HITACHI RAIL

ESG Report 2023 – FY22

Think Responsibly, Act Sustainably

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Letter to Stakeholders

from Giuseppe Marino

“In today’s world, faced with climate emergency, the pursuit of sustainability isn't just a choice – it's a responsibility.

It is why last year we announced our decarbonisation pathway for Hitachi Rail as part of our commitment to become a Climate Change Innovator, and why today I am proud to share our annual ESG Report, outlining our progress in the financial year 2022.

We understand that the role of rail transport is crucial, both in achieving the goals of climate neutrality by 2050, and in bringing people, communities, and our customers closer together through an integrated and sustainable mobility ecosystem.”

Progress through innovation

It is our people that play the greatest role in moving us forward. And our teams have much to be proud of in FY22. Amongst the many achievements, Hitachi Rail launched Europe’s first battery hybrid fleet of passenger trains in the pioneering Masaccio train; we introduced the 360Pass smart ticketing app to help operators worldwide connect and optimise their city’s entire transportation network in real time; we became the first rail manufacturer in the world to obtain the BSI PAS2080 Carbon Management certification for the UK’s new HS2 trains; and – together with our Hitachi Group partners - we started work to create a closed-loop supply chain for lithium-ion batteries.

This year, too, Hitachi Rail received the EcoVadis Platinum medal for business sustainability, putting us in the top 1% of companies in our industry (read more about our ESG Ratings in Section 3.1.1).

A rich and diverse culture

A diverse workforce fosters innovation and success, which is why – as we grow our team with nearly 1,500 new hires last year – we continue to take further strides in achieving gender diversity, with female representation in senior positions rising by 2.6% in FY22. And why, around the world, we promote diversity within the industry at large, as exemplified by our ongoing Women in STEM activities and during our annual Women’s History Month campaign, which celebrated the voices of hundreds of Hitachi Rail colleagues worldwide (see Our People in Section 4.1).

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Decarbonisation pathway

Becoming a climate change innovator means driving a modal shift away from fossil fuelled cars and planes, accelerating the decarbonisation of rail with batteries, and decarbonising ourselves using science-based targets.

Last year, we bolstered our existing commitment, setting new targets to achieve carbon neutrality throughout our entire value chain by 2050. And we are well on the way, achieving a 12% decrease in CO_2e emissions across Scope 1 and 2 (read more about our progress on Environmental goals in Section 5.2). This year, we've set specific targets to reduce all emissions by at least 5% in FY23 compared to FY22.

Partnerships for sustainable growth

At Hitachi Rail, we also recognise that our journey towards sustainability is a shared endeavour, rooted in collaboration, transparency, and purposeful action.

As a partner and climate actor, we play a fundamental role in the overall value chain, and we have a responsibility to deliver sustainably, as an innovative and reliable partner to our customers. From FY23, for example, all new Hitachi products will be developed using Life Cycle Assessment, adopting an eco-design perspective that alleviates environmental, social, and economic impacts in the product supply chain and throughout its lifecycle (learn more about our Innovative Product Design in Section 5.3.1). In this way, our products can contribute to the growing circular economy that our societies will need to achieve true sustainability.

Our pathway to decarbonisation hinges too on our relationship with our supply chain. We were pleased to welcome 3,000 of our trusted suppliers to the Hitachi Rail Global Partner Day, where we highlighted the importance of sustainability and decarbonisation and celebrated these partners for their contribution to its success (learn more about our Sustainable Supply Chain in Section 3.4). And we are proud that today, more than half of our procurement spend is covered by suppliers rated, like us, by EcoVadis for their sustainable performance. We continue to onboard more suppliers so we can support our partners in their own decarbonisation journey.

Continuous improvement is a team sport

As sustainability gains increasing importance, I'm reminded of our collective power to effect change. I would like to thank our people, customers, partners and stakeholders, whose collaboration drives our shared mission.

I am deeply proud of the progress made by all our teams as evidenced throughout this report, and by the ambitious goals we have set ourselves.

This commitment is reflective of our values and of our determination to lead the rail industry towards a greener, more inclusive, and sustainable future.

Giuseppe Marino

Chief Executive Officer of Hitachi Rail

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Guide to the ESG Report 2023 – FY22 (April 1 2022 to March 31 2023)

The following document constitutes Hitachi Rail's fourth annual sustainability report. Its purpose is to report on Environmental, Social, and Governance (ESG) performances, impacts and ambitions the Hitachi Rail Business Unit of Hitachi Ltd., hereinafter referred to as "Hitachi Rail" or "Organisation".

The objective of the document is to enhance awareness regarding Environmental, Social, and Governance issues and consistently establish and implement effective measures and strategies. The document is structured to provide an overview of the context in which Hitachi Rail operates and its identity and values (Chapter 1) and illustrate to the reader its approach to sustainability issues through its ESG Targets and Roadmap (Chapter 2), and then focus on its performance and impacts in the three sustainability dimensions: Governance (Chapter 3), Social (Chapter 4) and Environmental (Chapter 5).

To ensure the comprehensive disclosure of information, Hitachi Rail reports with reference to the GRI Sustainability Reporting Standards, as set forth by the Global Reporting Initiative (GRI). For further details please consult the GRI Content Index at the end of this document. To ensure the coherence of data, a comparative analysis has been conducted with the preceding Fiscal Year, whenever possible, although in some cases the reporting scope has been expanded due to continuous improvements.

In this FY22 edition, Hitachi Rail has developed a new approach to materiality analysis that looks to the future of Corporate Sustainability Reporting from a perspective on the impacts the Organisation has on the economy, people, the environment and human rights.

The outcomes of this Materiality Analysis received approval from Hitachi Rail's Sustainability Committee in June 2023.

Hitachi Rail emphasises the intrinsic correlation between its material topics and the United Nations Sustainable Development Goals (SDGs) and the associated Targets to which it contributes in line with Hitachi Group's Business Strategy and Corporate Commitments. For an in-depth understanding of their interconnectedness, please refer to the section titled "Our Contribution to SDGs".

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Highlights Fiscal Year 2022

38 countries | **13,765** employees | **46** sites[1].

Environment

Decrease of -12% in **Scope** 1 **and 2 emissions**

8 (2 new) categories reported for **Scope 3 emissions**

Water consumption and non-hazardous waste generation in line with previous FY

Targeting a 100% reduction of **Scope 1 and 2 emissions by 2050**

Social

0.68 lost time injury frequency rate (28 fewer incidents vs. last year)

An average of 19 training hours per employee (over 265,000 total training hours)

Governance

EcoVadis platinum medal with score of **81/100**

New materiality analysis, with **more than 1,900 internal and external stakeholders**

90% completion rate of the **annual Ethics & Compliance training**

0 incidents of corruption

[1] FY22 ESG Report perimeter relates to 46 sites. For additional information on the reporting perimeter, please refer to the Methodological Note.

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1

Context and Identity

Chapter 1:
Context and Identity

The United Nation's **17 Sustainable Development Goals** (SDGs) describe the major challenges humans will have to face to ensure a sustainable, peaceful, prosperous, and equitable life on earth for all, in the present and in the future. In this context, the role of rail transport becomes crucial in achieving the goals of decarbonisation and in emphasising its contribution to bringing people, territories, and relationships closer together for social and economic well-being.

These assumptions also form **the basis of Hitachi Rail's idea of sustainability**, as further described in paragraph 2.1.1, to offer an integrated and sustainable mobility ecosystem, capable of contributing to the achievement of prosperity and quality of life in balance with natural capital.

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1.1 The Global Sustainability Scenario and the Transport Sector Challenges and Trends

Fiscal Year 2022 was characterised by strong socioeconomic and environmental instability; events such as the Russian invasion of Ukraine and the climate emergency, which led to devastating events in many countries of the world, made the challenges harder to tackle for companies worldwide.

Among the main trends in the transport sector is the growing emphasis on electrification and renewable energy sources to power trains. This shift aims to reduce greenhouse gas emissions and dependence on fossil fuels. Advancements in technology are facilitating the adoption of smart and automated systems to optimise operations, improve safety, and enhance passenger experience. However, several challenges persist. Upgrading existing rail infrastructure to accommodate new technologies requires substantial investments and coordination among stakeholders. Ensuring seamless integration with other modes of transportation and improving accessibility to remote areas are pressing challenges.

Operators also faced challenges adapting to the post pandemic world. While passenger levels have mainly recovered to pre-pandemic levels, the emergence of hybrid working has made it harder to predict occupancy patterns. The traditional peak rush hour for commuters has been replaced with a more volatile trends, making it hard to schedule traditional maintenance activities for both trains and infrastructure.

As extreme climate events intensify, amplified by the global pandemic, the effects of climate change stress are becoming more evident, stressing the need of a notable shift in businesses' commitments to reduce their environmental impacts. Regulators around the globe are enacting an increasing number of legislation requiring companies to have stronger climate and environmental but also social commitments.
In January 2023 the Corporate Sustainability Reporting Directive (CSRD) entered into force to define a standard for Corporate Sustainability

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Reporting across EU and international businesses. Additionally, various frameworks and initiatives are being applied internationally for the reporting of ESG topics. In particular, two of most widely used sustainability performance reporting standards globally are the GRI Standards and SASB Standards.

Within this context, Hitachi Rail, recognising its role in Europe and in the global transport sector, has chosen to engage in promoting increasingly integrated, inclusive, collective, and environmentally low-impact mobility (infrastructure and services). For Hitachi Rail and its clients, the challenge lies in aligning traditional economic and financial objectives with the principles of sustainable development.

Ensuring a continuous and sustainable movement of people and goods within and between cities is fundamental to building a sustainable future. The execution of continuous and systemic innovation processes represents a strategic driver for Hitachi Rail to strengthen its leadership positions in reference sectors. Through innovation, Hitachi Rail aims to offer increasingly high-quality and personalised services that cater to the needs of travellers, clients, and other stakeholders, encompassing the entire value chain: from design and construction to maintenance, and providing safe, integrated, and tailor-made transport services.

Hitachi Rail launches first-of-its-kind research into passenger attitudes to smart mobility

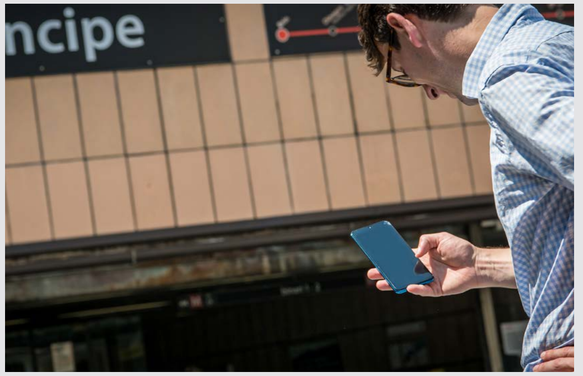
Following the successful launch of the new 'Smart Mobility' offering last year, Hitachi Rail is excited to have launched a first-of-its-kind smart mobility report in February 2023. The global report examines attitudes from 8000 survey respondents toward smart city transport in eight global cities: Washington, Toronto, London, Paris, Düsseldorf, Turin, Dubai, and Bangkok.

The headline discoveries:

- Three-quarters of people would use public transport more often if they had a single effective digitised transport app;
- The single most important benefit of such an app is the ability to avoid crowding, according to 3 in 4 respondents;
- In boost for cities' decarbonisation strategies, two-thirds of respondents would be willing to pay for better services via more road charges, despite increased car usage.

What motivates peoples' travel decisions?

Overcrowding (48%) and busyness (42%) of services are the single biggest factors that put people off of using public transport. In contrast, people identify the three C's – cost, convenience, and comfort – as their biggest motivators to travel, with 79% noting the appeal of the ability to avoid crowded services, and 78% highlighting the importance of shortest journey time, and cheapest travel option.



360Pass - metro station

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1.2 Introduction to Hitachi Rail Identity and Business

For over a hundred years, Hitachi's mission has been to contribute to society through the development of superior technology.

Today, Hitachi Rail is connecting the future of mobility - helping every passenger, customer and community enjoy the benefits of more seamless, sustainable transport.

Every year, the company's pioneering technology enables more than 18bn passenger journeys and helps to safely transport millions of tonnes of freight.

As a trusted partner to cities and transport operators around the world, Hitachi Rail delivers every part of the railway: from manufacturing and maintaining trains, like the iconic Shinkansen in Japan, to the digital signalling infrastructure that enables autonomous trains, to delivering and operating entire turnkey railways.

Hitachi Rail is committed to being a climate change innovator by co-creating greener products with its customers - such as world-leading battery trains - and through its commitment to reduce its own CO_2 emissions to net zero by 2030 and the entire value chain by 2050.

Hitachi Rail is pioneering the digital transformation of transport. With its new Smart Mobility suite of technology, Hitachi Rail helps customers to predict, plan, manage and optimise mobility networks in real time - improving how passengers use the network and how operators manage congestion, cost and carbon. Hitachi Rail's asset performance management technology is helping operators to increase safety and reduce maintenance costs by predicting faults before they happen.

From its origins in Japan, Hitachi Rail's reach is global, but its business is local – with success built on investing in the people and communities that it serves around the world. Hitachi Rail is invested in the future of its communities – as an employer, dedicated to developing people, skills and talent, but also as an investor – bringing economic benefits to local places through its supply chain partnerships.

Hitachi Rail's customers benefit from additional value from the wider Hitachi Group companies, including digital transformation expertise from GlobalLogic, energy infrastructure from Hitachi Energy and innovative business models and financing from Hitachi's corporate entity and partners.

Hitachi Rail is growing and looking to recruit diverse talent now. Hitachi Rail now operates with around 14,000 employees in 38 countries, with strong roots in Europe, Asia-Pacific and the Americas.

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1.2.1 Mission, Vision and Values

The approach of Hitachi Rail is unique in how its pioneering partnerships brings innovation and expertise from the Hitachi Group and its wider stakeholders' ecosystem.

Hitachi Rail's beliefs and actions are guided by a clear mission, vision and values as the Organisation takes pride in holding itself and its projects to the highest standards, and the values provide benchmarks to evaluate successes and opportunities for improvement.

Initially set by Hitachi founder Namihei Odaira, the Hitachi Mission has been carefully passed on to generations of employees and Stakeholders throughout its 110-years history.

Rio Tinto AutoHaul in Pilbara

Mission

Hitachi Rail's Mission is to contribute to society through the development of superior, original technology that enables more seamless, sustainable journeys.

Vision

The Vision is that every passenger, customer and community around the globe can enjoy the benefits of more seamless, sustainable journeys.

Values

***Wa (Harmony)* – (和)**
The need to show respect to colleagues, suppliers, clients, and stakeholders.

***Makoto (Sincerity)* – (誠)**
To act with integrity in all words and actions, exemplifying the fact that sincerity lies inholding to stated values.

***Kaitakusha Seishin (Pioneering Spirit)* – (開拓者精神)**
This means to lead with ambition, to seek new challenges; and to be unafraid of flexibility and adaptability to the changing needs of the business.

Hitachi Rail's people around the globe choose to put these values into practice by working together, responsibly and with a collaborative approach with the aim of contributing to the society with courage and knowledge.

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1.2.2 Business, Products and Solutions

Hitachi Rail is a global leader in the railway sector offering integrated rail solutions, including rolling stock, signalling systems, digital technology, and service & maintenance activities.

Hitachi Rail's production is dedicated to **Vehicles and Rail Control systems**. The Vehicles division is mainly focused on manufacturing activities and operations and service & maintenance services, while the Rail Control division is devoted to Rail control products, service & maintenance, and turnkey solutions.

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Rolling Stock

With a remarkable century-long track record of serving customers and passengers, Hitachi Rail excels in engineering and embraces a dedication to innovation. Through collaborative partnerships with customers, Hitachi Rail strives to enhance the passenger experience across all Hitachi Rail's rolling stock offerings. In terms of train products and vehicles, the production is oriented on: High speed trains (Shinkansen and Vehicles at High Speed also called "VHS"), Main line trains (Intercity and Regional trains) and Mass transit trains (Tram, Monorail and Metro).

Among the most important and globally recognised Hitachi Rail's train models, which demonstrate Hitachi Rail's commitment to sustainability and to the reduction of products' environmental impact, there are:

- **ETR 1000** provided with a recyclability of 94.4% and the remarkable recoverability rate of 95.8%
- **Caravaggio Train**, recyclable as of 95.1% and presenting a high recoverability of 96.3%
- **HTR 412 Blues train**, recyclable for its 86.1% and provided with a good recoverability rate of 95.9%.

Digital Signalling & Systems

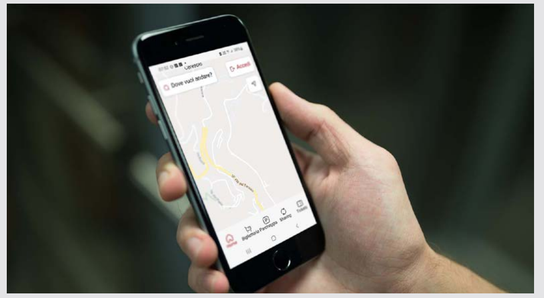
Hitachi Rail specialises in the design, production, installation, and commissioning of signalling components, systems, and comprehensive mobility solutions for modern and enhanced railway, transit, and freight lines. Hitachi Rail's dedicated teams worldwide provide extensive support, offering a diverse range of signalling solutions. This approach enables us to gain a comprehensive perspective on railway operations, ultimately enhancing performance and revenue efficiencies for the Organisation's clients.

Smart Mobility

The Lumada Intelligent Mobility Management suite represents a novel and distinctive proposition introduced by Hitachi Rail, with a specific focus on assisting public transport operators, cities, and passengers in realising a more sustainable, cost-efficient, and congestion-free global landscape. This suite comprises a collection of intelligent mobility solutions, encompassing the multi-modal passenger smartphone application, 360Pass, and a cutting-edge orchestrator tool named 360Motion, tailored for operators and municipalities. With its capability to create a digital twin of an entire city's public transport network, 360Motion enables predictive analytics and real-time responses, empowering cities to optimise their transportation systems and facilitate seamless movement for their citizens.

Smart Mobility in Genoa

Social Innovation involves using innovation and digital technology to address society's major problems. The Mobility-as-a-Service (MaaS) project in Genoa, Italy, exemplifies this concept. MaaS is an integrated transport system designed to optimise urban mobility with coordinated and efficient modular solutions. The goal is to meet the growing need for sustainable mass transport in cities. Through the app, passengers can plan multimodal journeys on public transport, access parking lots, e-scooters, and car-sharing services. The app tracks the passenger's journey, enable contactless payments without the need for physical tickets. Genoa is the first city to fully embrace this MaaS system, with 663 buses, 2500 bus stops, the subway line, two funiculars, one rack railway, ten public elevators, and two suburban routes integrated into the platform.



Genoa App

This ambitious initiative aims to enhance the quality of life, protect the environment, and promote sustainable and connected mobility for the city's residents and visitors. The app offers users access to various mobility services through a single tool. The app also features an intelligent payment system that applies the best daily rate for the customer, ensuring convenient and efficient payment processes. In partnership with the municipal administration and local Mobility and Transport Company), Hitachi Rail delivers significant contributions to society through Social Innovation principles, making transportation more sustainable and user-friendly, ultimately benefiting the community and the environment.

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Turnkey

Hitachi Rail holds a prominent position as a leader in the global design and construction of entire railways, whether undertaken independently or in collaboration with consortium partners. Their transportation systems are carefully crafted, with a primary focus on whole-life cost considerations. As a result, these solutions exhibit exceptional performance, enhanced capacity, elevated safety levels, improved service availability, and heightened passenger satisfaction. With versatile capabilities, Hitachi Rail possesses the capacity to act as a specialised contractor or assume a leadership role in joint ventures alongside civil work companies and other rolling stock manufacturers.

Service & Maintenance

Hitachi Rail offers pioneering solutions across a diverse range of services, encompassing Service & Maintenance for both rolling stock equipment and legacy signalling installations. By providing best-in-class services, Hitachi Rail aims to optimise product life cycles, support customers' operations, and elevate passenger experience through the integration of innovative digital solutions.

Line 6 metro project in Naples

The Linea 6 project, commissioned to Hitachi Rail by Naples Municipality, was realised in collaboration with the Engineering Department of the University of Naples Federico II (UNINA), with the aim of promoting the use of sustainable technologies through an approach that integrates Building Information Modeling (BIM) with Building Energy Modeling (BEM). The project involves the construction of three structures: a train depot, a HUB which will be for the canteen and changing rooms, and the station proper. Each facility has been carefully designed to ensure efficient passenger flow and maximise the use of energy resources.

Extending from the Mostra area to Piazza Municipio, Line 6 represents a significant step towards improving urban mobility and reducing environmental impact. The works will be carried out on an area of approximately 110,000 square metres in the areas adjacent to the Campi Flegrei railway station. Dynamic simulations for the analysis of energy, economic and environmental impact performance, as well as multi-objective optimisation of the building-plant system were carried out for all proposed solutions. Among the solutions adopted for the building envelope: south-side solar greenhouse (to optimise winter solar gain) that transforms into an open porch during summer by opening the external windows, the use of heat-insulating glass, polymer windows and doors, which represent a further step towards optimised thermal and acoustic insulation, cool paints and low-emission interior paint to minimise winter dispersion.

The HUB was designed to offer a full range of services, including offices, canteen and changing rooms, with a focus on energy efficiency and the adoption of eco-friendly solutions. Particular attention was paid to an intelligent and functional design that promotes the well-being of users, while ensuring the optimisation of energy resources.

In addition, innovative energy-saving systems have been adopted, including: photovoltaics for own power generation, energy-efficient cooling systems, smart grids, state-of-the-art thermal storage and 'free cooling' systems for sustainable cooling of technical rooms.

The combination of advanced solutions represents a major step forward in the design and construction of sustainable building, representing a tangible example of how innovation and sustainability can come together to create a state-of-the-art environment.

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Prestigious prize awarded for Hitachi Rail's Taiwan train

Hitachi Rail's EMU3000 train, which is in operation for the Taiwan Railway Administration, has been awarded the iF Design Award 2022, one of the world's most prestigious design awards. The iF Design Award, sponsored by "iF International Forum Design GmbH" in Hanover, Germany, has been recognizing outstanding design and innovation in industrial products for over half a century.

The EMU3000 train was selected for its originality, functionality, ease of use, quality, and environmental considerations.

The iF DESIGN AWARD 2022 received approximately 11,000 entries from 57 countries and regions.

Hitachi Rail was assigned to deliver 600 EMU3000 train cars in 2019, and they have been entering service gradually, with the order set to be fulfilled by 2024.

Takuya Yamakawa, Deputy Head of Japan Business and Head of Asia & Japan Initiatives (Sales & Projects), Railway Systems Business Unit, Hitachi, Ltd., expressed their delight in receiving the award and emphasised their commitment to providing safe and reliable fleets for seamless and sustainable passenger journeys.

Hitachi Rail UK fleet awarded best-in-class at rail awards

The Hitachi Class 802 fleet operated by Hull Trains in the UK, running between Hull and London, has been recognised for its outstanding reliability and performance. The fleet, maintained at the Bounds Green Maintenance Centre in North London, received the prestigious Golden Spanner Award for their exceptional maintenance work.

The Hitachi Class 802 fleet was awarded the highest accolade, Gold, in the 2nd Generation new inter-city category. The fleet has consistently ranked in the top-10 on the UK reliability table for the past seven periods.

The team at the depot, including maintenance, engineering, and planning teams, along with the collaboration between Hitachi Rail and Hull Trains, have played a crucial role in achieving this success. The award marks a significant milestone since the introduction of the AT300's for the Hull Trains fleet, highlighting the team's dedication and excellence in keeping the fleet running at its best.

About the 8000-series Metro cars

The 8000-Series Metro trains are designed to enhance reliability, provide modern on-board technology, and offer an improved passenger experience. The train designs include popular features like on-board WiFi, heated floors throughout, improved regenerative braking, digital screens for better journey information, high-definition security cameras, ventilation system improvements, and stringent cybersecurity measures. With 130 seats per pair of cars, these all-electric vehicles will be a significant upgrade over the older 2000- and 3000-series fleets, which have been in service since the early 1980s. The new fleet is expected to improve service for passengers, facilitate easier maintenance, and reduce operational costs for Metro.

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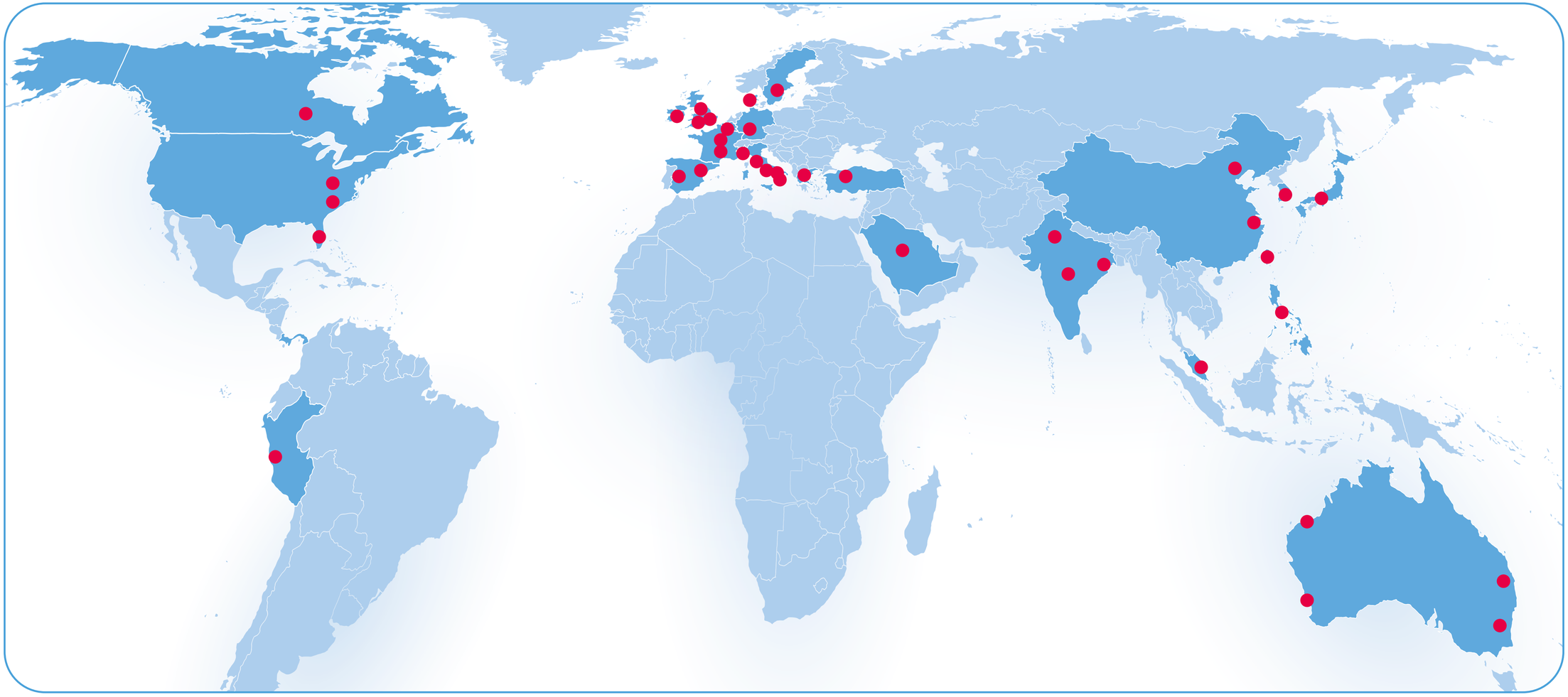
1.2.3 Group Structure and Business

Hitachi Rail is present in five continents with around 14,000 employees. Hitachi Rail believes that a culture of sustainability is best practice, combining clear goals and plans for the development of the business with staff's personal and professional growth.



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The ESG Report 2023 of the companies belonging to the Hitachi Rail Business Unit of Hitachi Ltd. consists of Hitachi Rail Ltd. and its fully consolidated subsidiaries and the Rail division of Hitachi Ltd in Japan.

The reporting scope of qualitative and quantitative data and information in the ESG Report 2023 includes 46 main sites in the 38 countries in which Hitachi Rail operates as shown below:

- **32 offices:** UEA, Ankara, Baltimore, Bangalore, Beijing (2 sites), Brisbane, Brussels, Copenhagen, Genova, Karratha, Kolkata, Kuala Lumpur, Les Ulis, Lima, Madrid, Makati City, Miami, Munich, Noida, Perth, Piossasco, Pittsburgh, Riyadh, Seoul, Shanghai, Solna, Sydney, Taipei and New Taipei, Zaragoza, Ludgate (Global Head Office), Glasgow
- **6 train maintenance centres:** Bounds Green, Craigentinny, Doncaster, North Pole, Stoke Gifford, Swansea
- **8 manufacturing sites:** Batesburg, Riom, Napoli, Pistoia, Reggio Calabria, Tito Scalo, Kasado, Newton Aycliffe

The correspondence between the Group's sites and related legal entities consolidated on a line-by-line basis as of 31 March 2023 is shown below:

HITACHI Ltd. 1

HITACHI RAIL Ltd. 8

- HITACHI RAIL TRANSPORTATION SYSTEMS SPAIN S.A.
- PERPETUUM LIMITED

- HITACHI RAIL STS S.p.A. **14**
- SECURE RAIL INDIA PRIVATE LIMITED **2**
- HITACHI RAIL STS USA INC **4**
  - *Hitachi Rail STS USA International Co.*
  - *Union Swiitch & Signal Inc.*
  - *Hitachi Rail STS Canada Inc.*
  - *Hitachi Rail Ontario O&M Inc.*
  - *Hitachi Baltimore Rail Partners, LLC*
  - *Hitachi Rail Washington LLC*
  - *Hitachi Rail Honolulu JV*
- HITACHI RAIL ONTARIO HOLDINGS INC.
  - *Hitachi Rail Ontario GP Inc.*
- HITACHI RAIL STS HURONTARIO HOLDINGS INC
  - *Hitachi Rail STS Mobilinx Hurontario GP Inc*
- HITACHI RAIL STS SWEDEN AB **1**
- HITACHI RAIL STS FRANCE SAS **5**
  - *Hitachi Rail STS Hong Kong LTD*
- HITACHI RAIL ESPANA S.L.U. **2**
- HITACHI RAIL STS DEUTSCHLAND GMBH **1**
- HITACHI RAIL STS AUSTRALIA PTY LTD **5**
  - *Hitachi Rail STS Malaysia SDN BHD*
  - *Hitachi Rail STS India PVT LTD*
- HITACHI RAIL STS RAILWAY SIGNALING TECHNOLOGY (BEIJING) **3**

Number of sites

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1.2.4 Economic Performance

Hitachi Rail is aware of the significance of its economic impact generated on the external context in which it operates and on its internal and external stakeholders. In particular, Hitachi Rail is committed to generating value for its stakeholders and to reporting its direct monetary value added to local economies, as well as acknowledging the importance of being transparent by providing a clear picture of its economic profile. Concerning FY22, the prospectus for the calculation of the economic value generated and retained[2] is constructed by aggregating, in scalar form, items in the income statement in line with the representations shared with Corporate, and represented in JPY, with the aim of highlighting the formation process of added value and its distribution to the various stakeholders.

DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED	UNIT OF MEASURE	4/21 - 3/22 (FY21)	4/22 - 3/23 (FY22)	% DISTRIBUTION OF GENERATED VALUE 4/22 - 3/23
Economic value generated				
Revenues (net sales plus revenues from financial investments and sales of assets)	mn JPY	467,298	**537,307**	**100.0%**
Economic value distributed				
Operating costs (payment to suppliers, non-strategic investments, royalties and facilitating payments)	mn JPY	307,443	**434,282**	**80.8%**
Employee wages and benefits (total employee expenses – current payments, not future commitments)	mn JPY	102,356	**121,900**	**22.7%**
Payments to provider of capital (e.g., investors)	mn JPY	2,252	**3,573**	**0.7%**
Payments to government (tax expenses)	mn JPY	32,685	**11,512**	**2.1%**
Economic value retained				
"Direct economic value generated" less "Economic value distributed"	mn JPY	22,562	**-33,960**	**-6.3%**

The table shows the development path that characterises Hitachi Rail's business activities. The solidity of financial performance, the activities and the internal reorganisation processes to foster increasingly effective governance, have a significant impact on the analysis in the Report, both qualitatively and quantitatively.

[2] Please note that the following data reported will refer to the legal entities consolidated Hitachi Rail Ltd. and its subsidiaries - STS Group, Perpetuum Group, STS UK. Japan sites and offices are not included.

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2

ESG Framework and Roadmap

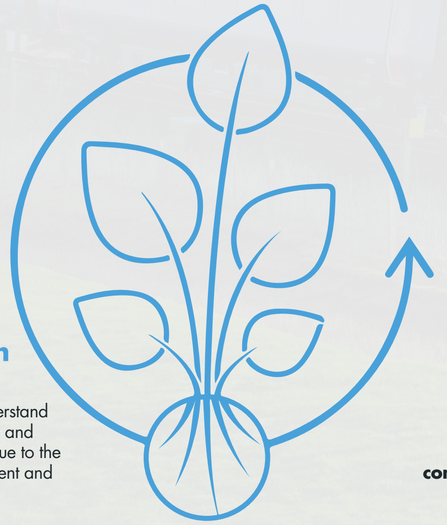
Chapter 2

ESG Framework and Roadmap

2.1 ESG Roadmap and Targets

Hitachi Rail aims to become a sustainability leader, leveraging its ability to identify innovative business opportunities. Acting as a backbone of this strategic and holistic view, the Hitachi Rail follows the LEAVES Strategy with different levers and roles:

LEAVES STRATEGY



Sustainability Committee sponsorships

Board-level sponsorship for successfully implementing an ESG strategy reflects the entire corporate culture. Therefore, clear communication of the importance of ESG to the Organisation is crucial

Stakeholders engagement Cross - function ESG team

Engaging with stakeholders, such as employees, customers, and suppliers, to understand expectations and concerns about ESG policy and action plan is not only about sustainability. Due to the interdisciplinary nature of ESG, the commitment and involvement of all stakeholders are essential.

Material ESG topics & alignment to the business strategy

Focus on company-relevant and **material ESG topics** set **ambitious targets** and conduct **KPI-based ESG**. A tracking process via a dedicated KPIs model enables **consistent ESG management** and communication to the capital market and general public

Data infrastructure, transparency & accountability

Correct and consistent Reporting, which requires **transparent communication** of ESG targets, underlying metrics, and progress to the public.

Moreover, Hitachi Rail is in a prime position to make a significant impact on the attainment of the UN Sustainable Development Goals, as described in section 2.4.1 "Our Contribution to SDGs". By aligning its business activities with the SDGs and their targets, Hitachi Rail has identified four key avenues through which it can contribute:

- development of innovative products and solutions;
- responsible management of operations and assets;
- continuous engagement with stakeholders and suppliers;
- robust measurement of performance against sustainability objectives.

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Strategic priorities

The results of the Organisation's materiality analysis (see updated materiality in section 2.4 "Materiality Analysis") are of relevance in setting strategic priorities:

Occupational Health and Safety: guaranteeing, through the creation of safe and healthy working environments, the psycho-physical health of all personnel and all those people who access offices, maintenance centres and production centres;

Ethics, Integrity and Transparency: acting in compliance with the regulations in force in the individual countries in which the Organisation carries out its activities, implementing controls to prevent and monitor corruption in all its forms and to ensure ethical and transparent business conduct;

Customer focus: developing products and services according to criteria of honesty, fairness, transparency, and collaboration to maintain a solid relationship with customers based open dialogue;

Reduction of emission and mitigation of climate change: effectively managing the potential environmental impacts of Hitachi Rail's activities and contributing to the overall reduction of atmospheric emissions.

Photovoltaic plant

With regard to Climate Change, Hitachi Rail supports Hitachi Group's formal commitment to SBTi (more detail section 5.2 "Environmental Goals and Decarbonisation Path") and follows a science-based approach to decarbonisation, to reduce the negative impacts of its activities on climate change and to enhance the positive ones. After Hitachi Rail has defined an extensive set of metrics, KPIs and disclosures to maintain control of its defined path, and to monitor its current performance and trends. Many of these are present in the current ESG Report, others will be integrated over time, consistent with the *Mid-Term Management Plan* and functional to the evaluation of strategy and risk management.

2.1.1 Delivering a Sustainable, Safe and High-Quality Railway Business

As illustrated in paragraph 1.1 The Global Sustainability Scenario and the Transport Sector Challenges and Trends of this Report, Hitachi Rail operates within a context of global mobility highly influenced by sustainability and subject to regulatory developments. Following the latest reports[3-4] stating CO_2 levels in the atmosphere have been rebounding to pre-Covid19 levels, Hitachi Rail has confirmed an overarching objective to reduce Greenhouse Gas (GHG) emissions charting its path to environmentally sustainable business operations.

Hitachi Rail has updated its **mid-term roadmap by setting environmental targets** and establishing performance measurements and transparent disclosures which drive its day-to-day activities. It implements a sustainability culture, promoting specific skill development coordinated by the Corporate Social Responsibility and Sustainability function (CSR&S), functionally reporting to Head of SHEQ Department (see paragraph 3.1.1 ESG Governance for further details).

Digital Innovation

Within Hitachi Rail's diverse range of rolling stock, signalling, and turnkey solutions, digital technologies are effectively harnessed to deliver improved customer experiences with reduced environmental impacts. Hitachi Rail's signalling solutions team is leading the way in developing innovative *'Zero-Infrastructure'* train control technologies. These advanced systems replace traditional line-side equipment with cloud-based solutions connected via satellite communication. Additionally, the operations teams have acquired Perpetuum, a remote condition monitoring Company, whose analytics technology extends the safe service life of equipment, effectively reducing industrial and financial waste caused by inefficient maintenance practices.

Lifecycle Analysis, Material Recovery and Waste Reduction

Hitachi Rail prioritises the most recent advancements that aim to minimise material and energetical consumption for its customers throughout the product lifecycle. By implementing life cycle analysis, Hitachi Rail incorporates sustainable materials, including recycled ones, and embraces renewable energy sources, such as battery trains, to achieve this goal.

Furthermore, Hitachi Rail actively encourages its suppliers to engage in energy efficiency initiatives and other environmental programmes aimed at reducing their emissions; the adoption of material recovery, an innovative technological approach for recycling electronic equipment and materials[5].

Carbon Management and the Decarbonisation Pathway

While promoting waste reduction, material re-use, and the utilisation of recycled materials Hitachi Rail emphasises innovating recycling processes and designs increasingly efficient products and solutions to effectively reduce greenhouse gas emissions. Hitachi Rail analyses the potential effects of its strategic choices in diminishing greenhouse gas emissions, with a forward-looking perspective encompassing short, medium, and long-term horizons. **This approach aims to identify prospects for business development, enhance operational efficiency, and mitigate environmental risks**. It centres on speeding up the transition to renewable energy sources, optimising energy and process efficiency in internal operations, and utilising market influence to drive economy-wide decarbonisation efforts. Consequently, this concerted effort not only significantly curtails Hitachi Rail's emissions but also contributes to reducing emissions among its partners.

[3] *Emissions Gap Report*, UN Environment Programme, 2021.
[4] *Sixth Assessment Report*, Intergovernmental Panel on Climate Change (IPCC), March 2023.
[5] In compliance with the legal requirements arising from the EU Directive 2012/19, Waste from Electrical and Electronic Equipment (WEEE) and other internationally relevant legislation.

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Actions to reduce greenhouse gas emissions are part of the ***Environmental Management System*** that Hitachi Rail has established at a global level, defining a ***Carbon Management Approach*** based on the following principles:

- global approach: development of mechanisms to increase the commitment to sustainability in all offices and production sites;
- reasonable and feasible long-term objectives: establishment of a clear and realistic vision for path to be followed;
- support for the development of technologies: implementation of advanced solutions;
- effort to train a broader base of employees in the LCA analysis;
- methodological developments, including impact assessment methodologies type I and II and interpretation phases;
- recognition of a plurality of established approaches, since social life cycle impact assessment methodologies include different approaches developed in the literature;
- development of areas where minimum guidance prevails;
- integration of Social Organisational Life Cycle Assessment (S-LCA) to extend the focus from products to the Organisation.

Hitachi Rail reports both direct and indirect GHG emissions as part of its carbon management system. To reduce these emissions, its policies focus on mobility, consumption reduction, energy efficiency improvements, adoption of renewable energy sources, and enhanced waste and water management programmes. Hitachi Rail currently studies and implements these practices on selected manufacturing facilities, which have the greatest energy consumption and impact in terms of GHG and pollutant emissions. Based on those results, it intends to review and implement a new framework of emission policies to create a lasting change across the Business Unit, ensuring a conscious, orderly transition, for economic development.

Consistent with Hitachi Group's criteria for environmental classification, Hitachi Rail's decarbonisation pathway is focused on the premises of these selected production sites, for which it has engaged to reach carbon neutrality within 2030 (compared to baseline year 2016 calculated for those sites).

The organisation has announced the following initiatives and key objectives:

- implementing photovoltaic panel technologies;
- providing maintenance centres with insulation systems to isolate system with different thermal-acoustic conditions and prevent the two systems from exchanging heat;
- introducing solar thermal offices;
- implementing pyro-gasification, technology aimed at the gasification of the biomass while simultaneously producing biochar;
- introducing Thermal Power Unit;
- exhausting fume extraction;
- providing offices and other facilities with new air conditioning systems;
- relamping and replacing the lighting system (traditional lamps) with LED bulbs, thus moving in the direction of further energy efficiency.

It also aims to meet its carbon neutrality goal by increasing the use of renewable power and implementing policies of energy saving and thermal carbon credit purchasing.

First battery hybrid fleet in Europe

Launched in FY22, Hitachi Rail's pioneering Masaccio train is the first battery hybrid fleet in passenger service in Europe. Designed with a focus on accessibility, connectivity and sustainability and made with 95% recyclable materials, the *'tri-brid'* train can switch seamlessly between battery, electric or diesel power, and is already cutting emissions by more than 50%.

In stations and urban areas, batteries power the train completely, eliminating emissions to the environment, including harmful NO_2 emissions, and reducing noise pollution.

Blues Train

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365 days of all-electric Lumo - the most reliable train in the UK

Hitachi Rail's 100% electric fleet - Lumo - celebrated its first year in operation with more than 1 million miles travelled and more than 1 million passengers transported. Officially the most reliable train ever conveyed in the UK, it continues to deliver efficient and affordable journeys, connecting Edinburgh to London.

Lumo

41,000 tons of CO_2 saved in Scotland's Central Belt

Since its introduction in 2018, Hitachi Rail's 100% Class 385 electric commuter trains allowed passengers in Scotland save 41,000 tons of CO_2, the carbon equivalent of 14,000 return flights from London to Tokyo. As ScotRail's fastest and most reliable train, they are one of the UK's top three most reliable fleets.

Class 385

360Pass smart ticketing app

360Pass smart ticketing app gives passengers the fastest and most convenient multi-modal route options and real-time journey updates. Powered by Hitachi's Lumada Intelligent Mobility Management suite, municipalities and operators around the world now have the tool to connect, scale and optimise their entire urban transportation network in real time.

360Pass - Funicular

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2.2 Our Partnerships for Sustainable Development

Hitachi Rail Partnerships for Sustainable Development bring together diverse stakeholders, including governments, businesses, civil society organisations, academy, and communities, to collaborate and work towards achieving the United Nations Sustainable Development Goals (SDGs).

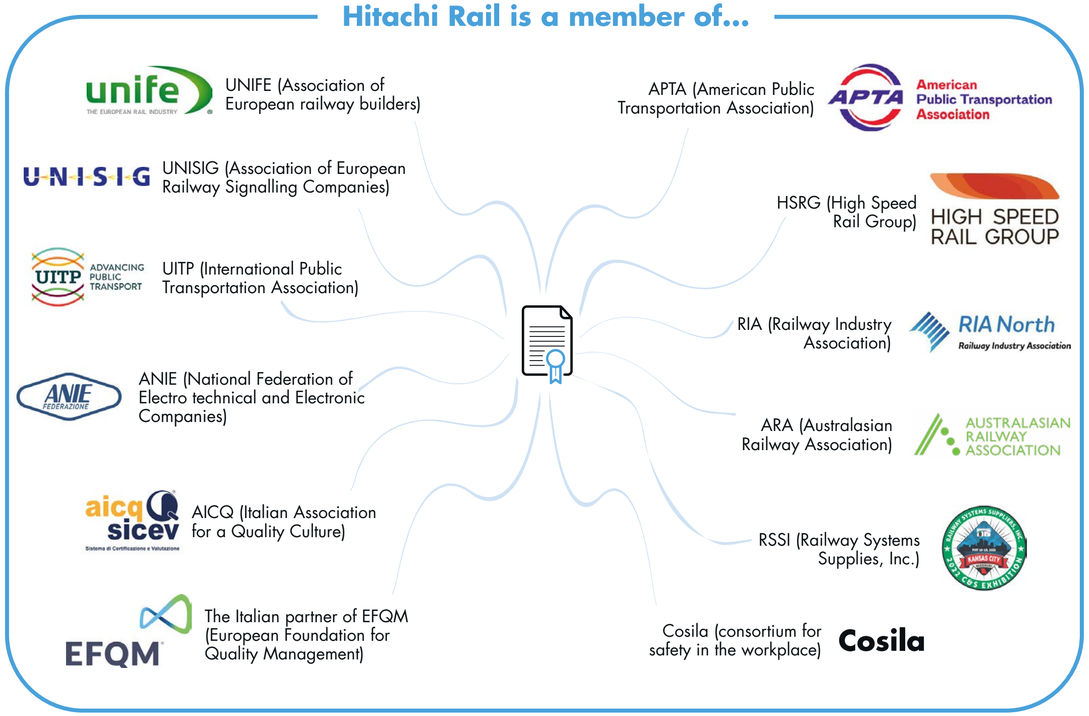
These partnerships recognise that no single actor or sector can effectively tackle issues such as poverty, climate change, inequality, and environmental degradation on their own. By leveraging the strengths, expertise, and resources of each partner, these collaborations foster innovation, knowledge sharing, and collective action towards Sustainable Development.

Commitment to the UN Global Compact

As co-founders of the UN Global Compact Network Italy, Hitachi Rail has confirmed its support to the Global Compact, a voluntary United Nations initiative that supports global companies that are committed to responsible business practices in the areas of human rights, labour, the environment, and corruption. The Group's membership in the initiative reiterates its commitment to the Global Compact and its principles as an integral part of the Hitachi Rail's strategies and workplace culture.

In 2023, Hitachi Rail submitted the Communication on Progress (CoP) Questionnaire, which focuses on five disclosure areas (governance, human rights, labour, environment and anti-corruption) and is designed to help participating companies monitor performance across the Ten Principles of the UN Global Compact.

2.2.1 Industry Associations and Certifying Authorities



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Hitachi Rail in UNIFE

Within the scope of UNIFE, Hitachi Rail collaborates to promote the use of railway transportation through the implementation of technological standards (ERTMS and TSI) and by suggesting European research projects to improve safety, energy efficiency, and environmental protection in the field of railway transportation.

- Hitachi Rail participates in SHIFT2RAIL, now known as Europe's Rail, both proposed as a Joint Undertaking in the railway sector to reduce emissions and promote a modal shift in transportation, and in line with the indications of the transportation white book published by the EU Commission.
- Hitachi Rail sits on the Sustainable Transport Committee, which aims to define a consistent and effective consensus in the railway industry with respect to environmental issues and, particularly, energy efficiency (reliable standards to measure energy consumption), life cycle assessments in decision-making processes, eco-procurement, and noise and emission reduction. Hitachi Rail also sits in the ERRAC (the European Rail Research Advisory Council) which has a key focus on the contribution of railways to sustainable mobility. Its primary objective is indeed to communicate the railway sector's common Research & Innovation vision to European institutions and other important stakeholders.

Hitachi Rail and the studies conducted with UNIFE

Hitachi Rail has been an active member of the UNIFE European Railway Association for almost 20 years, contributing to various working groups and committees focused on sustainability. In the Sustainable Transport Committee, they have supported the development of a joint statement with other rail sector associations and updated the position paper on EU Taxonomy.
The focus has been on successful Taxonomy implementation in the rail sector.
In the Life Cycle Assessment Topical Group, Hitachi Rail concentrated on Eco Design for Sustainable Products Regulation and Environmental Product Declarations. They were also involved in ISO Standardization for circular economy guidelines and legislative discussions on Eco-Design and Circular Economy Directives.

In the Chemical Risk Topical Group, the main focus was on the new Proposal to restrict Per- and Polyfluoroalkyl Substances (PFAS), which will have implications for the rail sector and Dangerous Substances Management, such as REACh Regulation, SVHC, SCIP Database, and RISL (Railway Industry Substances List).

Hitachi Rail in UITP

UITP (Union Internationale des Transports Publics) is the International Association of Public Transport and a passionate champion of sustainable urban mobility. Established in 1885, with more than 135 years of history, it is the only worldwide network to bring together all public transport stakeholders and sustainable transport modes. Hitachi Rail actively participates in the Working Bodies (Committees), contributing to several technical and non-technical agendas and closely working with other members of the associations belonging to Industry, PTO (Public Transport Operators), and PTA (Public Transport Authorities).

Hitachi Rail in the Information & Telecommunication Technology Committee

The Information & Telecommunication Technology (ITT) Committee brings together approximately 30 active UITP members to anticipate the introduction of new technologies, evaluate their impact and benefit, and understand how to improve existing systems and their evolution. The Group promotes innovation and moves favourable developments forward, suggesting recommendations, disseminating technical knowledge, and good practices in information and telecommunication systems. The ITT Committee meets twice a year and maintains a continuous exchange on these topics with the operators, the organising authorities, and the other actors of the sector. Demonstrating the strong commitment of Hitachi Rail, for two consecutive mandates (2019 – 2023), a representative of the Organisation is the Chairman of the ITT Committee.

Hitachi Rail in IT-TRANS

IT-TRANS is UITP's flagship event on IT held every two years in Karlsruhe, Germany. It incorporates an exhibition of over 250 stands with 6000+ visitors, as well as an international conference counting 550+ delegates.

Hitachi TMS Model Office

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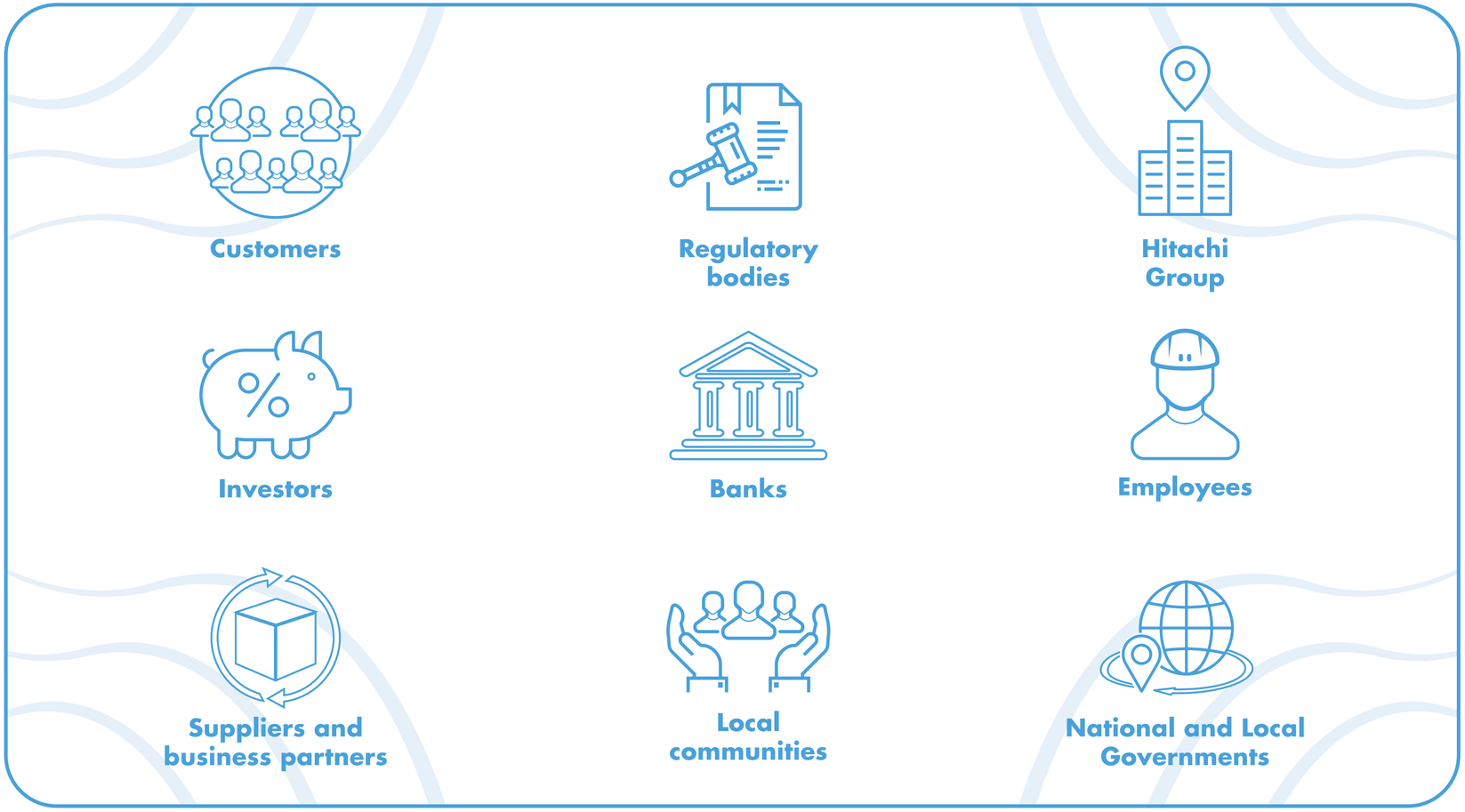
2.3 Stakeholder Engagement

For Hitachi Rail, corporate social responsibility translates into a daily focus and constant care of its relations with stakeholders. The understanding of their needs and expectations is achieved through the definition and implementation of specific tools for dialogue and interaction. The stakeholder engagement process plays a central role in Hitachi Rail's corporate strategy, reflecting its unwavering dedication to inclusive decision-making and transparent communication. The Organisation unit makes meticulous efforts to outline various dialogue channels and decision-making mechanisms, sensitively addressing the concerns and interests of different stakeholder categories.

These figures depict Hitachi Rail's principal stakeholders, identified through the analysis of the reference sector and open discussion with stakeholders.



2.3.1 Our Dialogue with Stakeholder and their Involvement Process

Core to Hitachi Rail's stakeholder engagement strategy is the principle of inclusivity and receptiveness, whereby the Organisation embraces the needs and perspectives of workers, customers, suppliers, and various other categories intertwined with the Hitachi Group, and cultivates an environment where shared values thrive.

Hitachi Rail seeks to identify common priorities, pursuing them through three distinct and transparent lines of action:

- **opportunities for information:** one-directional communication from Hitachi Rail to its Stakeholders, to provide pertinent information, updates, and insights, keeping stakeholders informed;
- **consultation/dialogue:** actively seeking the invaluable opinions and perspectives of its Stakeholders, through surveys, polls, focus groups, and other participatory mechanisms. This also includes permanent discussion groups to allow for ongoing dialogue and exchange of ideas;
- **partnerships:** forging specific projects in collaboration with Stakeholders to work jointly on goals of mutual interest, strengthening relationships and co-creating value with its diverse partners.

Hitachi Rail aspires to progressively intensify opportunities for dialogue and partnerships, thereby cultivating an environment where shared value thrives and emphasising transparency and responsiveness.
Hitachi Rail dedicates itself to evolving its engagement strategies, continually striving for an even deeper connection with its valued stakeholders and the broader community.

At the forefront of this effort is the decarbonisation strategy, focused on driving modal shift for better public transport, accelerating the adoption of batteries to aid customers in decarbonisation, and reducing emissions in Hitachi Rail's own operations and supply chain.

Hitachi Rail highlighted progress at the InnoTrans trade fair, Hitachi Rail, showcasing decarbonisation through battery technology with the launch of the Masaccio Battery train and highlighting its own efforts to reduce its own emissions through the adoption of solar panels at manufacturing sites in Italy and the engagement of the supply chain in eco-friendly practices through the EcoVadis rating agency programme. Conscious of the environmental impact of exhibitions and events, it also promoted sustainability and the use of recyclable materials. Moreover, the team focused on increasing Gender Diversity among spokespeople, with notable progress achieved in FY22.

Hitachi Rail assumes a prominent role in fostering strong connections with local communities, encompassing municipal authorities, resident associations, metro and rail users, businesses, and local workers. Depending on the nature of each commercial project, Hitachi Rail employs diverse methods to engage and communicate with these communities:

- Participation in local stakeholder committees;
- Facilitation of communication between local authorities and citizens;
- Engagement in direct communication with community members;
- Involvement in programmes aimed at empowering and developing local communities.

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Hitachi Rail and local communities

Serious fun at Italy's EnergyMed 2023, an event dedicated to the green revolution and energy transition.

In Italy, Hitachi Rail and its partners brought together young talent to develop their skills using the Lego Serious Play method, sharing real ideas for achieving the UN Global Sustainable Development Goals.

Hitachi Rail donates ambulance to Dr. M. C. Modi Charitable Eye Hospital

Hitachi Rail has donated a Force Ambulance to the Dr. M. C. Modi Charitable Eye Hospital to enable the structure to provide better medical and relief services to the people of Bengaluru and to render various humanitarian services, like smooth transportation of patients in need of treatment to the hospital.

Primary Engineer Rail Project inspires the next generation into a career in rail

Organised by East Midlands Rail Forum, the Primary Engineer Rail Project programme encourages young people to think about a STEM career, helping Hitachi Rail to attract the next generation into a career in rail and further encouraging diversity of people and ideas into the industry.

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2.3.2 Our Customers and their Engagement

Hitachi Rail's breadth of rail experience and research and development programmes has created new, innovative trains and infrastructure, meeting the demand of passengers, operators and governments all over the world for rolling stock, traffic management systems, signalling and much more. Its global expertise means that the Organisation can offer to customers solutions to every aspect of a railway network.

Nonetheless, Hitachi Rail's customers operate multiple types of transport. As such, the Organisation is expanding its capability to support them beyond its traditional areas of operation.

Whether as a leader or part of consortia, Hitachi Rail innovates and collaborates to deliver projects that meet customers' needs, providing advanced solutions in every aspect of rail travel, including traction equipment and heating, air conditioning and ventilation (HVAC), signalling (ETCS) and traffic management systems (TMS), commuter trains, metro/underground and intercity trains.

Hitachi Rail's experts work together with customers to create new solutions to real world challenges, working closely with its extensive international supply chain to promote innovation, resilience, and sustainability. Hitachi Rail knows its ability to deliver valuable products to its customers depends on its suppliers. Alongside project management, Hitachi Rail actively engages with customers to ensure their awareness of business news, updates, and developments.

This is achieved through virtual and face-to-face conferences, trade shows, press releases, editorial content, and through the group website – www.hitachirail.com. Promotion and online advertising support these efforts, especially through the use of social media channels to reach decision makers, media, and industry associations. Customer also participate in 360-degree feedback loop to help Hitachi Rail fully understand customer needs and requirements. These surveys target new and existing customers – allowing communication plans and tactics to be adjusted and customised based on qualitative feedback.

Customer satisfaction activities are handled by the managers of various departments, such as Safety, Health & Environment, Quality, EMEA Business Unit, Americas & APAC Business Unit, Operation & Maintenance Business Unit, and Operations Units. These activities take place at various stages and are carried out using different tools to accurately monitor the level of customer satisfaction and project status until the completion of the projects.

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2.4 Materiality Analysis

Hitachi Rail is attentive and responsive to variations in stakeholder needs. It is through ongoing dialogue that the Organisation directs its efforts and defines strategic sustainability priorities. This enables a focused approach on the most relevant topics for business development in line with the expectations of all stakeholder categories with whom Hitachi Rail engages daily, considering the positive and negative impacts expected on the reference business.

A new approach to Materiality Analysis

According to the GRI Sustainability Reporting Standards, materiality is the principle that identifies which topics represent the most significant impacts of the Organisation on the economy, the environment, and people, including impacts on human rights. **Hitachi Rail's new approach for the 2023 materiality analysis** integrated several new elements, such as the "Impact Materiality" process defined by GRI 3: Material Topic 2021, as per the requirements set forth by the new GRI Universal Standards 2021, in a process that will gradually move towards a full *double-materiality*[6] assessment.
This process involved engaging in extensive stakeholder consultations and conducting a rigorous analysis of environmental, social, and economic material aspects and related impacts to identify the most relevant material topics to be included in its sustainability reporting.

The new approach to the Materiality Analysis has focused on the concept of significant, actual, and potential impact on the economy, people, and the environment, from an "inside-out" perspective, also including elements from financial impact dimension, known as "outside-in" perspective. As a result, Hitachi Rail's Materiality Analysis has been updated, considering the shift from a focus on the relevance of material topics for stakeholders and the Organisation to a focus on the actual and potential impacts, both positive and negative, arising from its activities.

The process can be summarised as follows:

- **external context analysis and relevant macro-themes identification:** the analysis started with the internal and external context analysis, implementing a deep benchmarking analysis focused on business activities, stakeholders, sustainability sector trends, industry ESG priorities, reporting trends and market KPIs, having the specific focus of rationalising and reviewing Hitachi Rail's material topics for FY22 through the identification of relevant "macro-themes," broader than the previous material topics;
- **preliminary analysis and identification of relevant impacts:** Hitachi Rail analysed its activities and of the sustainability context in which it operates in order to identify possible impacts related to the most relevant ESG macro-areas. This allowed the elaboration of a list of impacts on the main stakeholders, differentiated by positive/negative, current/potential, reversible/irreversible impacts, by the area of impact (economic, environmental, social, human rights) and by the moment of occurrence along the value chain (business operations – suppliers and partners, end use).

[6] Double materiality is defined by the EU Commission in the context of the CSRD and is composed two dimensions: impact materiality and financial materiality. A sustainability matter is material if it meets the definition of impact materiality, financial materiality, or both.

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This analysis was based on multiple elements, including:

- internal procedures and analyses that Hitachi Rail developed during its experience in the field of sustainability;
- the GRI Universal Standards and Sustainability Accounting Standards Board (SASB) Sector-Specific Standards applicable to the railway transportation industry and the machinery and industrial goods industry[7];
- a diverse characterisation of impact, such as positive or negative, short/medium/long-term, actual or potential, systematic or linked to individual incidents, expected or unintended, and reversible or non-reversible.

Through the analysis, 16 material topics and 32 impacts were identified and submitted for approval to Hitachi Rail's Sustainability Committee;

- **stakeholder engagement and evaluation of material topics and impacts:** Hitachi Rail engaged the top management and primary internal and external stakeholders to assess the each material topic:
  - **Internal and External Stakeholders:** submission of two separate surveys on the relevancy of potential impacts related to each of the material topics (inside out perspective);
  - **Top Management:** submission of a dedicated survey to assess the significance of the expected financial impact of each of the material topics (outside-in perspective);
  - **Impact Materiality Workshop:** inaugural workshop session with relevant stakeholders from the middle management of Hitachi Rail's Functions. The workshop focused on the identified impacts with the aim to directly assess the perception of their severity and likelihood.

[7] For further details please consult: https://www.sasb.org/standards/archive/

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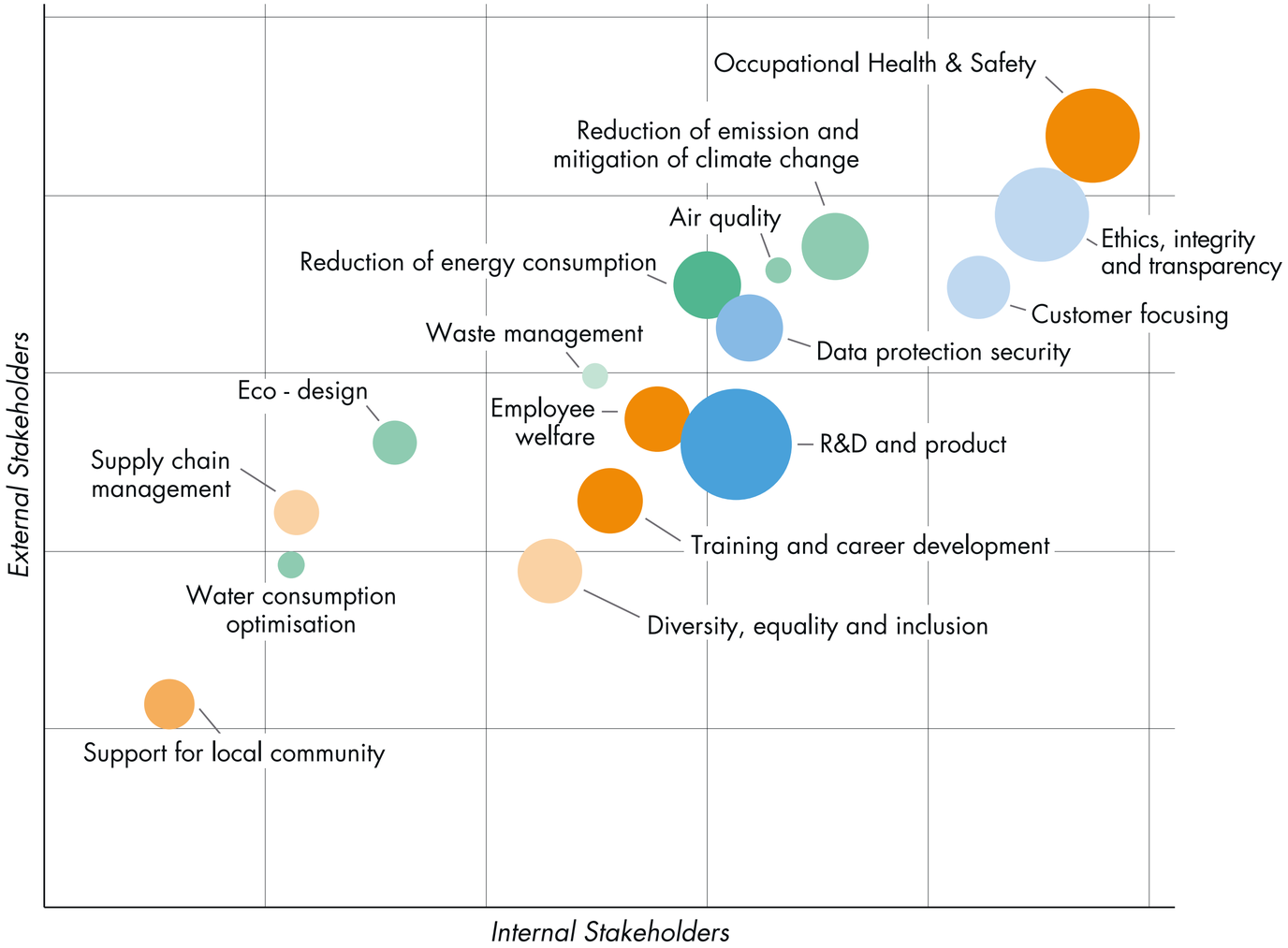
This engagement approach has allowed Hitachi Rail to involve and gather feedback from **more than 550 stakeholders**, marking a significant increase in the number of engaged participants compared to the previous edition of the activity. The results of the workshop are summarised in the figures below.

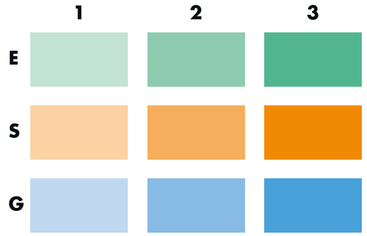
Materiality Matrix 2023



X-asis: Relevancy from Internal stakeholders
Y-asis: Relevancy from External stakeholders

Bubble width Relevancy from financial perspective from Top Management
Bubble color Significance of the main impacts connected to the material topic

Legend for the significance of the impacts



From the materiality analysis, the following findings emerge:

- **Environmental (E):** among the related topics, "Reduction of emissions and mitigation of climate change" emerges as the most relevant;
- **Social (S):** the priority topics are "Occupational Health & Safety" and "Customer focusing";
- **Governance (G):** the standout topic in this area is "Ethics, integrity, and transparency."

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2.4.1 Our Contribution to SDGs

In 2015, the 193 Member States of the United Nations officially signed the Agenda 2030, presenting the 17 Sustainable Development Goals (SDGs), articulated in 169 specific targets, based on a set of fundamental and urgent issues for the planet to be achieved by 2030. Hitachi Rail is well-positioned to make a meaningful contribution to achieving the SDGs, through its mission to contribute to society through the development of superior, original technology and products that power sustainable connectivity.

Hitachi Rail's contribution is based on the broader framework of Hitachi Group's commitment to contributing to the SDGs as "Business Strategy" and "Corporate Commitment." The contribution to the objectives can be substantiated in different ways, i.e:

- through the achievement of Hitachi Rail's mission to develop railway and mass transit systems and create increasingly sophisticated products and solutions that are safe, convenient, efficient, and environmentally sustainable.
- through management models which enable the Organisation to follow a path of sustainable growth and guarantee a cohesive culture of responsibility which promotes sustainable actions by individual collaborators.

SDGs to which Hitachi Group contributes though its Business Strategy and Corporate Commitment

Business Strategy

Corporate Commitment

Among the UN Sustainability Goals, Hitachi Rail has identified the specific Goal to which it contributes the most through its business activites.
More detail on the SDG's targets to which Hitachi Rail contributes to, refer to the Annex A - Hitachi Rail's Sustainable Development Goals and Target".

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Hitachi Rail's material topics and contribution to SDGs

TOPIC	TOPICS DESCRIPTION	SDGS
Reduction of emission and mitigation of climate change	Effectively manage the potential environmental impacts of the Group's activities, contributing to the overall reduction of atmospheric emissions	
Reduction of energy consumption	Manage operations with a holistic approach to reducing energy consumption and the rational use of resources	
Air quality	Managing production processes by reducing emissions of substances able to affect the natural composition of the air and impact biodiversity, local communities and employee health	
Water consumption optimisation	Ensure a responsible water supply by rationalising consumption and carefully managing water discharges to minimise environmental impacts	
Waste management	Ensure proper waste management aimed at safeguarding the environment, favouring the reuse and recycling of recoverable material, also through continuous training and updating of internal staff	
Eco-design	Rethink production processes from a circular economy perspective to make the finished product and its production/maintenance process more efficient and less resource intensive	
Training and career development	Training, valorisation and development of Hitachi Rail people, through the development of dedicated activities and programmes aimed at increasing professional skills and promoting growth paths	
Diversity, Equality, and Inclusion	Promoting inclusion and valuing gender, generation, and cultural diversity as factors for growth and innovation	

TOPIC	TOPICS DESCRIPTION	SDGS
Employee welfare	Offer employees modern and flexible tools and working models to meet specific personal needs and ensure work-life balance	
Occupational Health & Safety	Guarantee, through the creation of safe and healthy working environments, the psychophysical health of all Group personnel and of all those who access offices, maintenance centres and production centres	
Customer focusing	Developing products and services according to criteria of honesty, fairness, transparency and collaboration to maintain a solid relationship with customers and based on listening to their needs	
Support for local community	Ensure the social development of the territory and communities in which the Organisation operates, through local stakeholder engagement initiatives aimed at generating long-term sustainable value	
Supply chain management	Ensure that the Organisation's values are shared throughout the supply chain, setting purchasing processes on monitoring the social and environmental performance of counterparts	
R&D and product innovation	Develop innovative and technologically advanced solutions to take advantage of digitisation and automation opportunities and offer state-of-the-art products and services	
Ethics, integrity and transparency	Act in compliance with the regulations in force in the individual countries in which the Organisation carries out its activities, implementing controls to prevent and monitor corruption in all its forms and to ensure ethical and transparent business conduct	
Data protection security	Ensuring professional management of sensitive and personal data through the use of state-of-the-art procedures, tools and technologies, ensuring an effective IT security management system and efficient use of information assets	

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Governance

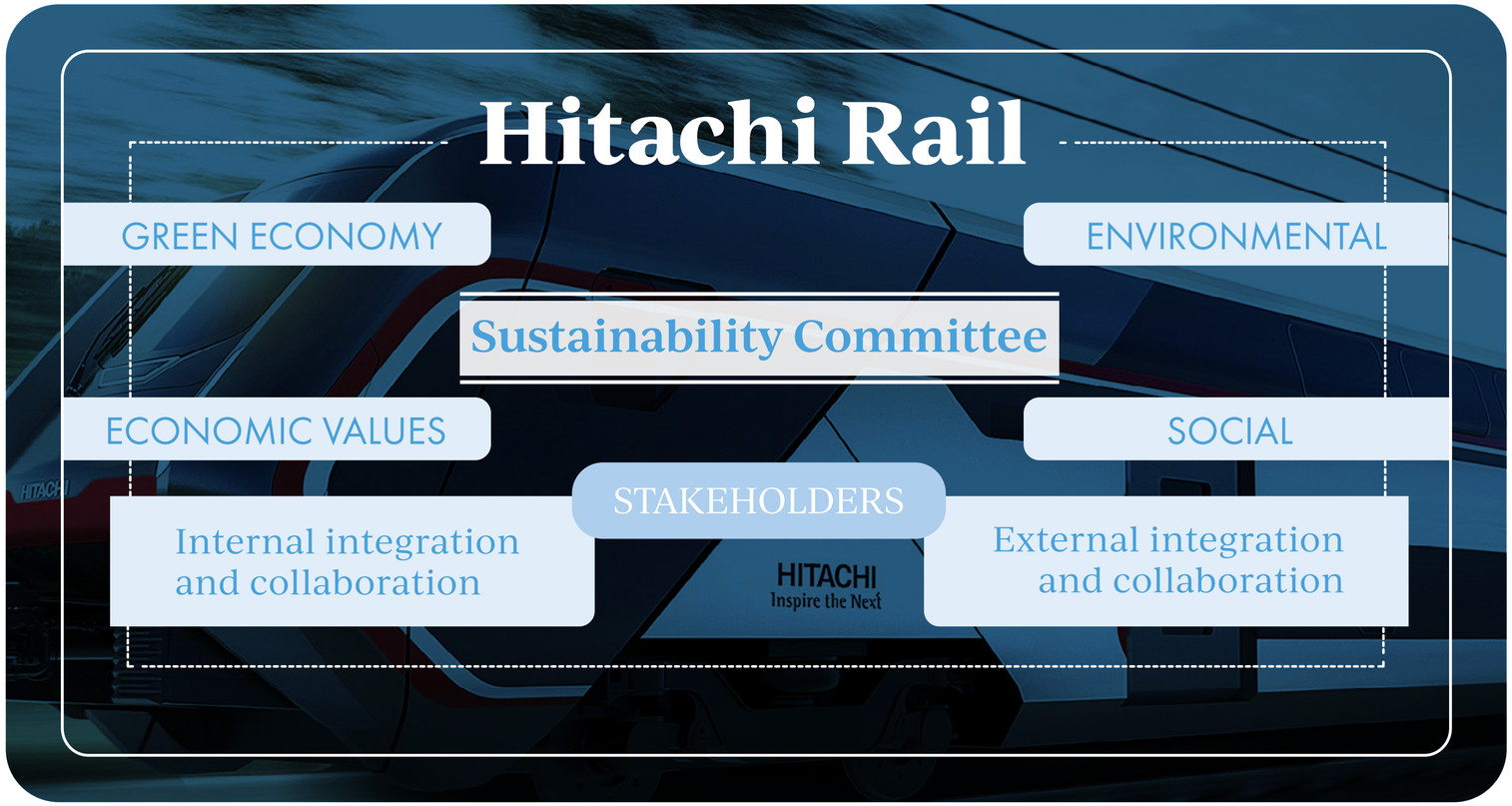
Chapter 3:
Governance

3.1 Corporate Governance

Hitachi Rail operates on several continents with different local offices at region and country level. The operational structure reflects the international presence, with Corporate functions at global level and local branches able to manage the business specificities in each territory.

The Organisation is led by Group CEO Giuseppe Marino, who chairs the Global Leadership Team from FY22. This Team is composed of 13 Senior Executives[8], of which one woman, who supervises precise areas of responsibility and activities both for staff and business functions.

The Hitachi Group governance structure is widely cascaded and replicated within Hitachi Rail. Several Committees take on specific core strategic matters: Sustainability, as briefly explained afterwards, but also HSE, Data Protection, Audit, Risks and Control, etc.



[8] For additional information on Hitachi Rail Global Leadership Team, consult the section available on the corporate website (https://www.hitachirail.com/our-company/global-leadership-team/)

3.1.1 ESG Governance

The Corporate Social Responsibility & Sustainability (CSR&S) function addresses ESG topics; and from 2020, a Sustainability Committee oversees, approves, and provides input to Hitachi Rail on its policies, strategies and programmes related to sustainability and corporate responsibility issues, assessing their KPIs and risks.

The CSR&S Department manages and coordinates the work for the four strategic areas of sustainability:

SUSTAINABILITY OF PRODUCTS

SUSTAINABILITY OF SITES

SUSTAINABLE CULTURE

SUSTAINABLE VALUE CHAIN

The mission of the CSR&S function is to interface with the lead managers of Hitachi Rail's business functions, reporting to them and to all other stakeholders about the impact and progress toward the sustainability roadmap.

At the end of FY22, the CSR&S function drafted a specific procedure dedicated to the 'Preparation of the ESG Report' of the Hitachi Group Railway Systems Business Unit Organisation. This document discloses environmental and socio-economic performance information, measures and oversees ESG performance and impacts, and tackles sustainability risks and opportunities, making possible to define a clear governance model in the process of preparing the ESG Report, defining roles and responsibilities for each stage of reporting.

This procedure describes the process of setting up and defining the ESG Report including, among others, the reporting timeline, reporting boundaries, description of the materiality analysis process, the data collection and consolidation process, and the finalisation, approval, and communication phases of the document.

Hitachi Rail's ESG KPI Model

Before the start of the annual reporting process for the ESG Report, Hitachi Rail updates the repository of all relevant ESG KPIs to be collected and integrated as to guarantee the higher possible level of granularity of information.

In doing so, all data owners are notified and know what kind of data to collect, the frequency of update needed and the standards to which they need to refer.

As a result, the quality of data collection is increased, and regulatory updates and best practices are implemented on a regular basis.

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Sustainability Committee

The Sustainability Committee, led by the Group CEO and composing permanent Executive members and other specific appointed figures, manages Hitachi Rail's vision and long-term ESG goals in pursuing continuous improvement of governance through a global structure, effective decision-making and implementation.

In the FY22, the Committee held five strategic and operational meetings with the following outcomes:

- develop its mission of addressing, evaluating activities and correcting strategies;
- discuss leading CSR and Sustainability issues, both from a strategic and development and implementation point of view;
- mandate a specific organisational Group Unit (SHEQ/R&D) to implement and achieve the objectives of continuous improvement, environmental protection, and social objectives, in the interest of the Stakeholders affected by the business activities.

The Sustainability Committee, through the coordination of the CSR&S function, also interacts with the representatives of local governance, maintaining a holistic view on ESG performance and targets. The Sustainability Committee reports directly to the CEO of Hitachi Rail and works in partnership with Hitachi Group's Sustainability Promotion Division (SusD).

ESG Ratings: EcoVadis

EcoVadis is a third-party provider of business sustainability ratings that organisations can use to understand more about their sustainability performance and the sustainability performance of their suppliers. Since its founding in 2007, EcoVadis has rated globally over 100,000 companies on its platform in areas covering Environment, Labour & Human Rights, Ethics, and Sustainable Procurement. Hitachi Rail's CSR&S department has taken over the complete management of the sustainability ratings.

After years of collaboration with EcoVadis and, following Hitachi Rail's new organisational structure, for the first time the EcoVadis rating reflects the commitments and approach to sustainable topics of the whole Organisation.

The EcoVadis Sustainability Rating, which is based on Hitachi Rail's Non-Financial Reporting is highly requested by most important clients and has reached a new higher level.

In 2023, EcoVadis awarded Hitachi Rail the Platinum medal with a score of 81/100 (+2 points compared to the previous award), which covered only the signalling part of the business.

Hitachi Rail is in the top 1% of companies rated by EcoVadis in the manufacture of railway locomotives and rolling stock industry.

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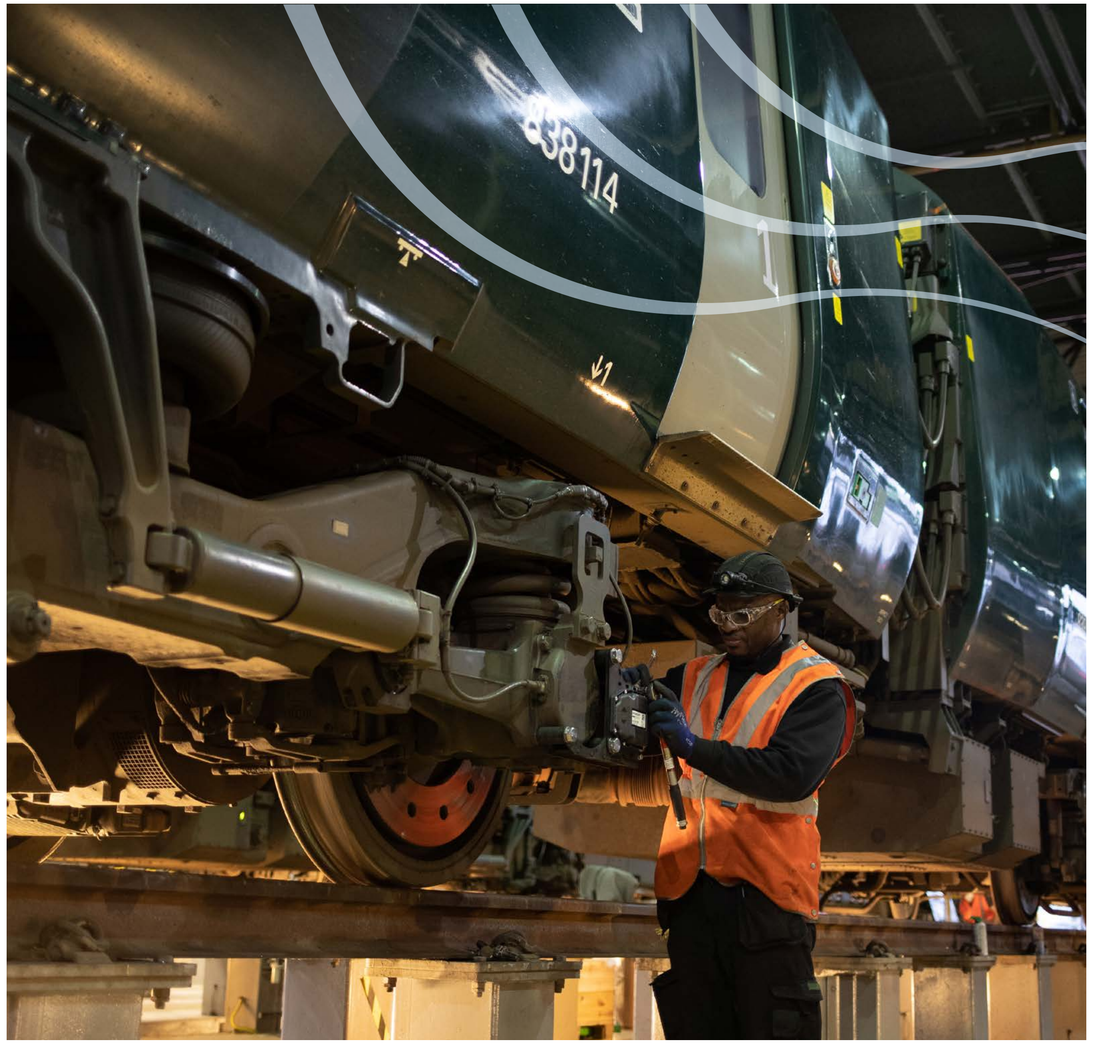
3.1.2 ESG Management System and Certifications

The Global Business Management System (GBMS) is the unique set of rules common to the whole Hitachi Rail Organisation. It is designed to cover, with the same approach and methods, the activities of all the Hitachi Rail entities. GBMS combines all related components of a business into one system for an easier management and monitoring in a continuous improvement approach.

There are four GBMS sections:

- **Governance:** high level manuals, global objectives and policies (strategy execution);
- **Organisation:** Organisation's structure, roles and mandates (accountabilities for each organisational role), project team structure;
- **Process excellence:** complete sets of operation practices, procedures, rules and detailed instructions;
- **Enterprise architecture:** the Organisation's IT platforms and tools.

Since its inception in April 2020, the project team has now published and deployed most of the global processes published on the COSMO GBMS area (Manuals, Global Policies, Strategy and Governance, Support functions, Execution processes), in addition to the Organisational Area (lead by HR functions) with the Organisation Chart, Roles & Mandates, Project Organisation Structure.



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Quality, Health, Safety and Environmental certifications

SHEQ Certification as of March 2023 (end of FY22)
Hitachi Rail RSBU

COUNTRY	SITE	IRIS	ISO 9001	ISO 45001	ISO 14001	EMA S	SA 8000	ISO 50001	ISO 27001
PRODUCTION SITES									
USA	Batesburg	✔	✔	✔	✔				
	Miami		✔	✔	✔				
FRANCE	Riom	✔	✔	✔	✔				
UNITED KINGDOM	Stoke Gifford			✔	✔				
	Newton Aycliffe		✔	✔	✔			✔	
ITALY	Tito Scalo	✔	✔	✔	✔	✔	✔		
	Naples	✔	✔	✔	✔	✔	✔	✔	
	Pistoia	✔	✔	✔	✔	✔	✔	✔	
	Reggio Calabria	✔	✔	✔	✔	✔	✔	✔	
JAPAN	Kasado		✔	✔	✔				
TRAIN MAINTENANCE									
UNITED KINGDOM	Ashford		✔	✔	✔				
	Doncaster		✔	✔	✔				
	Landore Swansea		✔	✔	✔				
	Edinburgh (Craigentinny)		✔		✔				
	London (North Pole)		✔	✔	✔				
	London (Bounds Green)		✔	✔	✔				
OFFICES AND SIGNALLING									
UNITED KINGDOM	London Head Office Ludgate		✔	✔	✔				
FRANCE	Les Ulis		✔	✔	✔				
SPAIN	Madrid	✔	✔	✔	✔				
	Zaragoza		✔	✔	✔				
GREECE	Thessaloniki								
PANAMA	Panama City								
TURKEY	Ankara								
DENMARK	Copenhagen		✔	✔	✔				

COUNTRY	SITE	IRIS	ISO 9001	ISO 45001	ISO 14001	EMA S	SA 8000	ISO 50001	ISO 27001
OFFICES AND SIGNALLING *continued*									
ITALY	Naples (HQ)		✔	✔	✔		✔		
	Genoa		✔	✔	✔		✔		✔
	Roma		✔ (included in the Italian Certicate)	✔ (included in the Italian Certicate)	✔ (included in the Italian Certicate)		✔		
	Milano		✔ (included in the Italian Certicate)	✔ (included in the Italian Certicate)	✔ (included in the Italian Certicate)		✔		
	Piossasco		✔	✔	✔		✔		
SAUDI ARABIA	Riyadh		✔	✔	✔				
U.A.E.	Abu Dhabi		✔						
PERU	Lima		✔	✔	✔				
TAIWAN	Taipei		✔	✔	✔				
MALAYSIA	Kuala Lumpur		✔	✔	✔				
	Rawang			✔	✔				
USA	Pittsburgh PA		✔	✔	✔				
	Pearl city (Honolulu)		✔		✔				
AUSTRALIA	Brisbane (Eagle Farm)		✔ AS/ZNS 4801:01	✔	✔				
	Perth (Belmont)		✔ AS/ZNS 4801:01	✔	✔				
	Sidney		✔ AS/ZNS 4801:01	✔	✔				
	Karratha		✔ AS/ZNS 4801:01	✔	✔				
INDIA	Kolkata		✔	✔	✔				
	Noida		✔	✔	✔				
	Mumbai		✔	✔	✔				
	Bangalore		✔	✔	✔				
CANADA	Ontario		✔	✔	✔				
GERMANY	Munich		✔						
SWEDEN	Solna		✔	✔	✔				
CHINA	Bejing		✔	✔	✔				

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Key achievements

As part of the improvement process carried out in the last two years, all the Italian sites have been certified SA 8000: this standard encourages organisations to develop, maintain and apply socially aligned practices in the workplace.

All vehicles manufacturing plant in Europe have been certified with ISO 50001 Certification, the ISO standard promoting a sustainable Energy Management System.

The SHEQ team revised the procedure for incident management to include the new SHEQ reporting tool as systematic approach to incident reporting. It issued further procedures related to engineering controls for management of critical risks like Electrical Hazard, Working at Height, Train Movement, Contractor Management and Confined Space. The Critical Risk Control Assessment, introduced in FY22, is an important element of integration with the campaign *Our Life Saving Rules*.

In November 2022, all Rail Control Organisational Units completed the Capability Maturity Model Integration (CMMI) Lev.2 Registration. This model is a proven set of best practices organised by critical business capabilities, whose objective is the overall improvement of the business performances.

Occupational Health, Safety and Environment (OHSE) Management System

Hitachi Rail's integrated OHSE Management System ensures that process and procedures are properly implemented and maintained. This year Hitachi Rail achieved a Global Multisite Certificate for ISO 14001and ISO 45001, demonstrating its constant efforts to build a safety culture and promote health and safety activities.

Hitachi Rail HSE management system includes a set of global documented procedure and template, constituting the backbone of the system. Hitachi Rail uses an integrated approach to Health, Safety, and the Environment to ensure that all work practices are carried out in a manner that mitigates the risk of injury or harm to personnel and the environment.

Hitachi Rail's Management System is complex, and it is composed of elements from both an internal and external perspective, namely corporate policies and assessments and third-party certifications.

Additionally, each Country/Legal Entity/ Branch and Site/Project can develop, according to specific legal and regulatory requirements and operational controls process needs, Local GBMS Instruction or Project documents.

In this way, all sites and projects where Hitachi Rail operates are covered by a dedicated management system.

The main actor in the preparation and implementation of the HSE Management System is the HSE Unit, which ensure the planning, implementation, coordination and monitoring of HSE processes and policies that drive compliance with the Global Business Management System, relevant local regulations and, where applicable, customer requirement.

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3.2 Business Ethics, Transparency and Integrity

The creation of sustainable economic value must also be supported by policies, practices and information processes that guarantee ethics, integrity and transparency in the day-to-day activities.

There were no instances of non-compliance with laws and regulations, and no fines or non-monetary sanctions, including anti-bribery and anti-corruption, export and trade compliance, or personal data protection laws reported or recorded during the FY22 reporting period. During fiscal year 2022 (FY22), covering the period 1 April 22 – 31 March 23, Hitachi Rail's Legal & Compliance function undertook numerous core initiatives to streamline and simplify governance, and strengthen and enhance elements of its compliance programme.

Legal

The Legal function supports the whole business with legal guidance and counsel across all operations globally. During FY22, the Legal function contributed to streamlining and simplifying Hitachi Rail's governance, which is aligned to Hitachi Group directives and requirements. It issued new governance manuals to the internal Global Business Management System (GBMS), including Governance, Committees, Boards of Directors, and Legal Entity Rules, as well as Bid and Project Authorisation Rules.

These activities integrated the ordinary task under the direct responsibility of the function, such as the support of the whole business with legal guidance and counsel across all operations globally, including but not limited to advising on contractual matters, negotiations, bids, litigation, mergers and acquisitions, and insurance.

Compliance

The Compliance function operates as a matrix Organisation, with individual compliance managers responsible for a specific country or region, and area of compliance. During FY22, Hitachi Rail appointed a Chief Compliance Officer as well as dedicated compliance managers to cover anti-bribery and anti-corruption, compliance operations, and whistleblowing and investigations.

During FY22, the Compliance launched initiatives to strengthen existing compliance programme elements:

- Multi-faceted communication plan to ensure that all Hitachi employees and stakeholders understand the expectations regarding business conduct and ethics connected with the launch of the new Hitachi Group Code of Ethics and Business Conduct effective from March 1, 2023;
- Direct oversight in the Ethicspoint system for all Hitachi Rail-related whistleblowing concerns. During FY22, Hitachi Rail received 43 reported concerns through its various speak-up channels, including 31 reported via the new Hitachi Group Global Compliance Hotline;
- Support for the Procurement function in developing a risk model for assessing compliance-related risks during supplier qualification. In February 2023, Hitachi Rail moved to single technology solution and platform, Jaggaer, which is integrated with its SAP system for supplier qualification. Compliance reviews include assessing red flags for entities, owners, and management associated with, among others, sanctions and watch-lists, regulatory actions, negative news, and reputational risk. Human rights risks are reviewed, and corruption risks are comprehensively assessed considering not only corruption perception scores, but also financial secrecy, and corporate tax haven indices.

For FY23, the Compliance function will continue to:

- Drive common requirements and a streamlined compliance policies and procedures framework for the business;
- Refine a fit-for-purpose compliance-related risk assessment framework;
- Communicate with employees and stakeholders and harmonise its existing compliance-related Policies and Procedures across Hitachi Rail.

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3.2.1 Code of Ethics and ESG Policies

The Corporate Code of Ethics summarises all the good practices for the ethical management of human resources and the development of a work environment where respect and consideration for each employee prevails.

The Hitachi Group Code of Ethics is a crucial pillar of the Hitachi Group Compliance Programme, providing rules, values and principles that are required to be followed by employees, executives, and directors, and third parties engaging in business with Hitachi Rail. The same rules, values and principles are also intended to assist officers and employees in making business decisions and acting in alignment with Hitachi's Group Identity.

During FY22, Hitachi launched the new Hitachi Group Code of Ethics and Business Conduct, effective from March 2023. The new Code was internally communicated and disseminated to all employees, and publicly posted to Hitachi Group and Hitachi Rail's external websites. The Code is applicable to all of Hitachi Rail and core policy commitments related to business conduct are themed:

- Being aware (making good decisions and reporting concerns);
- Protecting what is ours (safeguarding assets, intellectual property, and non-public information);
- Demonstrating accountability (selecting business partners carefully, maintaining accurate financial records and preventing money laundering, exchanging business courtesies responsibly, identifying and managing conflicts of interest, and safeguarding personal data);
- Dealing fairly with others (building customer trust, competing fairly, preventing bribery and corruption, complying with trade compliance laws);
- Caring for Hitachi Rail's communities (caring for the planet, respecting human rights, appreciating diversity, equity and inclusion, providing a workplace free of harassment, promoting health and safety, and investing in local communities).

Where appropriate, Hitachi Rail has internal-facing policies and procedures for its workforce to supplement the commitments noted in the Code, such as the following **ESG policies**:

Hitachi Rail deploys annual Ethics & Compliance training with a dedicated session on anti-corruption, to its workforce, including governance body members and all employees. In FY22 90% of the workforce completed its training, correlating to ~13,000 individuals across Hitachi Rail, including facilitated sessions held for production staff.

3.2.2 Organisational, Management and Control Model

Hitachi Rail has adopted appropriate measures to prevent liability in accordance with Legislative Decree 231/01, with the implementation of specific protocols and supervision systems. These systems are designed to prevent potential crime committed by Directors, Statutory Auditors, executives, employees or by any person who has a contractual, financial or commercial relationships with the BU.

Each legal entity within Hitachi Rail has adopted an Organisation, management and control model pursuant to Legislative Decree no. 231/01 (the model), which has been subsequently updated following regulatory and organisational changes. Furthermore, this regulatory framework is replicated on the different geographical areas when required, with consideration of the relevant national specificities.

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3.2.3 Whistleblowing Management

Hitachi Group Whistleblowing Policy and Programme is applicable to all Hitachi Business Units, including Hitachi Rail. It provides numerous "speak-up" channels through which anyone internal or external to the Organisation, can report concerns. These channels include Managers, Human Resources, Legal & Compliance, and the Hitachi Global Compliance Hotline. Hitachi Rail additionally uses supervisory bodies and other eligible recipients as speak-up channels within Hitachi Rail, as required by certain local laws and regulations. All speak-up channels are publicly available on Hitachi Rail's external website and internally to employees on a dedicated Ethics & Compliance Page on the intranet site, COSMO.

Hitachi Rail promotes a speak-up culture whereby anyone can report, in good faith, actual or suspected violations or breaches of laws, regulations, Hitachi Rail's Code of Ethics and Business Conduct, or any applicable Hitachi Rail policies, with zero tolerance for retaliation of any kind anyone who reports a concern or participates in an investigation. Hitachi Rail allows and encourages any person wishing to report a concern to choose the speak-up channel that is most suitable to their circumstances, or through which they feel most comfortable reporting their concern.

Concerns are evaluated promptly and effectively by Hitachi Rail's Compliance function to determine the appropriate course of action. If an investigation is deemed necessary an independent investigator is appointed that has the competency, capacity, and appropriate authority to manage and follow up on the concerns. Strict confidentiality is applied, to the maximum extent reasonably possible, to handling concerns, including investigation details, identity of the person reporting the concern, and of the other individuals involved.

3.2.4 Anticorruption

The Hitachi Group promotes and implements a corporate culture inspired by responsibility, sincerity, fairness, and ethics. The Hitachi Group's Anti-Bribery and Corruption Policy provides the foundation for all Group companies to ensure the strictest compliance with all anti-bribery and anti-corruption laws. On this basis, Hitachi Rail is committed to tackling corruption and preventing the risk of unlawful practices by ensuring full adherence with Group-level requirements and that all business activities are carried out ethically and legally.

There is a dedicated Anti-Corruption Manual for Group Companies and a Policy for Hitachi Rail to ensure compliance with anti-bribery and anti-corruption laws. Both the Manual and Policy provide for due diligence of third parties, management of gifts and entertainment, and whistleblowing "speak-up" channels for employees and other stakeholders to confidentially report concerns related to bribery or corruption, and to mitigate and manage associated risks.

Hitachi Rail deploys annual Ethics & Compliance training to its workforce, including governance body members and all employees. Annual training focuses on all elements of the Code of Ethics and Business Conduct, with a dedicated session therein covering anti-corruption requirements; during FY22 deployment, a 90% completion rate was achieved, correlating to some ~13,000 individuals across Hitachi Rail who completed the training, including facilitated sessions held for production staff. During FY22, Hitachi Rail did not confirm any incidents of corruption. Through speak-up channels, one concern related to an alleged request for a bribe from a reseller was reported, and duly investigated. The investigation concluded that the allegation was not substantiated, and Hitachi Rail followed all appropriate controls in its engagement. No instances of corruption or bribery were confirmed.

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3.2.5 Competition Law

The Hitachi Group Compliance Programme's Fair Competition policy applies to Hitachi Rail. The policy reflects and expands on the fair competition provisions of the Code of Ethics, and is included in the annual Code of Ethics training.

Hitachi Rail engages in business across the world based on principles of adherence with the law and business ethics as well as fair and open competition in compliance with EU competition laws, and those of other regions in which Hitachi Rail conducts business. During FY22, Hitachi Rail appointed a Head of Competition Law responsible for managing competition law risk and compliance on behalf of the Organisation. This includes ensuring that all employees of Hitachi Rail are aware of their obligations under competition law and conduct themselves in compliance with the applicable rules.

3.2.6 Export and Trade Compliance

The failure to comply with regulations on export, import, re-export or re-transfer of products (tangible or intangible), technologies, information, and services (hereinafter "goods") classified as "Dual-Use" has exposed several Companies to administrative and criminal sanctions, reputational damage, as well as significant financial losses.

Hitachi Rail shares the concerns of the international community on the proliferation of weapons of mass destruction and the excessive accumulation of conventional weapons. Therefore, Hitachi Rail does not deal in military products and is committed to complying with all applicable export and trade compliance laws and regulations.

The Hitachi Rail Export and Trade Compliance Programme includes Export Control procedures, policies, and a Manual. The programme is applicable to all Lines of Business (LoB) and Hitachi Rail Companies to prevent, manage, and monitor the risk of non-compliance with applicable legislation and regulations on export, import, re-export, or re-transfer of goods classified as "Dual-Use". The Export and Trade Compliance meets the standard controls required by the Regulation in force and is based on best practice andthe European Commission Recommendation.

To reach its target, Hitachi Rail exercises Export and Trade Compliance due diligence against any possible illicit transactions and ensured that no products are provided, and no trade is carried out in any country or any entity in violation of laws and regulations.

Hitachi Rail holds two active EU General Export Authorisation (EUGEA) licenses issued in May 2020. During FY22, it applied for and secured four EU Individual Export Authorisation licenses for export of materials from Italy to projects in the United Arab Emirates, Turkey, and Peru.

All Hitachi Rail employees are required to operate in full compliance with the laws and regulations in force and training opportunities to reinforce a culture of compliance are duly offered.

The Compliance function, under its Export and Trade Compliance programme, collaborates cross-functionally with Engineering, Industrialisation, and Operations to ensure that all Hitachi Rail products are properly assessed, reviewed, and classified under applicable law and regulation.

During FY22, Hitachi Rail had no instances of non-compliance related to product classification. Hitachi Rail completed the classification of all its rail control products initiated in January 2019. The relevant functions engaged in the export and trade compliance programme, on a continual basis, ensure updates to classifications per new versions of products released and/or additional products as they are added to the portfolio. Rail control manufacturing sites in Italy (Tito, Pistoia, Naples), France (Riom), and the USA (Batesburg) manufacture products bound for export that require classification. Hitachi Rail conducted analysis on ~700 products during FY22.
No instances of non-compliance with laws and regulations have been registered by the appointed Legal and Compliance function, during the FY 2023.

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3.2.7 Data Protection and Cybersecurity

Hitachi Rail takes great care in ensuring compliance with all relevant privacy and personal data protection laws and regulations in effect wherever it does business. The Group has developed distinct approaches for IT security, managing data protection on the one hand at a Corporate level, including GDPR, and on the other hand, at a Project/Customer level.

Privacy and GDPR

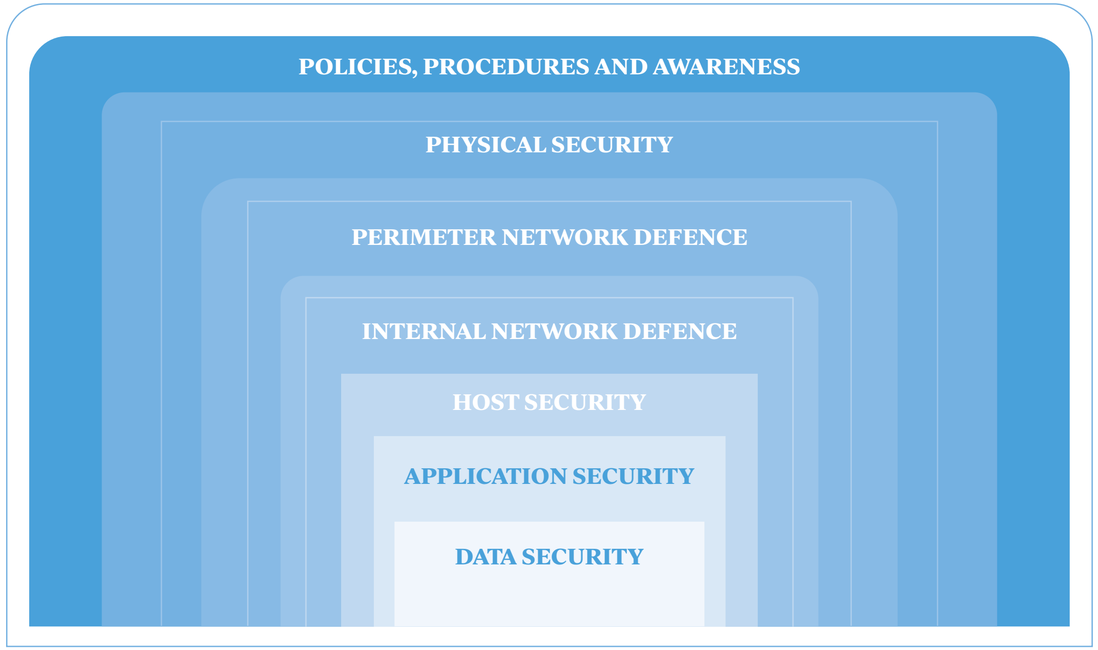
Hitachi Rail proactively manages personal data lawfully and ethically in compliance with current local privacy laws and best international practices with reference to the NIS Directive, Network and Information Security Directive (see EU 2016/1148) or EU Cybersecurity strategy. The privacy policies and procedures across Hitachi Rail entities, notices, and other customer agreements clearly define the data collected, why it is being collected, who has access, and for how long. Hitachi Rail seeks to process only the minimum data required. Personal data processed in the systems is secured appropriately and treated maintaining the privacy of employees, partners, and customers globally.

Hitachi Rail implements its Personal Data Protection governance model, aligned to GDPR principles and international best practices, in all countries in which it operates, standardising personal data processing and granting the highest level of compliance with local laws. Hitachi Rail's governance model provides for the appointment of a Data Protection Leader, Committee, and Data Protection Officer where required. In the event of data transfer to third parties or in the context of projects execution, Hitachi Rail data protection and privacy specialists work closely with teams across the Organisation to maintain compliance with data privacy standards and to ensure that any data is used in an ethical manner.

The second guideline introduced by Customer Data Protection concerns the security process in the business area. Critical Infrastructures (CIs) are the physical and virtual assets essential for the effective functioning of Society and the national economy.

Cybersecurity activities are aimed at protecting the System and minimising risks related to misuse of data and abuse of confidential information by authorised/unauthorised personnel having malicious intents, exposing passengers and personnel to risk of harm and/or impacting the continuity of operations. These security activities are managed by a Security Management Systems, based on IEC 62443 standards. The Security Process is implemented during all the phases of the Project lifecycle, following the general principles of Prevention, Detection and Reaction.

The process evaluates and monitors the Cybersecurity Risk Level by managing all the cybersecurity activities, in accordance with the contractual requirements, best practice, standards and laws. The aim of the Cybersecurity Risk process consists in protecting transportation system information, minimising risks related to Data Confidentiality, Integrity and Availability, and it is designed based on the Defence in Depth approach, where concentric domains are identified and protected:



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Cyber Security Strategy

The Security and Control System (S&CS) Unit defines the Cybersecurity strategy to apply, the level of detail of the Security Risk Management activities, and any learning needs. Output of this activity is the Cybersecurity Management Plan, and the list of Cybersecurity Risk Assessment carried out every year for achieving the tolerable risk level.

In FY22, the S&CS Unit published the new Cybersecurity Process on the Global Business Management System (GBMS) Platform. The Process ensures cyber protection of Signalling Generic Products (GP), Generic Applications (GA), Specific Application (SA) and Turnkey Systems developed by LoB Rail Control for Hitachi Rail Customers.

Protection of Hitachi Rail's IT assets

The Cyber Security & IT Risks Unit (or Cyber Security Unit) proposes Information Security objectives and defines countermeasures to protect data, systems, and product/service in line with Hitachi Rail's business strategies, policies, standards, and guidelines to implement the Information Security framework, IT security risk management, and training programmes. It also maintains day-by-day operations to ensure monitoring & detection of any threats, managing risk mitigation with IT systems, and conducting any security incident response when needed; finally, the Unit co-ordinates all annual Information Security and Cyber Security audits, technical assessments, and mitigation reviews.

The central document for its activities is Hitachi Rail's *"Information Security Management System (ISMS) Documentation Framework,"* which is essential to ensure that all activities are conducted according to well-defined criteria.

The Cyber Security function collaborates with other relevant Corporate functions (e.g., Legal and Compliance, Risk Management) to ensure the implementation of the Organisation's IT security objectives. However, the Cyber Security function handles compliance issues separately, focusing primarily on security incidents and vulnerabilities. All these events are recorded in an internal log, to track each incident and the related corrective actions taken. When events threaten the continuity of business operations, the Enterprise Risk Management function takes control and works in synergy with the Cyber Security function to ensure a prompt response and an effective solution.

During the FY, Hitachi Rail passed both the Cyber Essentials Basics and Cyber Essentials Plus assessments, obtaining the renewal of the certifications and demonstrating the effectiveness of the protection against the growing threat of cyber-attacks.

Honolulu Metro

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3.2.8 Fiscal Transparency

Hitachi Rail follows rules for transfer pricing management and manages transfer pricing in accordance with the Organisation for Economic Co-operation and Development (OECD) Transfer Pricing Guidelines and the laws and regulations on transfer pricing in each country or region where Group companies are located.

For Intercompany projects, the margin allocation between group companies, decided at contract award, must comply with Arm's Length principle and other transfer pricing principles provided by OECD.

Each Group legal entity involved in Intercompany projects is remunerated in accordance with the functions performed, assets used, and risks assumed in the transaction. The "commercial route" for the Projects is decided also taking into consideration the tax implications. During the contracts execution the monitoring is also aimed at identifying possible adjustments, where appropriate.

3.2.9 Internal Audit

A dedicated Internal Audit function - with an onsite presence in Italy, UK, US, and Japan - is in place for the entire Organisation to oversee the proper implementation of the Internal Control System and its continuous updating.

The function, in line with the industry best practices, operates in accordance with an annual Audit Plan that is drafted with a risk-based approach, and it's formally approved by the ARCC (Audit, Risk, Compliance Committee) and the SEC (Senior Executive Committee) at the beginning of the financial year. The Plan is periodically reviewed and updated considering the state of company's risks and specific business requirements.

In FY22, Internal Audit carried out 47 audits mostly relating to operational matters, like turn-key projects and internal processes, and compliance matters.

Furthermore, Internal Audit is charge of testing J-SOX[9] controls in accordance with Hitachi requirements. J-SOX requires the implementation and operation of a large set of controls over financial reporting. In FY22, Internal Audit tested 938 controls regarding the main financial processes like close the books, purchase to pay, order to cash, etc. Testing activity is performed for the legal entities located in Italy, France, US, Australia, UK, Japan and in the main STS branches.

The results are periodically shared with Senior Management and Hitachi.

Hitachi Rail ships Train 1 of the Class 800 series from its factory in Kasado, Japan

[9] A Japanese regulation based on international frameworks like SOX, Sarbanes and Oxley Act, in the US.

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3.3 Risk Management Process and Internal Control System

“Ethics, integrity, and transparency put Hitachi Rail’s values into action”

Makoto (Sincerity) – (誠)

Hitachi Rail has a dedicated Enterprise Risk Management function that collaborates with the Compliance function on assessing relevant risks. Enterprise Risk Management (ERM), belongs to the Integrated Risk Management Framework (IRM) and applies this common framework[10] to provide reasonable assurance to the Organisation’s senior executive and ARCC that an effective risk management system is in place. This includes the identification and management of potential events that may affect enterprise, projects and programmes.

The ERM structure comprising Lines of Business, Regions, and Technical Risk Areas (Operational and Organisational Resilience) ensures enterprise risks and opportunities are managed in an integrated way across the Organisation, covering the key interdependencies. ERM is a multidirectional, iterative process in which almost any component can and does influence another. Hitachi Rail’s ERM Process constitutes of the following steps:

- **Landscape evaluation** - refresh Risk and Opportunity Portfolio and prioritisation of Key Risk Themes and Technical Risk Areas;
- **Risk assessment - risk identification, risk analysis** (before and after the risk response) and **risk Evaluation** (prioritisation of focus on key risks);
- **Treatment** - action plan identification;
- **Monitoring** - risks and actions progress monitoring;
- **Reporting** - periodical reporting of ERM insight and summary to Senior Executives and ARCC. (Audit Risks and Control Committee).

Risk assessment is a key step of the process, when ERM function supports Risk Owners in the identification/update of specific risks and opportunities belonging to the main processes and strategic objectives. Risks are firstly considered in their ‘inherence’ and then evaluated and prioritised with the Risk Owners who oversee setting the proper Risk Response on which ERM can assess effectiveness of mitigation and detective actions and controls. ERM Function defines impact and likelihood scales with associated criteria for the Risk Analysis and assesses the velocity of impacts, calculating the risk score accordingly in order to align the Global Risk Portfolio. As a result, Risk Owners are required to provide mitigation plans to be monitored over the time.

The main categories of the Hitachi Rail Risk and Opportunity Portfolio include:

- **Strategic** (incl. Climate Change & ESG Readiness) - strategic threats;
- **Financial** - financial concerns;
- **Operational** - inefficient and ineffective operations;
- **Regulatory** (incl. HSE and Human Rights) - compliance with legal and regulatory requirements.

[10] All best practices and external applicable standards were taken into account and monitored by Internal functions in designing, reviewing and implementing Policies and GBMS, such as:
- ISO 31000:2018 Risk Management Principles and Guidelines;
- ISO 9001:2015 Quality Management System European Standard;
- COSO (Committee of Sponsoring Organisations of Tradeway Commission) 2004, updated in 2017.

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ERM annually refreshes the Hitachi Rail Risk and Opportunity Portfolio and prioritises the Key Risk Themes to Deep Dive in line with Mid Term Management Plan; these will undergo response identification and mitigation plans. The ERM framework is continuously updated, and the dedicated ERM function is committed to monitor Hitachi Rail's enterprise profile, technically guiding Risk Owners and Risk Champions and, whereas possible, supporting them useful methodologies and tools to be implemented in the next future.

On March 2023 ERM provided, first to Senior Executives and then to the ARCC, an update on five Key Risk Themes:

1. **Production Capacity**
2. **Supply Chain Resilience**
3. **Energy Supply & Inflation**
4. **Geopolitical evolution**
5. **Climate Change & ESG** (further details in the next paragraph).

During FY22 Compliance partnered with Procurement to assess and analyse sanctions-risks across Hitachi Rail's supply base and engaged in broader discussions of corruption and compliance-related risk assessments.

The assessment resulted in the development and deployment of an appropriate risk model, embedded in a single platform, for due diligence during supplier qualification, specifically screening against any red flags for any association with corruption risks for entities (and their ownership and management) in Hitachi Rail supply chain.

This platform, Jaggaer, was launched in February 2023.

Hitachi Rail team and the new 100% electric train for British operator LUMO

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3.3.1 Responding to ESG Risks and Opportunities

ESG is playing a key role in defining a renewed perception of risks and opportunities in the Corporate environments. From a mainly financial and compliance perspective, Risk Management Processes have been turning into a comprehensive framework: the integration of ESG factors is assured through structured processes at both Corporate and Hitachi Rail levels, which includes analysing of the sustainability context, identifying priorities (e.g. materiality analysis), implementing specific actions in support of sustainability goals and reporting. At each stage of the process, alignment on respect for human rights is considered a fundamental element in pursuing sustainable success.

Adopting sustainability indicators within the entire value chain is central to the approach to report on the results achieved, to anticipate decisions and to guide actions.

The CSR&S and ERM functions work together to identify risks and opportunities and to evaluated by setting several techniques and tools.

During FY22, the team assessed Climate Change & ESG Readiness as a crucial element of the Risk and Mitigation strategy and shared these results with the ARCC. This comprehensive Risk Theme raised several risk factors and facets related to ESG targets and the potential risk resulting financial losses and reputational damage due to unavailability of resources, product and processes roadmap or low business function commitment.

ESG Risks are a priority for the Organisation and their inherence with regard to the overall exposure of the industry where it operates, is high. However, Hitachi Rail monitors and reinforces its risk responses to reduce risks. As a result, Hitachi Rail has introduced:

- A Carbon Neutrality Roadmap on its main and most emission-intensive facilities (see section 2.1 "ESG Roadmap and Targets" and 5.2 "Environmental Goals and Decarbonisation Path" for further details);
- A Vehicle Product Approach, with an extensive Life Cycle Assessment and ECO Design to Hitachi Rail product Portfolio and the willing to obtain for flagship projects the PAS 2080:2016 Certification (Carbon Management Infrastructure).

Other relevant areas for Hitachi Rail ESG Risks mitigation actions relate to its Supply Chain, which is progressively assessed through Ecovadis (see section 3.4 "Towards a Sustainable Value Chain") and the review of the current CapEx approval process to consider ESG as a source of risk and/or opportunity.

During FY22, Hitachi Rail has started its path to enhance and better detail in the ERM System ESG Risks, adopting a holistic approach that leverages sustainability materiality analysis and sustainability context overview, and will result in an overall update of the Hitachi Rail Risk and Opportunity Portfolio.

Hitachi Rail offices in Kasado

Climate-related Risks and Opportunities

Hitachi Rail considers climate related risks and opportunities as a major commitment. Hitachi Rail is willing to implement TCFD recommendations and has started from this year its path to transparently disclose upon those recommendations (for further details please read "TCFD Reference Table").
Aligning this will to the Corporate's endorsement of the recommendations and, on a local level, the path towards UK MCD compliance, Hitachi Rail has identified its main climate risk and opportunity areas with regard to 2 different Climate Scenarios:

1) The business environment and major risks and opportunities under the 1.5°C scenario:

Risks

- Compliance with EU Legislations and timely response with effective and sustainable products is crucial to stay in the market.
- Competitiveness will decline if there are delays in the development of innovative emission-reducing technologies (for examples dynamic headway, flexible operations in response to passenger demand, and new mobility services like MaaS).

Opportunities

- Demand will grow for railways, which emit less CO_2 per distance covered. There will be a shift to energy saving railcars from conventional models, the efficiency of railway services will be improved through digital utilisation and through the provision of sustainable mobility systems based on alternative multi-modal energy vehicles. Data usage will also boost demand for new mobility services.
- Innovative technologies should also encourage a shift in demand for long-distance public transport to less impactful modes of transport, i.e. rail (in EU countries in 2018, rail accounted for only 0.4% of both greenhouse gas (GHG) and CO_2 transport emissions and for 2% of transport energy consumption).

2) The business environment and major risks and opportunities under the 4°C scenario:

Risks

- Demand for electric powered transport will gradually increase even without tighter energy regulations, causing high exposure and costs.
- Damage from typhoons, floods, and other natural disasters caused by climate change will rise sharply.
- The high frequency of natural disasters will exacerbate damage to facilities, worsen working environments, and disrupt supply chains leading to delays in deliveries and the procurement of components.

Opportunities

- Transport systems more resilient to natural disasters can be developed. Competitiveness can be enhanced by providing added value, as energy-saving railcars and new technologies.
- Increased control over the supply chain (also over their physical location and Organisation) can be achieved through supplier assessments aimed at covering these topics.

Specific actions have been undertaken both at global/local level to mitigate risks and enhance opportunities:

- Specifically, develop and market more energy-saving railcars and battery powered railcars for non-electrified sections;
- Strengthen railway services through digital utilisation such as dynamic headway (flexible operations in response to passenger demand) and new mobility services like MaaS;
- Ensuring the competitiveness of the business by focusing on sustainable activities according to international standards (i.e. EU Taxonomy) also increases the ability to access capital and ESG-driven investments, both for internal and external business projects;
- Respond with an integrated view of business management that includes the management of production sites and the decarbonisation of plants and offices;
- Given the increasing frequency of natural disasters, take risk aversion into account when deciding the location and equipment layout of a new plant;
- Keep an eye on the supply chain in strengthening the ability to respond to business disruption risks.

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3.4 Towards a Sustainable Value Chain

Hitachi Rail is continuously supporting its programme to transform Supplier Management capabilities as part of a broader Procurement improvement agenda. As part of its continuing efforts to transform Supplier Management capabilities, Hitachi Rail is striving to:

- Implement and operate a global supplier qualification process for Rail to qualify supply base against a defined set of criteria, improve visibility of key risks (including Sustainability) and enable the on-going tracking and management of suppliers against these criteria and risks;
- Support the improvement of quality and risk management of the supply base;
- Drive more effective performance management with suppliers with a particular focus on tracking performance against key sustainability metrics;
- Work collaboratively with suppliers to define and implement innovative solutions that support sustainability.

These support a broader Procurement agenda which will improve visibility, monitoring and defining improvement actions on key risks in Supply Chain, with a particular focus on CSR and Sustainability, and decarbonisation.

3.4.1 Supplier Governance and Guidelines

The Hitachi Rail Supply Chain & Procurement teams work within the framework of the Code of Ethics and Supplier Code of Conduct to responsibly and effectively source, procure and contract with suppliers based on the Procurement Strategy and in line with its Supplier Quality procedures.

Code of Ethics and Supplier Code of Conduct

The Code of Ethics and Supplier Code of Conduct set out specific requirements which must be followed by everyone working for or with Hitachi Rail. The Code of Ethics is fully deployed across all areas of Hitachi Rail, while the Supplier Code of Conduct is in place for the UK and Japan business areas and expanded in Italy in FY22. For Hitachi Rail's business, the Code also reflects the commitment to becoming a climate change innovator. Hitachi Rail is committed to having all its suppliers conform to the Organisation standards, as well as to the agreed business conditions. This is important because it promotes customer trust and confidence with products and services and shows them that suppliers are valued partners in this process. Encompassing human rights, health and safety, environmental management, ethics, supplier commitment, product quality and data protection, policy and expectations are clearly explained in the document.

Hitachi Rail calls on all suppliers to act as ethical and responsible companies, to commit to the sustainability of their supply chains, and to promote innovation and excellence for the rail industry. Following the publication of the Code of Conduct, Hitachi Rail, in partnership with all suppliers, is committed to doing its part to provide the best for the millions of passengers who travel the world's rail networks every day, for the benefit of a more sustainable society.

Hitachi Rail's SPEAK UP channel is made available to report any suspected violations of the Group Code of Ethics or any violation of laws and regulations during the procurement process (see Section 3.2.3 Whistleblowing Management). Hitachi Rail ensures whistle-blower protection also in the supply chain and that no-one among suppliers is subject to any direct or indirect retaliation, illegal conditioning and/or discrimination of treatment of any kind, for having made reported in a good faith report of a violation.

Supplier Audits

Hitachi Rail conducts regular audits on suppliers under a specific procedure which covers all audits, both internal and external. Hitachi conducts second party audits aimed at verifying the External Providers' processes and activities. External Providers audits can be general (including qualification audits) or relevant to one project only.

This audit scope includes:

- External Provider Monitoring Audits: audits aimed at verifying the External Providers' processes;
- External Provider Qualification Audits: audits performed to qualify an External Provider;
- Project External Provider Audits: audits aimed at verifying the External Providers' processes and activities on specific projects;
- External Providers Safety Audits;
- External Providers Business Continuity Audits;
- External Providers Information Security Audits;
- External Providers HSE Audits.

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Each audit can encompass one or more area:

- Quality
- Health & Safety and Environment
- Safety
- Information Security
- Business Continuity
- Social Accountability.

Suppliers and subcontractors are selected to be included in the yearly audit programme based on various risk-based decision criteria such as spend, material group risk (risk of what is being supplied to the business), impact on the overall project performance, impact on safety, time since last audit, results from internal stakeholder assessments on supplier performance, product quality (SQC) statistics or specific cases of request from operations.

The frequency of audits in general is based on the material group provided. High risk categories are prioritised in the selection of which suppliers to audit as per criteria above.

3.4.2 Sustainable Supply Chain

Sustainability sits at the heart of Hitachi Rail's supply chain strategy to address the climate crisis and transition to a regenerative economic model. Most of the business social and environmental impact occurs in the supply chain. Through Sustainable Supply Chain Strategy, Hitachi Rail will drive positive intentions, deliver sustainable change and ultimately empower the achievement of its Sustainable Development Goals promises.

During FY22 Hitachi Rail introduced the model of Sustainable Procurement Strategy, based on externally recognised frameworks i.e., OECD, UNGPs. This will be aligned to deliver the Hitachi Corporate Sustainable Procurement Policy and wider Sustainable Development Goals and Agenda 2030 commitments.

Hitachi Rail, started a process to improve the digital carbon accounting engine which uses the Greenhouse Gas (GHG) Protocol to estimate total carbon footprint through a spend-based methodology, for the Scope 3 categories of purchased good and services, capital goods, and upstream transportation and distribution. This is an innovative and tailored approach for Hitachi Rail to solve the challenge of understanding the volume of Scope 3 emissions of suppliers without, typically, having direct access to the Scope 1 and 2 emissions data for these suppliers.

Hitachi Rail has also been able to determine the categories of spend with the highest levels of carbon intensity. This gives a clear opportunity to focus the efforts in collaborating with top supply chain partners to address their emissions as well to track and monitor the progress towards carbon neutrality over time.

Meanwhile, all suppliers are being encouraged to register in the EcoVadis Ratings platform and Hitachi Rail is using the EcoVadis Carbon Action Module functionality to engage suppliers in climate action, build capability and collect primary data. This will provide a better understanding of suppliers' sustainability and decarbonisation practices, strengths, and areas for improvement.

Hitachi Rail supplier mapping through EcoVadis is composed of the following main steps:

1. **Screening of Hitachi Rail's risk distribution per theme - EcoVadis IQ:**
   Screening of suppliers using the EcoVadis IQ platform which profiles and maps our supply base for environmental, social and ethical risk using inherent industry & country sustainability risk profiles.

2. **Assessment of sustainability performance of supplier – EcoVadis Rating:**
   Actual assessment of suppliers based on risk and supplier materiality through the registration in the EcoVadis ratings platform.

3. **Assessment of carbon performance of partner - Carbon Scorecard:**
   Monitoring of the carbon performance of rated supplier eligible for the Carbon Scorecard.

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Screening of Hitachi Rail's risk distribution per theme - EcoVadis IQ:

Hitachi Rail screened over 6,800 suppliers using the EcoVadis platform, representing 95% of its total annual third party spend. This screening provides critical insights on the inherent risks profile of suppliers in terms of the industries they work in and the countries in which they operate and allows Hitachi Rail to have a holistic CSR & Sustainability risk profile to focus resources and prioritise the highest potential risks.

In FY2022 Hitachi Rail uploaded and assessed 6,802 partners ranging in 199 industries and 52 countries, registering a 10% increase with respect to last year.

OVERVIEW

6,802 Partners

199 Industries

52 Countries

Assessment of sustainability performance of supplier – EcoVadis Rating:

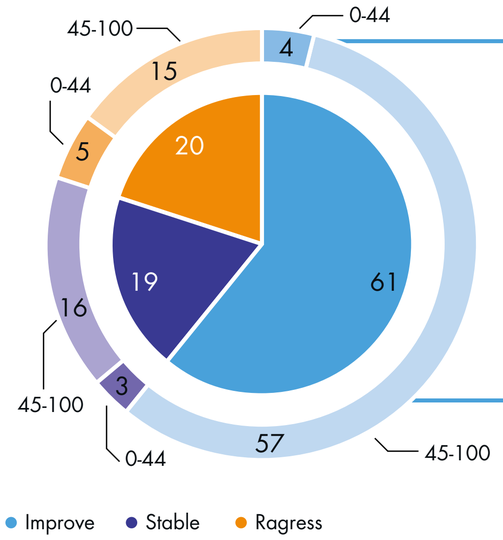
Through a defined implementation plan based on risk and supplier materiality, Hitachi Rail today has over 759 top suppliers fully registered in the EcoVadis ratings platform, providing detailed visibility of their CSR & Sustainability performance. This marks an increase of 281 (63% increase) new suppliers screened for environmental, social, and ethical criteria. Today, 50% of annualised Procurement spend at Hitachi Rail is covered by Rated suppliers, an increase with respect to the 30% covered last year. Over the year, Hitachi Rail will continue to expand the number of suppliers invited to join the platform, providing essential information on the performance of supply base, and forming a basis for a broader Sustainable Procurement strategy.

Rated **759**

In progress **178**

It should be noted that the figure *"In progress"* also includes suppliers being re-assessed. The reassessment process has shown significant improvement in the score of the suppliers involved, showing a shared commitment and the development toward a common path.

Evolution of reevaluated suppliers (%)



84% **Have a score of 45 (good) or higher**

+4.25pts **Average Improvement points of rated suppliers since Hitachi Rail Implementation**

61% **of suppliers reassessed have improved their overall score in the last 12 months**

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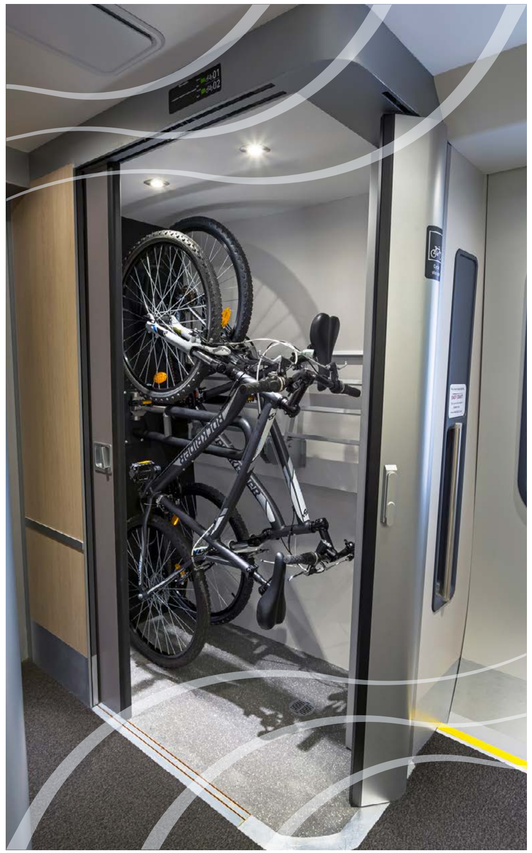
Assessment of carbon performance of partner - Carbon Scorecard:

Around 9 in 10 of Hitachi Rail's suppliers on EcoVadis are eligible for the Carbon Scorecard and of those, 49.5% of them are rated as Intermediate or above.



Hitachi Class800 series - Bicycle storage

More on supplier assessment integration in business practices:

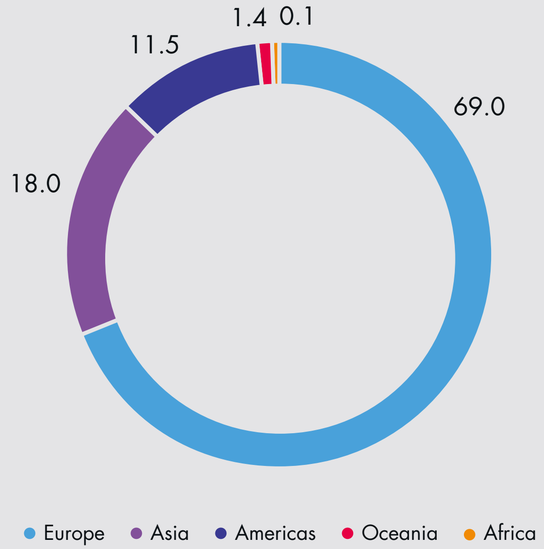
- EcoVadis was formalised in a Group Indirect Sourcing procedure and EcoVadis Rating was incorporated in the UK Supplier Selection Board (SSB) therefore, the EcoVadis rating (where applicable) for suppliers is included in the supplier selection decision alongside other selection criteria;
- A specific training section on EcoVadis was held, involving 167 people from procurement staff from around the Globe. 4 sessions were delivered in total, each covering different regions.

Given the nature of Hitachi Rail's global business presence, the Organisation manages a large and diverse supply base covering multiple areas of spend including:

- **Materials** – purchase of circuit boards, mechanical and plastic parts, wayside equipment, cables, racks, cabins, industrial PCs, on-board equipment and electromechanical components;
- **Services** – facility management and HSE, payroll services, professional and ICT services, logistics services and travel;
- **Business services** – engineering and development services and RAMS activities (reliability, maintenance, availability and security);
- **Turnkey projects and subcontracts** – systems such as installation systems, telecommunications systems, auxiliary braking systems, power supply and systems, supervision and control systems, depots for equipment, signalling systems, rails and civil works.

An overview of the regional distribution of supplier base can be found below:

Supplier distribution (based on spending) (%)



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Hitachi Rail and Partners Awards

Partner Turntide Technologies recognised for innovative and sustainable technology solutions

Turntide is doing outstanding work developing and manufacturing the battery system prototype for Hitachi Rail's reduced emissions hybrid and tri-brid trains, and this year was awarded the prestigious Queen's Award for Enterprise in Innovation.

It will be the preferred supplier to design and supply traction battery systems for Hitachi Rail's intercity battery train trial.

A proud partner, Hitachi Rail celebrated Turntide at the Hitachi Rail Global Partner Day for its collaboration with DB ESG on a battery systems design project, in line with the joint vision to support decarbonisation on the railway.

3,000 suppliers come together at Hitachi Rail Global Partner Day

At the global Partners Day, Hitachi Rail highlighted the importance of sustainability and decarbonisation to over 3,000 suppliers.

They recognised five key supply chain partners for their contributions. DB ESG and Turntide Technologies were praised for collaborating on a battery systems design project for railway decarbonisation. Daeyang Electric Limited was acknowledged for delivery, quality, and global collaboration. Mors Smitt was celebrated for delivering significant weight savings, enhancing quality and reliability.

Anixter received the Strategy Partner of the Year award for their global accounts team and commitment to 'Made in the USA' content.

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4

Social Impact

Chapter 4:
Social Impact

4.1 Our People

Hitachi Rail aims to build an environment where talent from diverse cultural backgrounds, experiences, and ideas play an active role in cultivating a common identity in all employees worldwide so they may share the values of Harmony, Sincerity, and Pioneering Spirit that comprise Hitachi Rail's core mission.

The Organisation works with constant commitment to ensure, on the one hand, the continuity of service and, on the other, the protection of the health and safety of all workers engaged in various capacities in the various activities.

Hitachi Rail's workforce is managed by the HR function, guided by a set of HR policies and a strong labour structure, defined in alignment with Corporate policies and guidelines as well as with regional and local requirements.

The Organisation is managed at global level, across LoBs and geographical boundaries, with the support of all Operational HR units for all employee related matters. All Hitachi Rail's employees are recorded into the Organisational Chart, which provides a clear description of the mandates of each role, ensuring consistency with the Mid-Term Strategic Plan, and encouraging collaboration across organisations, regions and generations, by building an equitable and inclusive Organisation where diverse talents are able to play an active role.

The structure allows Hitachi Rail to actively engaging in regular dialogue with employees regarding opportunities, training, and career development through its Global People Management System, as well as through regular dialogue between managers and employees.

As Hitachi Rail grows, the Organisation expands and changes to accommodate and foster synergies among the markets and businesses in which it operates.

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4.1.1 Human Capital

The Hitachi Rail workforce is shown in the following tables, where employee categories are broken down by gender, geographical location, professional categories, education, age, seniority, and types of contracts. All quantitative data referring to human resources are to be understood in terms of headcount as of 31 March and never in terms of full-time equivalents (FTE). Unless explicitly stated, all HR data are disaggregated by region to ensure both granularity and readability of tabular and graphical formats.

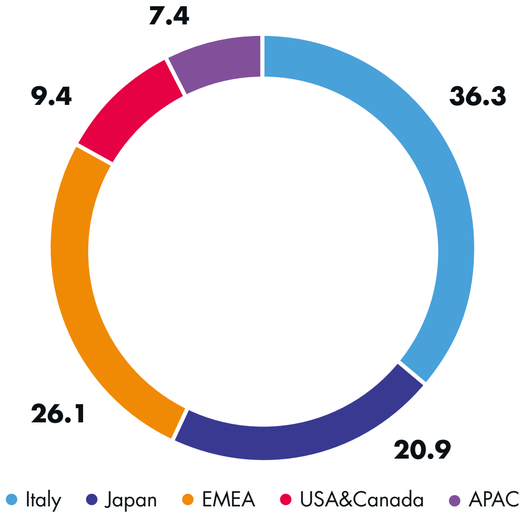
NUMBER OF WORKERS BY REGION	FY21				FY22			
	MEN	WOMEN	TOT	% W	MEN	WOMEN	TOT	% W
Italy	4,056	735	**4,791**	15.3%	4,218	774	**4,992**	15.5%
Japan	3,359	317	**3,676**	8.6%	2,632	242	**2,874**	8.4%
EMEA	2,979	571	**3,550**	16.1%	3,019	575	**3,594**	16.0%
USA & Canada	762	238	**1,000**	23.8%	973	319	**1,292**	24.7%
APAC	793	168	**961**	17.5%	844	169	**1,013**	16.7%
Total	**11,949**	**2,029**	**13,978**	**14.5%**	**11,686**	**2,079**	**13,765**	**15.1%**

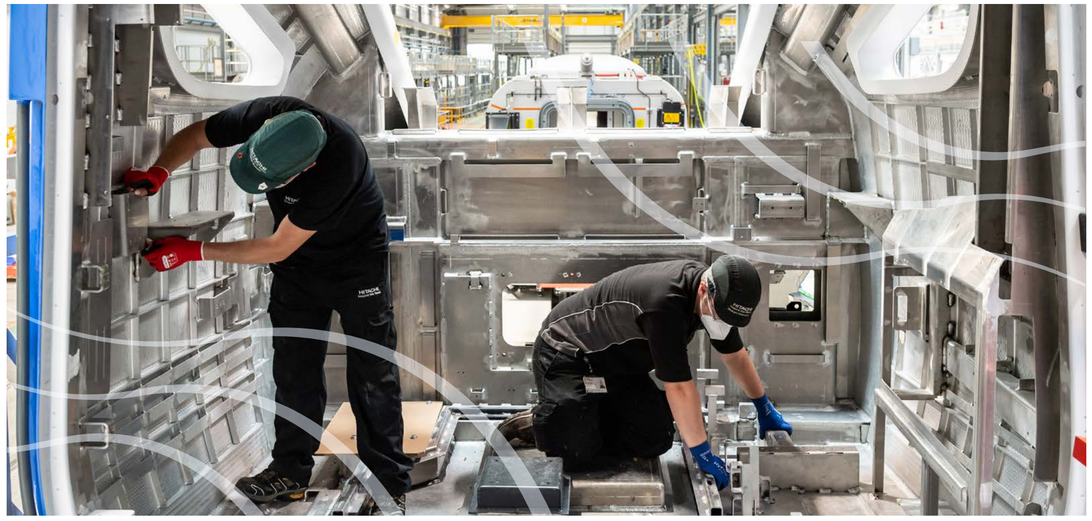
Data reporting is based on the Company's local system of records, in accordance with existing local controlling models.

Number of workers by region

Hitachi Rail employees are located all around the world and its workforce is grouped in several different regions, with 36% of the workforce concentrated in Italy – constituting of a region itself due to the concentration of workforce - a 26% in the EMEA (Europe, Middle East, and Africa) region and 21% in Japan. This year confirms the trend of a growing workforce in the EMEA. The remaining workforce is in the US and Canada (10%) and in the APAC (Asia Pacific) region representing 7% of the total workforce.

Employees as FY22 (%)





ECOA interior work

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Professional categories

58% of Hitachi Rail's employees fall into the white-collar category, of which women, accounting for 15% of the total workforce, represent 17%.
The proportion of women in the Executives category is increasing over the years, registering a 15% increase this year (specifically with an increase of 2 people) compared to the previous fiscal year, and a 30% increase in the Middle Management category (specifically 175 people).

PROFESSIONAL CATEGORIES	FY21				FY22			
	MEN	WOMEN	TOT	% W	MEN	WOMEN	TOT	% W
Executives	171	13	**184**	7.1%	166	15	**181**	8.3%
Middle Management	1,382	118	**1,500**	7.9%	1,832	293	**2,125**	13.8%
White Collar	6,303	1,571	**7,874**	20.0%	6,651	1,349	**8,000**	16.9%
Blue Collar	4,093	327	**4,420**	7.4%	3,037	422	**3,459**	12.2%
Total	**11,949**	**2,029**	**13,978**	**14.5%**	**11,686**	**2,079**	**13,765**	**15.1%**

As far as the age distribution is concerned, 61% is aged between 30 and 50; 27% over 50, while the remaining 12% are employees under 30 years old.

AGE	FY21				FY22			
	MEN	WOMEN	TOT	% W	MEN	WOMEN	TOT	% W
< 30 years	1,362	264	**1,626**	16.2%	1,304	251	**1,555**	16.1%
30-50 years	7,309	1,293	**8,602**	15.0%	7,142	1,312	**8,454**	15.5%
> 50 years	3,278	472	**3,750**	12.6%	3,240	516	**3,756**	13.7%
Total	**11,949**	**2,029**	**13,978**	**14.5%**	**11,686**	**2,079**	**13,765**	**15.1%**

By considering the distribution over generations, the Hitachi Rail's workforce is made of a majority of Generation X employees.

This snapshot, which is new to previous Reports, is in line with Hitachi Rail's ongoing commitment and journey to certify itself in compliance with ISO 30415: 2021.

WORKFORCE BY GENERATION	FY22			
	MEN	WOMEN	TOT	% W
Traditionals (1926-1945)	3	1	**4**	25.0%
Baby Boomers (1946-1965)	1,499	245	**1,744**	14.0%
Generation X (1966-1985)	6,689	1,199	**7,888**	15.2%
Generation Y (1986-1995)	2,762	515	**3,277**	15.7%
Generation Z (1996-2005)	733	119	**852**	14.0%

For the first time this year, Hitachi Rail also reports the classification of employment level by age in the table below.

WORKFORCE BY GENERATION	FY22			
	<30	30-50	>50	TOT
Executives	-	69	112	**181**
Middle management	-	722	680	**1,402**
White collars	909	4,824	1,787	**7,520**
Blue collar	646	2,838	1,178	**4,662**
Total	**1,555**	**8,453**	**3,757**	**13,765**

Hitachi Rail monitors its ability to retain talent by tracking the years of seniority of its employees, i.e., the number of years they spent within the Organisation. Roughly 42% of Organisation workforce has been employed by more than 10 years.

SENIORITY	FY21				FY22			
	MEN	WOMEN	TOT	% W	MEN	WOMEN	TOT	% W
< 5 years	4,097	773	**4,870**	15.9%	4,177	840	**5,017**	16.7%
5-10 years	2,256	501	**2,757**	18.2%	2,494	474	**2,968**	16.0%
11-15 years	1,552	243	**1,795**	13.5%	1,283	242	**1,525**	15.9%
16-20 years	1,458	243	**1,701**	14.3%	1,325	237	**1,562**	15.2%
21-25 years	696	66	**762**	8.7%	803	101	**904**	11.2%
> 25 years	1,890	203	**2,093**	9.7%	1,604	185	**1,789**	10.3%
Total	**11,949**	**2,029**	**13,978**	**14.5%**	**11,686**	**2,079**	**13,765**	**15.1%**

Hitachi Rail aims to build long-term relationships with each of its employees; the quota of employees with an open-ended contract reached 96% in FY2021 and remained stable ever since. The overall number of employees globally has seen a small decrease versus last year, with 98% of the FY22 employees now employed on full-time contracts.

As can be seen from the tables, the trend by region shows an increase in hiring with open-ended contracts for the Italy and APAC regions, despite overall decrease in staffing for FY22 compared to FY21.

For Italy, EMEA and USA & Canada regions open-ended contracts increased for the female corporate population.

OPEN-ENDED AND FIXED CONTRACTS	ITALY		JAPAN		EMEA		USA&CANADA		APAC		TOTAL	
	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22
No. of open-ended contracts	**4,790**	**4,992**	**3,427**	**2,524**	**3,370**	**3,459**	**1,000**	**1,291**	**890**	**935**	**13,477**	**13,201**
of which men	4,055	4,218	3,141	2,323	2,833	2,908	762	972	738	786	**11,529**	**11,207**
of which women	735	774	286	201	537	551	238	319	152	149	**1,948**	**1,994**
No. of fixed-term contracts	**1**	**-**	**249**	**350**	**180**	**135**	**-**	**1**	**71**	**78**	**501**	**564**
of which men	1	-	218	309	146	111	-	1	55	58	**420**	**479**
of which women	-	-	31	41	34	24	-	-	16	20	**81**	**85**
Total	**4,791**	**4,992**	**3,676**	**2,874**	**3,550**	**3,594**	**1,000**	**1,292**	**961**	**1,013**	**13,978**	**13,765**

FULL-TIME AND PART-TIME	ITALY		JAPAN		EMEA		USA&CANADA		APAC		TOTAL	
	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22
No. Full-time employees	**4,723**	**4,925**	**3,635**	**2,843**	**3,455**	**3,494**	**999**	**1,286**	**945**	**993**	**13,757**	**13,541**
of which men	4,045	4,208	3,322	2,603	2,947	2,979	761	971	787	837	**11,862**	**11,598**
of which women	678	717	313	240	508	515	238	315	158	156	**1,895**	**1,943**
No. Part-time employees	**68**	**67**	**41**	**31**	**95**	**100**	**1**	**6**	**16**	**20**	**221**	**224**
of which men	11	10	37	29	32	40	1	2	6	7	**87**	**88**
of which women	57	57	4	2	63	60	-	4	10	13	**134**	**136**
Total	**4,791**	**4,992**	**3,676**	**2,874**	**3,550**	**3,594**	**1,000**	**1,292**	**961**	**1,013**	**13,978**	**13,765**

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The table shows a positive trend in the number of full-time contracts among employees, especially in the Italy and USA & Canada regions - with a particular attention to female workforce - and APAC. The female trend is overall positive for both part-time and full-time contracts, while for men the figure is overall static.

Hitachi Rail employees

OTHER CONTRACT TYPES[11]	ITALY		JAPAN		EMEA		USA&CANADA		APAC		TOTAL	
	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22
Temporary workers	**233**	**218**	**859**	**740**	**34**	**27**	**-**	**-**	**1**	**1**	**1,127**	**986**
of which men	206	186	752	641	16	15	-	-	1	1	**975**	**843**
of which women	27	32	107	99	18	12	-	-	-	-	**152**	**143**
Contracts of different categories	**1**	**119**	**-**	**-**	**266**	**503**	**-**	**-**	**-**	**24**	**267**	**646**
of which men	1	101	-	-	231	448	-	-	-	18	**232**	**567**
of which women	-	18	-	-	35	55	-	-	-	6	**35**	**79**
Total	**234**	**337**	**859**	**740**	**300**	**530**	**-**	**-**	**1**	**25**	**1,394**	**1,632**
Trainees	**28**	**31**	**8**	**4**	**34**	**40**	**-**	**-**	**-**	**-**	**70**	**75**
of which men	19	13	3	3	23	32	-	-	-	-	**45**	**48**
of which women	9	18	5	1	11	8	-	-	-	-	**25**	**27**
Project contracts	**-**	**-**	**273**	**344**	**-**	**-**	**-**	**-**	**-**	**-**	**273**	**344**
of which men	-	-	273	344	-	-	-	-	-	-	**273**	**344**
of which women	-	-	-	-	-	-	-	-	-	-	**-**	**-**

[11] Please note that the categories "Trainees" and "Workers with a project contract" fall into the definition of "workers who are not employees" according to GRI 2-8 and therefore are not included in the total.

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4.1.2 Relations Management

Industial Relations is the management of interactions between a company and its workers, unions, and other stakeholders with the aim of fostering a peaceful, equitable, and productive work environment. Hitachi Rail promotes respect for fellow employees, honesty, and collaboration, emphasising the need of building an atmosphere of trust and respect, to ensure that workers' rights are protected and that opportunities for career progression and development are provided.

Hitachi Rail manages employment relationships with its employees according to the labour laws and collective bargaining agreements in place in the different countries where operates.

The percentage of total employees covered by collective bargaining agreements changes according to the country; for example in Italy and France it is 100%, while for the United Kingdom it accounts for 69.6%.

Where employees are not covered by collective bargaining agreements, the Organisation determines working conditions and terms of employment by:

- **identifying roles in line with business needs**;
- **determining salaries based on levels of responsibility and technical skills**;
- **and benchmarking pay rates** (either nationally and/or locally, depending on the role). Benefits are determined based on existing similar internal roles and industry trends.

805s - Stafford station

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Industrial Relations in Italy

In Italy policies are aimed at fostering an inclusive and diverse work environment through active listening practices, such as surveys and focus groups to gather employees feedback and opinions, and procedures to ensure safe work environments, minimising accidents and promoting a culture of safety among all levels of management. Additionally, the business is amenable to discussion and negotiation to come to reasonable agreements and forge enduring partnerships based on trust with workers representatives.

The Annual Meeting represents a pivotal event in Hitachi Rail's commitment and agenda to fostering strong industrial and labour relations, bringing together representatives from all unions and the CEO, providing a platform for open dialogue and exchange of ideas. The outcomes include agreements reached with labour unions addressing business bonuses for the success of the prior fiscal year and future objectives, making it possible for the Organisation and its employees to have greater incentives and alignment. Representatives from all Unions work with Hitachi Rail's management on a crucial platform called the *"Osservatorio Strategico"* to get in-depth understanding of its business perspective.

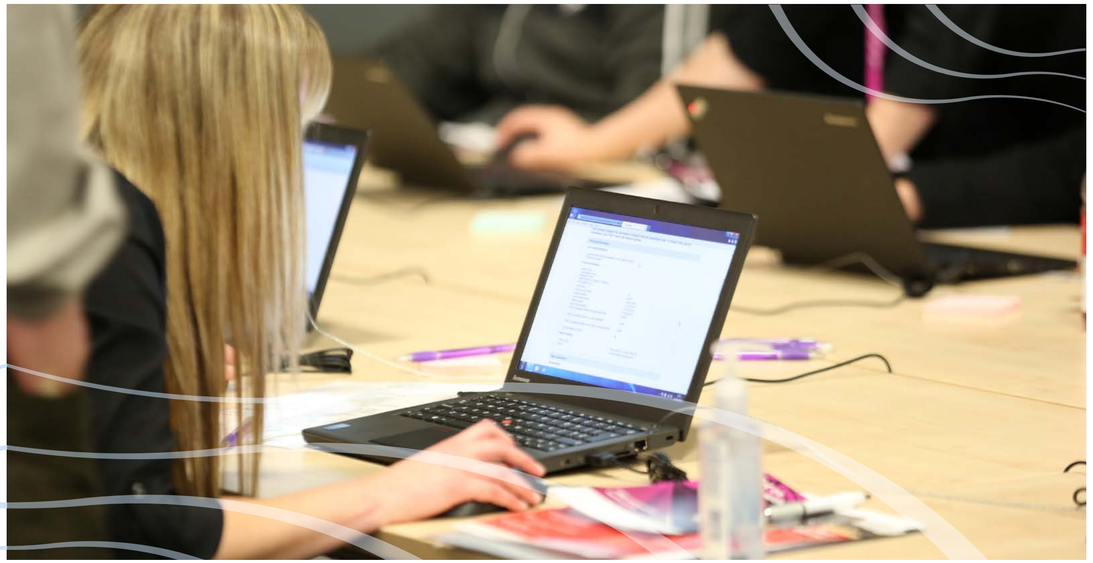
For FY23, Hitachi Rail will continue to schedule frequent meetings with Unions every 3 months, alongside corporate representatives, evaluating and assessing progress towards objectives; arranging Unions meetings; keeping regular training sessions with Unions to discuss learning requirements and signing contracts for government funding to encourage skill development; holding regular meetings with Unions every six months to discuss pertinent issues, introduce new departments, and check smart working; arranging a meeting to discuss Survey 2023 findings and putting into practice a corresponding action plan to improve employee engagement and satisfaction.

Industrial Relations in France

In the case of France, the bargaining system does not require one to be unionised to benefit from a collective agreement. At the national and company level, all collective agreements are automatically binding on the total of the population. The French national metal and steel sector is going through a period of major reforms in the national collective agreement involving major changes in a new grading system, working hours, health plan, and working hours.

According to French law all companies with more than 300 employees publish annual data on equal pay for men and women, according to age, seniority, and category. These data are measured according to a scoring system that takes into consideration several factors, aware of the importance of gender equality and equal pay, Hitachi Rail has obtained a rating of 85/100.

In addition, Hitachi Rail through the "Goodwill/Benevolence at Work Charter": implements good relations among employees by promoting better and caring management, which is implemented through training and the hiring process.



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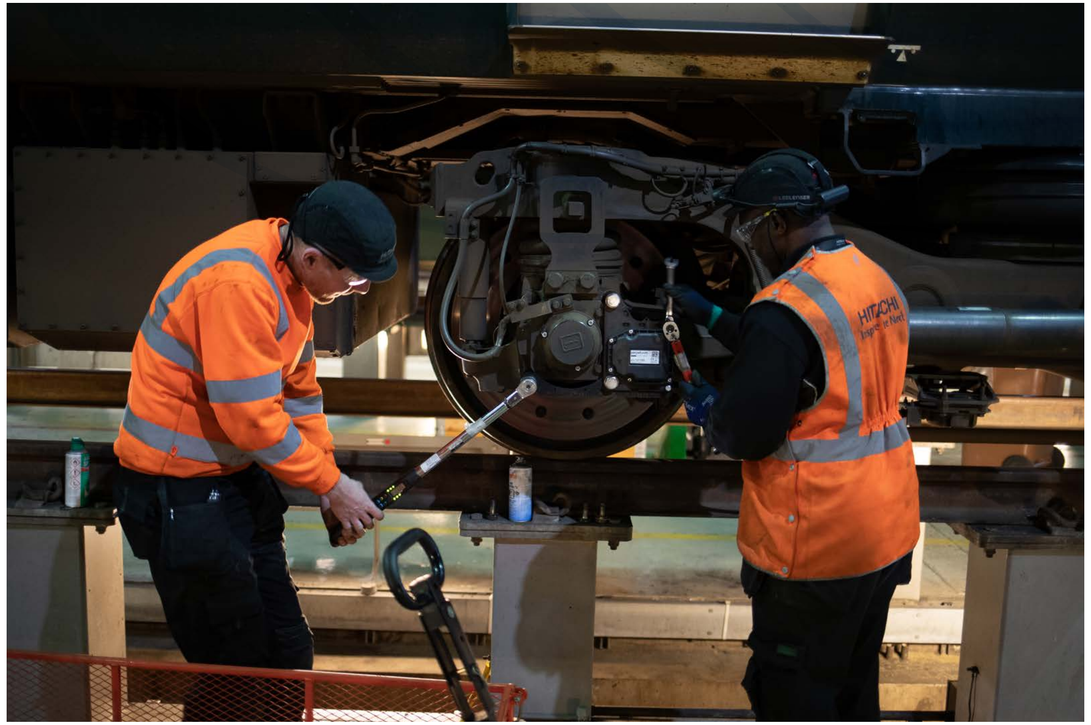
4.2 Diversity, Equity and Inclusion

Hitachi Rail adopts an inclusive culture, embracing and celebrating diversity in its workforce by valuing differences in colleague backgrounds, age, gender, sexuality, family status, disability, race, nationality, ethnicity, and religion. Hitachi Rail places paramount importance on Diversity, Equity, and Inclusion (DEI) as pivotal drivers for sustainable business growth and societal advancement.

It embraces and celebrates diversity in its workforce, recognising that it is a catalyst for understanding markets, fostering creativity, and driving innovation.

Aligned with broader Hitachi Group initiatives, Hitachi Rail **pursues several key themes** to enhance DEI:

- cultivating a truly global workforce with diverse talents from around the world;
- enhancing capabilities to better serve global customers, improve operations, and explore new markets;
- harnessing diversity to foster innovation and creativity;
- attracting and retaining top talents through a supportive and inclusive work environment;
- ensuring employee engagement and alignment with the Group's strategic vision.



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Over the past Fiscal Year, Hitachi Rail has achieved notable progress in its pursuit of DEI objectives, in line with the DEI targets of the Organisation to increase gender balance and representation in Hitachi Rail and to communicate diversity inside and outside of the Organisation:

- the **number of female employees** has **increased by 80**;
- the **percentage of women in managerial positions** has **grown by 2.6%**;
- the **internal communication and dialogue on DEI** to address biases was **intensified**;
- the **diversity of "ambassadors" for External Communications** was **fostered**;
- **additional learning resources** on DEI for employees' benefit were provided.

By fostering a culture of inclusion and empowering employees from diverse backgrounds, Hitachi Rail strives to create a vibrant and dynamic workplace, driving innovation, and delivering wide social value.

The 2022 annual Gender Equality Survey showed improvements in key indicators. Comparing results to the previous year, for respondents identifying as women, results to highlight include:

HITACHI RAIL GENDER EQUALITY SURVEY 2022	FY 22 vs. FY 21
Satisfaction in current job	+10%
Barriers in achieving career goals	-6%
Being treated by colleagues differently due to gender	-4%

Hitachi Rail Europe employee

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Looking ahead, Hitachi Rail will continue to strive for improvements across the range of DEI goals.

In line with the key themes at Hitachi Rail the ambitions over the next two years include:

- **Talent** – ensure the workforce diversity reflects the local communities Hitachi Rail serves and operates in;
- **Systems and Structures** – ensure systems, policies and practices are equitable and unbiased;
- **Culture** – Further provide learning opportunities for Hitachi Rail's people to develop the skills and competence needed to create and sustain an inclusive workplace.

Also, including actions to achieve these ambitions such as:

- updating gender categories and pro-noun selection to be inclusive for all;
- launch talent acceleration and mentoring programmes with a primary focus on women;
- develop Employee Resource Groups to create forums and provide feedback to shape future actions;
- launch of a new Employer Brand development strategy with the aim of correctly communicates and best reflects Hitachi Rail's values and principles to all potential talent.

In addition, the Hitachi Insights survey and other employee feedback opportunities will continue to provide valuable insight to measure progress and further shape priorities.

Women's History Month - Celebrating Hundreds of Hitachi Rail Voices

In Hitachi Rail Diversity, Equality and Inclusion are also communicated through real stories. Here's a selection of Women's History Month celebrating the voices of hundreds of Hitachi Rail colleagues worldwide.

I. L. is advancing STEM studies and careers for people with diverse backgrounds. Hitachi Rail Installation Engineer, I. L. was honoured as one of five "10,000 Degrees" alumni for her efforts to voice the advancement of STEM studies and careers. She says, "What excites me about the future of the rail industry is seeing how one of the oldest modes of transportation is evolving to become faster and greener in many different areas while connecting many individuals across the globe."

M. L., a Supply Chain Director, has worked for Hitachi Rail for nearly 50 years. She started her career in a clerical role and made her way to director level. Determined, diligent, and enamoured with manufacturing, M. knows this business is where she is meant to be. She says, "My advice to other women: seek a mentor early on who has travelled a similar path to support people's journey. The best trait, in anyone, is to activity listen to gain knowledge".

Hitachi Rail's **S. D.** is a Test and Validation Engineer from Newton Aycliffe factory in the UK. She recently spent nine months collaborating with the University of Birmingham on an innovative Digital Twin project, which allows rail engineers to conduct testing without using real trains on a live track. A project that could have huge benefits for passengers and the rail industry, including reducing costs and disruption.

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People with disabilities

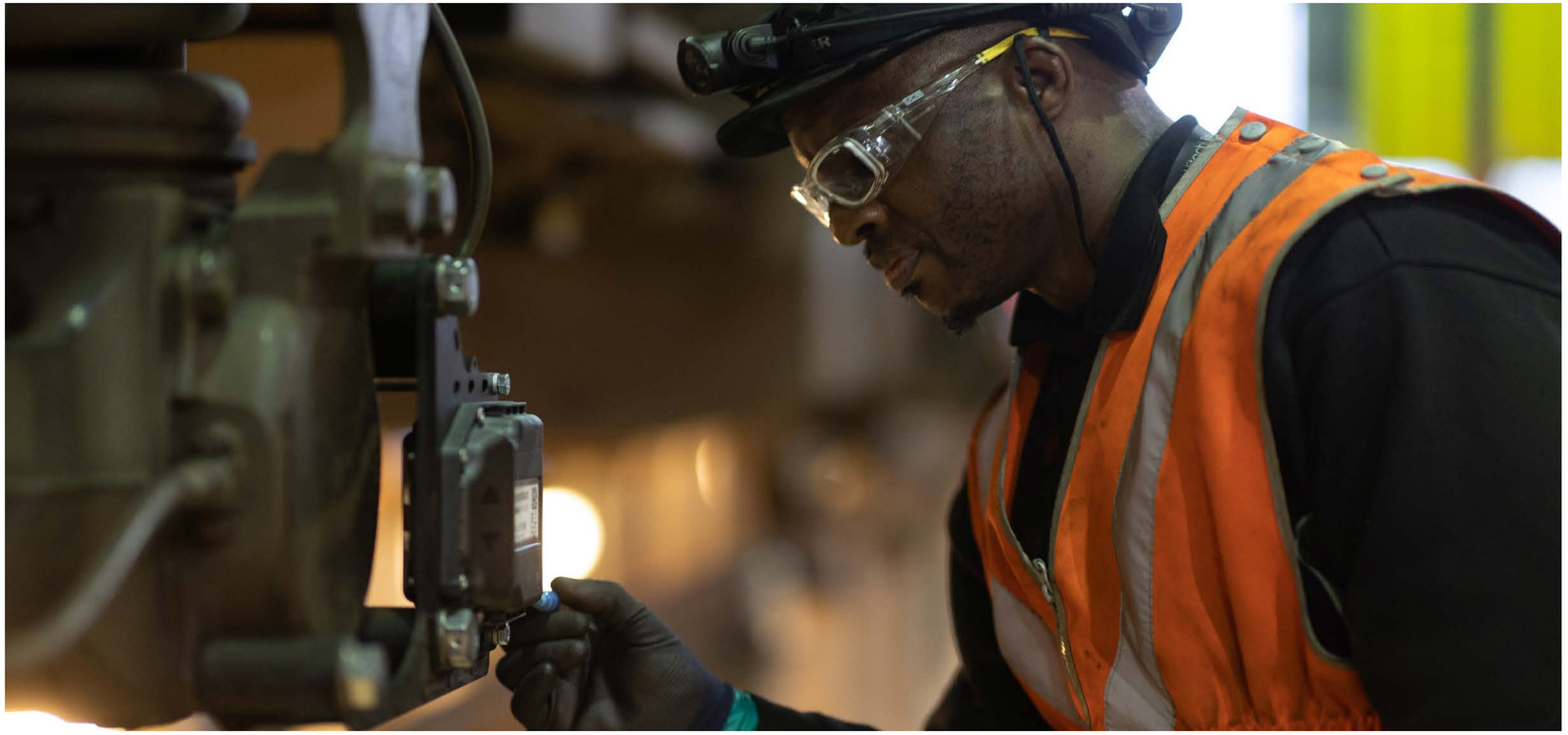
In Italy, Law no. 68/99 introduced the key concept of "targeted" employment where successful appointments are made by analysing positions, forms of support, positive actions and solutions to issues related to the work environment, tools and interpersonal relations that a person would experience in the role.

In Japan, the law mandates that a certain percentage of the workforce must constitute people with disabilities. Hitachi Rail provides opportunities and positions both in office-based roles and in production roles.

In the United States, it is common practice for customers to require the mandatory allocation of a percentage of the contract to DBEs (Disadvantaged Business Enterprises), which are regulated by federal and state departments.

The table below shows the total number and percentage of the workforce represented by people with disabilities in Central and Eastern Europe, the Middle East and Western Europe.

PERCENTAGE OF PEOPLE WITH DISABILITIES BY REGION	ITALY		JAPAN		EMEA		USA&CANADA		APAC	
	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22	FY21	FY22
% of men with disabilities	4.83%	4.77%	0.95%	1.25%	0.23%	0.13%	N/A	N/A	0.10%	0.00%
% of women with disabilities	7.61%	5.35%	4.42%	5.99%	1.75%	1.39%	N/A	N/A	-	0.59%



Worker in a UK depot

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4.3 People Development and Care

Hitachi Rail has adopted a People strategy that aims to make employment with Hitachi Rail a functional tool to promote the worker's work-life balance and enhance family leisure time, whilst protecting their health and well-being.

Its health benefits cover Health Care to supplementary social security, and occupational and non-occupational accident policies. And, the Corporate Welfare Plan increases the purchasing power of families without increasing their taxable income by incorporating sustainable mobility, supplementary healthcare, and smart working into the benefits programme.

'People Care' Concept

Hitachi Rail's "People Care" concept applies to employees' wellbeing as both professionals and individuals. People Care is linked to Hitachi Rail's "Total Reward" strategy, based on tangible and intangible measures to create a working environment where employees can continuously gain experience, develop skills, forge relationships, and find motivation.

The programme actively supports relationships between managers, employees and colleagues. Support services, such as flexible work schedule, special arrangements with local entertainment and sports centres, benefits such as health insurance, accident insurance, company-car, employee scholarships, corporate welfare, canteen and breakfast areas, and celebrations of successful projects are just some of the tools accessible to full-time and part-time employees across regions.

Moreover, employees can benefit from exclusive discounts and agreements on selected services and products, enhancing their overall well-being with a comprehensive support system, also offering psychological assistance on various aspects of life, as well as legal, fiscal, and social welfare guidance from experts in the relevant fields.

These initiatives collectively exemplify Hitachi Rail's dedication to nurturing a thriving and supportive work environment, ensuring that its employees flourish both personally and professionally. The services offered are:

- **remote and face-to-face listening and support**: anonymous and confidential psychological support provided by listening professionals, both remotely and face-to-face, on various topics, including: managing life changes, self-esteem, relationships, inclusion and diversity, personal well-being;
- **legal, fiscal and social welfare support**: legal, fiscal and social welfare information service, provided by experts in the social welfare sector and by lawyers and accountants enrolled in the relevant professional registers;
- **agile working method** continues to gain satisfaction and engagement in Italy with the participation of the staff of all offices. "Smart working" continues to favour the need to reconcile work-life in full compliance with business activities and objectives;
- **bonus upon completion of certain seniority** in the Hitachi Rail through the candidacies of some employees, who have distinguished themselves in their professional and working career, in the recognition of the "Stella al Merito", an annual award for workers with at least 25 years of seniority promoted by the Ministry of Labour.

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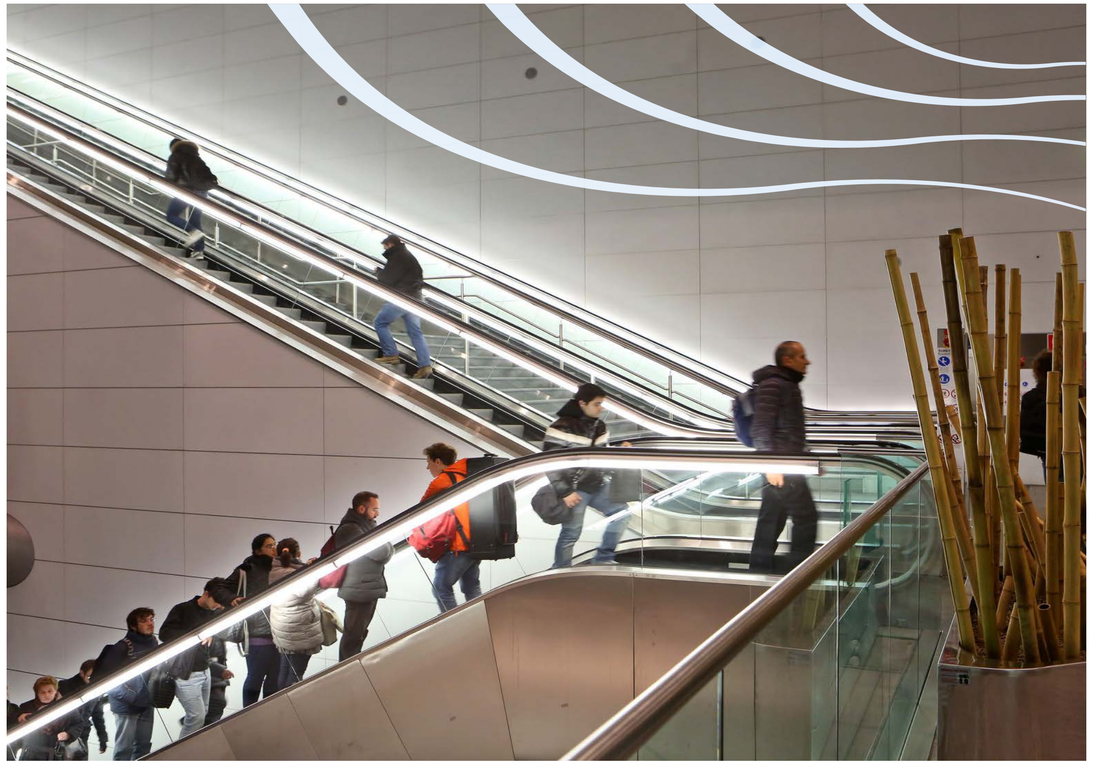
Parents at Hitachi Rail

Parental leave is recognised and guaranteed to workers throughout all of Hitachi Rail.

Hitachi Rail grants parental leave in accordance with legislation, collective agreements, and internal policy. Beyond the limits imposed by law and in line with Sustainable Development Goals 5 (Gender Equality) and SDG 8 (Decent work and Economic growth), Hitachi Rail supports its employees when they become parents and promotes work-life balance in daily activities. At the Organisation level, a total of 236 employees took parental leave in the reporting period, marking a -12% decrease compared to last year.

PARENTAL LEAVE[12,13]	FY21		FY22	
	MEN	WOMEN	MEN	WOMEN
Total number of employees that took parental leave	170	100	137	99
Total number of employees that returned to work in the reporting period after parental leave ended	171	80	100	73
Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work	152	83	93	77



Hitachi Rail, as part of the continuous improvement of its reporting systems, has started an in-depth methodology for the representation of parental leave metrics.

Through the provision of Welfare credits via an accessible online platform, parents gain access to a diverse array of goods and services. Also, the availability of summer recreational and cultural stays for employees' children further underscores Hitachi Rail's commitment to promoting a harmonious work-life balance.

The establishment of CRAL *(Workers' Company Recreational Clubs)* adds to the enrichment of both Hitachi Rail's people and the community through local recreational and cultural initiatives.

[12] The number of employees who took parental leave during the year may not coincide with the number of employees who returned to work during the same year or with the sum of the latter plus the number of employees still on leave at the end of the reporting period, as in some cases the leave may have started and ended in two different reporting years.
[13] All table data related to US & Canada region are not available due to privacy national requirements.

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Strategy to Action: Focus on People Care Initiatives in France

In Hitachi Rail, the People Cares concept focuses on employee wellbeing, as professionals and as individuals. Here's a snapshot of examples from France that put Hitachi Rail's People strategy in practice.

Recruitment: all employees involved in the hiring process receive training in non-discrimination, ensuring fair and unbiased candidate evaluation. A Charter for Diversity and Equal Opportunities is distributed to all participants, fostering an inclusive environment. Hitachi Rail actively integrates a disability/handicap programmes, demonstrating support for individuals with diverse abilities. Moreover, Hitachi Rail collaborates with associations like *"Elles bougent"* to promote technical professions to a female audience, encouraging greater gender diversity in the workforce.

Equal Pay: Hitachi Rail upholds its commitment to equal pay by regularly reminding managers of their obligations. The Organisation diligently rechecks allocated increases to reduce pay gaps and mitigate the impact of maternity/paternity leave on careers and pay differentials. Furthermore, extended paternity paid leave is provided to support work-life balance.

Training: Hitachi Rail ensures employees receive appropriate training tailored to their personal situations. Employees in positions of responsibility are offered individualised support through training or coaching. Additionally, the Organisation supports employees with childcare costs during training sessions that necessitate a modification in their parental arrangements.

Work/Life Balance: Hitachi Rail offers "extended parental leave" funded by the untaken paid leave account, allowing employees to accompany the arrival of a child. Flexibility in working hours is provided through part-time work options, with equal treatment emphasised between full-time and part-time employees. Hitachi Rail also collaborates with inter-company crèches to support work-life balance.

Agreement on Smart working: the successful experience of homeworking during the pandemic has led to an updated agreement promoting employees' well-being and attracting demanding candidates. The minimum seniority required to access smart working is leveled down, and the flat-rate allowance for professional expenses is increased.

Agreement on Health Plan: Hitachi Rail updates its Health plan in line with the French steel and metallurgic industries reform, aligning some benefits with the new national collective agreement while maintaining existing favorable benefits.

Provision of Rest Days for Employees' Parents: Hitachi Rail allows employees to donate paid leave anonymously to colleagues facing parental tragedies, providing compassionate support.

Professional Equality Index: Hitachi Rail publishes its professional equality figures annually, with a grading of 85/100, as required by French Law to ensure pay equality and fair treatment based on gender, age, seniority, and grading.

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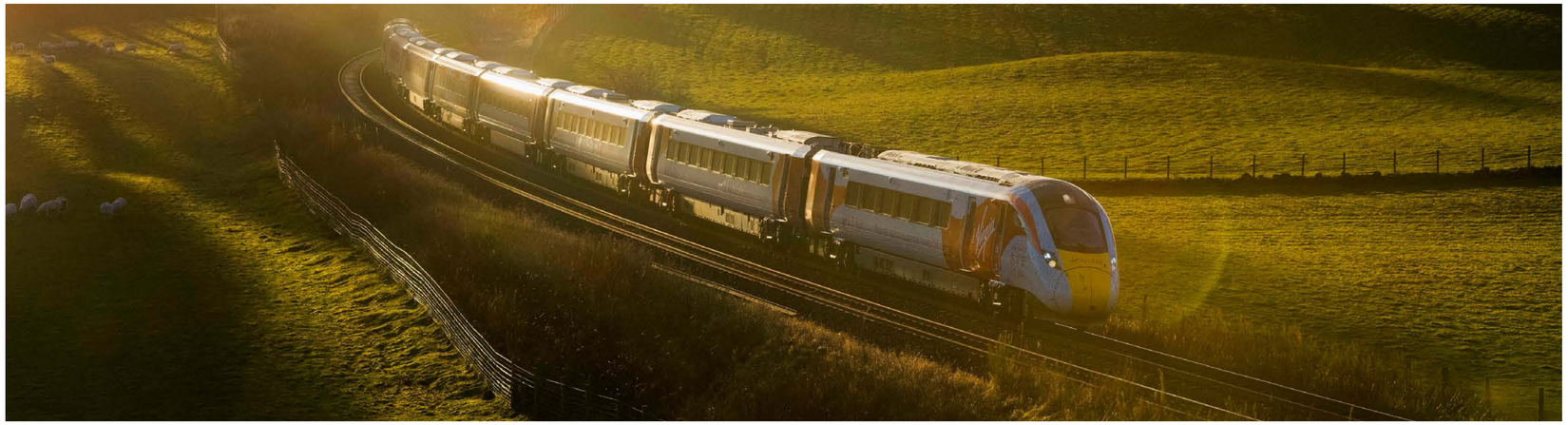
4.3.1 Talent Acquisition

Over the past 12 months, Hitachi Rail has strategically prioritised three crucial aspects to strengthen and optimise its employment strategy, ensuring the attraction and retention of top talent while fostering a positive and inclusive work environment.

Applicant Tracking System Systems and Processes: a primary focus has been on the implementation and improvement of the Applicant Tracking System (Workday) throughout Hitachi Rail, outside of Japan. This modern system has been carefully embedded into the recruitment process to enable a consistent and efficient approach. By leveraging the functionalities of Workday, Hitachi Rail's recruitment teams have been empowered to deliver the required talent to internal stakeholders promptly.

Recruitment Marketing: recognising the significance of a compelling employer brand and effective recruitment marketing, Hitachi Rail has proactively engaged in initiatives to present itself as an employer of choice in the industry. Developing and showcasing captivating content that brings to life the essence of Hitachi Rail and its workforce is a key aspect of this effort.

To Convey the Hitachi Rail value proposition, the team makes strategic use of various channels including Hitachi Rail's Careers Site (www.hitachirail.com/careers) and other third-party platforms like LinkedIn and Glassdoor to provide up-to-date and relevant information to potential candidates. Hitachi Rail also values and actively seeks feedback from individuals who engage with these platforms, understanding that genuine conversations contribute to continuous improvement.
This open and responsive approach has led to increased engagement, a surge in job applications, and positive ratings, reinforcing Hitachi Rail's employer brand and making it a preferred destination for top talent.



Azuma at Gleneagles

Employee Value Proposition (EVP) and Employer Branding

Realising the pivotal role of a strong EVP and employer branding in attracting and retaining talent, Hitachi Rail has diligently worked on defining its EVP for the first time. This process, nearing its conclusion, will serve as the guiding foundation for highlighting themes and values that resonate with all employees, fostering a sense of belonging and pride in being part of Hitachi Rail.

As part of its employment strategy evolution, the Organisation is also actively developing a new employer brand identity that aligns with its strategic vision and cultural values. This step is seen as essential in enhancing Hitachi Rail's ability to attract the right talent who align with its ethos and aspirations. By presenting itself authentically and appealingly to potential candidates, Hitachi Rail endeavours to continue flourishing with a diverse and skilled workforce, propelling its growth and success in the dynamic railway industry.

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4.3.2 Learning, Career Development and Performance Management

During the fiscal year 2022, Hitachi Rail made significant advancements in establishing an integrated framework of learning processes. Building upon the previous year's efforts, the Organisation successfully completed a comprehensive global learning needs analysis process, capturing the Organisation's competency demands Hitachi Rail's Learning & Development Department initiated a systematic process to collect, analyse, and prioritise learning needs throughout the development of key competencies as a priority for Hitachi Rail's growth and success.

Learning

During FY22 Hitachi Rail increased training hours in almost all countries by deploying global, regional and specific initiatives as a result of the "Global Learning Needs Analysis" process. This enabled the collection and analysis of learning needs through the direct involvement of business stakeholders in order to build a framework for the implementation of training initiatives to support the development of necessary skills. The outcome of the process has generated Hitachi Rail global learning plan.

Despite an overall reduction in training hours globally, training hours have increased in Italy, in the USA & Canada, and in the APAC region, with the exception of Japan.

TOTAL HOURS OF TRAINING BY GENDER AND REGION

	ITALY		JAPAN		EMEA		USA & CANADA		APAC		AVERAGE		
	M	W	M	W	M	W	M	W	M	W	M	W	AVERAGE
FY22	71,209	15,346	87,080	10,209	46,344	6,359	6,906	2,495	16,219	3,169	**227,759**	**37,578**	**265,338**
FY21	50,166	8,746	269,689	31,619	49,114	6,882	4,094	1,618	9,518	2,330	**382,581**	**51,195**	**433,776**

AVERAGE HOURS OF TRAINING BY GENDER AND REGION

	ITALY		JAPAN		EMEA		USA & CANADA		APAC		AVERAGE		
	M	W	M	W	M	W	M	W	M	W	M	W	AVERAGE
FY22	16.9	19.8	33.1	42.2	15.4	11.1	7.1	7.8	19.2	18.8	**19.5**	**18.1**	**19.3**
FY21	12.4	11.9	80.3	99.7	16.5	12.1	5.4	6.8	12.0	13.9	**32.0**	**25.2**	**31.0**

AVERAGE HOURS OF TRAINING BY GENDER AND PROFESSIONAL CATEGORY

	FY21			FY22		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Executives	8	9	8	**12**	**19**	**12**
Middle managers	94	31	89	**43**	**29**	**41**
White collars	54	31	49	**28**	**24**	**27**
Blue collars	9	3	8	**6**	**3**	**6**
Total average	32	25	31	**19**	**18**	**19**

Hitachi Rail provides its employees with a wide range of training activities covering various topics and business areas. This year, the main areas covered by training were "Technical-Specialist Training" (34%), "EHS, Quality" (18%), "Language Training" (14%), and "Human Rights and Ethical Aspects" (14%).

It also continues to invest in technical and professional upskilling, including role-specific training for engineers with power of attorney[14], certifications in safety-critical skills, special processes in vehicle manufacturing, and non-destructive testing.

This year, it launched a training programme for all Lob Vehicles workers to ensure professional updating and fulfil contractual training requirements.

HOURS OF TRAINING PER CONTENT	FY21		FY22	
Technical-specialist training	215,962	49.8%	91,068	34.3%
Language training	115,447	26.6%	38,460	14.5%
Managerial training	11,737	2.7%	18,912	7.1%
EHS, Quality	42,460	9.8%	46,623	17.6%
Human Rights and Ethical Aspects	41,033	9.5%	36,642	13.8%
Other	7,137	1.6%	33,633	12.7%
TOTAL	433,776	100.0%	265,338	100.0%

As part of Hitachi Rail's sustainability agenda, the Learning team added the "Introduction to Climate Change" e-learning to its activities, which has been designed to inform all employees of the importance of getting a proactive approach and sense of responsibility toward climate change.

In March 2022 Hitachi Rail launched the first global course on environmental impact to become a Climate Change Innovator, developed by Hitachi Rail's CSR&S Department. This was disseminated worldwide as mandatory training for all Hitachi Group employees (more than 360,000 employees). It offers an opportunity to provide ideas or proposals on how to support the fight against climate change in the daily life and for business activities. As part of the training, Hitachi Rail collaborated with Treedom, the first platform in the world that allows each participant to plant a tree from a distance and follow its growth and story online.

Hitachi Rail's managerial development efforts in FY22 focused on various training initiatives to enhance leadership and organisational effectiveness. These initiatives include:

- **LEAD – Leadership Enhancement and Development Programme:** this programme aims to support managers in areas such as Effective Communication, Feedback & Difficult Conversation, and Development Culture. The goal is to equip managers with concrete tools for effective people management, and the training programme was launched in FY22, continuing throughout FY23;
- **BAIC – Building an inclusive culture:** Hitachi Rail implemented the global BAIC programme in FY22 to develop inclusive behaviours based on the Organisation's values and Diversity & Inclusion (D&I) policies. Creating an inclusive culture is crucial for the success of the corporate strategy, improving interpersonal interaction methods at all levels for increased personal and collective performance;
- **Business Continuity:** Business Continuity (BC) refers to Hitachi Rail's ability to continue its operations in adverse events. To ensure organisational resilience and responsiveness, several remote workshops were organised involving resources assigned to support BC, such as the Regional Emergency Boards (REB), simulating critical situations for effective management;

[14] Hitachi Rail ensures compliance with regulatory obligations through training pursuant to Presidential Decree n. 137 of 7 August 2012 for personnel registered in the national register of engineers, allowing employees with power of attorney to sign projects/specifications/reports to remain proficient in their roles.

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- **HSE Leadership Excellence:** numerous sessions of the "HSE Leadership Excellence" training course were provided to improve the culture of health and safety within the Organisation. Leaders were made aware of the importance of HSE for themselves, their teams, and the Organisation as a whole, emphasising how behaviours influence the HSE culture. Practical advice and tools were provided to promote a positive HSE culture and effective conversations on health and safety;
- **Project Management:** a series of Basic and Advanced Project Management sessions were launched in FY22, involving colleagues working within project teams. Additional modules like PM Leadership, Stakeholders Management, and Contract Management were designed based on global training needs analysis to encourage a strong project management culture.

Hitachi Rail continues to invest in technical and professional upskilling, including certifications in safety-critical skills, special processes in vehicle manufacturing, and non-destructive testing. The Organisation also launched an impressive training programme for all Lob Vehicles workers to ensure professional updating and fulfil contractual training requirements.

Furthermore, Hitachi Rail ensures compliance with regulatory obligations through training pursuant to Presidential Decree n. 137 of 7 August 2012 for personnel registered in the national register of engineers, allowing employees with power of attorney to sign projects/specifications/reports to remain proficient in their roles. These comprehensive training initiatives demonstrate Hitachi Rail's dedication to employee development and organisational excellence.

Think responsibly, act sustainably

Hitachi Rail considers Sustainability a core part of its heritage and mission, aiming to create a better society for future generations. To promote this value, the company offers a course on Sustainability, SDGs, and CSR, available in four languages for all employees.

The course takes an engaging approach to encourage understanding and commitment to real change in thinking and living.

The Learning and Development (L&D) strategy focuses on increasing learning opportunities within the Organisation, fostering a culture where employees actively seek growth in their competences and contribute their knowledge to the company. Projects are underway to train employees in transferring knowledge through a train-the-trainer approach, empowering a sense of belonging and reducing training costs while investing in upskilling people with new competences.

Additionally, initiatives have been implemented to raise employees' awareness of environmental matters, including e-learning modules on SA8000 and Climate Change, as well as face-to-face courses on environmental topics like waste management.

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Performance

The Global Performance Management process is performed for employee and line manager, facilitated by the HR department, as part of the "People Development Cycle". The aim of the Global Performance Management process is to improve people performance through SMART goals with clearly defined and shared performance expectations, continuous feedback and coaching to support the improvement of the High-Performance culture based on the current Mid-term plan and the organisational business needs.

From FY22,Hitachi Rail has introduced regional calibration meetings to improve the data consistency for the global calibrations, ensuring alignment amongst the evaluation process whilst observing cultural differences. Regional managers took part in regional calibrations to review the performance ratings of their own teams, supported by their regional HR operations referent.

A common and integrated Hitachi Rail Global Performance Management process represents one of the main pillars of the new Talent Management Framework, as does the launch of the Group Talent Review Process. Both processes aim to align the characteristics, behaviours, and aspirations of each individual with business goals and business challenges.

The Talent Review process aims to:

- **promote** potential, performance, and a development-oriented culture in the Organisation;
- **identify** suitable actions to be implemented for the enhancement of people's talents and growth also through Development Plans;
- **ensure** a pipeline of talented people at all organisational levels;
- **retain** talents, ensure continuous improvement of skills, and support individual needs;
- **calibrate** of the rating distribution so as to be balanced at global level. This process provides managers with the opportunity to focus and discuss the accomplishments and strengths and development needs of their collaborators and teams (Talent Review).

The following table shows the percentage of employees by gender and professional category who received a regular performance management review during the reporting period.

PERCENTAGE OF EMPLOYEES RECEIVING REGULAR PERFORMANCE REVIEWS (%)	FY21			FY22		
	MEN	WOMEN	AVERAGE	MEN	WOMEN	AVERAGE
Executives	100	100	100	96	100	97
Middle Management	100	100	100	100	99	100
White Collars	94	89	93	96	88	95
Blue Collar	85	91	85	78	82	78
Total	91	90	91	90	88	90

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4.3.3 Employee Engagement

Hitachi Rail provides several engagement tools for its employees to effectively communicate the Organisation's growth and development path and listen to and respond to the employee voice.

Hitachi Rail's internal communication strategy is linked directly to the global strategic objectives. It connects employees with their shared direction and purpose and keeps them up to date with business achievements. The communication channels are available in up to five languages, recognising the diversity of Hitachi Rail's people. They are:

- **COSMO:** a global intranet accessible to all Rail employees: updated regularly with one site dedicated specifically to Sustainability and CSR topics;
- **This Week on COSMO:** weekly email to all employees with links to latest COSMO news;
- **regular video announcements** and **written messages** about **Strategic and Engagement themes**;
- **screens at production sites** for employees without regular access to PCs;
- large scale **video conferences with senior leaders**;
- **employee app:** two-way communication with polling and real time alerts mechanism.

During FY22, the Internal Communication Function aimed to inspire, motivate, and engage colleagues to reach their goals by delivering communications into several channels - and also to support leaders and managers to deliver engaging and interesting communications - alongside promoting Hitachi Rail as a great place to work, with a focus on Wellbeing and Diversity and Inclusion.

Employees accessed COSMO more than 8 million times in FY22, keeping up-to-date with COSMO news daily through a combination of direct and indirect channels, including emails.

Themes of communication included: Employee Wellbeing, including safety, mental and physical health and Diversity, Equity, and inclusion; Employee Voice; Reward and Recognition including major awards programmes; Sustainability, in particular Decarbonisation; the Global Reorganisation Programme and Quality improvements.
As part of the Hitachi Insights Survey, employees returned feedback on the positive impact of themes, in particular relating to Safety, Health and Wellbeing, teamwork, and manager effectiveness.

In FY2023, Internal Communication will focus on Wellbeing as priority, this year with three focus areas:

- **an even stronger emphasis on Diversity, Equity, and Inclusion** - in particular the attraction and retention of women colleagues;
- **the launch of a series Employee Resource Groups** focused on LGBQT+ communities, Black, Asian and minority ethnic and multi-faith communities;
- **action to support mental** and **physical health**.

In addition, Internal Communication will support the introduction of a new award programme specifically for Hitachi Rail colleagues and bolster communications about existing Hitachi Group reward schemes.

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Measuring engagement through Hitachi Insights Survey

As a way of measuring levels of employee engagement (through the comparison of engagement drivers), every year Hitachi conducts a Group survey, the Hitachi Insights Survey. The survey is administered online via an external vendor. It is available for all Hitachi employees in many different languages and individual responses are anonymous. Some of the crucial focus areas are: clarity of direction, manager effectiveness, empowerment, diversity and inclusion, continuous improvement, teamwork, recognition and reward, professional growth, communication, engagement, mid-term management plan, culture, growth mindset.

The aim is to identify key strengths and opportunities, to improve productivity and help leaders analyse and communicate the results, as well as working together with team members to develop and implement plans that will lead to enhancing employee engagement and ultimately improve team performance.

The survey is managed across the full lifecycle including preparation phase, launch, survey management, post survey phase, action plan management, KPIs setting and action plan communication. In 2022, 13,600 Hitachi Rail employees were invited to participate across all legal entities with an average response rate of 73% achieved.

Here are the results indicated among the top five strengths:

- **Teamwork 71.6%**
- **Pride in Hitachi Rail 70.1%**
- **Manager effectiveness 71.3%**
- **Environmental sustainability 70.9%**
- **Engagement 70.3%**

Following the analysis of results, managers across the Group will now work on action planning at team-level.

Passenger groups see the new Hitachi Rail Italy Rock trains

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Programmes to promote the Hitachi Rail well-being culture

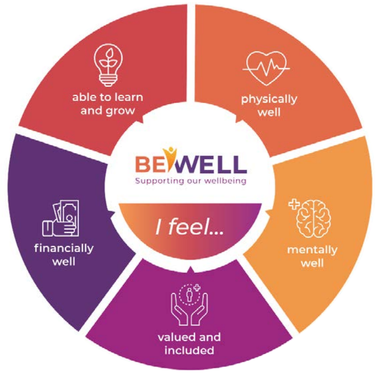
Hitachi Rail runs several programmes to promote occupational health services and the wellbeing culture, including psychological well-being, aiming at the creation of a tangible value, functional to the individual and business performance:

- **BeWell - Worth and Wellness**, is the project developed by Hitachi Rail to provide its employees a concrete response to the various and numerous daily problems that can affect both professional and personal life.

  To mark World Mental Health Day on 10 October 2022 Hitachi Rail provided tools for every team to have a conversation about mental wellbeing and how to care of it, in order to be able to find out what to do to feel happier, healthier and be able to cope with life's challenges.

  This comprehensive assistance programme includes a professional listening for emotional support in both online and in-person modes as well as legal, fiscal, and social welfare support. The psychological support service is anonymous and confidential and is provided by specialists in the field. Employees can schedule appointments for sessions with professionals working in their municipality of residence or preference. In addition, employees, or their immediate family members, can call a free number available 24 hours a day, 7 days a week without an appointment and in total anonymity thanks to the possibility of using a pseudonym.

- **Tito Social Gardens:** at the Tito Scalo plant, in an area adjacent to the photovoltaic plant, Hitachi Rail has created the first company-garden. The goal is to promote socialisation among employees even after working hours.



Hitachi's "Social Gardens" are created with the purpose of fostering employee aggregation by promoting physical activity as well as health prevention, maintenance and care, supporting organic food production and traditional local vegetable essences, and encouraging an appropriate response to the need for healthy and safe food; small plots of company-owned land to be used for vegetable gardens and recreational gardening are assigned for free use upon written request.

This initiative is a symbol of the dedication to nurturing a holistic work environment, contributing to a greener planet but also positioning Hitachi Rail as responsible industry leader.

- **Hitachi's Voice of Youth:** The Voice of Youth team carried out a survey, asking employees how the business can achieve sustainability. The survey responses were individually analysed for core themes, and mapped to identify nine common points, which have been drafted as Hitachi's 'Call to Action' and form the basis of the manifesto. Here are nine points that have been highlighted:

Hitachi's Voice of Youth: Call to Action

1. **Green Kaizen:** Establish philosophy of continuous improvement of operational sustainability at all levels
2. **Awareness and Involvement:** Guide employees to contribute and invite all employees to collaborate
3. **Innovation:** Foster innovation by leading global coordination between R&D centers and business divisions, creating innovation eco-systems for the development of superior products
4. **Information and Transparency:** Transparent communication on goals, actions and how these goals are measured. Communication of detailed objectives and how this translates to actions for employees
5. **Guidance and Education:** Encourage employee training on sustainability and educate on core definitions and sustainable alternatives
6. **Appreciation and Empowerment:** Enable grass-root change through autonomous decision-making and reward sustainability achievements like other business goals
7. **One Hitachi:** Actively encourage communication and collaboration within the Hitachi Group companies, leveraging on inherent diversity to share knowledge and expertise.
8. **Involve Sustainability Experts:** Involve Sustainability experts in processes, audits and assessments. Organise working groups to create awareness and train employees
9. **Lead By Example:** Demonstrate leadership, integrity, determination, conviction, pro-activeness, and commitment to make sustainability a top priority in every decision. Take strong actions and show the urgency and importance of this goal.

The ambition is to form regional committees from volunteers across all Hitachi regions and Business Units and look to embody the 'One Hitachi' ethos to be a truly global and collaborative programme and to promote the exchange of ideas between young Hitachi employees and emerging leaders.

Many other initiatives were launched at a local level, such as the menopause support and awareness programme in UK, 10,000 Steps challenge in Australia and the project VA.BENE in Italy.

Engaging in safety

Employee engagement is also fundamental when it comes to Health and Safety issues: self-reflection plays a significant role in developing and strengthening health and safety culture. Hitachi Rail approaches incidents using the Kelvin Topset methodology ensuring root causes, and specific actions are uncovered to prevent reoccurrence. The management teams analyse trends on a quarterly basis to ensure its business reacts to emerging risks and improvement areas, based on live data captured via the Econline database.

Consultation and participation on HSE issues occurs via a number of different methods and sources. The primary method for sharing information is through direct communication with the HSE Unit and direct supervisors of the workforce.

To ensure there is a consistent approach for engagement, teams may need to establish local HSE Committees of appointed HSE representatives, taking into account regulatory requirements.

In addition to HSE Committees, there are informal initiatives which aim to encourage the Workforce to participate and provide feedback on HSE matters related to their work activities, including meaningful safety conversations between workers and management built on trust with no fear of reprisals, risk workshops and Reward & Recognition frameworks to encourages best practice and participation.

Project VA.BENE

VA.BENE (VAlore e BEnessere) Project offers many services with great potential for all Italian employees of Hitachi Rail and their family members. The project was launched in order to promote the culture of well-being, including psychological well-being, oriented toward the creation of tangible, functional value for the individual and impact on organisational performan.

VA.BENE project was awarded an Honorable Mention at the Challenge Safety Factory 2023 in May 2023 given the importance of the project.

Newton Aycliffe Manufacturing Facility

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4.3.4 Compensation and Benefits

The employment terms that Hitachi Rail outlines in individual contracts are usually more favourable to employees than those defined under general labour legislations or collective agreements in place in the various countries it operates.

Hitachi Rail has defined a total reward framework strategy to include the design, standardisation, implementation, and communication of pay and benefits to ensure it is embedded in the BU's ways of working and organisational culture.

Furthermore, through the contribution of specialist companies in the field, Hitachi Rail periodically evaluates organisational positions comparing its remuneration policies with those of the reference market.

The Hitachi Rail Rewards strategy aims to deliver outstanding business performance and superior capabilities through an engaged and motivated workforce. It aims to attract people to the Organisation by clearly differentiating its employment offering, delivered at an affordable and sustainable cost, in line with business goals and Hitachi Rail's long-term objectives. In this sense, Hitachi Rail has also been working to digitalise all the Compensation processes such as salary review, bonuses improving the governance and freeing up time for the HR teams to work on more value-added activities.

Hitachi Rail monitors the ratio of basic salary between women to men. The reported data show different trends for regions and seniority levels, with delta limited within a maximum 18% variation, and are by their nature conditioned by multiple factors over time (structure and perimeters of applicable collective agreements, local compliance, statistical significance of employee numbers, etc.).

	FY22				
RATIO OF BASIC SALARY OF WOMEN TO MEN[15]	**ITALY**	**JAPAN**	**EMEA**	**USA&CANADA**	**APAC**
	WOMEN/MEN	**WOMEN/MEN**	**WOMEN/MEN**	**WOMEN/MEN**	**WOMEN/MEN**
Executives	0.91	1.02	-	1.07	0.85
Middle Management	0.96	0.92	1.01	1.17	1.03
White Collar	0.96	0.82	1.02	0.86	0.85
Blue Collar	1.03	1.00	0.87	0.88	0.94

[15] (Basic salary W / basic salary M). Computation based on basic salary expressed in thousands of euro.

Looking forward to the future, the area intends to digitalise all the compensation processes standardising the different practices across the countries, bringing efficiency and more transparency to the employees when feasible. The pay transparency as employees also demand more information about how their compensation is determined and what benefits are available to them.

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4.4 Workers' Rights and Human Rights

Hitachi Rail's actions to pursue its ambitious vision to "embed and advance respect for Human Rights in all its activities, operations and value chain" follows the relevant regulatory standards generally shared by the international community, such as the UN Guiding Principles on Business and Human Rights (Human Rights Due Diligence "HRDD").

The Hitachi Rail Human Rights Policy, as well as its Social Accountability Policy, is communicated internally and available to all members of the workforce on Hitachi Rail's Global Business Management System. The policy commits to develop and implement ongoing human rights due diligence to include identifying and assessing potential and actual human rights impacts and taking appropriate action to prevent or mitigate risks. Where it may be identified that Hitachi Rail has caused or contributed to a negative human rights impact, Hitachi Rail will provide for or cooperate in legitimate processes to provide remediation. Moreover, Hitachi Rail's Social Accountability Policy provides the basis for the SA8000 certification extended to its Hitachi Rail STS S.p.A. legal entity.

The policy applies to all officers and employees of Hitachi and its consolidated subsidiaries and it requires its business partners and other relevant parties to respect human rights. The Group also represented its commitment in the Hitachi Group Code of Ethics and Business Conduct which was revised in 2023.

SA 8000

Hitachi Rail obtained the SA 8000 certification for the Italian sites in 2021 for the first time. This ethical certification effectively and openly deals with and regulates the social consequences of its operations. It also demonstrates to all interested parties how they implement labour and human rights laws and measures to mitigate risks across the entire supply chain. Hitachi Rail strongly believes that following the path towards a Company-wide SA 8000 certification will help to improve working conditions for all its employees worldwide. For this purpose, the Organisation sets up a dedicated Social Performance Team consisting of 12 members, six of which were employees and 6 trade union representatives. The team met four times during the FY22, with the objective of assessing the governance process of the certification, the related risks and opportunities and the evidence gathered. The SA 8000 certification guarantees that Hitachi Rail's stakeholders (competitors, public bodies, customers, suppliers, institutions, associations) respects workers' rights and commits to an ethical management of its business.

In line with the SA 8000 Standard, Hitachi Rail is committed to:

- reject the use of child labour: Do not resort to or support the use of child labour, in line with current legislation, relevant ILO Conventions and the International Convention on the Rights of the Child;
- reject the use of forced and compulsory labour: Do not employ or support the use of forced and compulsory labour, condemning all forms of modern slavery and prohibiting the employment of labour carried out non-voluntarily including due to threats or debt;
- protect the health and safety of workers and their welfare: Ensure a healthy and safe workplace by taking all appropriate measures to protect the welfare of workers and prevent workers' accidents and damage to their health during their engagement;
- respect the right to freedom of association and collective bargaining: Respect and protect workers' freedom to associate, not obstruct their membership in labour organisations, and promote collective bargaining;

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- respect the right to decent wages and fair working hours: Comply with applicable laws on working hours, rest and holidays, ensuring a decent and sufficient wage;
- respect the principles of dignity, equality, and non-discrimination: Prohibit any form of discrimination, based on age, ethnic origin, nationality, political and trade union views, religious beliefs, sexual orientation, gender identity, physical and mental disabilities, and any other personal characteristic not related to the right to collective bargaining, gender identity, physical and mental disabilities, and any other personal characteristic not pertaining to the professional sphere. Comply with applicable laws on working hours, rest and holidays, ensuring a decent and sufficient wage;
- respect the principles of dignity, equality, and non-discrimination: Prohibit any form of discrimination, based on age, ethnic origin, nationality, political and trade union views, religious beliefs, orientation sexuality, gender identity, physical and mental disabilities, and any other personal characteristic not related to the professional sphere.

Hitachi Rail has established dedicated channels to enable reporting any suspected breaches of the Group's Code of Ethics or any violation of laws and regulations related to Corporate Social Responsibility, with a focus on maintaining high ethical standards and compliance with applicable laws and regulations.

Human Rights Due Diligence

In FY21, to expand Human Rights Due Diligence throughout the entire Hitachi Group, Hitachi Ltd. issued the Human Rights Risk Management Implementation Manual, which sets out the entire process of human rights risk management practices for use in the practical operation of each Business Unit and Group Company.

In FY22, the Group welcomed a U.S. human rights non-profit organisation as a visiting lecturer and held a series of guidance sessions on human rights risk assessments for BUs and major Group companies in which the attendees worked on actual risk assessments. Hitachi Rail recently revised that Manual as the second edition, organising and incorporating knowledge obtained during the guidance sessions and risk management work sheets and other tools. Hitachi Rail is structuring itself with an internal cross-functional working group to follow and develop these issues.

Modern slavery

Hitachi Rail recognises the importance of identifying and preventing the action and causes of modern slavery in its business operations and supply chain.

Hitachi Rail complies with all reporting requirements as it relates to modern slavery under local law and regulation. In its sixth statement, published under Section 54 of the UK Modern Slavery Act 2015, Hitachi Rail detailed the steps it has taken to address modern slavery and human trafficking in the business, and it supply chain. Also, a separate Modern Slavery Statement that complies with the Australian Modern Slavery Act 2018 has been lodged with the Australian Government for the reporting period.

Conflict Minerals

Conflict minerals commonly associated with heavy industries sector include tin, tantalum, tungsten, and gold. These minerals are essential for the production of various components, and their extraction and trade in conflict-affected areas often fund armed groups and perpetuate violence, contributing to human rights violations.

Tracing the origin of minerals throughout the complex global supply chains is a significant challenge. The train manufacturing industry relies on a vast network of suppliers, making it difficult to verify the ethical sourcing of every mineral used. Hitachi Rail is implementing responsible sourcing programmes that establish criteria for suppliers, encouraging them to source minerals from conflict-free regions.

Hitachi Rail has adopted a policy to ensure that the procurement/sourcing of materials containing conflict minerals does not encourage activities of armed groups, human rights violations, including child labour, corruption and environmental destruction in the conflict and high-risk regions.

Hitachi Rail will persist in investigating, upholding the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and carrying out thorough examinations in accordance with the Guidance, considering social concerns and the responsibilities of corporations in the respective regions.

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4.5 Occupational Health and Safety

Hitachi is committed to ensuring that activities are undertaken by considering the Safety and Health of the employees, contractors and individuals who may be impacted by daily operations. Health and Safety Policies are reviewed and updated every year to ensure focus on strategic objective and targets and mitigation of impacts.

Employee representatives are identified in each legal entity of the Organisation, in line with legal requirements to participate to decision-making process in Health and Safety matters. One of the main tasks where management and workers' representatives collaborate is Risk Management.

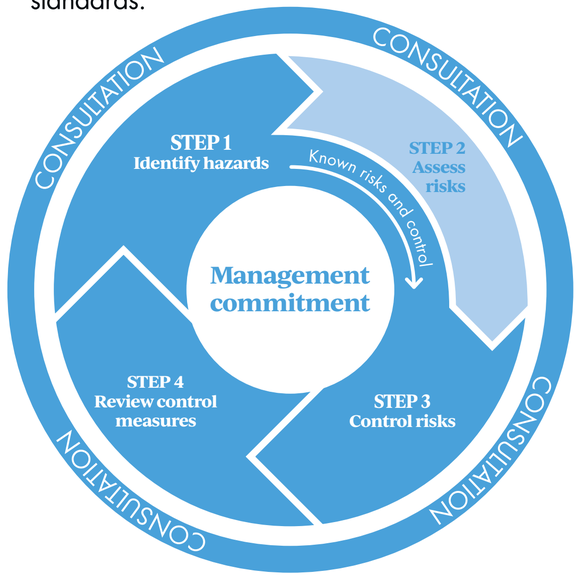
The Health and Safety Risk Assessment and Environmental Aspect Evaluation follows concept of ISO 31000 Risk Management, considering the "Plan, Do, Check, Act" cycle, as follows:

Step1 – Plan: Identify hazards / aspects
Considering the organisational internal and external context, identify the hazards and environmental aspects associated with the tasks, activities, working areas, environment, and personnel to be assessed. This process should involve observing, inspecting, investigating, communicating, consulting, and making a record of the hazards/ environmental aspect identified.

Step 2 – Do: Assess Risks
Using the defined risk matrix when assessing and prioritising the risks; dealing with the highest priority risks first and dealing with lower-risks or least significant risks last. Risk is managed following the hierarchy of risk control, implement appropriate measures that adequately manage the hazards and environmental impacts.

Step 3 – Check: Monitor & Review
Considering the following: to ensure that control measures have been implemented as intended and are adequate; to implement control measures which do not create other hazards, environmental impacts or increase risks. Also, no further changes have been implemented, risk-control is reported to be working effectively and risk management process are effectively conducted.

Step 4 – Act: Improve and Adjust
Hitachi Rail's Health and Safety policy is based on the application of the requirements of relevant standards, namely UNI ISO 45001 in compliance with national and international regulations. Hitachi Rail's plan is focused on continuously improving Health and safety standards.



This policy is shared with all Hitachi Rail personnel and all Stakeholders online and via the Organisation's intranet. The initiatives adopted by Hitachi Rail to promote employee welfare in the workplace are adequate for risk assessment (e.g., analysis and monitoring of working activities, including the nature of the work, equipment, workspaces, personal and collective protective measures, technical infrastructure, and contractual issues, both for internal and contracted tasks).

Performance measurement is an essential part of the HSE Management System:

- to determine whether HSE policies, objective and targets have been implemented and achieved;
- to check that risk-control measures have been implemented and are effective;
- to learn from HSEMS failures, including hazardous events (actual incidents, near misses and ill-health cases);
- to promote better implementation of plans and risk controls by providing feedback to all parties;
- to provide information that can be used to review and, where necessary, improve aspects of HSEMS.

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Managing the impact on non-employees

Additionally, considering the product and service delivered from Hitachi Rail, it is also **essential to manage impacts on non-employees**. The main interaction with non-employees is connected with partners and suppliers during the process of executing, sub-contracting and outsourcing of Hitachi Rail product and services.

The correct management of partners and suppliers starts with a strong qualification process to identify since onboarding phase their performances in matter of Occupational Health and Safety and identify OHS deficiencies could affect the employees and any other stakeholder involved during delivery of Hitachi Rail Product and Services. After onboarding phase and contractual phase, the Suppliers before site mobilisation are subject to specific process of preliminary acceptance of documentation of their SOW execution (HSE Plans, Method Statements etc), employee's qualification and equipment certifications according OHS Requirements from local regulation and site/project. During execution, the Suppliers are subject to a continual monitoring, in order to evaluate the safety condition of site and safe deliver the outsourced process according Hitachi Rail principles and values.

HSE Training

To implement the above principles, **the Organisation developed a dedicated process of training and learning practices**, in collaboration with the functional managers and the HR department, ensuring that each country has a training matrix describing the needed HSE competences for each specific role in the Organisation. It includes standard HSE training elements as well as specific ones required by local regulation or projects.

Examples of global standard training for FY22 are the HSE leadership masterclasses rolled out in connection with the leadership programme as part of the strategic plan for last fiscal period. The programme aimed to engage leaders and managers and ensure their commitment in achieving a high reliable safety culture in Hitachi Rail, where safety is spontaneous part of the day-to-day discussion among business leaders and workers and where decisions are taken considering safety as the number one priority.

HSE Performance

In terms of HSE performance, the number of near misses and unsafe situations is evaluated. The consequent result of this strategy is **to focus primarily on prevention of serious incidents by eliminating the causes identified for close calls and near misses**. Furthermore, injuries are not counted as absolute numbers but related to worked hours in order to consider in the performances the increase or decrease of business activity.

In the last three years, Hitachi Rail moved the HSE performance approach from reactive to proactive, identifying an increasing number of leading indicators that have replaced the lagging ones. In particular, performance evaluation is based on number of lost time incidents:

HEALTH AND SAFETY – KPI	FY21	FY22
Injury frequency index[16]	0.74	0.68

[16] No. Injuries/h. worked x 200,000 ratio in the table calculated on recordable injuries, therefore excluding first aid cases.

Going into details with FY22 HSE data, trend analysis shows an increase of first aid reported. This is indicating a positively increased capability and attention to reporting and not a higher number of cases. In order to ensure accuracy, Hitachi Rail's HSE Function has launched a re-baseline project to capture all missing first aid cases in the previous period and adjust the target. Furthermore, close calls (or "near miss") target was achieved and exceeded with a number of 549.

In addition, no incidents have been recorded identifying a violation of the Organisation's voluntary codes related to HSE issues. Only one case has been recorded globally across the business resulting in a fine to Hitachi Rail from the authorities, due to delay in answering a request of information. The delay was caused by change of the official corporate email address not being communicated to the authorities in a timely manner.

More generally, in terms of HSE compliance, Hitachi Rail is aware that the creation of sustainable economic value, in the broadest sense of the term, must also be supported by policies, practices and information processes to ensure and the robustness of an internal control systems that guarantee ethics, integrity and transparency in the day-to-day activities to comply all applicable laws and regulations.

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At Hitachi Rail, the workplace is a place where everyone is empowered to make the right decisions and do the right thing to take care of health and safety of all.

To help us achieve this, the Organisation launched **Our Life Saving Rules**, these critical risks were created through consultation with a variety of working teams, no matter who people are, where they are or what they do these critical risks apply to them.

Controls for these Life Saving Rules are non-negotiables and work does not commence until these risks are controlled and all workers agree with the measures in place.

In terms of future HSE objectives, the next financial year is to strengthen Hitachi Rail's global risk management and control processes. To ensure risk management is focused on essential control measures, a working team, with different backgrounds, has been formed and a new Risk Assessment initiative is underway in FY2023. This group of experts will:

- develop a rapid improvement programme for infield risk assessments;
- simplify risk assessments - modernising and making sham user friendly;
- educate all layers of organisational with risk management skills;
- standardise the approach across all the whole business;
- embed a culture of full disclosure to highlight important issues and opportunities to improve;
- engage with workers as problem identifiers.

Exhibition stand of Hitachi Rail

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5

Environmental Impact

Chapter 5:

Environmental Impact

5.1 Environmental Policy

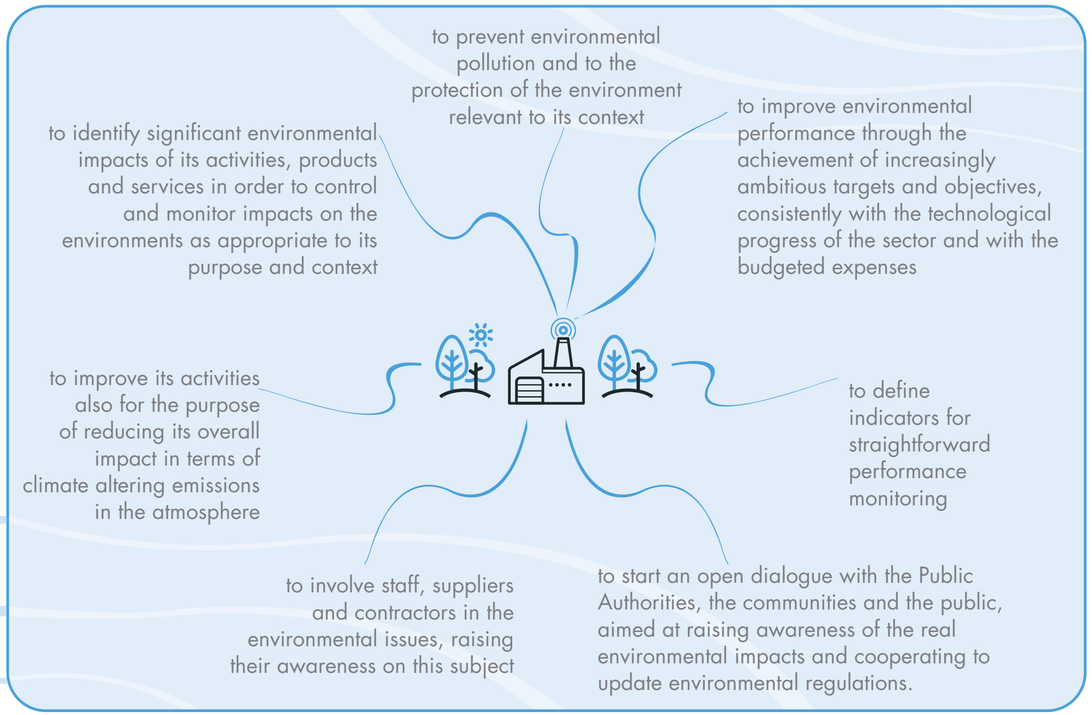
Hitachi Rail uses a systematic framework for integrating environmental management practices by supporting environmental protection, pollution prevention, waste minimisation, as well as energy and materials consumption reduction.

Hitachi Rail applies environmental management systems throughout the Organisation (e.g., ISO 14001) and is committed to reporting to all stakeholders on the environmental management and performance of the Organisation.

Finally – to involve the entire value chain – Hitachi Rail is committed to promoting sustainable environmental practices to suppliers, contractors, and customers.

Its Environmental Policy places safeguarding the environment at the heart of its management and development strategies, with a constant and targeted commitment to preventing pollution and pursuing continuous improvements in its environmental services. The policy is shared with all Hitachi Rail personnel through the BU's intranet.

The key principles of Hitachi Rail's commitment are:



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Zero Construction Footprint for Etihad Rail Project

The UAE-based Etihad Rail awarded a contract to Hitachi Rail in 2019 for the second stage of its rail network.

The Etihad Rail project, spanning 1,200km, is the first national freight and passenger railway network that connects the seven emirates of the UAE. The second stage of the project involved constructing a 605 km rail link between Ghuweifat, located on the border with Saudi Arabia, and Fujairah on the east coast.

Many of the environmental practices implemented in Etihad Rail construction site go beyond the project's compliance requirements. Among the most significant examples: ecological surveys were conducted in all project areas, not just those where it was strictly necessary. Additionally, rather than relocating the animals, the decision was made to avoid disturbing the habitat of the Spiny-tailed Lizard, a critical species identified along the planned route.

In line with Hitachi Rail environmental policy, an ecological survey was conducted to ensure zero construction footprint impact on the biodiversity. Detailed ecological reports were prepared based on the survey findings, and one of the major outcomes was the identification of a critical species, the spiny-tailed burrow, along the planned route. As a result, a proposal was made and implemented to reroute the connection and avoid disturbing the active habitat of the Spiny-tailed Lizard.

Etihad Rail Project

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5.2 Environmental Goals and Decarbonisation Path

In September 2021, Hitachi Group set new targets to achieve carbon neutrality throughout its entire value chain by 2050 - bolstering the existing commitment to achieve carbon neutrality across all its business sites by 2030.

In accordance with the Group's dedication, Hitachi Rail has made a promise to attain neutrality by eliminating carbon emissions not only from its own activities but also from the purchases and sales of its products and services. This challenging objective will be accomplished in collaboration with Hitachi Rail's customers and suppliers.

In December 2020, Hitachi Ltd. received validation of its emission reduction targets from the Science Based Targets initiative (SBTi), the international Organisation that helps companies setting emission reduction targets in line with the Paris Agreement goals of keeping mean global temperature to well below 2°C and preferably limit the increase to 1.5°C above pre-industrial levels. Hitachi Corporate made a commitment to reduce its absolute Scope 1 and 2 GHG emissions by 100% by 2030 and absolute Scope 3 GHG emissions by 40% by 2030, considering a 2010 baseline.

Reflecting the spirit of the SBTi commitment from Corporate, Hitachi Rail set intermediate goals to monitor Scope 1 and 2 reduction progress at selected sites. Also, to structure a pathway applicable to all its facilities, Hitachi Rail is conducting a Pilot Analysis on seven key facilities, monitoring their year-on-year emission trends and the effectiveness of the applied solutions against baseline year emissions. This will allow the Organisation to outline the most efficient emission reduction roadmap for the remaining sites.

This year, Hitachi Rail has set a **specific target to reduce Scope 1 and 2 emissions** by at least 5% in FY23 compared to FY22. The target has been defined based on the forecasts and decarbonisation plan available to date.

Decarbonisation pathway

Realising these ambitions and developing a decarbonisation pathway means adopting low-carbon choices and creating solutions that are sustainable and compatible with these goals. By becoming a Climate Change Innovator, Hitachi Rail aims to develop innovative technologies and solutions that mark an alternative path to sustainable mobility, to help cities, governments and customers cutting carbon in the mobility sector.

It uses a new pioneering approach towards technologies for designing solutions that can create a tangible and positive impact and a visible and persistent change.

- using technology to decarbonise its own industrial footprint and contributing to carbon neutrality targets following Corporate adoption of Science Based Targets;
- driving a modal shift by making rail an attractive alternative and enhancing with Mobility as a Service;
- accelerating the decarbonisation of rail by creating new electrified railways or powering trains with batteries.

Modal shift to alternative transport

A fundamental pillar in the Hitachi Rail ESG pathway is making rail technology the key element to drive through a comprehensive modal shift from air and automotive transport to railway system, a shift that remains one of the most impactful in terms of decarbonisation.

Accelerating electrification and battery

Furthermore, as pioneers in the rolling stock and digital systems, Hitachi Rail aims at accelerating the decarbonisation by creating new electrified railways or powering trains with batteries.
The acceleration of electrification and the central role of technological innovation make rail transport an environmental frontrunner, as of today the global non-electrified rail transport relying on diesel amounts to no more than 25%.

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5.2.1 Energy Efficiency and Consumption Trends

The issue of resource scarcity, triggered by rising demand and population growth, is a common concern for the entire world. As populations grow and living standards improve, higher volumes of resources are collected, extracted, used, and eventually emitted as waste.

Hitachi Rail works with customers and society to help building a world that uses resources more efficiently.

Energy Consumption

Hitachi Rail mainly relies on electricity used for lighting, plant operation and building temperature control but also uses fossil fuels, such as natural gas and district heating, to heat workplaces. To reduce electricity consumption, the Organisation carries out constant work on its real estate assets.

It employs energy-saving lighting and efficient heating/cooling technologies as much as possible:

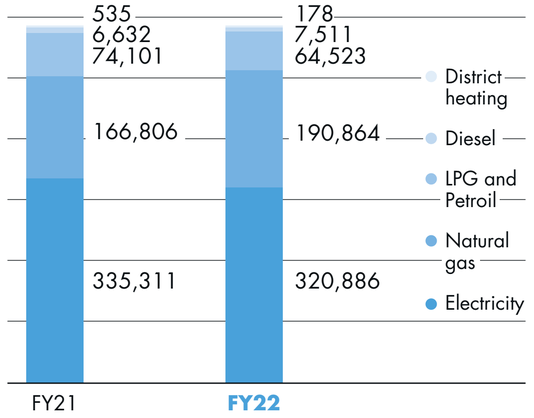
- installation of LED lighting systems;
- construction of envelopes and installation of thermal insulation for windows/doors;
- direct expansion of heating/cooling systems (heat pumps);
- installation of presence detectors or clocks/timers to control activation and/or deactivation of powered systems;
- improvement of the energy efficiency of data centres;
- promoting energy saving practises by reminding personnel to turn off the lights, their laptops and any other device that might consume energy.

Its total energy consumption - natural gas, electricity, diesel, LPG and petrol, district heating - amounted to 583,962 GJ, in line with the previous year. The percentage of electricity derived from renewable sources, both purchased from certified sources from the grid and self-produced, reached 54% in FY22, an increase of 30 percentage points with respect to the previous period.

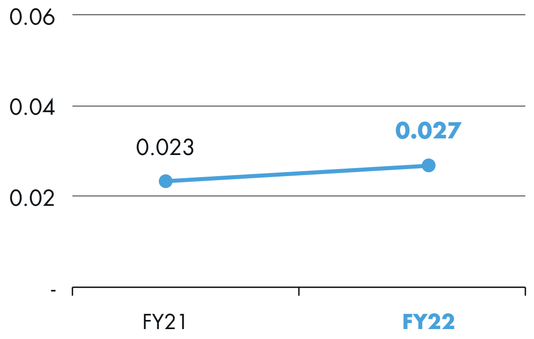
ENERGY BY SOURCE [GJ][17]	PRODUCTION SITES AND TRAIN MAINTENANCE CENTRES		OFFICES		TOTAL	
	FY21	FY22	FY21	FY22	FY21	FY22
Electricity	283,028	271,050	52,283	49,837	335,311	320,886
Natural gas	154,495	176,870	12,311	13,994	166,806	190,864
LPG and Petrol	73,892	64,321	209	202	74,101	64,523
Diesel	3,398	2,729	3,234	4,781	6,632	7,511
District heating	10	-	525	178	535	178
Total	**514,823**	**514,970**	**68,562**	**68,992**	**583,385**	**583,962**

During FY22, Hitachi Rail registered achievements in the LPG and Petrol, district heating and electricity, as a result of good practices and behaviours, and the energy-efficiency investments made in several regions. The graph shows the energy consumption trends over the two-year period. Again, the overall consumption of energy shows a constant trend over the year. However, by taking into account the total hours worked, energy intensity has gone from 0.023 to 0.027. It should be noted a refinement of the methodology for calculating hours worked occurred in the year in order to better represent the effort allocated in the year.

Energy consumption (GJ)



Energy intensity (GJ per hour worked)



[17] Data regarding 2021 differs from the one represented in the previous CSR&S Report due to a methodological refinement in data collection and processing.

5.2.2 Emissions Reduction and Air Quality

Hitachi Rail is developing low-carbon, sustainable solutions to decarbonise transport around the world. Where railways are only partially electrified, Hitachi Rail is designing and building new batteries and hybrid trains and trams to cut diesel emissions and reduce the costs and the disruption of electrification programmes. **The Organisation thinks responsibly and acts sustainably**. As such, it is striving to deliver 100% reduction in its own CO_2e emissions by 2030, and a 100% reduction through the entire value chain by 2050.

Hitachi Ltd. has set emission reduction targets which have been validated by the Science Based Targets initiative (SBTi, scope 1,2,3) and Hitachi Rail is currently focusing its attention on improving energy and resource management. For example, with different contractual agreement and implementation frameworks, Hitachi Rail is running a solar panel installation programme at various facilities in Italy (Tito Scalo, Reggio Calabria), Australia (Perth) and the United Kingdom (Newton Aycliffe, Doncaster and Stoke Gifford). Likewise, it encourages low carbon transportation by introducing electric car sharing schemes for its employees and supporting the use of electric vehicles at all Hitachi Rail sites.

From strategy to reality: the solar panels of Tito Scalo

As a matter of fact, Hitachi Rail has recently completed the installation of a solar plant in Tito Scalo, Basilicata, Italy. The plant is an innovative solar panel system that will enable to produce more than half of the electricity needs of the site (50-60%).

In addition, the next-generation photovoltaic array, connected to the national grid, will enable the plant to reduce CO_2 emissions by 325 tons per year. In details, the plant covers an area of 6,000 square meters, roughly half the size of a soccer field, and consists of 1,122 440Wp photovoltaic modules with double-sided cells that allow to harness reflected energy, maximising electricity production.

The system has a peak power of 494 kWp, with a producibility of 700-750 MWh/year. Since the size of the photovoltaic system is minor than 500 kWp, it is possible to take advantage of the existing Power Exchange Scheme, which allows electricity fed into the grid during a given hour to be offset for the electricity taken from the grid in another given hour.

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Looking at the bigger picture, Hitachi Rail has also started to dive into the functioning of its entire value chain at all stages of product development, from the procurement of raw materials and parts to production, transportation, use, disposal, and recycling.

As part of Hitachi Rail's Sustainable Procurement Strategy, it investigates its Scope 3 emissions which typically account for over 90% of the CO_2e emissions from a given company. Hitachi Rail is working to build a clear view of the carbon emissions generated by its value chain by calculating its Scope 3 emissions in line with the Greenhouse Gas Protocol methodology.

Hitachi Rail reports direct and indirect GHG emissions, engaging to reduce them through:

- policies on the mobility of people and goods;
- programmes for reducing consumption and improving energy efficiency;
- use of renewable energy sources;
- waste and water management.

With regard to CO_2 emissions, Hitachi Rail registered a decreasing trend for all Scopes, notwithstanding the increasing consumption trends. This is due to the increased amount of certified renewable electricity purchased from the grid by certification by Hitachi Rail for FY22.

In particular, the decrease in total Scope 1 and 2 emissions amounted to 12%.

On the other hand, Scope 3 emissions decreased and underwent a significant change during the year as Hitachi Rail refined its calculation of indirect emissions by adding the results of additional emission categories as defined by the GHG Protocol. **Scope 1, 2 and 3 emissions are shown in the table below, along with relevant details**.

In addition to the reported CO_2e emissions, Hitachi Rail also monitors the pollutant emissions related to the consumption of non-renewable resources used to run thermal plants (methane and diesel) and to the production processes that emit volatile organic and inorganic compounds. Compared to FY21, total air emissions increased by 6%, not least because of better tacking systems and increased reporting capabilities.

GREENHOUSE GAS EMISSIONS[18,19,20]	Unit	FY21	FY22
Emissions due to Energy Production (Natural Gas)	tCO_2e	10,897	10,774
Emissions due to Energy Production (Diesel)	tCO_2e	435	537
Emissions from Air Conditioning Systems (Fugitive Emissions)	tCO_2e	2,446	1,878
Emissions due to Internal Handling (Lorries and Forklifts)	tCO_2e	60	28
LPG	tCO_2e	4,749	4,128
Total Scope 1 Emissions (-7%)	**tCO_2e**	**18,587**	**17,347**
Emissions due to Electricity Consumption	tCO_2e	21,215	17,861
Emissions due to District Heating	tCO_2e	25	8
Total Scope 2 Emissions (-16%)	**tCO_2**	**21,241**	**17,870**
Total Scope 1&2 Emissions (-12%)	**tCO_2**	**39,828**	**35,216**
Total Scope 3 Emissions (-14%)	**tCO_2e**	**3,886.025**	**3,349,241**

AIR EMISSIONS[21]	FY21	FY22
NOx [Kg]	13,958	15,639
SOx [Kg]	693	917
CO [Kg]	5,073	5,751
Volatile Organic Compounds [Kg]	220,235	232,211
Volatile Inorganic Compounds [Kg]	–	343

[18] Data regarding 2021 differs from the one represented in the previous CSR&S Report due to a methodological refinement in data collection and processing.
[19] Scope 1 emissions are calculated using the factors provided in their most up-to-date publicly available version by the UK government's Department for Environment, Food and Rural Affairs (DEFRA). The Scope 2 emission factors adopted are a combination between IEA (International Energy Agency) Factors provided by Hitachi Ltd. and used at a Group level, and, where available, at sites supplied with green energy, market-based factors of EU AIB (Association of Issuing Bodies) origin or directly from national energy providers. For what concerns Scope 3 emission calculation methodologies, further details are provided in the methodological note.
[20] Additional details can be found in the Methodological Note. For this reason, the total amount of Scope 3 emissions for FY2021 reported in the following table differs from that published in last year's Report.
[21] SOx, NOx and CO values were estimated from the consumption of natural gas and diesel for energy production, using EEA emission factors. The emission factors used were those of "Commercial/institutional plants" (1.A.4 Small combustion 2019) for offices and those of "Manufacturing industries and construction" (1.A.2 Combustion in manufacturing industries and construction) for production sites and maintenance centers. Volatile organic compound values and Volatile Inorganic Compounds were aggregated from direct measurements at the Batesburg, Kasado, Napoli, Newton Ayclifee, Pistoia and Reggio Calabria production sites.

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5.2.3 Sustainable Mobility

Hitachi Rail has set concrete targets as part of its medium-term roadmap based on achieving emission reductions through direct action both within operations and throughout the value chain to produce high quality products, solutions and operations, service, and maintenance.

Hitachi Rail supports these goals through its Decarbonisation Pathway and reducing employee-commuting emissions. It has appointed a single Mobility Manager for Hitachi Rail's Italian sites to promote initiatives aimed at reducing emissions related to the home-work journey of employees, encouraging the use of local public transport, and vehicle sharing.

Hitachi Rail Travel / Corporate car sharing

Hitachi Rail provides electric car sharing between employees of the same Organisation helping to reduce CO_2 emissions related to employee travel. Starting from a pilot project that took place in the Naples site, Hitachi Rail is working to make electric cars available to all employees for travel and business trips between Hitachi Rail sites and other local mobility points (Airport, Railway Station, Hub car parks).

Corporate Car-Sharing

During FY22, in the offices of Naples, Pistoia and Genoa, Hitachi Rail introduced a Corporate Car Sharing System for its employees to commute for business trips or to local mobility points.

This service is available to all employees as an alternative to taxis and private cars, even for short business trips (same-day services, visits to suppliers or construction sites), with return within the same day to the dedicated parking areas of the site to which they belong.

To take advantage of the Corporate Car Sharing Service, employees simply need to download the "Green Sharing" app or register on the dedicate website. Through the app, they can book an electric vehicle, which can be picked up and returned free of charge in the special green areas based in Hitachi Rail's headquarters or in the dedicated areas around the city, suitably marked on the app with a special Green Zone logo. Hitachi Rail only selected electric vehicles to run the service and reduce polluting emissions.

Based on the pilot, the service will eventually be offered to all Hitachi Rail employees and will be designed for specific local needs.

The scope of such project does not only achieve a reduced environmental impact in reducing emissions, but it also improves corporate welfare, cost containment and facilitation of travel services and service activities.

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Mobility (Travel for Business)

Following the impacts of the COVID-19 pandemic, and subsequent slowdown of business travel, this year's goal was to reintroduce business travel y through a global gradual recovery of both national and international trips within safety, security, and sustainability guidelines.

At the same time, Hitachi Rail has given great relevance to sustainability prioritising the environment and monitoring environmental impact of all business travels:

- Hitachi Rail relies on business agreements with major airline companies who are distinguished for their efforts to reduce their impacts on the environment and promotes stays in green and sustainable hotels;
- it is working on the harmonisation of its travel policy to provide global guidelines to its employees to book and organise their business travels with greater awareness of safety, security, and sustainability criteria, using a self-service booking tool.

Sustainable mobility (home-to-work) - Hitachi Rail sites

During FY21, the Hitachi Rail launched the first multi-site survey on mobility in the six Italian sites. The survey was run once again during FY22.

The aim of the survey was to detect the mobility habits of employees related to their home-work-home journey and to respond with alternative mobility solutions based on the results obtained through the platform. The participation in the survey was successful and allowed Hitachi Rail to estimate CO_2, NOx, PM10, and VOC emissions related to employees' home-work-home journeys.

It used the COPERT method (Computer Programme to Calculate Emissions from Road Transport) to estimate the amount of pollutants released into the atmosphere:

	FY22	
	u.m	Tot. Emissions
Emissions CO_2	[ton/year]	3,707.41
Emissions CO	[ton/year]	57.45
Emissions VOC	[ton/year]	6.92
Emissions NO_x	[ton/year]	11.02
Emissions PM_{10}	[ton/year]	0.95

The CO_2 data gives an emission ratio for the surveyed Italian employees of 1.11 tCO_2e/year per capita. The main actions identified to reduce the above-mentioned emissions are:

- contacts with individual local mobility companies (LPT);
- verification of framework agreements for incentivised purchases of electric bicycles;
- car-pooling apps;
- if applicable, possible structural improvements to encourage the use of bicycles (e.g., increasing the number of bike racks with possible electric recharging);
- gamification (virtual competition between employees regarding mobility habits).

As a result, Hitachi Rail launched a pilot project consisting of a Mobility HUB of shared services for employees in collaboration with local institutions on the Naples site. It also continues to promote and enable remote working to support the reduction of pollution by employees travelling to work and back to their homes at Hitachi Rail sites all around the world.

Promoting Sustainable Mobility

Among the different ways that Hitachi Rail uses to incentivise the promotion of low-emission transport there is the development of the E-Charge project.

E-Charge is a project developed by Hitachi Rail to provide employees with an innovative electric vehicle charging service. Electric charging stations are available at the parking lots of all Hitachi Rail corporate offices in Italy.

To date, 69 charging stations have already been installed in Naples, Genoa, Pistoia, Piossasco, Tito Scalo, and Reggio Calabria, with a total of 138 electrified stalls.

Through the app E-Charge one can enter the payment method wished and start and/or end the recharge directly with a click. For Hitachi Rail employees, having an electric vehicle means saving time, money, and emissions. Hitachi Rail is proud to be able to provide mobility solutions and alternatives that incentivise a strong cultural change towards a greener world.

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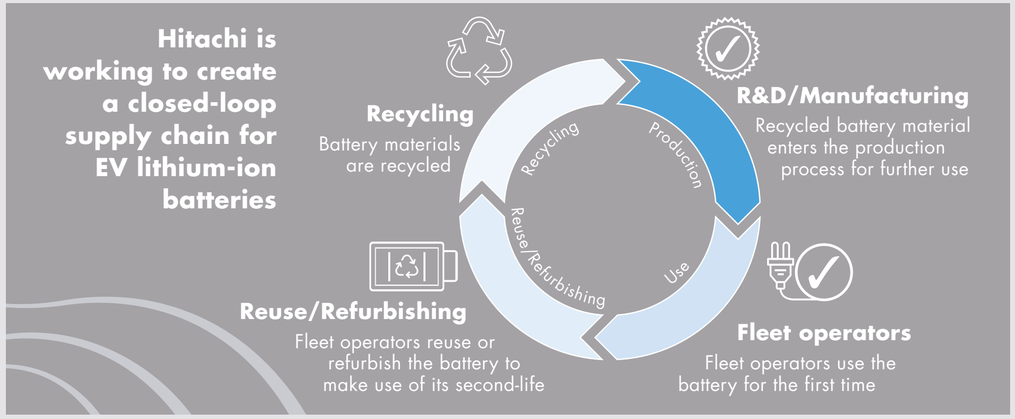
5.3 Circularity, Innovation and Resources Management

Circularity represents an ongoing challenge in the current economic model of production and resource consumption. For companies, material conservation, product longevity through repair and reuse, and eventual recycling are no longer optional choices but imperative necessities. Embarking on a circular business model demands a radical shift, an endeavour that Hitachi Rail has been actively embracing for several years. Developing circular products or strategies necessitates innovative thinking, substantial investment, and meticulous research.

Governance of natural resources

Hitachi Group has established targets to minimise its impact on natural capital as part of its long-term environmental targets. Hitachi Rail is responding to the shift from linear to circular economy by working with customers and society to create higher economic value, designing and promoting use of less and pursuing products and solutions, as well internal processes and activities, with a reduced environmental burden. The enabler for achieving this is, again, technology: Hitachi Rail's knowledge transfer between research and business is a priority in ensuring responsible resource management that balances the use of traditional and alternative sources according to their availability, renewability, affordability, sustainability, and environmental impact.

Hitachi lithium-ion batteries to be part of closed-loop supply chain



Circular economy is key to the plans for train batteries. The lithium-ion batteries that power vehicles will be part of a closed-loop supply chain. Each battery can be deployed for eight years on fleet, then the Organisation will extend their valuable life by integrating into line side equipment on railways, in Hitachi Rail's own factories or supply the growing after sale market. Once batteries reach the end of their first and second-life usage, they will be recycled and put back into production.

Hitachi Rail produces highly recyclable trains, with some cases achieving above 95% recyclability. The Organisation also effectively recovers a significant portion of materials during maintenance operations and refurbishes and reuses components from older products in new ones.

In addition, Hitachi Rail adopts a reverse-logistic approach to manage the end-of-life phase of trains, further contributing to circularity. To maintain its role as an innovator, Hitachi Rail has undertaken a project to assess its circularity level and benchmark it against a model of Circular Economy implementation maturity.

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Circular Economy Project

Hitachi Rail incorporates the concept of the Circular Economy within its Environment and Quality Management Systems at production sites in which the relevant certifications are managed.

The **Circular Economy Project** allows Hitachi Rail to evaluate the opportunity-cost of alternative business models in terms of socio-economic (Life Cycle Cost, Social Life Cycle Assessment) and environmental impact (Environmental Life Cycle Assessment).

In recent years, the market dynamics in this sector have shifted towards increased customer demand for turn-key transportation solutions that efficiently meet the needs of local and national institutions. This demand requires comprehensive support throughout the project's entire life cycle, as customers are increasingly regarded as partners rather than mere buyers.

Detailed information on the material content of each component is provided to facilitate recovery and recycling operations by asset owners[22]. Furthermore, Hitachi Rail's commitment to sustainability is demonstrated through the publication of several **Environmental Product Declarations** (EPDs) and Carbon Footprint Disclosures, showcasing progress towards product recyclability, recovery, and other environmental impacts.

Sustainability Exibition 2023, Milan

[22] In some cases, suppliers request the return of resulting materials in their contracts, such as aluminium from window cuts, which are then reused in their production processes. Other instances involve selecting disposal partners through tender procedures, negotiating the purchase price of resulting materials, particularly in maintenance processes, where valuable materials from spare parts are retained at the end of their regenerative cycles.

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5.3.1 Product Innovation and Eco-Design

At Hitachi Rail, innovation follows a structured process that entails a rigorous approach, relevant needs assessment, clear objectives and activities, driven by customer needs. Through an "open innovation" approach, it develops and tests new solutions and technologies to demonstrate their effectiveness in meeting these while assuring positive impacts on the business and community. It creates prototypes of new products and solutions that, together with the associated skills, enrich the future product portfolio through collaboration with engineering and development departments.

From 2024, all new Hitachi Rail's products will be developed using **Life Cycle Assessment** and an Eco-Design perspective: recognising that 80% of a product's environmental impact can be affected by the design phase. The approach means building an inventory of materials used throughout the entire lifecycle, from raw material extraction to train decommissioning. It prioritises recyclability, environmental impact, and energy consumption from the outset of the process, and includes production and maintenance processes that valorise waste or spare parts that have reached the end of their life. Using LCAs for rolling stock design since 2005 has been a significant undertaking, given the complexity of trains with approximately 110,000 different parts.

Eco-Design Strategy

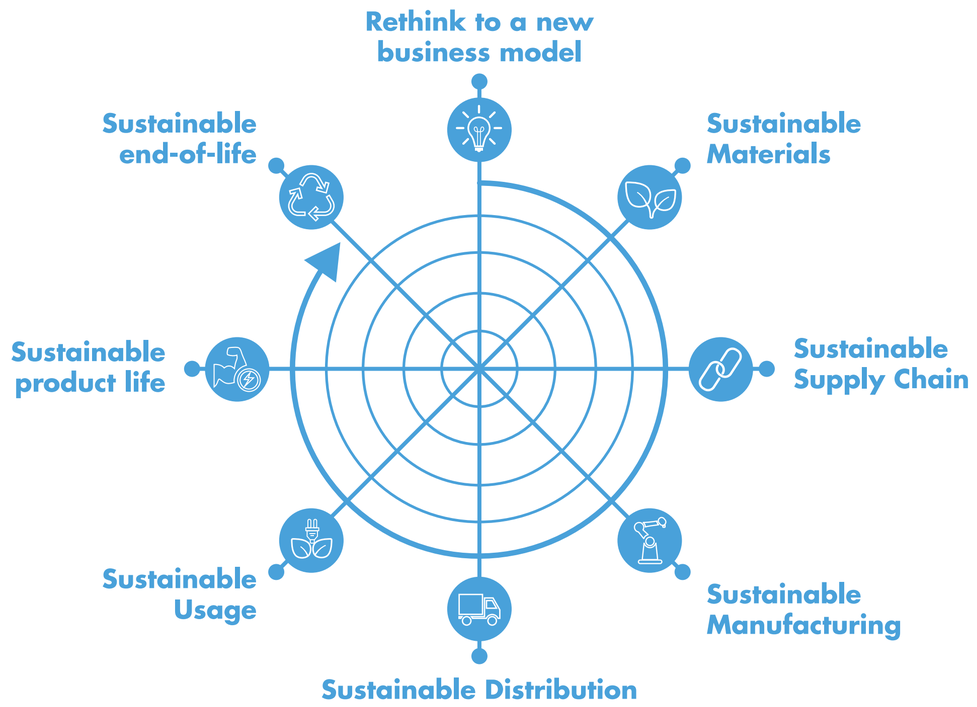
Eco-Design or "sustainable design" sensitively improves product design for the purpose of disassembly, repairability, recovery, recycling, including a large set of techniques that are also applied to Circular Economy, going beyond the creation of a "green" product, aiming to meet the needs of consumers in a sustainable way. Companies that incorporate Eco-Design into their long-term product innovation strategies strive to alleviate negative environmental, social, and economic impacts in the product supply chain and throughout its life cycle.

All the possible solutions for a "sustainable" product are easily generated by adopting the Eco-Design Strategy Wheel, which illustrates the eight main directions to follow to achieve improvements.

Hitachi Rail pursues its Eco-Design Strategy through the improvement of performance when using the rolling stock. All the LCA studies conducted on local and regional trains, high-speed trains, trams, and subways have shown that most of the environmental impacts are due to the operational and maintenance phase of the rolling stock. The electricity mix that feeds the grid affects the results, but reduction of energy consumption remains a primary objective to be pursued. Hitachi Rail is therefore focused on reducing energy consumption during the operational phase:

- weight reduction;
- improved aerodynamical performance of car bodies and bogies;
- HVAC adsorption;
- lighting efficiency.

Eco-Design Strategy Wheel



While the production of parts and components has minimal environmental impact compared to the overall impacts of the railway vehicle in its life cycle, Hitachi Rail's Eco-Design Strategy also addresses upstream stages to further reduce overall impacts. It has launched a dedicated procedure to guide the eco-design process incorporating LCA from the conceptual design to the preliminary and final phases. After conducting LCA, the results are shared with design members to achieve the following objectives:

- evaluate the attainment of train performance objectives;
- identify critical points contributing significantly to environmental impacts throughout the life cycle;
- explore alternative materials to reduce environmental impacts for incorporation in the project's subsequent review.

In the Eco-Design process, each Legal Entity compiles a list of train parts significantly contributing to the carbon footprint and selects potential suppliers required to provide EPDs or carbon footprints for these parts. Suppliers entering supply contracts commit to provide materials and weight details for LCA review during the Detailed and Final design phases.

Furthermore, the Eco-Design function requests process owners to communicate changes, such as:

- train weight matrix;
- refinements in design for sub-groups/ equipment/parts, including possible material sheets from suppliers;
- supplier-related changes (origin/ components);
- worked hours and resource consumption (energy, auxiliaries) or waste production (air emissions, water discharge, solid waste) in each involved plant for specific projects;
- simulation results (e.g., improved power equipment performance, energy recovery systems, product mass reduction, optimised auxiliary consumption, enhanced aerodynamics);
- issuing or changing predictive maintenance plans.

The LCA tool is used recursively to assess proposed solutions for reducing environmental impacts from previous phases. For supplies involving metal parts (aluminium, steel, and copper), Hitachi Rail asks suppliers for declarations regarding recycled content to customise production processes and reduce ecological footprints. Hitachi Rail involves the supply chain to gather information on recyclability rates and recycled content, aiming to increase circularity of trains.

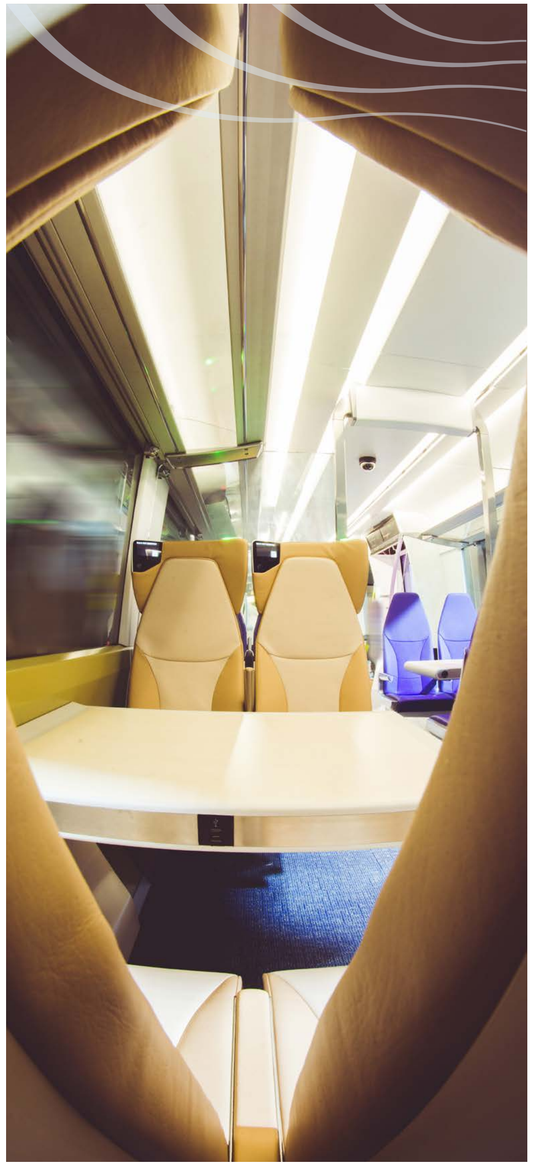
Industry first: Social LCA in the lifecycle of a train

Social Life Cycle Assessment (S-LCA) is a method used by Hitachi Rail to assess the social and socio-economic aspects of its products and their impacts along their life cycle, in alignment with the Sustainable Development Goals (SDGs).

The company aims to understand the social impacts related to labor conditions and human rights and improve its communication on these matters.

Hitachi Rail is the first in the railway industry to apply S-LCA to a train's life cycle, particularly the Blues Train.

The project's goal is to create a Social Product Declaration (SPD) following ISO 14025 guidelines to communicate the social impacts of the product's life cycle to stakeholders. This initiative demonstrates Hitachi Rail's commitment to sustainable production and consumption while promoting transparency and positive social impacts in their products and services. The study was conducted with support from Circular S.r.l and various internal departments.



Hitachi AT200_First Class

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Hitachi Rail Eco Design Projects in FY22

PROJECT	DESCRIPTION
BSI PAS 2080 Certification on Design of Product & Services	HAH-S, a joint venture company between Hitachi Rail, obtained the **BSI PAS2080 Carbon Management certification for the HS2** Project related to a High Speed Train operating on the UK market. BSI PAS 2080 is the world's first standard for infrastructure carbon management and is critical to helping companies reduce carbon use and costs. PAS 2080 certification was required by the contracting station even if the train is not part of the infrastructure. At present, the conceptual design review has been completed and the next phase of the train's preliminary design is being finalised. The certification was issued by an external body and all activities carried out by HAH-S were coordinated by the Hitachi Rail team. The HAH-S design team leader was involved during the verification and asked to demonstrate that the hot spots, in terms of the train's carbon emissions, had been discussed by the design team to find an alternative design solution for reduce them. For the next certification surveillance audit, Hitachi Rail expects the audit team to request a possible alternative design solution to reduce the carbon footprint of the HS2 train. It was confirmed by BSI that **Hitachi Rail is the first Rail Manufacture in the world to obtain this certification and covers all Rolling Stock Products and Services**.
S-PCR releasing for Rolling Stock	Hitachi Rail has carried its first project on Social life cycle assessment (S-LCA) in 2022. It represents the first assessment of positive and negative social impact of a train along its life cycle. The Train assessed was the HTR 412 Blues and In this project Hitachi Rail has been supported by Circular S.r.l. To follow up on this project directly after the development of the S-LCA, a furthermore innovative project has been started with the aim to develop **the first Social Product Category Rules (S-PCR) worldwide**. The project was again supported by Circular S.r.l. and required the involvement of the International EPD System (Environdec.com) as a provider platform. Indeed, until today, a product declaration according to the ISO 14025 was possible only to evaluate and certify the environmental impact of a product. That is the reason why Hitachi Rail and its Ecodesign Team have decided to develop for the first time (worldwide) the first social product declaration of Rolling Stock product group and allow to certify the social impact of its products and complete the sustainability assessment of them. The project started last year, and it will be finalised by the end of 2023. The S-PCR draft has been already gone through two consultations process to get inputs and feedback from stakeholders of the rolling stock sector and experts on S-LCA. A few comments have been received and the S-PCR is now in the final editing phase. The publication of the S-PCR of Rolling Stock represents **a milestone in the communication tool for social impact assessment, it covers an important gap**. From now on, other companies in the sector of Rolling Stocks can assess the social performance of their train and improve their performance in a consistent manner as well as other companies can develop its own S-PCR of their products.
EPD Certification HS2 Project	EPD certification of the HS2 train will be obtained in the near future. Once the final design review is released, Hitachi Rail will be able to update the LCA model already implemented on the SimaPro platform for PAS 2080 purposes to issue the final release of the Life Cycle Assessment. According to relevant PCR (Product Category Rules) Hitachi Rail will prepare EPD (Environmental Product Declaration) for B2B communication. The LCA and corresponding EPD will be verified by a third party certification body and then published by the IES (International EPD System) programme operator on the website www.envnrondec.com.
Circular Economy Business Model Implementation	Hitachi Rail faces a significant challenge in implementing the circular economy business model. Traditionally, the manufacturing industry followed a linear economic model, starting with raw material extraction, product creation, and eventual disposal as waste (*Take-make-use-dispose model*). Given limited resources and population growth, this model is no longer sustainable. The circular economy, a subset of the green economy, prioritises protecting natural resources, efficient usage, and waste reduction. Hitachi Rail's Eco-Design team leads the way in adopting a circular economy-based development model, starting with the Italian driver. Key activities undertaken include: • identifying value chains and processes from a Circular Economy perspective; • mapping relevant business processes for Circular Economy implementation; • analysing material flows; • assessing market trends and regulatory developments related to Circular Economy; • developing a Maturity Model and Implementation Plan. Now, the team is integrating this information into their processes, including: • technical specifications for purchasing; • warehousing and logistics; • waste management guidelines; • sharing customised packaging approaches.

Innovation Projects

In Hitachi Rail, the **Research & Development Function** gives priority to those projects that best meet the sustainability requirements and the most innovative needs of Hitachi Rail's customers and their own customers. From this process, one important framework project was created: **"Zero Infrastructure"**. This framework encompasses projects aimed at eliminating parts of the physical infrastructure such as servers and power and telecommunications cables alongside railway lines. This will allow Hitachi Rail to provide solutions with less equipment and consequently that consume less. In the case of physical equipment still needs to be powered, green alternative sources of energy are used together with batteries and capacitors. In addition, this solution also reduces the cost of operating and maintaining the railway. The projects within the "Zero Infrastructure" framework are:

- the creation of alternative green power sources to power the signalling systems along the line;
- the study and design on the use of cloud computing in signalling and automation systems, including the implementation of Verification and Validation laboratories on the Cloud;
- the use of wireless communications to connect the signalling systems installed along the line with the central station.

In 2022 Hitachi Rail was granted a patent for implementing safety critical systems on Cloud and a prototype on cloud interlocking based on such patent was tested on an actual train station even if not in operation. While the Zero Infrastructure programme can contribute to several objectives such as building resilient and sustainable infrastructures reducing waste, use of raw materials, energy consumption and, indirectly, use of land by reducing the need at Hitachi Rail clients' sites for dedicated space for its equipment, the **S4M programme** on the other hand mainly focused making transport systems more attractive, reliable, convenient and safe for passengers.

Another key focal point of Hitachi Rail innovative activities is on Automated Maintenance and Intelligent Asset Management. As an example, within Europe's Rail, Hitachi Rail is one of the main partners and Project Manager of the **IAM4RAIL project**. This is focused on the integration of asset condition information, obtained via advanced and non-intrusive monitoring systems, both with decision-making tools and with the traffic management system (TMS). IAM4RAIL aims to improve the sustainability of the railway industry with the development and demonstration of an **Intelligent and Integrated Rail Asset Management System (IAMS)** covering fixed and rolling stock assets, minimising the life cycle costs of assets and extend their lifetime, while meeting safety requirements and improving the reliability, availability and maintainability of the rail system. IAM4RAIL will pave the way for the integration of asset condition information and TMS, enabling optimisation of train routing decisions and improving the overall lifecycle of monitored assets. It will ensure an increased volume of rail traffic in existing lines with improved cost efficiency and lower CO_2 emissions from their maintenance and operations. Furthermore, construction time and cost of new assets and lines will be reduced, the durability and reliability of their assets increased, and their life cycle costs optimised.

North Pole

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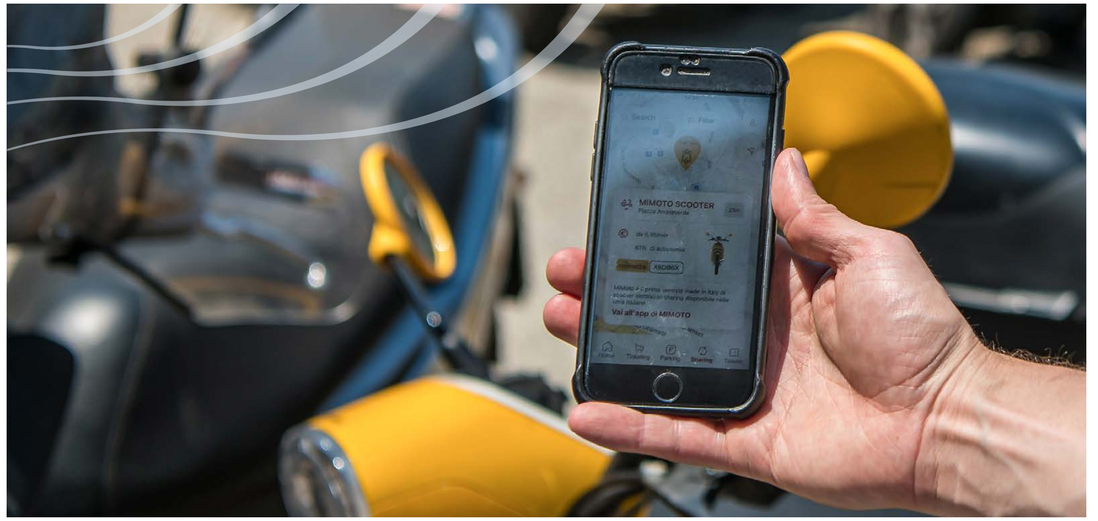
Smart Mobility

Hitachi Rail is actively focusing on **Smart Mobility** to meet customer demands for efficient operations, improved services, sustainability goals, and increased passenger attraction. It established the **Digital & Lumada Solutions** (D&LS) line of business in 2022, collaborating with Hitachi Group companies like Global Logic and Hitachi Energy developing a suite of Lumada-centric solutions known as the Lumada Intelligent Mobility Management suite.

The Smart Mobility Solutions framework aims to create value-added services for enhancing public transport operations and passenger appeal. It facilitates the transition from private to public transport, reducing environmental pollution and supporting sustainability targets, including E-Bus implementation. The suite offers an integrated solution for efficient E-Bus operations. The solutions created to this aim are:

- **360Pass:** this solution enables passengers to experience a hands-free ticketing technology in a multimodal transportation environment, while collecting data to support operators to improve their service (e.g., timetable optimisation);
- **360Flow:** it is dedicated to analyse the flow of passengers within the transportation network, collecting insights that are precious to the operators to understand the usage of their network and maximise the comfort of their passengers;
- **360EV:** Operation Management for e-Buses, it collects information from electric vehicles (supported by Hitachi Energy solutions), creating an integrated environment to offer to the operators all the information they need to effectively run electric fleets;
- **360Motion:** it integrates information coming from multiple transportation services and from the other applications of the LIMM suite; it uses advanced AI algorithms to create value added services to support city planners, bus operators, and rail operators in optimising public transport networks in real-time, enabling scenario planning and predicting and managing future disruptions.



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5.3.2 Circular Economy in Hitachi Rail: Materials and Waste

Hitachi Rail is very aware of the contribution that an efficient consumption of raw materials can give in terms CO_2e emission reduction. The Organisation promotes the reduction of the intensive use of raw materials in line with the OECD Council principles and its sustainability roadmap.

This commitment is reflected through the reliable quantification of the raw materials used, and strives for increasingly standardised designs that can lead to an overall reduction in the direct and/or indirect consumption of raw materials.

MATERIALS AND SUBSTANCES[23]	FY21	FY22
Alluminium	**12,431**	**10,832**
Alluminium - new material [t]	9,689	8,651
Alluminium - recycled material [t]	2,743	2,181
Steel	**2,283**	**3,469**
Steel - new material [t]	2,283	3,469
Steel - recycled material [t]	-	-
Copper	**62**	**78**
Copper - new material [t]	62	78
Copper - recycled material [t]	-	-
Iron	**1**	**0**
Iron - new material [t]	1	0
Iron - recycled material [t]	-	-
Liquefied compressed gases - tot	**1,256**	**950**
Nitrogen [t]	60	39
Argon [t]	736	568
Carbon dioxide [t]	18	15
Oxigen [t]	119	110
Other [t]	323	219
Paints (water based) **[t]**	**263**	**243**
Oil [t]	**3,517**	**7,629**
Glues and adhesives [t]	**7,006**	**15,734**

For the reporting period under assessment, the materials and substances used are listed in the table. While consumption clearly varies depending on the work commissioned, the higher decreased was linked to nitrogen (-35%) and the higher increased was linked to glues and adhesives.

[23] Due to a methodological change in data collection the data presented in the table for FY2021 differs from the one of CSR&S Report 2022.

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Waste

Hitachi Rail's internal policy is to reinforce the principle of re-use, recycling, and recovery of waste. All sites have waste collection areas based on the type of waste and site layout. External specialist companies collect and process hazardous and non-hazardous waste. For a detailed picture of Hitachi Rail's waste cycle, refer to the following points:

- **Inputs:** Hitachi Rail, through its office, production, maintenance and construction sites activities purchases services, products, production materials for the construction of trains and railway signalling;
- **Activities:** Hitachi Rail's activities that generate non-hazardous and hazardous waste include office activities, train manufacturing, railway bogies, railway signalling, train maintenance activities and plant maintenance;
- **Outputs:** waste indirect outputs are generated by the activities carried out by companies working at Hitachi Rail's sites and/or construction sites (e.g., maintenance activities, painting, installation of cabinets, etc.) and by supply logistics;
- **Upstream generation:** waste generated upstream is generated and managed by third-party suppliers who supply materials/ semi-finished products (e.g., electronic boards, railway signals, train carriages, components for engine assembly, etc.). This includes packaging, plastic, cardboard, paper, electronic waste and scrap metal;
- **Operations:** waste generated by Hitachi Rail's own operations includes both hazardous and non-hazardous waste. Non-hazardous waste includes plastics, wood, cardboard, paper, electronic waste, scrap metal, and mixed waste. Hazardous waste includes batteries, solvents, chemicals, degreasers, and sludge. Hitachi Rail manages the waste generated, both hazardous and non-hazardous, by its activities through authorised companies;
- **Downstream generation:** waste generated downstream is the result of the distribution and installation of trains and railway lines.

Continuous efforts are made to minimise waste in Hitachi's manufacturing facilities, with priority actions as follows:

- separate waste and, if possible, recycle it;
- reduce the production of plastic *(Plastic Free Project)*;
- inform and train personnel on reuse, through signs, articles, posters, etc.

During FY22 Hitachi Rail used new technologies to reduce organic material waste while creating thermal and electrical energy. It made a further investment in a furnace in Newton Aycliffe, which burns wastes obtaining heat to use on the site. And, across the world, Hitachi Rail continues to promote green initiatives on all sites:

- the use of bio waste bags in offices to reduce landfill waste and to increase recycling;
- the elimination of plastic resetting water bottles in all Italian canteens (achieved plastic waste reduction by 12% and the avoidance of 3.6 plastic tons of waste);
- the use of re-usable and biodegradable products in India and Sweden (glass bottle and cups replaced by ceramic ones which allowed for a reduction of 10% of waste compared to the previous year);
- the evaluation of suppliers to sell waste such as iron, copper, ropes, aluminium, and steel.

Across Hitachi Rail's supply chain, its suppliers – who mainly generate construction site waste during installation – continue their commitment to reduce the amount of packaging waste that occurs when semi-finished products are delivered.

The following table provides details on the waste produced at the production sites and offices, with specification of disposal method.

WASTE PRODUCTION[24]	PRODUCTION SITES AND TRAIN MAINTENANCE CENTRES		OFFICES		TOTAL	
	FY21	FY22	FY21	FY22	FY21	FY22
Non-hazardous [t]	**11,290**	**11,174**	**624**	**644**	**11.914**	**11.818**
% recycled	92.1%	91.1%	13.5%	17.0%	88.0%	87.0%
% incinerated (mass burn)	6.3%	7.2%	0.9%	1.4%	6.0%	6.9%
% disposed of in landfill	1.6%	1.7%	85.5%	81.6%	6.0%	6.1%
Hazardous [t]	**756**	**885**	**7**	**8**	**762**	**894**
% recycled	80.7%	72.7%	95.2%	43.1%	80.8%	72.4%
% incinerated (mass burn)	8.7%	14.6%	0.0%	8.3%	8.6%	14.5%
% disposed of in landfill	10.6%	12.7%	3.3%	48.6%	10.6%	13.1%

[24] Due to a methodological change in data collection the data presented in the table for FY2021 differs from the one of CSR&S Report 2022.

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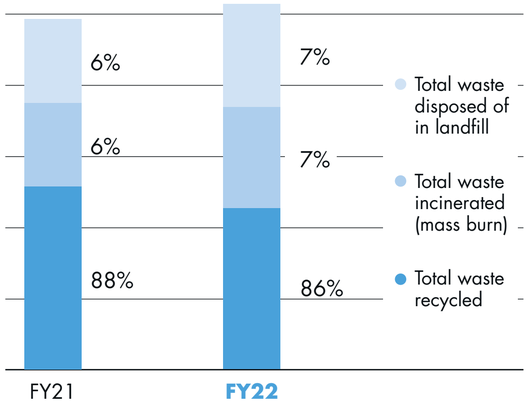
As of FY22, the total waste production amounted to 12,712.24 tonnes, an increase of 28% compared to the last reporting year mainly due to the new paint system installed at the production site Newton Aycliffe.

Approximately 86% of the total waste is recycled, with peaks of 91.1% in the case of non-hazardous waste from production plants and maintenance centres. Looking into the trend of waste production by type of waste, it can be noticed that:

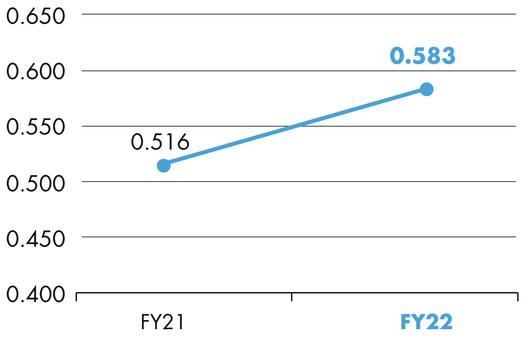
- total Non-Hazardous Waste decreased by 1% (from 11,914.37 to 11,818.47 tonnes);
- total Hazardous Waste increased by 17% (from 762.14 t to 893.77 tonnes).

Total waste by disposal method



The KPI concerning the kg of waste produced per hour worked, shown in the graph below, highlights an increase of about 13%, in view of the decrease in the total hours worked.

Kg of waste produced per hour worked



Towards a Plastic Free World

Hitachi Rail is committed to a "Plastic Free" world. As such, during FY22, the Organisation has provided a Freebeverage® service to all its canteens in Italy, where employees can find free self-service dispensers with microfiltered water and healthy and high-quality beverages. It is possible to consume these beverages during lunchtime using a special multi-use cup several times before disposal. The dispensers installed at the Freebeverage® stands feature high eco-friendly performance, such as the energy class A++ and the contact free system, for contactless beverage withdrawal.

Moreover, to achieve the goals of "Plastic Free", Hitachi Rail provided its employees with the latest generation of Water Bottle. These initiatives allow for the almost complete reduction of the waste production of water and beverage packages as well as to the limitation of environmental costs for their transportation.

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5.3.3 Water and Effluents

Hitachi Rail is aware that it can continually improve water quality by reducing pollution, eliminating waste, and fighting the release of chemicals and hazardous materials, halving the percentage of untreated wastewater and substantially increasing recycling and safe reuse.

To minimise the impacts on water caused by its activities, Hitachi Rail invests continuously in the improvement of the internal management of water resources, through the adoption of new technologies, dissemination of internal knowledge and implementation of good practices through the application of the LCA.

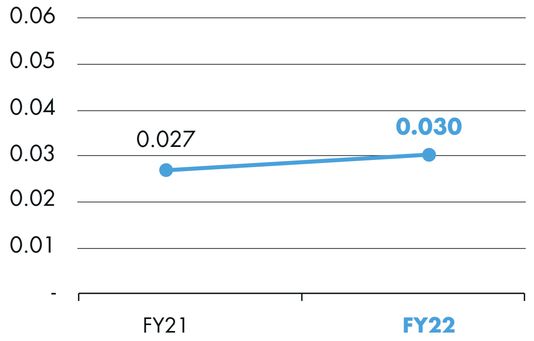
Hitachi Rail assess its water-related impacts on business sites through the ISO 14001 certified Environmental Management System and for its products through Life Cycle Assessment (LCA), internationally standardised methodology aligned to ISO 14040, 14044. Both approaches help to quantify the environmental pressures related to products, services and operations, the environmental benefits, the trade-offs and areas for achieving improvements considering the full life cycle of our activities. These approaches also consider local legislative and contractual requirements.

During the FY22 reporting period, the trend in water consumption has remained quite stable, registering an increase of around 3%.

While water consumption has remained stable, reported wastewater has increased by 18%, in part because of the increased presence of employees in office during FY22.

To consistently evaluate consumption trends year on year, Hitachi Rail also calculates consumption in comparison with hours worked. In FY22, the KPI showing the total water withdrawal per hour worked has increased of around 12%, not least because of the decrease in the number of total hours worked.

Total water used on site per hour worked



The management of water discharges is under the control of the Facility Function, which with HSE defines the control and monitoring standards in relation to the applicable law.

WATER USED[25]	PRODUCTION SITES AND TRAIN MAINTENANCE CENTRES		OFFICES		TOTAL	
	FY21	FY22	FY21	FY22	FY21	FY22
Total water used on site [m³]	**587,450**	**606,152**	**58,108**	**55,632**	**645,559**	**661,784**

[25] Due to a methodological change in data collection the data presented in the table for FY2021 differs from the one of CSR&S Report 2022.

All discharges, including those originating from indirect activities, are managed by Hitachi Rail and it periodically carries out chemical/physical/biological control analyses to verify the quality of the water before discharge. The management of these controls is defined in Corporate procedures.

WATER DISCHARGE[26]	PRODUCTION SITES AND TRAIN MAINTENANCE CENTRES		OFFICES		TOTAL	
	FY21	FY22	FY21	FY22	FY21	FY22
Total volume of domestic or sanitary wastewater inflow in the wastewater stream before treatment [m^3]	243,266	291,420	19,230	17,931	262,496	309,351
Total volume of industrial wastewater produced on site [m^3]	1,690	1,672	-	-	1,690	1,672
Total water discharged [m^3]	**244,956**	**293,092**	**19,230**	**17,931**	**264,186**	**311,023**

A noteworthy practice related to water use is the water management of the Kasado site. Kasado has already met the Corporate water reduction target set for 2050, consisting in a 50% improvement of efficiency in use of water compared to 2010. It has done so by developing the following water cycle:

- water is taken from a close river;
- water is purified and tested;
- water is used in the plant for industrial purposes, but also for drinking and cleaning;
- after the use, water is tested one more time and then released into the ocean.

Thanks to this cycle, 95% (around 240,000 m^3 per year) of the total water taken from the river comes back to the ocean. At Hitachi Rail several measures have been implemented to manage water risks, such as:

- improvement of processes and equipment to verify consumption and discharge: Enhanced monitoring of water consumption through dedicated water meters;
- smart meters have been installed in several sites (like All UK sites, Pittsburgh, Batesburg, Baltimore, Beijing) and ongoing for Australia;
- implementation of Corporate and local procedures to define control and monitoring criteria;
- support from external laboratories for sampling;
- pre-treatment systems before discharge (biological, chemical-physical purifiers, collection, and pre-treatment tanks);
- automated water diffusion systems;
- awareness campaigns on the sustainable use of water resources.

[26] Due to a methodological change in data collection the data presented in the table for FY2021 differs from the one of CSR&S Report 2022.

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After the finalisation of the sustainability report on March 31, 2023, Hitachi Rail continued the path of being a leader in sustainability. Below are some of the major initiatives that have taken place since the end of FY22.

Recognition of the environmental standards achieved: PAS 2080 certification

On September 5, 2023, Hitachi Rail published a press release to announce its PAS 2080 certification, becoming the first train manufacturer to attain world leading environmental design accreditation.

Hitachi Rail has become the world's first train manufacturer to attain the PAS 2080 carbon reduction standard for the design, manufacture, and operation of the 100% electric High Speed 2 (HS2) fleet in the UK. PAS 2080 is globally recognised as one of the leading environmental standards in infrastructure design and manufacturing.

The British Institute of Standard (BSI) awarded the certification following verification of Hitachi Rail's whole-life carbon analysis of the fleet, which includes assessment of carbon management or reduction during design, procurement, manufacturing and operations.

Meeting the global PAS 2080 standard requires Hitachi's HS2 fleet to maintain a very low carbon footprint. CO_2 emissions per passenger of the train will be 90% lower than taking the same journey via car or plane. These emission savings will reduce further as the UK electricity grid decarbonises.

To achieve PAS 2080, Hitachi Rail focused on:

- Reducing the energy consumption of the trains while in operation by making aerodynamic improvements to the car body and bogies, improving the efficiency of power supplies and air conditioning systems
- Reducing the weight of the trains, in the car body, bogies and wheelsets, and in internal and external cabling
- Increasing the proportion of recycled and recyclable materials across most components.

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New train factory in USA

Hitachi Rail's new $70 million train factory and 800-yard test track in Hagerstown, Maryland, has garnered attention for its potential to significantly boost rail transportation in the USA. Led by former CEO Andrew Barr, the team presented the final designs and construction progress to esteemed guests, including Maryland Governor Larry Hogan and Maryland Congressman David Trone, emphasising the project's positive economic impact. With the ability to sustain 1,300 jobs, including 460 employed directly by Hitachi Rail, the 41-acre site is poised to bring substantial economic benefits to Washington, D.C., Maryland, and Virginia.

The factory's focus on manufacturing trains of all types, starting with the new all-electric fleet of 8000-Series Metro cars for Washington, D.C., highlights Hitachi Rail's commitment to advancing rail transportation in the USA.

The appointment of Ryan Companies as the lead contractor ensures the project's smooth execution, with the factory set to be operational by early 2024. The facility's impressive capacity to complete up to 20 railcars per month in a single shift reflects the company's dedication to meeting the growing demands of the rail sector.

Hitachi Rail's investment in this new facility showcases their active involvement in improving passenger and freight rail transportation throughout the USA. From major signaling systems to new railway construction and support for rail freight firms, Hitachi Rail remains at the forefront of shaping the future of rail transport in the country.

Inauguration of the new Milan Metro line, M4

The first section of Milan's new M4 metro line, the blue line connecting Linate Airport, has been inaugurated. Currently spanning 5.4 kilometers with six stops, the line is served by 4-car trains built by Hitachi Rail, similar to those running on Copenhagen's renowned underground network.

The M4 line is equipped with Hitachi's CBTC technology, making it the first driverless application in Italy, ensuring precise stops at designated platform points. By June 2023, the line will extend to San Babila, and upon its completion in 2024, it will have 21 stations and cover 15 kilometers from Linate Airport to Lorenteggio, with San Cristoforo as the final terminus.

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Methodological Note

This document is the fourth ESG Report of the companies belonging to the Hitachi Rail Business Unit of Hitachi Ltd. (also referred to as "Hitachi Rail" or "Organisation") consisting of Hitachi Rail Ltd. and its fully consolidated subsidiaries and the Rail division of Hitachi Ltd. in Japan.

The ESG Report - published annually - is the tool with which Hitachi Rail communicates to internal and external stakeholders the commitments, strategy, management methods and results of the Organisation's sustainability activities, declined in their economic, environmental and social aspects. The objective is to enhance ESG awareness and consistently establish and implement effective actions and strategies.

The data and information in this document refer to the fiscal year 2022 (1st April 2022 to 31 March 2023). In order to ensure the comparability of data over time and to assess the development of activities, a comparison has been made with data for the previous financial year, where possible. Compared to the previous Report ("CSR & Sustainability Report 2022"), the reporting boundary has been expanded due to ongoing reporting refinements and organisational and production changes throughout the reporting year. There are no boundary restrictions for the human resources data. The scope of environmental data encompasses the performance of 46 sites in the 38 Countries in which Hitachi Rail operates. Excluded from the reporting scope to date are the Mito, Honolulu and Thessaloniki sites and all construction sites since the data collection system at these sites is currently under implementation. Finally, the health and safety data encompasses the performance of 70 sites in which Hitachi Rail operates. For more information, please refer to Chapter 1: Context and Identity, Section "Group Structure and Business".

Hitachi Rail has reported the information cited in this GRI content index for fiscal year 2022 with reference to the GRI Sustainability Reporting Standards, published by the Global Reporting Initiative (GRI). In particular, the new edition published in 2021 (GRI 1, GRI 2 and GRI 3) and that entered into force on 1st January 2023 and all the other applicable 2016 GRIs were used. For Disclosure GRI 403: Occupational Health and Safety, GRI 306: Waste, GRI 303: Water and Effluents the most recent versions have been considered.

To ensure a comprehensive understanding of Hitachi Rail's activities, performance, results and related impacts, additional information is disclosed in accordance with the general disclosure principle of maximum transparency. The Report covers information related to environmental, social and personnel issues, as well as aspects related to respect for human rights and the fight against bribery and corruption. In line with the GRI Standards provisions, the complete list of disclosures reported is presented in the "GRI Content Index" at the end of the document.

For the purpose of a correct representation of performance and to ensure the reliability of the data, the use of estimates has been limited as much as possible, which, if present, are based on the best available methodologies and are appropriately reported. In addition, any restatements of previously published comparative data are clearly indicated in the document.

As provided for by the GRI Standards Hitachi Rail updated the materiality analysis with a view to identifying the sustainability topics material for the Organisation. In particular, the contents of the Report were identified through a new materiality analysis process, well-updated compared to the analysis finalised in 2021 and incorporated in the documents of the previous two fiscal years. This update resulted from several drivers: the Organisation's increasingly ambitious and conscious positioning, the new reporting standards and sector best practices, and the commitment to proactively address emerging international regulations. This renewed process identified the most relevant sustainability topics for Hitachi Rail and its stakeholders through an engagement process, discussions, and consultations.

In particular, the engagement activity was the result of a comprehensive and structured analysis process, which began with an extensive desk analysis of the internal and external reference context. Subsequently,

the impacts related to each significant macro-topic for Hitachi Rail were identified, considering the impact of Hitachi Rail's activities on the environment and the impact of ESG issues toward the company.

The engagement process consisted of an engagement through surveys, addressed to different categories of internal and external stakeholders with dedicated questionnaires whose statistical significance was ensured through sharing with representative samples of respondents, and an engagement to the most relevant referents of the main structures of the Organisation through a dedicated workshop, with a live vote and brainstorming on the long list of individual impacts preliminarily identified. Additionally, Hitachi Rail also emphasises the close link between these topics and the UN Sustainable Development Goals (SDGs) and the related Targets, through a specific table that highlights the existing connection (see paragraph "Sustainability topics and contribution to SDGs"). The criterion that allowed the positioning of the SDGs was the alignment of each Goal with the most relevant associated topic.

The results of the materiality analysis was approved by the Sustainability Committee in June 2023. For more details see Chapter 2 "ESG Framework and Roadmap" Section "Materiality Analysis".

Consumption and Emissions

Consumption data were collected at the operational site level in the original unit of measurement. The conversion factors used for translating energy consumption into GJ are those provided by ISPRA (Italian National Institute for Environmental Protection and Research) in the "Tabella parametri standard nazionali" (Table of National Standard Parameters).

- **Scope 1**
  Scope 1 Direct GHG Emissions are of utmost importance for Hitachi Rail due to its commitment of reducing them 100% by 2030. Consequently, the Company is doing its best to track the Year-on-Year trend to identify the primary sources of emissions and the best solutions to mitigate them. The calculation structure and methodology follow the guidelines provided by the GRI 305-1, considering emissions conversion factors recognised by the international community and consistent Global Warming Potential (GWP) rates. Scope 1 emissions are calculated using the factors provided in their most up-to-date publicly available version by the UK government's Department for Environment, Food and Rural Affairs (DEFRA).

- **Scope 2**
  Also, Scope 2 Energy Indirect GHG Emissions are of paramount importance for Hitachi Rail due to its commitment to reducing them 100% by 2030. Hitachi Rail is doing its best to track the Year-on-Year trend to identify which facilities are responsible for the highest energy consumption. This enables the prioritization of future interventions (e.g., green energy production, phase-out of polluting technologies, modernization of the plants, etc.). The calculation structure and methodology follow the guidelines provided by the GRI 305-2, applying market-based calculation method which reflects emissions from electricity that companies have purposefully chosen. The methodology considers contractual instruments (e.g., Power Purchase Agreements) and energy attribute certificates (RECs, GOs, etc.). The Scope 2 emission factors adopted are a combination between IEA (International Energy Agency) Factors provided by Hitachi Ltd. and used at a Group level, and, where available, at sites supplied with green energy, market-based factors of EU AIB (Association of Issuing Bodies) origin or directly from national energy providers.

- **Scope 3**
  In line with last year's methodology, in order to account for the highest number of categories as possible, a hybrid calculation method has been adopted. This follows the hierarchic order provided by the GHG Protocol Guidelines, which has been applied following this logic:
  - Whenever the internally gathered values allow for an in-depth calculation methodology (e.g., distance-based method, waste-type specific method, etc.), more precise methods have been selected,
  - If not available, the spend-based method has been selected. This provides a high-level analysis based on the costs of purchased goods and services.

By applying the mixed method approach, it was possible for Hitachi Rail to confirm the extensive perimeter analyses and to identify the main sources of emissions, prioritizing future activities necessary to address them.

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Computation methodology for each emission category is specified below.

Emission category	Methodology
1. Purchased Goods and Services	Computation adopting a spend-based methodology. This category has been assessed using Environmentally Extended Input-Output (EEIO) emission factors. Emission factors, specific to the country and product or service provided by a supplier have been mapped to all expenditures made by Hitachi Rail. The categorisation and emission factor mapping of all activities has been reviewed and approved by Hitachi Rail's procurement team and the emission factors applied to the top 100 Suppliers by both spend and emissions were reviewed again to ensure the highest level of representativeness.
2. Capital Goods	Computation adopting a spend-based methodology. This category has been assessed using Environmentally Extended Input-Output (EEIO) emission factors. Emission factors, specific to the country and Capital goods provided by a supplier have been mapped to all expenditures made by Hitachi Rail. The categorisation and emission factor mapping of all activities has been reviewed and approved by Hitachi Rail's procurement team and the emission factors applied to the top 100 Suppliers by both spend and emissions were reviewed again to ensure the highest level of representativeness.
3. Fuel- and energy-related activities	Category not calculated.
4. Upstream transportation and distribution	Computation adopting a spend-based methodology. This category has been assessed using Environmentally Extended Input-Output (EEIO) emission factors. Emission factors, specific to the country and transportation mode provided by a supplier have been mapped to all transportation expenditures encountered by Hitachi Rail. The categorisation and emission factor mapping of all activities has been reviewed and approved by Hitachi Rail's procurement team and the assumed modes of transport for the top 50 transportation Suppliers by both spend and emissions were reviewed again to ensure the highest level of representativeness.
5. Waste generated in operations	Computation adopting a Waste-type-specific method using DEFRA emission factors: sum of the multiplication, by the respective conversion factor, of treated water and hazardous and non-hazardous waste, also broken down by disposal method (recycling, incineration, landfill).
6. Business travel	Computation adopting a Distance-based method using DEFRA emission factors. Business travel data was collected with particular reference to air travel, with a split between domestic, long-haul and short-haul flights, useful to identify the correct updated DEFRA conversion factor.
7. Employee Commuting	Computation adopting a variation of the Average-data method. Hitachi Rail computed from direct data gathering the average amount of emission from commuting per person for the Italian sites, and used this to estimate the commuting emission for the entire workforce. The methodology applied to the estimation of air pollutant emissions is based on the EMEP/EEA air pollutant emission inventory guidebook 2016 and is consistent with the 2006 IPCC Guidelines with respect to greenhouse gases.
8. Upstream leased assets	Category not calculated.
9. Downstream transportation and distribution	Category not calculated.
10. Processing of sold products	Category not calculated.
11. Use of sold products	Direct use-phase emissions were computed based on the provided EPDs using declared yearly distance and kWh/km, alongside production mix data from AIB for European trains. It should be noted that the different combinations of train power supplies were taken into account in the calculation, i.e., electricity and diesel. Ecoinvent emission factor was used for diesel portion of usage for trains which corresponding EPDs have been issued; DEFRA 2022 emission factor was instead used for the diesel portion of usage of other trains. The emission related to category 11 currently encompasses only the vehicles production business of Hitachi Rail.
12. End-of-life treatment of sold products	Computation based on available EPDs. End-of-life data was not available from Japanese trains. Materials data was paired with waste fate emission factors and DEFRA factors for material groups. The emission related to category 12 currently encompasses only the vehicles production business of Hitachi Rail.
13. Downstream leased assets	Category not calculated.

For the first time, the 2023 Report includes additional disclosures, updated to date, taking into account the recommendations of the Task Force on Climate related Financial Disclosures (TCFD). The ESG Report include information on how Hitachi Rail is monitoring climate-change risks and opportunities, through a TCFD Correspondence Table split in the areas of Governance, Strategy, Risk Management as well as Metrics and Targets. Hitachi Rail is committed to progressively develop its own environmental governance, strategy, metrics, and goals, in line with best practices and TCFD guidelines.

For any information on the ESG Report, please write to csrs@hitachirail.com.

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Glossary and Main Acronyms

contained in the ESG Report

This glossary aims to facilitate the understanding of the terminology used both for sustainability issues and for those more specific to the business sector.

ARCC (Audit, Risks and Control Committee)

The Audit and Risk Management Committee is responsible for monitoring the overall risk management framework, the financial reporting processes, the compliance processes, the performance of auditors and overseeing the audit program.

GHG (Greenhouse gas)

The IPCC defines Greenhouse gases as those gaseous constituents of the atmosphere, both natural and anthropogenic, which absorb and emit radiation at specific wavelengths within the spectrum of thermal infrared radiation emitted by the Earth's surface, by the atmosphere itself, and by clouds. This property causes the greenhouse effect. Water vapor (H_2O), carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), and ozone (O_3) are the primary greenhouse gases in the Earth's atmosphere. Moreover, there are a number of entirely human-made greenhouse gases in the atmosphere, such as the halocarbons and other chlorine- and bromine- containing substances, dealt with under the Montreal Protocol. Besides CO_2, N_2O, and CH_4, the Kyoto Protocol deals with the greenhouse gases sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

Eco-design

Eco-design, also known as ecological or sustainable design, is an approach that considers the environmental impact of products and systems throughout their entire life cycle. Its goal is to create environmentally friendly and resource-efficient products, taking into account factors like energy efficiency, waste reduction, and the use of renewable materials. By adopting eco-design principles, companies can contribute to a more sustainable future and appeal to environmentally conscious consumers.

EPD (Environmental Product Declarations)

The International EPD® System is a global programme for environmental declarations and signals a manufacturer's commitment to measure and and communicate to stakeholders the environmental impact of its products and services and report these impacts in a transparent way. With an EPD, manufacturers report comparable, objective and third-party verified data reporting the environmental performance of their products and services.

GRI (Global Reporting Initiative) Standards

The GRI Standards provide a standardised framework for organisations to report on their sustainability impacts in a consistent manner, fostering global comparability, transparency, and accountability. The set of Standards allows organisations to select the most relevant Topic Standards based on their material topics - economic, environmental, or social - ensuring an inclusive and comprehensive portrayal of material impacts and their management in sustainability reports. In 2021, GRI introduced its latest version of the standards, further encouraging organisations to engage with stakeholders in identifying and prioritizing their impacts (GRI 2).

IPCC (Intergovernmental Panel on Climate Change)

The IPCC is a United Nations intergovernmental body offering regular scientific assessments on climate change, future risks, and potential solutions for adaptation and mitigation. Through its Assessment Reports, it presents the updates related to climate change impacts and options for mitigating its effects. Also, it produces Special Reports on specific topics agreed upon by member governments and Methodology Reports that provide guidelines for greenhouse gas inventories preparation.

IRIS (International Railway Industry Standard)

IRIS certification is a global system developed by UNIFE in 2005 to ensure higher quality in the rail sector. It aims to evaluate companies supplying to the railway industry through a standardised evaluation method and promotes common language, guidelines, fostering transparency and trust in IRIS Certification throughout the supply chain. The standard enhances competition and improves the quality of rail products, building upon ISO 9001:2015 to create a recognised and robust evaluation framework for the rail industry.

ISO (International Standards Organisation)

ISO is an international standard-setting body composed of representatives from various national standards organisations. Founded in 1947, it promotes worldwide proprietary, industrial, and commercial standards. It is headquartered in Geneva, Switzerland, and works in 165 countries. It was one of the first organisations granted general consultative status with the UN Economic and Social Council.

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LoB (Line of Business)

Line of Business (LOB) refers to a product or a group of related products catering to specific customer transactions or business needs. In certain industries, LoB also has a regulatory and accounting definition for statutory policies.
It typically represents an internal Corporate Business Unit, while "industry" encompasses all competitors in a similar market.

MaaS (Mobility as a Service)

MaaS is an integrated system of transport aimed at optimizing urban mobility through modular solutions, which are more coordinated and efficient. The goal is to answer in a flexible way to the increasingly emerging transport necessity of mass transport in sustainable mobility ecosystem.

OECD (Office of Economic Cooperation and Development)

OECD is an intergovernmental economic Organisation with 37 member countries, founded in 1961 to stimulate economic progress and world trade. It is a forum of countries describing themselves as committed to democracy and the market economy, providing a platform to compare policy experiences, seek answers to common problems, identify good practices and coordinate domestic and international policies of its members.

Renewable energy

Renewable energy refers to useful energy collected from naturally replenishing sources like sunlight, wind, rain, tides, waves, and geothermal heat. It also includes biomass, although its carbon-neutral status is debated. It serves various purposes, including electricity generation, air and water heating/cooling, transportation, and providing energy services in rural areas (off-grid) and, unlike fossil fuels, which are depleting rapidly, renewable energy sources can be sustained over human timescales.

PCR – Product Category Rules

A PCR (Product Category Rule) is a copyrighted document found in the EPD "cookbook," providing guidelines for creating a EPD (Environmental Product Declaration) for a specific product category. The PCR instructs on conducting the life-cycle assessment, declared/functional unit (product quantity and service life), and defining the use phase and end-of-life options. The PCR allows accurate assessment of a product's environmental impacts and ensures consistency and comparability across EPDs within the same product category.

SDGs (Sustainable Development Goals)

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, outlines a collective plan for global peace and prosperity. Its core comprises 17 Sustainable Development Goals which urge all countries, to collaborate in a global partnership to address poverty and improve health, education, and economic growth, to reduce inequality, combat climate change, and preserve oceans and forests. This agenda aims to create a sustainable and equitable future for people and the planet.

S4M (Services for Mobility)

S4M delivers advertising that drives more customers to stores, dealerships and restaurants. Its drive-to-store platform, Fusio, delivers incremental customer visits which are always independently verified. Founded in 2011, S4M's platform is available globally, and used by over 1,000 brands worldwide to drive customers to physical locations.

UNIFE (Association of European railway builders)

UNIFE is a Brussels-based association representing European train builders and rail suppliers since 1992 that advocates for over 100 rail supply companies involved in designing, manufacturing, maintaining, and refurbishing rail transport systems. UNIFE also unites national rail industry associations representing 84% of the European and 46% of the global rail equipment and services market, becoming a trusted partner for EU institutions and other organisations representing rail sector stakeholders.

UITP (International Association of Public Transport)

UITP (*Union Internationale des Transports Publics*) advocates for sustainable urban mobility. It is the only global network that brings together all public transport stakeholders and sustainable transport modes, being a network of 1,800 member companies from 100 countries, covering all public transport modes.

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Task Force on Climate-Related Financial Disclosures

TOPIC	TCFD CODE	SECTION	DISCLOSURE AT A GLANCE*
GOVERNANCE			
Describe the board's oversight of climate-related risks and opportunities	TCFD – G(a)	3.1.1 ESG Governance	A global Sustainability Committee oversee sustainability topics including climate related issues. This Committee is composed by permanent members, including the Hitachi Rail Group CEO and key global heads of functions (e.g. SHEQ Global Director, CSR&S, HR, Communication, HSE, Facility, Eco-design, GBMS, etc.), covering broadly ESG material topics and members on call according to specific needs.
Describe management's role in assessing and managing climate-related risks and opportunities	TCFD – G(b)	3.1.1 ESG Governance 3.3.1 Responding to ESG Risks and Opportunities	A CSR & Sustainability function has been established within Hitachi Rail to manage all ESG issues. Moreover, different management departments across Hitachi Rail are dedicated to various sustainability topics at global and local level and are addressing climate-related risks and opportunities. In particular, there is a global energy management function that manages energy issues and the decarbonisation plan. ERM Function, supported technically by CSR&S, guides risk assessment activities and update Hitachi Rail Risk and Opportunity Portfolio. The ARCC (Audit, Risks and Control Committee) and Senior Executives are involved in the periodic review of the risk assessment results, as well as the Sustainability Committee which take the proper following management decisions.
STRATEGY			
Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	TCFD – S(a)	3.3.1 Responding to ESG Risks and Opportunities	Collaborating with Corporate and thanks to a specific qualitative risk assessment carried out during FY22, Hitachi Rail have identified main risk and opportunity areas: **Physical risks** related to more frequent and severe climate events and natural disasters such as typhoons, floods, and other natural disasters. **Transition risks** related to compliance with EU and other global relevant legislation and lack to competitiveness due to delays or failures in developing low carbon solutions and technologies and/or ensuring their delivery. **Opportunities** connected to the transition to a lower carbon economy may arise for the Railway system and for Hitachi Rail because of the higher demand for electric powered transport and low emissions technologies for the long-distance transportation System.
Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	TCFD – S(b)	2.1 ESG Roadmap and Targets 3.3.1 Responding to ESG Risks and Opportunities	A specific impact analysis by the business and financial planning point of view have not yet been performed by Hitachi Rail, but two foremost challenges are part of its strategy to address climate related risks and opportunities: a) Carbon Neutrality Roadmap on its main and most emission-intensive facilities; b) A Vehicle Product Approach, with an extensive Life Cycle Assessment and ECO Design to Hitachi Rail product Portfolio.
Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	TCFD – S(c)	3.3.1 Responding to ESG Risks and Opportunities	Hitachi Rail, following Corporate guidelines, identify its risks and opportunities and assess them through a qualitative approach, taking into consideration three scenarios: a. Business environment and major risks and opportunities under the 1.5°C scenario; b. Business environment and major risks and opportunities under the 4°C scenario; c. A transition scenario assessing non-environmental market factors.

continues

* The contents in this table are updated as of the date of publication of the ESG Report, following the end of the relevant FY, to provide an up-to-date view of the ongoing analysis. The references within the paragraphs of the document instead follow the scope of the FY22.

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TOPIC	TCFD CODE	SECTION	DISCLOSURE AT A GLANCE*
RISK MANAGEMENT			
Describe the organization's processes for identifying and assessing climate-related risks	TCFD – RM(a)	3.3 Risk Management Process and Internal Control System 3.3.1 Responding to ESG Risks and Opportunities	The CSR&S function, methodologically supported by the ERM function, deals with the identification and assessment of Hitachi Rail's ESG risks, including climate related risks and opportunities. ARCC and Senior Executives are involved in the periodic review of the risk assessment results, as well as the Sustainability Committee which take the proper following management decisions.
Describe the organization's processes for managing climate-related risks	TCFD – RM(b)	3.3 Risk Management Process and Internal Control System	Climate related risks are managed within Hitachi Rail IRM and ERM system, based on the COSO Framework and other relevant external framework and monitored by ARCC.
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	TCFD – RM(c)	3.3 Risk Management Process and Internal Control System 3.3.1 Responding to ESG Risks and Opportunities	The CSR&S function, methodologically supported by the ERM function, deals with the identification and assessment of Hitachi Rail's ESG risks, including climate related risks and opportunities. Climate related risks are then managed within Hitachi Rail IRM and ERM system. Also due to UK MCD regulation and the Hitachi Rail will full integrate a TCFD approach in its business strategy and operations, in the near future Hitachi Rail will commit to deep dive its scenario analysis and risk and opportunities quantitative assessment.
METRICS & TARGETS			
Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management	TCFD – MT(a)	2.1 ESG Roadmap and Targets 5.2.3 Emission Reduction and Air Quality	Hitachi Rail have defined an extensive list of KPIs and metrics which go beyond reporting disclosure objectives and is considered a useful tool to evaluate and assess ESG performances over time. With regard to climate-related risks and opportunities, Hitachi Rail calculate energy consumption absolute values and intensity ratios. Scope 1 and Scope 2 emissions are calculated, and Hitachi Rail is progressively improving the completeness and accuracy of its Scope 3.
Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks	TCFD – MT(b)	5.2.3 Emission Reduction and Air Quality	Hitachi Rail calculate and disclose its Scope 1, Scope 2, and relevant categories of Scope 3 emissions, together with intensity ratio for energy, waste, and water.
Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	TCFD – MT(c)	2.1 ESG Roadmap and Targets	Hitachi Rail is pledged to reducing the negative impacts of its activities and to enhance the positive ones, also through its commitment to follow a Science Based approach on decarbonisation after Hitachi Group's formal commitment to SBTi and through its effort in building a climate resilient development plan. A decarbonisation plan for Scope 1 and Scope 2 emissions was developed for most emission intensive facilities in Hitachi Rail as a result of that commitment.

* The contents in this table are updated as of the date of publication of the ESG Report, following the end of the relevant FY, to provide an up-to-date view of the ongoing analysis. The references within the paragraphs of the document instead follow the scope of the FY22.

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Statement of use	Hitachi Rail has reported the information cited in this GRI Content Index for the period from April 1st, 2022, to March 31st, 2023, with reference to the GRI Standards.
Use of GRI 1	GRI 1: Foundation 2021
Pertinent GRI sector standards	There are no GRI sector standards applicable to Hitachi Rail business

GRI Standard	Disclosure	Reference	Omission/Notes
GRI 2: GENERAL DISCLOSURE (2021)			
The Organisation and its reporting practices			
2-1	Organisational details	1.2 Introduction to Hitachi Rail Identity and Business 1.2.3 Group structure and business	
2-2	Entities included in the Organisation's sustainability reporting	Methodological Note 1.2 Introduction to Hitachi Rail Identity and Business 1.2.3 Group Structure and Business 1.2.4 Economic Performance	Omission of disclosure 2-2-b because "not applicable"; the consolidated financial statement of Hitachi Rail is included in the Report of Hitachi at Group level.
2-3	Reporting period, frequency and contact point	Methodological Note Letter to Stakeholders from Giuseppe Marino	
2-4	Restatements of information	Methodological Note 5.2.1 Energy Efficiency and Consumption Trends 5.2.2 Emission Reduction and Air Quality 5.3.2 Circular economy in Hitachi Rail: Materials and Waste	Restatements are due to methodological and perimeter refinements, aiming at a more accurate and complete representation of relevant sources/materials, and are indicated in the text through footnotes in correspondence with the reference tables.
2-5	External assurance	-	Hitachi Rail have not requested external assurance for ESG Report FY22.
Activities and workers			
2-6	Activities, value chain and other business relationships	1.2 Introduction to Hitachi Rail Identity and Business 1.2.2 Business, Products and Solutions 3.4 Towards a Sustainable Value Chain 3.4.1 Supplier Governance and Guidelines 3.4.2 Sustainable Supply Chain 4.4 Workers Rights and Human Rights	
2-7	Employees	4.1 Our People 4.1.1 Human Capital	Workers who are not employees are not included and number of not guaranteed workers is not represented because information is not available in all Hitachi Rail regions.

GRI Standard	Disclosure	Reference	Omission/Notes
Governance			
2-9	Governance structure and composition	1.2 Introduction to Hitachi Rail Identity and Business 2.1.1 Delivering a Carbon Neutral, Safe and High-quality Railway Business 3.1 Corporate Governance 3.1.1 ESG Governance	Specific composition of Highest Governance Body and Committees is not disclosed in terms of gender, under-represented social groups, stakeholder representations and independence. This information is not considered completely applicable for Hitachi Rail because of its organisational structure and ESG Report boundaries, which consider the overall BU.
2-12	Role of the highest governance body in overseeing the management of impacts	3.1 Corporate Governance 3.1.1 ESG Governance 3.1.2 ESG Management System and Certifications	
2-13	Delegation of responsibility for managing impacts	2.1 ESG Roadmap and Targets 3.1 Corporate Governance 3.1.1 ESG Governance 3.1.2 ESG Management System and Certifications 3.3.1 Responding to ESG Risks and Opportunities	The frequency for senior executives or other employees to report back to the Global Leadership Team (GLT) on the management of the Organisation's impacts on the economy, environment, and people is not disclosed because the process requires Committees are in charge to updating GLT upon specific internal policies.
2-14	Role of the highest governance body	Methodological Note	
2-19	Remuneration policies	4.3.4 Compensation and Benefits	Compensation policies are described but no specific details about the highest governance body and senior executives are provided in terms of variable pay, incentives and other bonuses or clawbacks because the information is limitedly applicable for Hitachi Rail because of its organisational structure and ESG Report boundaries, which consider the overall BU. Mid-term management plan connect performances and remuneration policies to business objectives, including relevant ESG aspects.

GRI Standard	Disclosure	Reference	Omission/Notes
Strategy, policies and practices			
2-22	Statement on sustainable development strategy	Letter to Stakeholders from Giuseppe Marino	
2-23	Policy commitments	1.2.1 Mission, Vision and Values 2.1 ESG Roadmap and Targets 2.2 Our Partnerships for Sustainable Development 2.4 Materiality Analysis 3.3.1 Responding to ESG Risks and Opportunities 3.4 Towards a Sustainable Value Chain 3.4.1 Supplier Governance and Guidelines 4.2 Diversity, Equity and Inclusion 4.3 People Development and Care 4.4 Workers Rights and Human Rights	Policy commitments are not publicly available apart from those explicitly summarised in the ESG Report because of confidentiality constraints if the policy commitments are not publicly available. Any approved policy commitment in Hitachi Rail is broadly shared with employees through COSMO.
2-24	Embedding policy commitments	2.1 ESG Roadmap and Targets 2.2 Our Partnerships for Sustainable Development 3.1.1 ESG Governance 3.3.1 Responding to ESG Risks and Opportunities 3.4 Towards a Sustainable Value Chain 3.4.1 Supplier Governance and Guidelines 4.2 Diversity, Equity and Inclusion 4.3 People Development and Care 4.4 Workers Rights and Human Rights	Specific figures related to training that the Organisation provides on implementing the commitments is not disclosed because not available as a separate source of information.
2-26	Mechanisms for seeking advice and raising concerns	3.1.2 ESG Management System and Certifications 3.2 Business Ethics, Transparency and Integrity 3.2.1 Code of Ethics and ESG Policies 3.2.3 Whistleblowing Management	Specific figures related to training that the Organisation provides on implementing the commitments is not disclosed because not available as a separate source of information.

GRI Standard	Disclosure	Reference	Omission/Notes
2-27	Compliance with laws and regulations	3.2 Business Ethics, Transparency and Integrity 3.2.1 Code of Ethics and ESG Policies 3.2.4 Anticorruption 3.2.6 Export and Trade Compliance 3.2.7 Data protection and Cybersecurity 5.3.1 Product Innovation and Eco-Design	
2-28	Membership associations	2.2 Our Partnerships for Sustainable Development 2.2.1 Industry Associations and Certifying Authorities	
Stakeholder engagement			
2-29	Approach to stakeholder engagement	Methodological Note 2.3 Stakeholder Engagement 2.3.1 Our dialogue with Stakeholder and their involvement process 2.3.2 Our Customers and their engagement 3.4 Towards as Sustainable Value Chain 4.3.3 Employee Engagement	
2-30	Collective bargaining agreements	Collective bargaining agreements	
MATERIAL TOPICS			
3-1	Process to determine material topics	Methodological Note 2.4 Materiality Analysis	
3-2	List of material topics	Methodological Note 2.4 Materiality Analysis	

GRI Standard	Disclosure	Reference	Omission/Notes
Ethics, integrity and transparency			
3-3	Management of material topics	Chapter 1: Context and Identity 2.1 ESG Roadmap and Targets	
201-1	Direct economic value generated and distributed	1.2.4 Economic Performance	
205-1	Operations assessed for risks related to corruption	3.2.4 Anticorruption	
205-2	Communication and training about anti-corruption policies and procedures	3.2.4 Anticorruption 4.3.2 Learning, Career Development and Performance Management	
205-3	Confirmed incidents of corruption and actions taken	3.2.4 Anticorruption	
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	3.2.6 Export and Trade Compliance	
207-1	Approach to tax	3.2.8 Fiscal Transparency	
307-1	Non-compliance with environmental laws and regulations	3.2 Business Ethics, Transparency and Integrity	
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	2.3.2 Our Customers and their engagement 3.2 Business Ethics, Transparency and Integrity 3.2.7 Data protection and Cybersecurity	
419-1	Non-compliance with laws and regulations in the social and economic area	3.2 Business Ethics, Transparency and Integrity 3.2.6 Export and Trade Compliance	

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GRI Standard	Disclosure	Reference	Omission/Notes
Supply chain management			
3-3	Management of material topics	3.4.1 Supplier Governance and Guidelines 3.4.2 Sustainable Supply Chain	
204-1	Proportion of spending on local suppliers	1.2 Introduction to Hitachi Rail Identity and Business 3.4 Towards a Sustainable Value Chain	
308-1	New suppliers that were screened using environmental criteria	3.4 Towards a Sustainable Value Chain 3.4.1 Supplier Governance and Guidelines	
308-2	Negative environmental impacts in the supply chain and actions taken	3.4.2 Sustainable Supply Chain	
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	3.4.1 Supplier Governance and Guidelines 4.4 Workers Rights and Human Rights	Omission for disclosure point a. ii.
414-1	New suppliers that were screened using social criteria	3.4 Towards a Sustainable Value Chain 3.4.1 Supplier Governance and Guidelines	
414-2	Negative social impacts in the supply chain and actions taken	3.4.2 Sustainable Supply Chain 4.4 Workers Rights and Human Rights	
Eco design			
3-3	Management of material topics	5.3 Circularity, Innovation and Resources Management	
301-1	Materials used by weight or Volume	5.3 Circularity, Innovation and Resources Management	The data disclosed were subject to restatement.

GRI Standard	Disclosure	Reference	Omission/Notes
Reduction of energy consumption			
3-3	Management of material topics	5.3 Circularity, Innovation and Resources Management	
302-1	Energy consumption within the Organisation	5.2.1 Energy Efficiency and Consumption Trends	The data disclosed were subject to restatement.
302-3	Energy intensity	5.2.2 Emission Reduction and Air Quality	
302-4	Reduction of energy Consumption	5.2.1 Energy Efficiency and Consumption Trends	The data disclosed were subject to restatement.
302-5	Reduction in energy requirements of products and services	1.2.2 Business, Products and Solutions 2.1.1 Delivering a Sustainable, Safe and High-Quality Railway Business	
Water consumption optimisation			
3-3	Management of material topics	5.3 Circularity, Innovation and Resources Management 5.3.3 Water and Effluents	
303-1	Interactions with water as a shared resource	5.3.3 Water and Effluents	
303-2	Management of water discharge-related impacts	5.3.3 Water and Effluents	Omission for disclosure points a. i. and iv.
303-3	Water withdrawal	5.3.3 Water and Effluents	Omission for disclosure point b and c.
303-4	Water discharge	5.3.3 Water and Effluents	Omission for disclosure point c.

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GRI Standard	Disclosure	Reference	Omission/Notes
Reduction of emission and mitigation of climate change			
3-3	Management of material topics	5.2 Environmental Goals and Decarbonisation Path 5.2.2 Emission Reduction and Air Quality 5.3 Circularity, Innovation and Resources Management	
305-1	Direct (Scope 1) GHG emissions	Highlights (FY22) 5.2.2 Emission Reduction and Air Quality 5.2.3 Sustainable Mobility	The data disclosed were subject to restatement.
305-2	Energy indirect (Scope 2) GHG emissions	Highlights (FY22) 5.2.2 Emission Reduction and Air Quality	The data disclosed were subject to restatement.
305-3	Other indirect (Scope 3) GHG emissions	Highlights (FY22) 5.2.2 Emission Reduction and Air Quality	The data disclosed were subject to restatement.
305-5	Reduction of GHG emissions	Letter to Stakeholders from Giuseppe Marino Highlights (FY22) 5.2 Environmental Goals and Decarbonisation Path 5.2.2 Emission Reduction and Air Quality	The data disclosed were subject to restatement.
305-6	Emissions of ozone-depleting substances (ODS)	5.2.2 Emission Reduction and Air Quality	

GRI Standard	Disclosure	Reference	Omission/Notes
Waste management			
3-3	Management of material topics	5.1 Environmental Policy 5.3 Circularity, Innovation and Resources Management 5.3.2 Circular economy in Hitachi Rail: Materials and Waste	
306-1	Waste generation and significant waste-related impacts	5.3 Circularity, Innovation and Resources Management 5.3.1 Product Innovation and Eco-Design 5.3.2 Circular economy in Hitachi Rail: Materials and Waste	
306-2	Management of significant waste-related impacts	5.3 Circularity, Innovation and Resources Management 5.3.1 Product Innovation and Eco-Design 5.3.2 Circular economy in Hitachi Rail: Materials and Waste	
306-3	Waste generated	5.3.2 Circular economy in Hitachi Rail: Materials and Waste	
306-4	Waste diverted from disposal	Highlights (FY22) 5.3.2 Circular economy in Hitachi Rail: Materials and Waste	
306-5	Waste directed to disposal	5.3.2 Circular economy in Hitachi Rail: Materials and Waste	

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GRI Standard	Disclosure	Reference	Omission/Notes
Employee welfare			
3-3	Evaluation of the management approach	4.1 Our People 4.3.1 Talent Acquisition	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	4.3 People Development and Care	
401-3	Parental leave	4.3 People Development and Care	
402-1	Minimum notice periods regarding operational changes	4.1.2 Relations Management	In the event of particularly significant organisational changes, specific communications initiatives targeting broad categories of employees are envisaged to explain the reasons for the changes.
Occupational health & safety			
3-3	Management of material topics	3.1.2 ESG Management System and Certifications 4.5 Occupational Health and Safety	
403-1	Occupational health and safety management system	4.5 Occupational Health and Safety	
403-2	Hazard identification, risk assessment, and incident investigation	3.3.1 Responding to ESG Risks and Opportunities 4.5 Occupational Health and Safety	
403-3	Occupational health services	4.3 People Development and Care 4.3.3 Employee Engagement 4.5 Occupational Health and Safety	
403-4	Worker participation, consultation, and communication on occupational health and safety	4.5 Occupational Health and Safety	
403-6	Promotion of worker health	4.3 People Development and Care 4.3.3 Employee Engagement 4.5 Occupational Health and Safety	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	4.5 Occupational Health and Safety	
403-9	Work-related injuries	4.5 Occupational Health and Safety	
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	2.3.2 Our Customers and their engagement 3.2 Business Ethics, Transparency and Integrity 3.2.7 Data protection and Cybersecurity	
Training and career development			
3-3	Management of material topics	4.3.2 Learning, Career Development and Performance Management	
404-1	Average hours of training per year per employee	4.3.2 Learning, Career Development and Performance Management	
404-2	Programs for upgrading employee skills and transition assistance programs	3.2 Business Ethics, Transparency and Integrity 4.3 People Development and Care 4.3.1 Talent Acquisition 4.3.2 Learning, Career Development and Performance Management 4.3.3 Employee Engagement 5.1 Environmental Policy 5.3 Circularity, Innovation and Resources Management	

GRI Standard	Disclosure	Reference	Omission/Notes
404-3	Percentage of employees receiving regular performance and career development reviews	4.3.2 Learning, Career Development and Performance Management	
412-2	Employee training on human rights policies or procedures	4.3.2 Learning, Career Development and Performance Management	
Diversity, equality and inclusion			
3-3	Management of material topics	4.2 Diversity, Equity and Inclusion	
405-1	Diversity of governance bodies and employees	4.1 Our People 4.2 Diversity, Equity and Inclusion	
405-2	Ratio of basic salary and remuneration of women to men	4.3.4 Compensation and Benefits	
Support for local community			
3-3	Management of material topics	2.3.1 Our Dialogue with Stakeholders and their Involvement Process	
413-1	Operations with local community engagement, impact assessments, and development programmes	2.3.1 Our Dialogue with Stakeholders and their Involvement Process 4.3.3 Employee Engagement	

GRI Standard	Disclosure	Reference	Omission/Notes
Air quality			
3-3	Management of material topics	2.3.2 Our Customers and their engagement	
305-7	Nitrogen oxides (NOX), sulphur oxides (SOX), and other significant air emissions	5.2.2 Emission Reduction and Air Quality 5.2.3 Sustainable Mobility	
MATERIAL TOPIC NOT COVERED BY A GRI DISCLOSURE			
Data protection security			
3-3	Management of material topics		
Customer focusing			
3-3	Management of material topics		
R&D and product innovation			
3-3	Management of material topics	5.3 Circularity, Innovation and Resources Management	

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By SHEQ and CSR&S Department

We thank all the colleagues who collaborated to the creation of this Report
we continue to make our contribution
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Creative concept, design and layout

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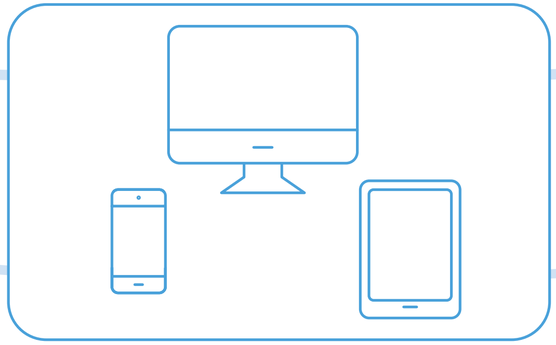

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