

Mid-term Management Plan 2024 | Green Strategy

Becoming a Climate Change Innovator

In recent years, many countries have set goals for carbon neutrality and made investments toward that end amid a growing awareness of the importance of international efforts to protect the global environment. Aiming to become a Climate Change Innovator, Hitachi is working to resolve environmental issues and achieve a higher QoL (Quality of Life) through its Social Innovation Business in collaborative creation with stakeholders.

We are working to realize a “decarbonized society,” a “resource efficient society,” and a “harmonized society with nature,” as defined in our “Environmental Vision” and in our long-term environmental targets, “Hitachi Environmental Innovation 2050.” In particular, we are accelerating our efforts to decarbonize. In addition to the targets for carbon neutrality at our business sites (factories and offices) by fiscal 2030, we set a target of achieving carbon neutrality throughout the value chain by fiscal 2050. This target covers CO₂ emissions from our procurement partners and from the use of Hitachi products and services by our customers. By collaborating with customers, partners, and governments, Hitachi will lead the way toward a better world, with the aim of realizing a decarbonized society.

To realize Hitachi Environmental Innovation 2050, Hitachi establishes three-year indicators and targets, and conducts environmental activities. BUs and major group companies also set their own targets based on the Hitachi Group’s Environmental Action Plan and strive to achieve their targets.

Strengthen GX Promotion Organization

To uncover business opportunities centered on the environment and lead value creation throughout the Hitachi Group and across sectors, as well as realize sustainable growth through GX (Green Transformation), the Global Environmental Division was established in April 2022, with executive officer Lorena Dellagiovanna as Head of Global Environment Division (former Chief Environmental Officer). At the same time, she was appointed to the newly created position of Chief Sustainability Officer.



Lorena Dellagiovanna

Vice President and Executive Officer, Chief Sustainability Officer, Head of Global Environment Division, and CDIO

Environmental Vision

Hitachi will resolve environmental issues and achieve both a higher quality of life and a sustainable society through its Social Innovation Business in collaborative creation with its stakeholders.

Long-term Environmental Targets: Hitachi Environmental Innovation 2050

For a Decarbonized Society

Achieve carbon neutrality by FY2050 throughout the value chain,
reduce CO₂ emissions
by 50% by FY2030
(compared with FY2010)

Achieve carbon neutrality by FY2030 at business sites
(factories and offices)

For a Resource-Efficient Society

Build a society that uses water and other resources efficiently with customers and society
Efficiency in use of water/resources
FY2050

50% improvement
(compared with FY2010 in the Hitachi Group)

For a Harmonized Society with Nature

Impacts on natural capital

Minimized



Environmental Action Plan

To achieve its Long-term Environmental Targets, Hitachi sets indicators and targets every three years. The “Environmental Action Plan for 2024,” covering the targets for FY2022 through FY2024, is in progress.

One of the decarbonization targets at Business Sites (Factories and Offices)

	Fiscal 2022	Fiscal 2023	Fiscal 2024
Reduction rate target in total CO ₂ emissions (compared with fiscal 2010)	32%	35%	50%

Hitachi GX Strategy

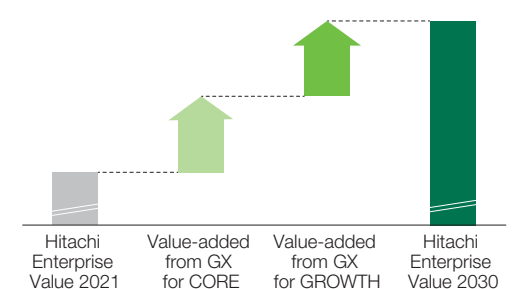
GX for GROWTH
Enabling our customers to reduce CO ₂ emissions through enhanced product offerings
GX for CORE
Decarbonizing Hitachi activities through Scope 1 & 2 carbon neutrality commitments by FY2030 and Scope 3 by FY2050

To accelerate and promote Hitachi's long-term environmental targets as measures, Hitachi developed two business strategies, GX for GROWTH (customer and society decarbonization) and GX for CORE (Hitachi decarbonization). Under GX for GROWTH, we will support customers in reducing CO₂ emissions by expanding Hitachi's greener and more efficient product portfolio and providing customers with E2E (End-to-End) solutions across sectors. By fiscal 2024, we aim to contribute to reduce CO₂ emissions by approximately 100 million metric tons per year, equivalent to 1.1 trillion yen in monetary terms. We will accelerate the development of various solutions realizing energy transition, the electrification of mobility and the conservation of energy. GX for CORE aims to decarbonize our own operations. We aim to achieve reductions in Scope 1 and 2 by investing approximately 37 billion yen over the next three years in efforts to conserve energy and generate renewable energy, and also combining measures such as the purchase of renewable energy, the acquisition of green power certificates and the purchase of credits for neutralization.

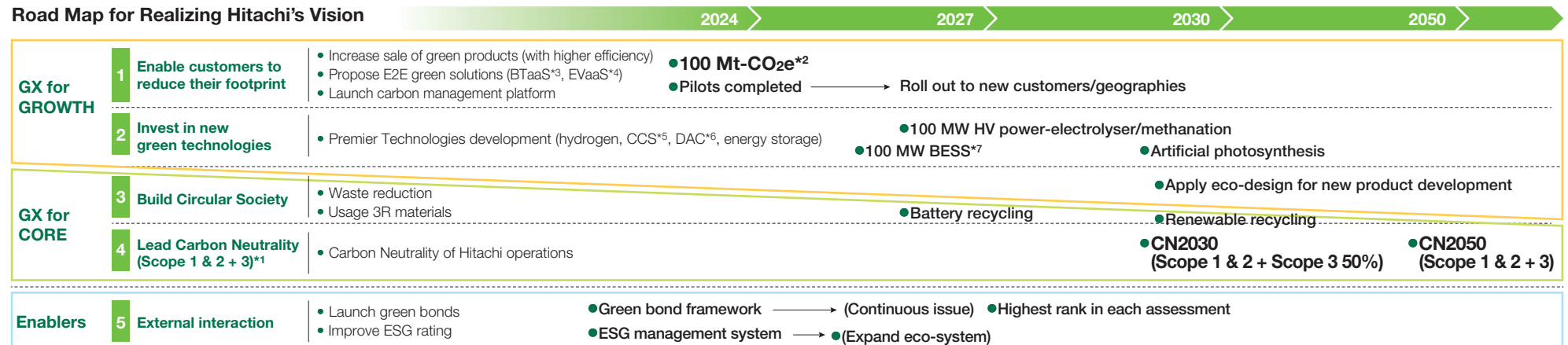
Achievement of Hitachi GX Strategy can bring New Value

Hitachi believes a strong commitment to sustainability will be the driving force for realizing enhanced corporate value. Specifically, Hitachi believes GX for GROWTH will enable further enhancement of corporate value through the provision of increased value through the new E2E service solutions for mobility and energy as a service. In EV Value Chain as a Service, we are developing turnkey solutions and promoting the shift to EVs for bus fleets, light commercial vehicles and private vehicles. Hitachi aims to increase value by providing more environmentally friendly products and solutions as a leader in carbon-free societies. We will proactively engage with our own management resources in addition to capital alliances with outside companies. To this end, we are considering investments in startups with the aim of developing green technologies.

We also believe we can create the value through efficiency gain with less energy consumption and further utilization of renewable energy based on GX for CORE. As one example, we are considering the use of wide-area energy centers and the optimization of energy at multiple sites within facilities management. We are also avoiding costs to facilitate future high-quality credit purchases for neutralization and considering the use of green finance to reduce capital costs.



Road Map for Realizing Hitachi's Vision

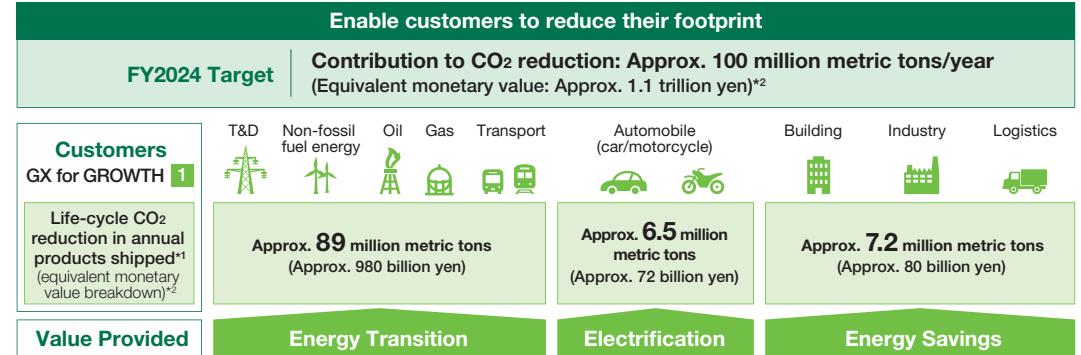


^{*1} SBTi certified on Scope 1 & 2 carbon neutrality by 2030, Scope 3 40% reduction by 2030 vs. 2010, aligned with 1.5°C commitment. Certification will be updated for new targets.
^{*2} CO₂ equivalent ^{*3} Battery as a Service ^{*4} EV Value Chain as a Service ^{*5} Carbon Capture and Storage ^{*6} Direct Air Capture ^{*7} Battery Energy Storage System

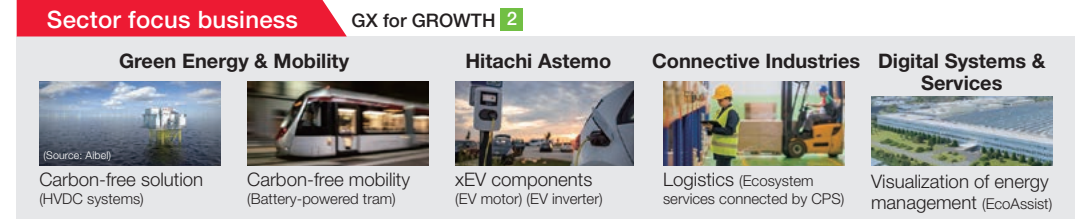
Specific GX for GROWTH, CORE Initiatives

GX for GROWTH

Through GX for GROWTH, Hitachi Energy will lead group contributions to reducing the carbon footprint of customers throughout the world. Our goal is to contribute to an annual reduction in CO₂ emissions of approximately 100 million metric tons by fiscal 2024, equivalent to about 1.1 trillion yen in monetary terms. Sustainable products and systems, power electronics and digital solutions are being deployed to build the foundation for a system of systems and enabling the energy transition. Technologies such as HVDC (High-Voltage Direct Current), FACTS (Flexible Alternating Current Transmission Systems) for power quality and digital solutions play an important role in the integration of renewables, long-distance power transmission, grid interconnections and ensuring flexibility, resilience, and efficiency. Additionally, Hitachi Rail successfully tested a storage battery-powered tram on a section of track in Florence, Italy. Hitachi will contribute to lower energy consumption in global urban transportation (railways). In the Green Energy & Mobility sector, with plans to invest 200 billion yen in R&D under the Mid-term Management Plan 2024, we will contribute to reducing CO₂ emissions from customers globally through the creation of new technologies, products and solutions that improve energy conversion efficiency. Hitachi Astemo is developing EV motors and inverters, which are key components amid the shift toward electrification in the next-generation vehicles (xEV) field and we plan to invest 300 billion yen in R&D under the Mid-term Management Plan 2024 for electrification. To accelerate activities, we continue to invest in future technologies such as hydrogen, artificial photosynthesis and carbon (or CO₂) utilization. Further, in utilizing services that create an ecosystem through the collection of vast amounts of data obtained in the real world (physical space) and analyzed in cyberspace, we will contribute to energy conservation in the manufacturing and logistics fields, etc.



*1 Base year FY2013 *2 Estimated carbon price as 11,000 yen per metric ton-CO₂ and converting CO₂ reduction by decarbonization solutions into monetary value



Omika Green Network

In 2020, Hitachi's Omika Works (Hitachi City, Ibaraki Prefecture) was selected as a Lighthouse advanced factory by WEF (World Economic Forum), a first for the factory of a Japanese company. As a factory implementing Hitachi's Lumada solutions combining OT, IT and products, the Omika Works is engaged in resolving various issues and creating new businesses by mobilizing technologies and know-how in a variety of fields. With this factory as a hub, Hitachi created the Omika Green Network to promote decarbonization alongside stakeholders, conduct various demonstrations in the Omika Works field and accumulate technologies and know-how related to decarbonization. These efforts aim to achieve carbon neutrality across the entire value chain and support customer business activities and environmental efforts through the provision of decarbonization measures to customers. We set the goal of realizing carbon neutrality at the Omika Works in 2024, returning the technology and knowledge gained to local communities and suppliers.



GX for CORE

As a decarbonization initiative, Hitachi has set a goal for fiscal 2024 of reducing CO₂ emissions by 50% compared with fiscal 2010. The specific aim is to reduce emissions 33% by conserving energy and generating renewable energy. At Hitachi Rail's Tito Scalo plant (Italy), 50%–60% of all the energy used onsite is generated from sunlight, supplying more than 700 MWh of electricity per year through solar power and reducing 325 metric tons of CO₂ annually. We are aiming to reduce CO₂ emissions 33% by energy saving and renewable energy generation, 31% by renewable energy purchases, 26% by green power certificate purchases and 10% by high-quality credit purchases for neutralization. Combining various initiatives, we will reduce CO₂ emissions by 50% across the entire value chain by fiscal 2030 (compared with fiscal 2010), achieving carbon neutrality by fiscal 2050. To accelerate these efforts, Hitachi will invest 37 billion yen in energy conservation and renewable energy power generation over the next three years. To realize carbon neutrality by fiscal 2050, we are formulating plans to establish monitoring mechanisms and measurable KPIs for up and downstream CO₂ emissions. In terms of downstream CO₂ emissions, we are working toward two goals: CO₂ emissions source transparency and the development of energy-saving products.

On track to achieve carbon neutrality for Scope 1 & 2 by FY2030, strengthen commitment for CN by FY2050 and Circular Economy

Lead on Carbon Neutrality (Scope 1 & 2 + 3)
Scope 1 & 2: 50%*1 reduction of CO₂ emissions in FY2024 (37 billion yen investment for energy saving and an RE facility in three years)
Scope 3: 50%*1 reduction by FY2030, carbon neutrality throughout value chain by FY2050

Scope 1 & 2 decarbonization levers

Levers to abate CO₂ emissions

Energy saving + RE generation 33%	RE purchase 31%
RE certificate 26%	Neutralization 10%

Scope 3


Upstream Establishing monitoring scheme and setting visible KPIs 	Downstream Accelerating reductions to promote CO ₂ visualization and energy-saving products
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*1 50% reduction: base year FY2010


Completed/Ongoing projects

Mass-consumption type

- Energy saving/improve HVAC
- RE self-consumption



Yokohama Office



Okayama Data Center

Area intensive type 3 areas in Ibaraki

- Use as energy center
- Asset share
- Facility management BPO*2




Rinkai Factory



Omika Works




Mito Works



Naka Site

Aiming for a 100% fossil-free factory (Hitachi Rail)

- Generating 50%–60% of energy from solar panels
- Expecting to reach more than 700 MWh
- Reducing carbon emissions by 325t annually



Tito Scalo Site, Italy

*2 Business Process Outsourcing

Initiatives for Realizing a Circular Economy

Hitachi will promote the transition from a conventional linear economy to a circular economy with the aim of creating a resource recycling-based society. Defining KPIs that establish target values to be achieved by business units and major group companies, we set goals such as reducing the volume of manufacturing site waste disposed in landfills. In the procurement, development and design divisions, we promote resource conservation through the introduction of design methods that are easily dismantled and use recyclable materials. We will also promote eco-designs, including increased use of recycled and eco-friendly materials. Further, we will work on long-term product usage, including the reuse, repair, improvement and remaking of products that are no longer needed. To support customer needs as they shift from goods to experiences, and society as it shifts from ownership to usage, Hitachi will provide services utilizing leasing, pay-per-use systems and subscriptions to promote the effective use of resources and assets. In the field of technology developments supporting resource recycling, we will accelerate decarbonization efforts through the development of raw materials, products, tools, applications and services.

Recycling 99% of Transformers

Hitachi Energy is promoting efforts in cooperation with Sweden's Stena Recycling to reuse approximately 99% of materials generated from the disposal of old transformers. At the end of their life, old transformers are dismantled and recycled to minimize their impact on the environment. About 64% of materials are recycled; 35%, including oil, is either recycled or incinerated for conversion to energy; and the remaining 1% is used as scrap. The provision of services has already been launched in northern Europe, with plans to expand in the future.

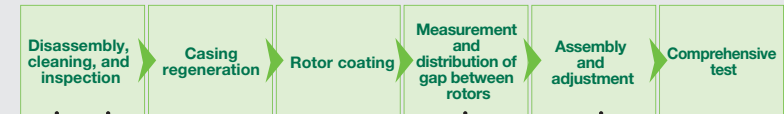


Transformer at the substation

Remanufacturing of Air Compressors (Hitachi Industrial Equipment Systems, Sullair)

Hitachi Industrial Equipment Systems and Sullair (US) promote rebuilding and remanufacturing of air compressors that have been in operation at customer sites for a long time. Air compressors received from customers are disassembled and inspected, and reusable parts are repaired and adjusted. They are then reassembled and performance inspected, and through other numerous steps, the air compressors finally restore their original performance and functionality. This allows fewer parts to be manufactured, and significantly reduces the energy required for processing raw materials relative to manufacturing new products.

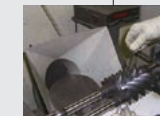
Work steps



Disassembly work



Block decomposition line



Gap measurement between rotors



Block assembly

Note: Photos are from Hitachi Industrial Equipment Systems

Participation in Public Forums

Hitachi proactively participates in numerous global public forums focused on global sustainability challenges.

COP26 (2021 Glasgow)

- Supported as Principle Partner
- Held the Hitachi European Innovation Forum
- Hosted Towards Net Zero—Greening Cities Through Low Carbon Connected Urban Transport



World Economic Forum (WEF, 2022 Davos)

- Participated in the main-stream climate leadership panel with the Alliance of CEO Climate Leaders



CDP Evaluations

Achieved CDP's Highest Score of "Grade A" in Climate Change and Water Security

