p>	 <p>Build a new economy in cyberspace</p>	<p>A digital platform to visualize the distribution of CO₂ within the value chain and enable a new kind of society that utilizes this CO₂ as a valuable resource. Its ultimate goal is to realize Carbon Neutrality.</p>
 <p>Coordinate humans and machines</p> <ul style="list-style-type: none"> • A solutions concept aiming to automate and intelligently transform all MHI Group products. ΣSynX will become a standard platform that integrates our digital technologies by synchronizing and coordinating among diverse machinery systems • We believe strongly in developing human-centric technologies to enable collaboration between operators and machines. This is based on the assumption that, even in our modern world, where the pace of automation and intelligent transformation of technology with AI and machine learning is accelerating, humans must remain at the center of society. 			

V. Appendix

(FY2021 Highlights by Segment)

GTCC Business Grew with Strong Orders



- Orders increased for new installations of large gas turbines incl. latest model J-class as well as small and mid-sized turbines incl. H-25 and aero-derivative gas turbines
- Won orders for upgrades and after-sales services for existing GTCC facilities in Japan and around the world

MHIAEL Nagasaki Plant for Manufacture of Aero Engine Combustors to be Expanded



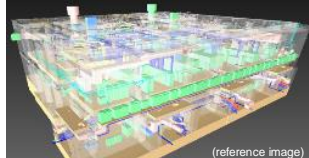
- Announced plans to build new Building 2 to expand current plant due to projected increase in demand for aero engine parts for short- and medium-haul commercial aircraft
- While strengthening internal manufacturing capabilities and cost competitiveness, we will meet the needs of the aviation industry, which is expected to resume growth in the post-COVID period

Mihama Unit 3 Restart



- Improved safety of KEPCO Mihama Nuclear Power Plant Unit 3 in accordance with new safety standards
- Contributed to safe operation of Japan's first nuclear reactor to remain in service for over 40 years (Jun '21)

Ikata Unit 3 SSF Completed



- Construction of a Specialized Security Facility for Shikoku Electric Power Company's Ikata Nuclear Power Plant Unit 3 completed (Oct 21)

TOMONI Intelligent Solutions Network Growth



- The fifth TOMONI Hub began operation in Duisburg, Germany. Other operating hubs: Takasago, Nagasaki, U.S., and Philippines
- TOMONI supports O&M of diverse energy systems, from thermal power plants to distributed power sources

Established Takasago Hydrogen Park



- Established Takasago Hydrogen Park within Takasago Machinery Works. It will be the first facility in the world where the integrated validation of hydrogen power from hydrogen production to power generation can be achieved.
- Will increase reliability of MHI products by validating at in-house facilities with the aim of early commercialization of hydrogen gas turbine technology

FY2021 Highlights

Plants & Infrastructure Systems



Strengthened Transportation Systems After-Service Sales Business



- Booked order to enhance capacity of Singapore's Sengkang-Punggol Light Rapid Transit (LRT) system
- Began providing high added-value services meeting the needs of customers in Asia through the MHI-AP Technical Service Center

LCO₂ Carrier



- Executed agreement for construction of the world's first validation test ship for LCO₂ transportation
- Rallied all liquid gas handling technologies in anticipation of future long-distance, high-volume transportation needs

Contributed to Decreasing CO₂ Emissions from Steelmaking



- Environmentally conscious miniaturized steel mill combining a new electric arc furnace EAF Quantum and Arvedi ESP began operation in China
- CO₂ emissions are 85% of those of traditional manufacturing methods
EAF: Electric Arc Furnace ESP: Endless Strip Production

Expanded CO₂ Capture Sources



- Received order for compact CO₂ capture system for biomass power plant in Hiroshima, Japan
- Contributing to the realization of a Carbon Neutral society by meeting CO₂ emissions reduction needs in a wide variety of industries

Began Sale of New Model of Antiseptic Beverage Filling Machine



- Began sale of a new model of antiseptic filling machine for beverages (preform sterilization), which excels in the areas of running costs, production efficiency, and footprint
- Promoting both within Japan and internationally together with new market entry by various beverage manufacturers

Received Order to Refurbish Municipal Solid Waste Incineration Plant



- Received order from Sendai City (Miyagi Pref., Japan) to refurbish its Matsumori Waste-to-Energy Plant, an incineration plant for municipal solid waste
- Will reduce CO₂ emissions by 8%/year by extending the plant's life and enhancing its energy efficiency

FY2021 Highlights

Logistics, Thermal & Drive Systems



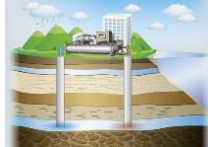
Began Sale of New Engine-Powered Forklift ERSIS



- Began sales of the first new integrated model forklift since the battery powered ALESIS was introduced in Nov 2019 after the founding of Mitsubishi Logistics
- This marked the completion of the integration of all domestic Japanese models. Going forward, there will be a phased integration with this model in international markets as well

Aquifer Thermal Energy Storage System

Awarded The Energy Conservation Center Japan Chairman's Award in the Best Practices Category at the 2021 Energy Conservation Grand Prize



- Focused on unutilized geothermal energy, the system cycles heat throughout the year for effective energy utilization
- Reduces atmospheric heat emissions and attains underground heat balance of zero for the full year period, which helps to protect the global environment

Triple Hybrid Stand-Alone Power System EBLOX Demo Plant to be Constructed in Turkey



- Promoting mainly in the Middle East and Africa, where electric grids are still developing
- Able to optimize use of renewables in accordance with power demand within a region

Intelligent, Automated Warehouse Project Enabled by ΣSynX Kicked Off



- Developing automated picking solutions coordinating AGF, AGV, and palletizers. Aiming for validation in FY2022
- Will contribute to solving logistics operator shortages by installing in multi-tenant warehouses

Heat Pump Chiller Q-ton Circulation Won 2021 Minister of the Environment Award for Climate Action



- By utilizing a low-GWP refrigerant, the product contributes to reduction of environmental impact, energy usage, and CO₂ emissions arising from hot water supply
- This is the latest in a series of awards received by the product, including the Technology Award from the Japan Society of Refrigerating and Air Conditioning Engineers in 2018 as well as the Japan Association of Refrigeration and Air-Conditioning Contractors' Excellent Energy Saving Equipment Award and a Grand Prize at the Nikkan Kogyo Shimbun's Protect the Ozone Layer, Prevent Global Warming Awards, both in 2021

Jointly Developed High-Efficiency Gas Cogeneration System



- Jointly developed a gas cogeneration system with output of 850 kW which achieves a world top-class efficiency of 41.9%
- Increased both output and efficiency from the existing 815 kW model while maintaining BCP functionality and footprint

Launched Frigate “Mikuma”



- Launched new 3,900-ton-class frigate at Nagasaki Shipyard on contract from the Japan Ministry of Defense

H-IIA Launch Vehicle



- Successfully launched with H-IIA Launch Vehicle No. 45, which carried the first satellite in Inmarsat's (UK) Inmarsat-6 series

Handover of First Taigei-Class Submarine



- Held handover ceremony for the first Taigei-class submarine on contract from the Japan Ministry of Defense at MHI Kobe Shipyard

Mitsubishi Heavy Industries Maritime Systems Began Full-Scale Operations



- Mitsubishi Heavy Industries Maritime Systems, which continues the former Mitsui E&S Holding naval & governmental ships businesses, began full-scale operations on Oct 1, 2021
- Handed over multi-purpose training ship “Kajinmaru” to Kobe University at the university’s Fukae Campus



- Held handover ceremony of new 3,900-ton-class frigate “Kumano” at Tamano Shipyard on contract from the Japan Ministry of Defense

Announced Collaboration with Regional Jet Hydrogen Propulsion Technology Start-Up



- CRJ business announced collaboration with ZeroAvia, a start-up developing a propulsion system for regional jets using hydrogen fuel cells

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