Green Strategy

June 13, 2022
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Chief Sustainability Officer, General Manager of Sustainability Group,
Head of Global Environment Division, and Chief Diversity & Inclusion Officer
Today’s Key Messages

1. Hitachi aspires to be the Climate Change Innovator

2. Adoption of Hitachi GX strategy will contribute to Hitachi’s corporate growth through multiple value levers

3. The Global Environment Division (GED) focuses on cross sector businesses to develop end to end green solutions for target customers
Green Strategy

Contents

1. Hitachi’s Environmental Vision
2. Mid-term Management Plan 2024
3. Business Growth Strategy
4. Conclusion
1-1. Hitachi’s Environmental Vision as One Pillar of Hitachi’s Strategy

"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"

To accelerate the realization of a more sustainable society, Hitachi will lead GX (Green Transformation) through Energy Transition, Electrification and Energy Saving.
1-2. Hitachi’s Wide Range of Green Technologies and Public Commitments to Lead the World Towards a Green Society

Power Grids
- Interconnection of renewable energy plants through HVDC

Railway Systems
- Delivered hybrid multiple units for Europe
- Approx. 50% less energy consumption compared to current diesel trains
- Up to 95% recyclable

Nuclear Energy
- Contribute to Fukushima and resume existing projects
- Promote the new design (e.g. SMR) reactors with advanced technology

IoT
- Global data integration for the basis of CO₂ calculation and timely disclosure

EV mobility
- Higher efficiency motors and components
- Electrified together with First Bus transport in Glasgow

Wide range of green technologies for a green society

Sustainability scoring
- Achieved CDP’s Highest Score of “Grade A” in Climate Change and Water Security

COP 26, Glasgow 2021
- Held the Hitachi European Innovation Forum

WEF, Davos 2022
- Hitachi participated in the mainstream climate leadership panel with the Alliance of CEO Climate Leaders

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1-3. Hitachi’s Aspiration to be the Climate Change Innovator

Hitachi aims to be the Climate Change Innovator by leveraging its:

- **Global footprint:** Hitachi presence in all relevant geographies
- **Green product portfolio:** Hitachi wideness of green product offering, and its continuous pursue for more energy efficiency products

**Illustrative map of Hitachi peers positioning based on their commitment on decarbonization**

- **HITACHI**
  - **Target position**
  - **Current position**

- **Low**
  - **World/Customer footprint commitment**

- **Scope 1,2,3 commitment**
  - Companies with scope 1,2,3 net zero commitment, but no reference to customer footprint reduction
  - Only few companies with scope 1,2,3 net zero and customer footprint commitment
  - Companies with only scope 1 and 2 reduction targets
1-4. Two Pillars of the Hitachi GX Strategy for being the Climate Change Innovator

**Decarbonizing Hitachi activities**
through Scope 1 & 2 net zero commitments by 2030 and Scope 3 by 2050
- Invest in energy saving and renewable energy generation projects
- Accelerate scope 3 reduction through value chain management, product redesign and engagement targets with key customers

**Enabling other companies to reduce CO$_2$ emissions** through enhanced product offerings
- Shift toward a greener product portfolio (to reduce emissions during product operation)
- Offer E2E solutions (e.g., carbon management platform, XaaS)
- Invest in new green technologies to extend current product portfolio

**GX for CORE**
**GX for GROWTH**
1-5. High Level Roadmap to Achieve set Vision

**Growth KPIs**

**Contribute to CO₂ reduction of society and customers**
100 million tons (Mt) /year at FY2024

**Carbon neutrality targets**

- **Scope 1 & 2 by FY2030**
- **Scope 1 & 2 + 3 by FY2050**

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**GX for GROWTH**

1. Enable customers to reduce their footprint
   - Increase sale of green products (with higher efficiency)
   - Propose E2E green solutions (BTaaS³, EVaaS⁴)
   - Launch carbon management platform
   - 100Mt-CO₂e²

2. Invest in new green technologies
   - Premier Technologies development (Hydrogen, CCS⁵, DAC⁶, energy storage)
   - 100 MW HV Power-Electrolyser / Methanation
   - 100 MW BESS⁷

3. Build Circular Society
   - Waste reduction
   - Usage of 3R materials
   - Battery recycling
   - Renewable recycling

4. Lead Carbon Neutrality (scope 1 & 2 + 3)
   - Carbon Neutrality of Hitachi operations
   - CN2030 (Scope 1 & 2+ Scope 3 50%)
   - CN2050 (Scope 1 & 2 + 3)

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**GX for CORE**

1. External interaction
   - Launch green bonds
   - Improve ESG rating
   - Green Bond Framework
   - ESG management System
   - Highest Rank in each assessment

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*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
1-6. Achievement of Hitachi GX Strategy can bring New Value

Hitachi GX Strategy will contribute to increasing Hitachi Enterprise Value

Efficiency gain
- Design more sustainable products/processes, resulting in:
  - Installation of RE generation facilities
  - Reduced raw materials
  - Lower consumption of other fuels (electrification of vehicles, process steps)
  - Process efficiency gains

Regulatory risk management
- Annual avoidance of future carbon taxes by lowering emissions:
  - Reduction of residual value for Scope 1&2
  - Engagement targets with customers and suppliers (i.e., Scope 3)

Lower cost of capital
- Lower cost of capital driven by higher sustainability performances (issuance of green bonds)

Green business building
- Upside driven by new revenues streams from green products (e.g., new products as a service business models)

Green premium*1
- Upside driven by green premium on all product portfolio given new Hitachi green brand image

Inorganic growth
- Premium driven by inorganic growth on green technologies (e.g., acquisition of promising start-ups)

*1. Additional revenues for choosing a clean technology over one that emits a greater amount of greenhouse gases.
Missions:
- Integrate both activities of GX for CORE and GX for GROWTH to maximize growth opportunities for Hitachi through environmental business.
Green Strategy

Contents

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2-1. Internal Environment Initiatives for CN and CE Target

On track to achieve net zero for scope 1 & 2 by FY2030, strengthen commitment for CN in FY2050 and Circular Economy

Lead Carbon Neutrality (Scope 1 & 2 + 3)

**Scope 1 & 2**: 50%*¹ reduction of CO₂ emissions in FY2024
(37B yen investment for energy saving and RE facility in 3 years)

**Scope 3**: 50%*¹ reduction in FY2030, Carbon Neutral throughout value chain in FY2050

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### Scope 1 & 2 decarbonization levers

<table>
<thead>
<tr>
<th>Levers to abate CO₂ emissions</th>
<th>Energy saving + RE generation</th>
<th>RE purchase</th>
<th>RE certificate</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area intensive type</td>
<td>33%</td>
<td>31%</td>
<td>26%</td>
<td>10%</td>
</tr>
<tr>
<td>3 areas in Ibaraki</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Use as energy center</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Asset share</td>
<td></td>
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<tr>
<td>Facility management BPO*²</td>
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<tr>
<td>Hitachi</td>
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<tr>
<td>Hitachinaka</td>
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<tr>
<td>Tsuchiura</td>
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</tbody>
</table>

- Energy saving / improve HVAC
- RE self consumption

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### Completed / on-going projects

#### Mass-consumption type
Yokohama Office
Okayama Data Center

#### Area intensive type
3 areas in Ibaraki

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

- Hitachi
- Hitachinaka
- Tsuchiura

### Aiming 100% fossil-free Factory (Hitachi Rail)

- Generating 50-60% of energy from solar panels
- Expected to reach more than 700MWh
- Enables to reduce 325t of carbon emission annually

- Tito Scalo Site, Italy

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### Upstream
Establishing monitoring scheme and Setting visible KPI

- Reduction of waste from manufacturing sites and product design concept

- Aiming Zero*³ waste to landfill*⁴ from Manufacturing sites
- Applying Eco-Design for new product development
- Improvement of efficiency in use of water
- More usage of ecofriendly materials (eg. recycle plastics) for new products

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*¹ 50% reduction: base year FY2010, *² Business Process Outsourcing, *³ Less than 0.5%, *⁴ Wherever this is compatible with local conditions and regulations
2-2. Mid-term Management Plan 2024 Target

Lead decarbonization globally with Hitachi Energy to foster a sustainable society

Enable customers to reduce their footprint

Contribution to CO₂ reduction: Approx. 100 million tons/year (Equivalent monetary value: Approx. 1.1 trillion yen)*2

<table>
<thead>
<tr>
<th>FY2024 Target</th>
<th>Contribution to CO₂ reduction: Approx. 100 million tons/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. 89 million tons (Approx. 980 billion yen)</td>
<td>(Approx. 72 billion yen)</td>
</tr>
<tr>
<td>Approx. 6.5 million tons</td>
<td>(Approx. 72 billion yen)</td>
</tr>
<tr>
<td>Approx. 7.2 million tons (Approx. 80 billion yen)</td>
<td></td>
</tr>
</tbody>
</table>

Customers

<table>
<thead>
<tr>
<th>Sector focus business</th>
<th>Value provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>T&amp;D Non-fossil fuel energy Oil Gas Transport</td>
<td>Energy Transition</td>
</tr>
<tr>
<td>Automobile (car/motorcycle) Building Industry Logistics</td>
<td>Electrification</td>
</tr>
<tr>
<td>Lifecycle CO₂ reduction in annual products shipped (equivalent monetary value breakdown)*2</td>
<td>Energy Savings</td>
</tr>
</tbody>
</table>

Value provided

<table>
<thead>
<tr>
<th>Green Energy and Mobility</th>
<th>Electrification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon-free solution (HVDC systems)</td>
<td>Hitachi Astemo</td>
</tr>
<tr>
<td>Carbon-free mobility (Battery-powered tram)</td>
<td>xEV components (EV motor)(EV inverter)</td>
</tr>
<tr>
<td>R&amp;D investment 200 billion yen</td>
<td>R&amp;D investment 300 billion yen</td>
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<tr>
<td>R&amp;D investment 200 billion yen</td>
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</tbody>
</table>

*1. Base year FY2013
*2. Estimate carbon price as 11,000 yen per ton-CO₂ and convert CO₂ reduction by decarbonization solution into monetary value
Green Strategy

Contents
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3-1. Environment Business Growth Model

Decarbonized Society

PLAN

Understand customer’s management issues

BUILD

Develop solutions with IT/OT/products

MAINTAIN

Operate, maintain and assess for next step

OPERATE

Implement the solutions

Realizing both sustainability and customers’ growth along with customers

Circular Economy

Energy

Industry

Financial/Public

Bio-diversity

Automotive

Building

Mobility

Hitachi Internal Environmental Initiatives

IT・OT・Products cultivated in diverse sectors

Capturing customers' essential issues comprehensively

Operate, maintain and assess for next step

Understand customer’s management issues

Implement the solutions

Develop solutions with IT/OT/products

Operate, maintain and assess for next step

Understand customer’s management issues

Implement the solutions

Develop solutions with IT/OT/products

Operate, maintain and assess for next step

Understand customer’s management issues

Implement the solutions

Develop solutions with IT/OT/products
3-2. Value Proposition for a Wide Range of Customers

Reach a wide range of customer sectors with a growth model and solutions/differentiating technology

Customers
- Grid Operator
- RE Companies
- Oil & Gas
- Mining
- Data Center
- Public Transportation
- Industry/Logistics
- Buildings
- Vehicle OEM
- Consumer

Service
- Grid Operation
- Grid Connection
- EAM
- Hydrogen Operation
- Availability Assurance
- DCIM
- Fleet Management
- SCM
- ESG platform
- xEMS
- EV Charging
- EFaaS

IT x OT
- Grid Stabilization
- Security
- M&R
- Electricity price Forecast
- AHS
- Computer Load Optimization
- DC Grid
- Operation Management
- Forecasting (Logi./Human Flow)
- Ancillary Function
- AD/ADAS
- V2G

Product
- HVDC
- e-STATCOM
- HV Power-Electrolyser
- BESS
- Distributed power source
- e-Router
- Bus/Truck
- eAxle
- In-wheel motor

Differentiating technology
- HVDC/STATCOM
- HV Power-Electrolyser
- e-Mesh BESS
- Multi-level converter (Compact charger)
- In-wheel motor
- Card type Inverter

3-3. Expansion of the Global Environment Business in Short Term

GED*1 focuses on cross-sector business to enhance the Green Business globally

### 3 main green segments

<table>
<thead>
<tr>
<th>Business sector</th>
<th>North America</th>
<th>EMEA</th>
<th>Japan</th>
<th>China</th>
<th>APAC</th>
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</thead>
<tbody>
<tr>
<td>GED</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Digital Systems &amp; Services</td>
<td></td>
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<tr>
<td>Green Energy &amp; Mobility</td>
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<tr>
<td>Connective Industries</td>
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<tr>
<td>Hitachi Astemo</td>
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</tbody>
</table>

#### Energy transition

- **Energy savings**

#### Electrification

- **Energy transition**

### Priority regions for pilot projects

- **Market size**
  - 2030 B$: 200-300 B$ / 900-1050 B$ / N/A

### Target segment

- **Public transport**
- **Private commercial fleets**
- **Utilities fleets**
- **Manufacturing facilities & buildings**
- **Power Grid**
- **Transportation**
- **Manufacturing facilities**
- **IT Data Center**

#### EV Value Chain as a Service

- **Turn-key solution to drive EV transition for bus fleet, LCV and private vehicles**
  - 200-300 B$

#### Energy as a Service

- **Develop new solutions to optimize production, storage and consumption of energy**
  - 900-1050 B$

#### Decarbonization

- **Provide integrated carbon management platform to support customers decarbonization**
  - N/A

**Target revenues from cross-sector business (¥B)**

- **FY24**: 30
- **Approx. FY27**: 60
- **FY30**: Approx. 150

3-4. Expansion of global Environment Business with Innovative Technologies

**Energy Transition**
- **Hybrid train**
- **Battery train**
  - Hydrogen prototype train
  - East Japan Railway Company and Toyota Partnership

**Electrification**
- **xEV Components**
  - In-wheel motor
  - Card-type inverter

**Energy Saving**
- **Circular Economy**
  - WT*1 blade recycling

**Hydrogen Value Chain**
- **Water electrolysis**
- **hydrogen production**

**XaaS Orchestration**
- **Service Orchestration**
  - Traffic data of cities, movement/data of people living in cities

**Carbon Negative**
- **Artificial photosynthesis**

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*1. Wind Turbine

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Hitachi Social Innovation is POWERING GOOD
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- exchange rate fluctuations of the yen against other currencies in which Hitachi makes significant sales or in which Hitachi’s assets and liabilities are denominated;
- uncertainty as to Hitachi’s ability to access, or access on favorable terms, liquidity or long-term financing;
- uncertainty as to general market price levels for equity securities, declines in which may require Hitachi to write down equity securities that it holds;
- fluctuations in the price of raw materials including, without limitation, petroleum and other materials, such as copper, steel, aluminum, synthetic resins, rare metals and rare-earth minerals, or shortages of materials, parts and components;
- estimates, fluctuations in cost and cancellation of long-term projects for which Hitachi uses the percentage-of-completion method to recognize revenue from sales;
- increased commoditization of and intensifying price competition for products;
- uncertainty as to Hitachi’s ability to attract and retain skilled personnel;
- uncertainty as to Hitachi’s ability to continue to develop and market products that incorporate new technologies on a timely and cost-effective basis and to achieve market acceptance for such products;
- fluctuations in demand of products, etc., and industry capacity;
- uncertainty as to Hitachi’s ability to implement measures to reduce the potential negative impact of fluctuations in demand of products, etc., exchange rates and/or price of raw materials or shortages of materials, parts and components;
- credit conditions of Hitachi’s customers and suppliers;
- uncertainty as to Hitachi’s ability to achieve the anticipated benefits of its strategy to strengthen its Social Innovation Business;
- uncertainty as to the success of acquisitions of other companies, joint ventures and strategic alliances and the possibility of incurring related expenses;
- uncertainty as to the success of restructuring efforts to improve management efficiency by divesting or otherwise exiting underperforming businesses and to strengthen competitiveness;
- general socioeconomic and political conditions and the regulatory and trade environment of countries where Hitachi conducts business, particularly Japan, Asia, the United States and Europe, including, without limitation, direct or indirect restrictions by other nations on imports and differences in commercial and business customs including, without limitation, contract terms and conditions and labor relations;
- the potential for significant losses on Hitachi’s investments in equity-method associates and joint ventures;
- uncertainty as to the success of cost structure overhaul;
- the possibility of disruption of Hitachi’s operations by natural disasters such as earthquakes and tsunamis, the spread of infectious diseases, and geopolitical and social instability such as terrorism and conflict;
- uncertainty as to the outcome of litigation, regulatory investigations and other legal proceedings of which the Company, its subsidiaries or its equity-method associates and joint ventures have become or may become parties;
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