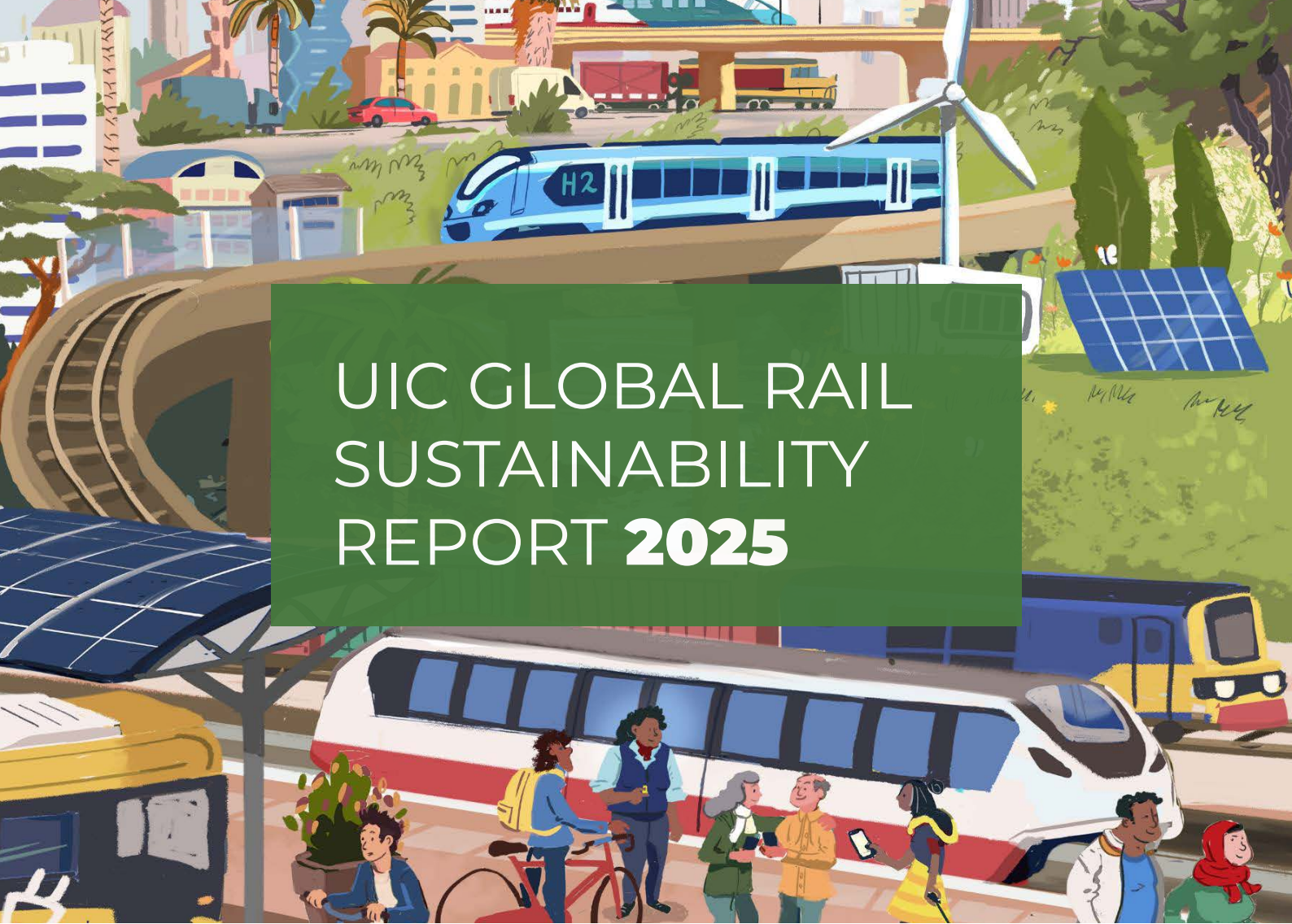


A vibrant, stylized illustration depicting a sustainable rail ecosystem. In the upper section, a blue high-speed train with 'H2' on its side travels on an elevated track. To its right, a white wind turbine stands tall. Below the train, a large green rectangular box contains the report title. In the lower section, a white and red high-speed train is stopped at a platform. A diverse group of people is shown: a man with a backpack on a red bicycle, a woman in a blue vest, a man in a green jacket, a man in a yellow jacket, a woman in a yellow dress, a man in a white jacket, and a woman in a red headscarf. To the left of the platform, there are solar panels and a yellow train car. In the background, a cityscape with various buildings, a red car, and a white van is visible under a clear sky.

UIC GLOBAL RAIL SUSTAINABILITY REPORT **2025**



The UIC supports the Sustainable Development Goals

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FOREWORD

As we enter the UN Decade of Sustainable Transport, the world is facing a defining issue: we need to restructure our transport systems to meet the pressing challenges of climate change, energy security, and social equity. Within this complex landscape, rail stands as a critical strategic asset.

While the advantages of rail – low carbon intensity, high capacity, and economic connectivity – are well-documented, this transition requires more than just recognition; it requires systemic integration and large-scale investment. This edition of the Global Rail Sustainability Report, the fourth in the series, provides an empirical foundation for this transition. By collating global data and proven operational models, the report shows how the rail sector is actively de-risking the path toward the Sustainable Development Goals.

Through UIC's commitment to international cooperation and the exchange of technical excellence, we are not merely documenting progress, we are providing a solution for a decarbonised global economy. This report is a call to action for all transport stakeholders to champion the role of rail in building a resilient and sustainable future. For more trains, a more sustainable transport system, and a better future for people and planet.



François DAVENNE

Director General

International Union of Railways (UIC)

PREFACE

Welcome to the fourth edition of the UIC Global Rail Sustainability Report. Since its launch in 2022, the report has continued to provide a global overview of how the rail sector is contributing to sustainable development and supporting the achievement of the United Nations Sustainable Development Goals (SDGs).

As the world enters the United Nations Decade of Sustainable Transport (2026–2035), rail's role within sustainable transport systems is increasingly important, given that it offers significant advantages in terms of energy efficiency, safety, accessibility, resilience, and reduced environmental impact, while helping connect people, regions, and economies.

This Global Rail Sustainability Report builds on previous editions by using updated data, indicators, and international case studies from UIC members and partners worldwide. It draws on the latest Rail Sustainability Index (RSi), Traction Energy and Emissions Database (TED), and Railisa platform results, providing insight into the sustainability performance and progress of the global rail sector.

As the report series continues to evolve, it reaffirms UIC's commitment to transparency, collaboration, and evidence-based reporting. By sharing experiences, good practices, and measurable progress from across the world, the report aims to support informed decision-making and strengthen the role of rail in advancing sustainable transport and the SDGs.



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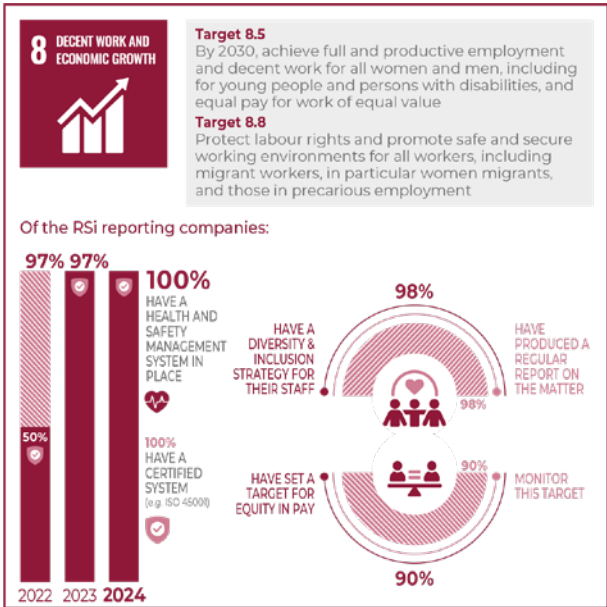
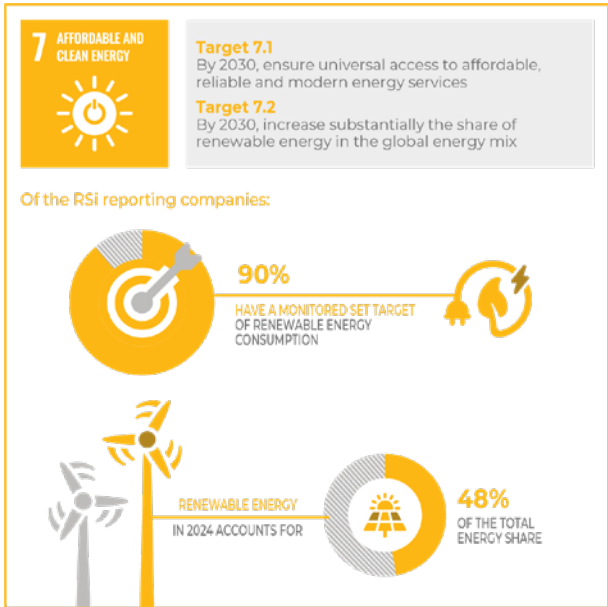
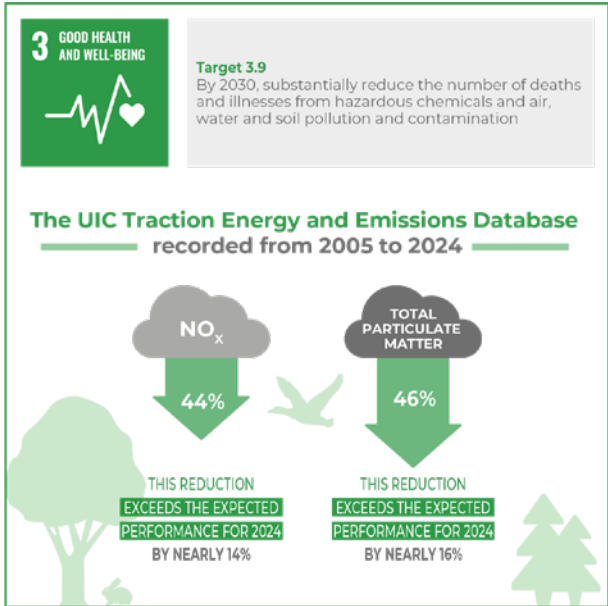
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RAIL SUSTAINABILITY AT A GLANCE



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Target 9.1

Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

Target 9.4

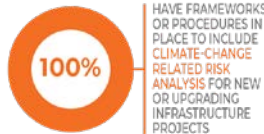
By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

Of the RSI reporting companies:

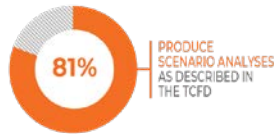


HAVE PUT PROCESSES IN PLACE FOR IDENTIFYING, ASSESSING, AND MANAGING CLIMATE-RELATED ISSUES INTEGRATED INTO THE OVERALL RISK MANAGEMENT

ALL OF THEM REPORT ON THESE PROCESSES
83% IN COMPLIANCE WITH TCFD



HAVE FRAMEWORKS OR PROCEDURES IN PLACE TO INCLUDE CLIMATE-CHANGE RELATED RISK ANALYSIS FOR NEW OR UPGRADING INFRASTRUCTURE PROJECTS



PRODUCE SCENARIO ANALYSES AS DESCRIBED IN THE TCFD

11 SUSTAINABLE CITIES AND COMMUNITIES



Target 11.2

By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

Of the RSI reporting companies:



OFFER RESERVATIONS FOR PRM AND PWD PRIORITY SEATS ON BOARD



OFFER WHEELCHAIR SPACES ON BOARD



100%

OFFER PRM ACCESS TO RAIL STATIONS



PLAN TO INCREASE THE AMOUNT OF SPACES IN THE NEXT 5 YEARS.



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Target 12.2

By 2030, achieve the sustainable management and efficient use of natural resources

Target 12.4

By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

Target 12.5

By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

Target 12.6

Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

Of the RSI reporting companies:

2023 83% 83% 94% 94%

2024 95% 83% 93% 95%

INCLUDE SOCIAL OR ENVIRONMENTAL CLAUSES WITHIN SUPPLIERS' CONTRACTS

MONITOR SUSTAINABILITY PERFORMANCES ALONG THEIR SUPPLY CHAINS

HAVE AN ENVIRONMENTAL MANAGEMENT SYSTEM IN PLACE

100% of them have a certified system (e.g. through ISO 14001)

ALREADY ISSUE A SUSTAINABILITY REPORT

100% of them produce it in compliance with a specific standard as GRI or SASB. 90% of them have it verified by a third party



69%

OF NON-HAZARDOUS WASTE SENT FOR RECYCLING



IN 2024 THE TOTAL HAZARDOUS WASTE GENERATED PER CAPITA WAS 0.4 TONNES LOWER COMPARED TO THE 0.72 TONNES IN 2023 AND 21 TONNES IN 2022

13 CLIMATE ACTION



Target 13.1

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Target 13.2

Integrate climate change measures into national policies, strategies and planning

Of the RSI reporting companies:



95%

have a board-level oversight of climate related issues



98%

had an emission target active in 2023
95% have integrated targets in the industrial plan



95%

collaborate with governments on policies or solutions for climate change and scaling up climate actions



95%

take part in public-private partnerships or initiatives on climate related issues

UNITED NATIONS DECADE OF SUSTAINABLE TRANSPORT



United Nations
Decade of
Sustainable Transport
2026–2035

The Decade recognises transport as a key driving force for sustainable development and calls for coordinated action across all modes of transport and stakeholders. Rail has a central role to play in achieving these objectives, with UIC actively contributing to the development of the Decade's implementation plan.

During the launch of the Decade, in New York in December 2025, UIC highlighted the need for a large-scale modal shift towards rail, increased investment in sustainable transport infrastructure, and stronger integration of rail within national and international transport strategies.



As the Decade begins, UIC has reinforced its pledge through two voluntary commitments, under which UIC will continue to support the implementation of the decade by promoting knowledge sharing, international cooperation, data-driven reporting, and practical solutions that strengthen the role of rail in delivering sustainable mobility worldwide.

COMMITMENT #1: CLIMATE FINANCE AND CARBON MARKET INITIATIVE

THIS INITIATIVE AIMS TO SUPPORT RAILWAY COMPANIES IN ACCESSING CLIMATE FINANCE, CARBON MARKETS, AND INVESTMENT OPPORTUNITIES FOR RAIL; PARTICULARLY SUPPORTING MEMBERS IN EMERGING AND DEVELOPING ECONOMIES, HELPING STRENGTHEN CAPACITY AND ACCELERATE SUSTAINABLE RAIL INVESTMENT.

COMMITMENT #2: TRACKING THE TRANSITION

THIS REPORT WILL PROVIDE A FRAMEWORK FOR MEASURING RAIL'S IMPACT ON THE TRANSITION WORLDWIDE. BY EXPANDING OUR INDICATORS AND REGIONAL SCOPE, IT WILL DELIVER THE TRANSPARENCY NEEDED TO ALIGN RAIL WITH THE UNITED NATIONS SUSTAINABLE DECADE OF ACTION.



RAIL AS THE BACKBONE OF SUSTAINABLE MOBILITY

Target 11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

Rail transport continues to be a key catalyst for the creation of inclusive, safe, resilient, and sustainable cities and communities. As urban areas expand and transport needs grow, rail offers a scalable and low-emission solution that supports compact urban development, reduces congestion, and enhances access to essential services.

An International Association of Public Transport (UITP) report published in May 2026 found that access to public transport has improved steadily, with the share of residents living in urban areas being served rising from 53.2% in 2020 to 61.5% in 2025 across 414 cities in 126 countries. However, around 40% still lack convenient access, showing that progress toward SDG 11.2 still needs to be made [1].

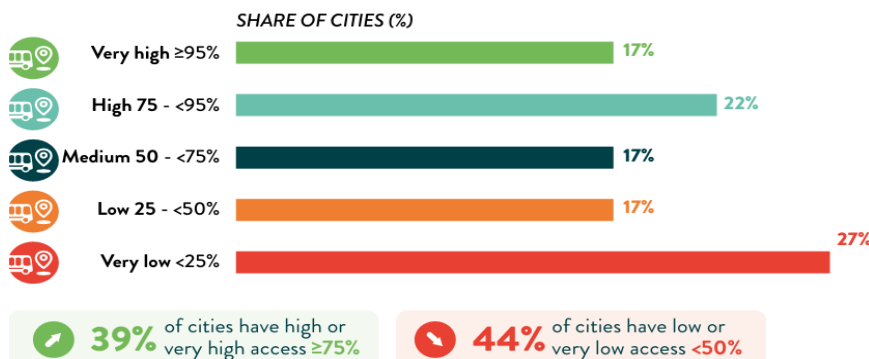


Figure 1: Proportion of cities with different levels of access to public transport, 2025 (UITP, 2026)

From a rail perspective, the report notes that metro and rail networks account for only about one fifth of urban population access in the sampled cities, while most access still depends on buses and other lower-capacity modes of transport. This highlights how limited rail's reach still is, together with the need for greater investment in rail infrastructure, especially in underserved cities and in the Global South.



Plan 30/30 - Suburban Rail Service Llanquihue–La Paloma, Puerto Mont



Challenge

The Los Lagos Region had been without passenger rail services for 18 years, limiting sustainable mobility options and increasing reliance on road transport.

Solution

As part of Chilean State Railways' (EFE) 30/30 Commuter Rail Plan, a 27.4 km corridor linking Llanquihue, Puerto Varas, Alerce, and La Paloma was re-established. The project introduced an integrated rail and feeder-bus service, while refurbishing existing railway assets and improving connectivity to educational institutions, healthcare facilities, and urban centres.

Impact

Between May and December 2025, the service carried 224,000 passengers across 2,300 services, demonstrating high demand for rail transport in the region. The project reduced travel times, established a new multimodal transport option, and demonstrated the potential of recovering existing railway infrastructure to support sustainable regional development.



Credit: EFE TRENES de Chile



11 SUSTAINABLE CITIES
AND COMMUNITIES



Digital Green Rail Pass



COMBOIOS DE PORTUGAL

Challenge

Trains of Portugal (CP) wanted to reduce dependency on cars, improve affordable access to rail across Portugal, and modernise ticketing through a seamless digital solution.

Solution

The **Digital Green Rail Pass**, launched in October 2024, introduced Portugal's first fully digital nationwide rail pass. Offering unlimited travel for €20 every 30 days, it combines digital identity authentication, online pass management, and validity across Regional, InterRegional, Intercity and Urban services outside intermodal areas, while maintaining both digital and physical card options, making this a nation-wide solution.

Impact

In 2025, more than 700,000 passes were sold, generating over 100 million additional passenger-kilometres and an estimated reduction of 4,500 tonnes of CO₂. The initiative also led to a 28% increase in CP customers and allowed nearly 3 million digital Intercity reservations to be made.



11 SUSTAINABLE CITIES
AND COMMUNITIES



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



13 CLIMATE
ACTION



PASSE FERROVIÁRIO VERDE

Credit: CP - Comboios de Portugal

GLOBAL RAILWAY TRAFFIC TRENDS

Global rail traffic trends in 2025 highlight the sector’s resilience and growing importance in sustainable mobility. Passenger transport continued its post-pandemic recovery across all regions, while freight transport has a mixed experience depending on the region, reflecting broader economic and trade conditions. Together, these trends underline both the opportunities and challenges facing railways worldwide.

PASSENGER TRAFFIC RETURNED TO PRE-PANDEMIC LEVELS

GLOBAL RAIL PASSENGER TRAFFIC **INCREASED BY 7% IN 2025 COMPARED TO 2024**, RETURNING TO 2019 LEVELS FOR THE FIRST TIME SINCE THE COVID-19 PANDEMIC.

GROWTH WAS OBSERVED ACROSS ALL UIC REGIONS, WITH PARTICULARLY A STRONG INCREASE IN ASIA AND EUROPE.

CHINA RAILWAYS AND INDIAN RAILWAYS TOGETHER ACCOUNTED FOR MORE THAN 2.6 TRILLION PASSENGER-KILOMETRES, WHILE AMTRAK IN THE UNITED STATES SURPASSED ITS PRE-PANDEMIC RIDERSHIP LEVELS.

GLOBAL FREIGHT VOLUMES PLATEAUED

RAIL FREIGHT TRAFFIC REMAINED BROADLY STABLE WORLDWIDE.

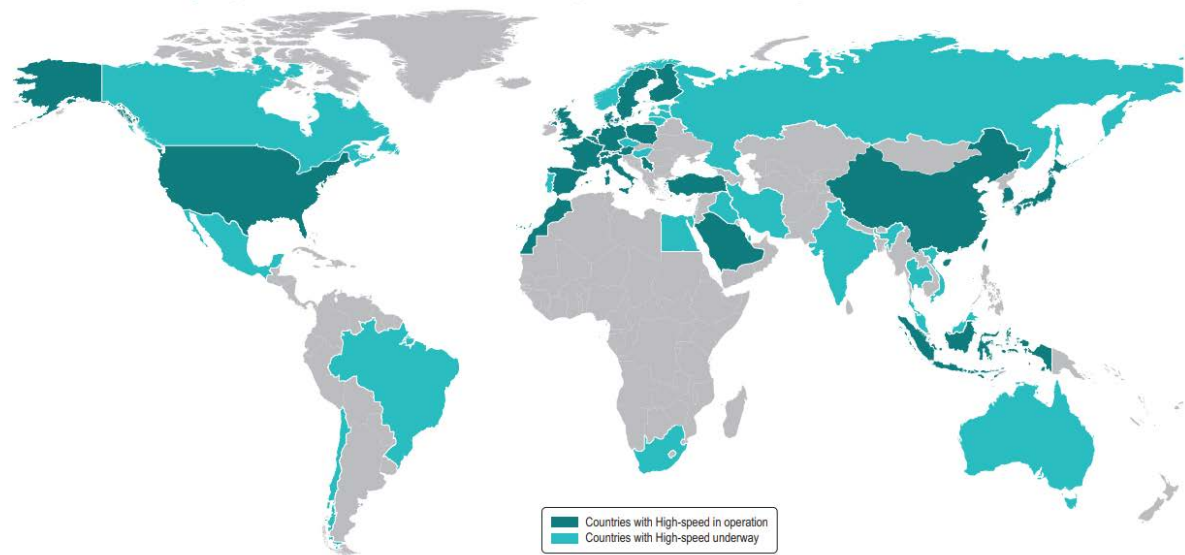
GROWTH IN ASIA, LED BY INDIAN RAILWAYS (+6%), WAS OFFSET BY WIDESPREAD DECLINES ACROSS EUROPE, WHERE FREIGHT VOLUMES FELL BY AN ESTIMATED 8% IN THE EU-27.

CHINA RAILWAYS RECORDED A SLIGHT DECLINE (-1%), WHILE VOLUMES IN KAZAKHSTAN AND THE UNITED STATES REMAINED BROADLY STABLE.

THE HIGH-SPEED RAIL NETWORK IS EXPANDING

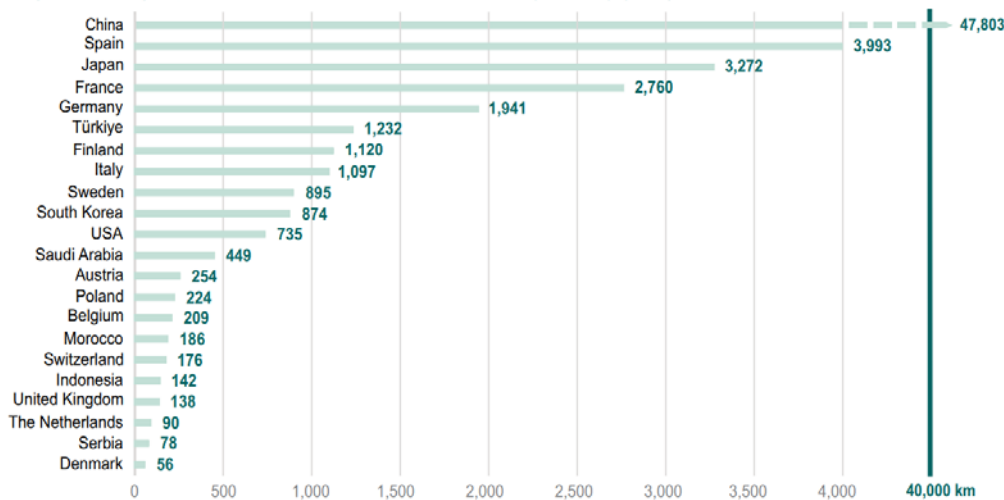
High-speed rail continues to make strong global progress, with roughly 65,000 km of high-speed lines now identified worldwide and more than 400 lines tracked across all stages of development, from planned to operational in the UIC 2024 edition of the **High-Speed Rail Atlas**. Around 4,900 high-speed trains are in service each day, carrying approximately 2.5 billion passengers annually and demonstrating the growing role of rail in sustainable mobility. China remains the clear global leader, with 45,390 km of high-speed rail infrastructure, followed by Spain, Japan, France, and Germany. In 2024, Indonesia became the latest country to launch high-speed rail operations, marking another important step in the worldwide expansion of this low-carbon transport mode [2].

Countries with a high-speed rail network in commercial operation and underway



Note: Vast island territories in extreme latitudes are not considered for this map

Length of the high-speed network in commercial operation by country (2024)



Source: compiled by authors based on International Union of Railways

efe **TRENES
DE
CHILE**

In 2025, the system carried 23.2 million passengers, including 3.56 million multimodal journeys (15.3%). Open-loop payments increased from 10.1% to 18.5% between December 2024 and December 2025, while customer satisfaction reached 77% for fare integration and 80% for intermodal connections.



Credit: EFE Trenes de Chile

11 SUSTAINABLE CITIES AND COMMUNITIES



Integrated connectivity

.italo
Nuovo Trasporto Viaggiatori

Challenge

Italo sought to integrate high-speed rail, long-distance buses, regional rail, and maritime services into a single travel experience despite fragmented ticketing systems, different operating models, timetable coordination challenges, infrastructure constraints, and the need to encourage passengers to adopt multimodal public transport.

Solution

Italo developed a proprietary digital platform integrating rail, bus, regional rail, and ferry services into a single booking, payment, and itinerary option. Partnerships with transport operators, station-specific transfer rules, dynamic scheduling tools, and shared quality standards created a coordinated and reliable intermodal network.

Impact

Intermodal transport use increased by 7% in 2025 compared with 2024. The network connects more than 150 cities, simplifies journeys through a single platform, and achieved a customer satisfaction rate 0.6% higher than Italo's standalone rail benchmark, while expanding access to underserved destinations and supporting low-carbon travel.



Credit: Italo

11 SUSTAINABLE CITIES AND COMMUNITIES



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



13 CLIMATE ACTION



11 SUSTAINABLE CITIES AND COMMUNITIES



KORAIL's "Regional Love Rail Travel" Modal Shift Project to Reduce Car Dependency in Depopulating Regions



Challenge

Dependency on private cars and transport inequality limited access to regions in Korea where populations are declining, reducing the appeal of rail for regional tourism and transport.

Solution

KORAIL launched the **Regional Love Rail Travel** programme, combining a 50% rail fare discount with tourism benefits and integrated rail-bus connections, which were developed in partnership with national agencies and local governments. The initiative embedded the modal shift to rail into fare policies, product design, operations and marketing.

Impact

Between August 2024 and December 2025, the programme attracted 263,948 passengers. Rail tourists visiting participating municipalities increased by 90%, from 155,000 to 294,000, while the number of participating municipalities grew from 33 to 42.



Credit: Korail

11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



11 SUSTAINABLE CITIES AND COMMUNITIES



Turning sustainable travel into a cultural movement: the story of Traukiniautojai



Challenge

In 2023, Lithuanian Railways Link launched the Sustainable Travel Club to reward passengers for choosing rail over car transport by converting CO₂ savings into travel benefits. However, it mainly appealed to environmentally motivated travellers. In Lithuania, where cars dominate mobility, encouraging wider behavioural change required a stronger emotional connection than climate messaging alone.

Solution

In 2025, LTG Link relaunched the programme as the Traukiniautojai Club, transforming it from a loyalty scheme into a community. Members earn rewards through a transparent mechanism linking rail travel, CO₂ savings and discounts, while the campaign repositioned rail as a modern, rewarding, and meaningful way to travel.

Impact

The initiative generated 227,000 additional rail journeys in 2025, welcomed 58,627 new members, and doubled monthly membership growth. Since March 2023, members have collectively saved 15,946,029 kg of CO₂, demonstrating measurable behavioural change through rewards, identity, and community engagement.



Credit: LTG Link

11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



11 SUSTAINABLE CITIES AND COMMUNITIES



Multi-Ecube: a multifunctional luggage locker transforming urban logistics



株式会社 JR 東日本スマートロジスティクス

Challenge

Traditional station lockers only provided luggage storage and operated as stand-alone units. East Japan Railway Company (JR East) aimed to transform them into networked, multifunctional lockers supporting parcel delivery while addressing increasing last-mile logistics demand and driver shortages.

Solution

JR East established JR EAST Smart Logistics and developed the multi-Ecube system, integrating reservations, parcel deposits, parcel collections, and shipment into a single locker managed through a central platform. Continuous testing, weekly reviews, and rapid updates supported implementation.

Impact

Multi-Ecube now handles **20,000 parcel pickups and shipments per month** and is expected to reach **1,000 units** in the Tokyo metropolitan area by June 2026. The system has expanded to other railway operators, supporting hands-free travel and reducing re-deliveries.



Credit: JR-EAST, JR East Smart logistics Co., Ltd.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



SAFETY

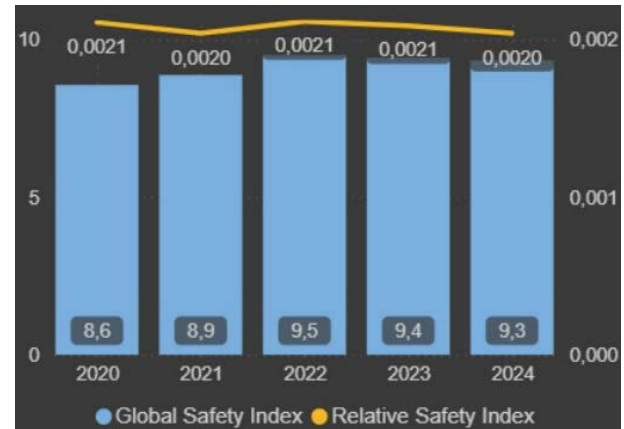
By design, rail is a particularly safe mode of transport, with a very low rate of accidents and injury or fatality for passengers and staff.

Why it is safe:

- Segregated tracks reduce the risk of colliding with other vehicles
- Centralised control and monitoring systems minimise human error

The graph below shows the latest results of the UIC Safety Index, with a slight improvement in both the Global and Relative Safety Indexes from 2022 to 2024 (data collected in 2025 for 2024) [3].

This modest improvement appears to be largely driven by a reduction in both the number of casualties and accident severity, whereas the slight increase in train-kilometres is unlikely to have had a substantial effect on overall safety performance.



ACCESSIBILITY

Accessibility is essential to a rail system that enables passengers with disabilities and/or reduced mobility to travel independently. While infrastructure upgrades remain important, effective passenger accessibility to trains also depends on reliable assistance on platforms, coordinated services and appropriately trained staff.

Through the PASSAGE Group, UIC supports knowledge exchange and the development of common solutions, including guidance for accessibility services. The Digital PRM Assistance Booking Tool, managed by UIC, connects 20 European rail call centres and allows around 5,000 cross borders PRM assistances each month. UIC is also strengthening sector-wide capacity through its Accessibility in Rail training course, developed with the ONCE Foundation, covering disability awareness, passenger rights and practical assistance across different accessibility needs [4]. These efforts complement infrastructure improvements by helping railways deliver accessibility consistently throughout the passenger journey.



ACCESSIBILITY REMAINS A PRIORITY FOR RSI RESPONDENTS. IN 2024, **ALL** ORGANISATIONS PROPOSE BARRIER FREE ACCESS FOR PASSENGERS WITH REDUCED MOBILITY (PRM) AT RAILWAY STATIONS, WHILE **88%** OFFERED RESERVATIONS FOR PRIORITY SEATING ON BOARD. IN ADDITION, **92%** PROVIDED DEDICATED WHEELCHAIR SPACES ON TRAINS, WITH THE SAME PROPORTION PLANNING TO INCREASE THEIR AVAILABILITY OVER THE NEXT FIVE YEARS. THESE RESULTS DEMONSTRATE THE SECTOR'S CONTINUED COMMITMENT TO IMPROVING ACCESSIBILITY AND DELIVERING MORE INCLUSIVE RAIL SERVICES FOR ALL PASSENGERS.

11 SUSTAINABLE CITIES AND COMMUNITIES



Inclusive mobility: rail transport accessible to all



Challenge

Providing seamless assistance for passengers with reduced mobility requires effective coordination between customer service desks, station staff, and train crews to ensure continuous support throughout the journey, including during operational disruptions.

Solution

The Moroccan National Railways (ONCF) implemented an integrated accessibility system combining adapted station infrastructure, accessible train equipment, and a dedicated assistance process coordinated through its Customer Relations Centre. The system is supported by virtual assistance, a chatbot, and real-time passenger information via the ONCF Traffic app.

Impact

In 2025, the system provided assistance to 30,000 passengers while 56% of stations were equipped with PRM facilities. Centralised booking improved coordination and service traceability, strengthening equitable access to rail transport and supporting ONCF's inclusive mobility strategy.



Credit: ONCF

11 SUSTAINABLE CITIES AND COMMUNITIES



10 REDUCED INEQUALITIES





SBB launches the Sunflower Lanyards initiative in Switzerland



Challenge

People with invisible disabilities often face barriers when using public transport, while few measures exist to support this group. Switzerland had not yet adopted the internationally recognised Sunflower Lanyard initiative.

Solution

In 2025, the Swiss Federal Railways (SBB) became the first national company in Switzerland to introduce the Sunflower Lanyard, training its staff and distributing free lanyard kits through its Travel Centres before expanding this nationwide. The initiative enables passengers to discreetly indicate an invisible disability without needing to provide proof.

Impact

Within six months, 10,000 lanyards were distributed, supported by 173 positive or neutral media stories and 15 partner organisations. A survey of 410 participants reported that 51% had positive or very positive experiences when travelling under the initiative while 41% had a neutral experience. Moreover 98% of the respondents said that they would recommend the Sunflower Lanyard.



Credit: SBB CFF FFS



11 SUSTAINABLE CITIES AND COMMUNITIES



A location intelligence-based methodology to shape assistance services for persons with disabilities and reduced mobility



Challenge

The Italian Railway Network (RFI) needed a transparent and consistent methodology to identify which stations should be prioritised for PRM assistance, balancing objective accessibility needs with requests from passengers, disability associations, institutions, and other stakeholders.

Solution

RFI developed an Integrated Opportunity Indicator combining a PRM Assistance Needs Index, based on Mobiland's location intelligence platform, with an Index of Formal Requests. The methodology integrates 22 indicators, accessibility analysis, multi-criteria assessments, and a participatory process involving RFI departments, regional administrations, and national disability federations.

Impact

Between January 2025 and February 2026, the methodology supported the activation of PRM assistance at 16 stations. The assistance network expanded by 7.5% in 2025, while the average distance to the nearest PRM station was reduced by 500 metres. The methodology is now embedded in RFI's decision-making process for future network expansion.



Credit: Ferrovie dello Stato Italiane

11 SUSTAINABLE CITIES AND COMMUNITIES



10 REDUCED INEQUALITIES



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE





RAIL AS AN INCLUSIVE EMPLOYER AND GENDER SAFE MODE OF TRANSPORT WITH A DIVERSE WORKFORCE

Gender equality is fundamental to building a railway sector that is inclusive, resilient, and capable of meeting future mobility needs. Helping people participate both economically and socially, transport should provide safe, accessible, and inclusive travel options for all users while ensuring equal opportunities across its workforce [5, 6].

Railways contribute to SDG 5 through two complementary aspects. As employers, railway organisations play an important role in promoting equal opportunities, inclusive workplaces, and career development. Increasing the participation of women across all levels of the workforce helps strengthen the sector's skills base and supports a more diverse and resilient industry [7].

As transport providers, railways also contribute by delivering services that respond to the different mobility needs of passengers. Research shows that women often have different travel patterns and place particular importance on security, accessibility, and comfort when using public transport. Designing railway services and stations that reflect these needs can improve accessibility, support more inclusive mobility, and enhance the overall passenger experience [6, 8].



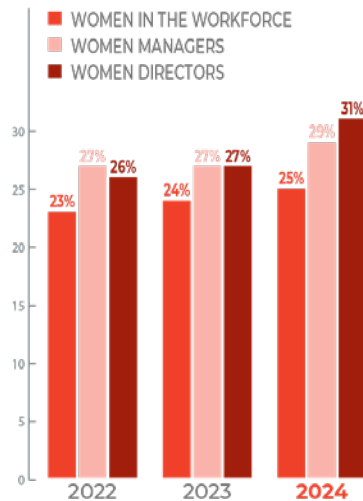
5 GENDER EQUALITY



Target 5.1

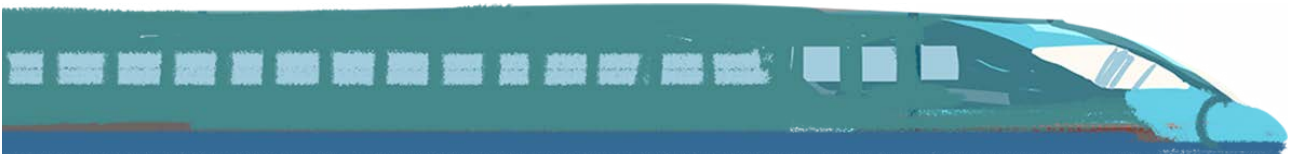
End all forms of discrimination against all women and girls everywhere

Of the RSI reporting companies:



THE RSI RESPONDENTS ARE CONTINUING TO MAKE PROGRESS IN TERMS OF GENDER EQUALITY.

IN 2024, **100%** OF ORGANISATIONS REPORTED HAVING BOTH A WRITTEN NON-DISCRIMINATION POLICY IN PLACE AND MONITORING ITS EFFECTIVENESS, MARKING CONTINUED PROGRESS IN INCLUSIVE WORKPLACE GOVERNANCE. WOMEN REPRESENTED **25%** OF THE WORKFORCE, CONSISTENT WITH PREVIOUS YEARS. FEMALE REPRESENTATION IN LEADERSHIP CONTINUED TO IMPROVE, REACHING **29%** AMONG MANAGERS AND **31%** AMONG DIRECTORS, THE HIGHEST LEVELS RECORDED SINCE RSI REPORTING BEGAN. THESE RESULTS INDICATE GRADUAL BUT SUSTAINED PROGRESS TOWARDS GREATER GENDER DIVERSITY.





Tolerància 0 (Zero Tolerance)



Challenge

The Catalan Government Railways (FGC) sought to move beyond awareness activities linked to specific dates by establishing a year-round initiative promoting women's safety and security by addressing sexual harassment across its network.

Solution

The Tolerància 0 campaign combined awareness messaging with existing safety and security measures, including SOS buttons, 2,848 CCTV cameras, improved lighting, enhanced emergency points, an app function for reporting sexual harassment, and staff training delivered with the Catalan Police. Campaign messages were displayed in trains, stations, and on social media.

Impact

In 2025, the campaign website recorded 15,906 visits, compared with 67 in 2024, while social media content reached more than 23,500 views in its first days. 722 employees received training, and the reporting function continued to support the management of sexual harassment complaints.



Credit: Ferrocarrils de la Generalitat de Catalunya



REGIONAL SPOTLIGHT: ADVANCING WOMEN IN RAIL IN AFRICA

GENDER EQUALITY HAS BECOME A PRIORITY WITHIN UIC'S AFRICA PROGRAMME THROUGH THE WOMEN IN RAIL AFRICA TASKFORCE, LAUNCHED IN 2025. THE INITIATIVE BRINGS TOGETHER RAILWAY ORGANISATIONS TO PROMOTE KNOWLEDGE SHARING, STRENGTHEN REGIONAL COOPERATION, AND ADVANCE MORE INCLUSIVE WORKPLACES ACROSS THE AFRICAN RAIL SECTOR.

TO MARK INTERNATIONAL WOMEN'S DAY 2026, THE TASKFORCE ORGANISED A WEBINAR FOCUSED ON IMPROVING THE SECURITY OF WOMEN IN RAIL, HIGHLIGHTING PRACTICAL MEASURES TO CREATE SAFER, MORE SECURE AND MORE INCLUSIVE ENVIRONMENTS FOR BOTH PASSENGERS AND RAILWAY STAFF, WHILE SHOWCASING UIC'S TRAIN 2B EQUAL INITIATIVE.





ECONOMIC GROWTH AND RAIL EMPLOYMENT

Target 8.1: Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries.

Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.

Target 8.7: Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.

Target 8.8: Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.

CONTRIBUTION TO THE ECONOMY AND EMPLOYMENT

Transport is a catalyst of economic and social development, connecting people to employment opportunities and goods to markets. Efficient transport systems strengthen supply chains, facilitate trade, improve access to services, and support the competitiveness of businesses and regions.

Rail contributes to these objectives by providing reliable, high-capacity passenger and freight transport that enhances connectivity and logistics performance. By moving large volumes of people and goods efficiently, rail helps reduce transport costs, improves market access, supports economic activity, and creates the conditions for sustainable growth. As countries continue to modernise their transport systems, investment in rail can strengthen economic resilience while delivering significant environmental benefits [9, 10].

NATIONAL SPOTLIGHT:RAIL INVESTMENT CAN ALSO PROMOTE REGIONAL COHESION BY IMPROVING ACCESS TO JOBS AND ECONOMIC OPPORTUNITIES. EUROPEAN COMMISSION ASSESSMENTS OF THE TRANS-EUROPEAN TRANSPORT NETWORK (TEN-T) SHOW THAT THE EXPANSION OF SPAIN'S AVE HIGH-SPEED NETWORK, TOGETHER WITH THE MODERNISATION OF COMMUTER RAIL CORRIDORS, STRENGTHENED CONNECTIONS BETWEEN OUTLYING REGIONS AND MADRID BY REDUCING TRAVEL TIMES AND EXPANDING ACCESS TO LABOUR MARKETS. THIS ILLUSTRATES HOW STRATEGIC RAIL INVESTMENT CAN REDUCE REGIONAL DISPARITIES, IMPROVE CONNECTIVITY, AND SUPPORT LONG-TERM ECONOMIC DEVELOPMENT.

8 DECENT WORK AND ECONOMIC GROWTH



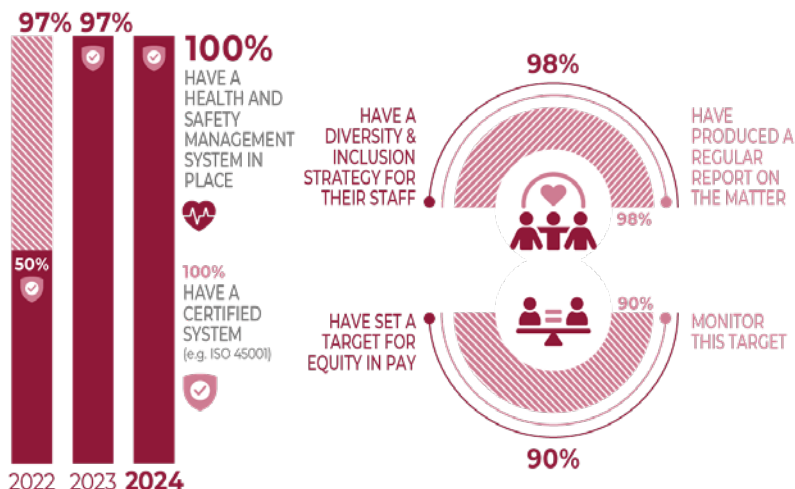
Target 8.5

By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

Target 8.8

Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

Of the RSi reporting companies:



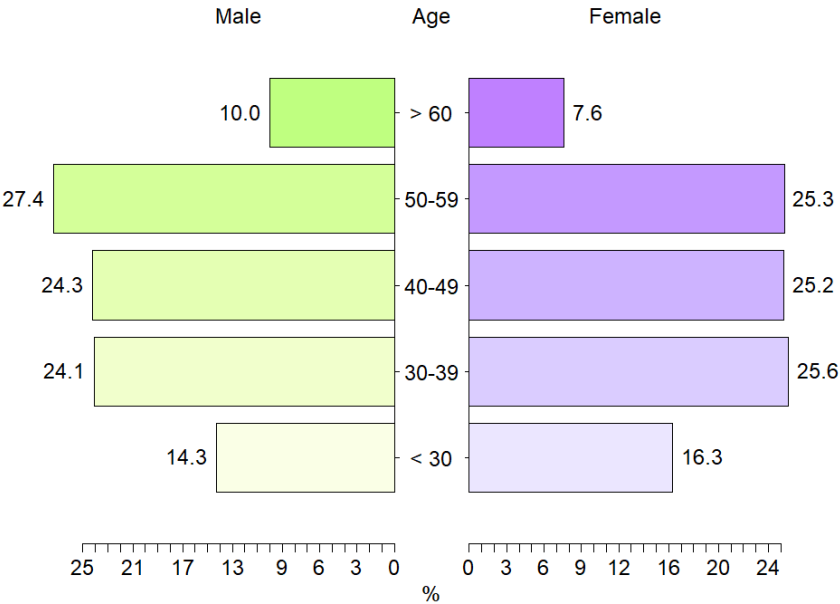
HEALTH AND SAFETY MANAGEMENT IS NOW UNIVERSAL AMONG RSI RESPONDENTS.

IN 2024, **100% REPORTED HAVING A CERTIFIED HEALTH AND SAFETY MANAGEMENT SYSTEM**, MARKING CONTINUED PROGRESS SINCE 2021.

DIVERSITY AND INCLUSION ALSO CONTINUE TO ADVANCE ACROSS THE SECTOR. **NINETY-EIGHT PERCENT** OF RESPONDENTS HAVE A DIVERSITY AND INCLUSION STRATEGY IN PLACE, UP FROM 74% IN 2022, AND **98%** OF THESE ORGANISATIONS REGULARLY REPORT ON ITS IMPLEMENTATION. PROGRESS IS ALSO EVIDENT ON PAY EQUITY, WITH **90%** OF RESPONDENTS NOW SETTING PAY EQUITY TARGETS, COMPARED WITH 67% IN 2022, WHILE **90%** MONITOR PROGRESS AGAINST THESE TARGETS.

WORKFORCE INCLUSIVENESS

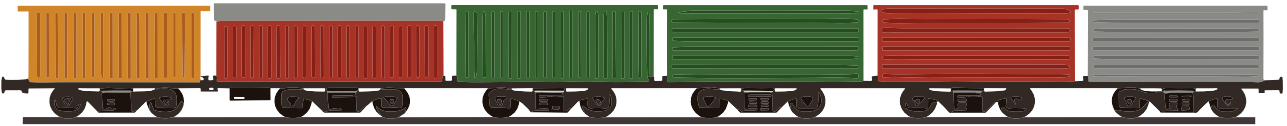
The railway sector's workforce is evolving to meet changing social, economic, and operational challenges, with the industry increasingly focusing on creating safer and more inclusive workplaces. This is happening by promoting equal opportunities, and supporting workforce development, which contribute to improving employee well-being while helping to build a resilient workforce capable of supporting the future of rail transport. Nevertheless, the railway sector is also facing labour shortages, an ageing workforce, and skills shortages, while increasing the participation of women in the workforce is recognised as an important priority.



THE AGE DISTRIBUTION OF THE RAILWAY WORKFORCE IN 2024

THE SLIGHTLY HIGHER SHARE OF WOMEN IN THE YOUNGER AGE GROUPS SUGGESTS A GRADUAL INCREASE IN FEMALE REPRESENTATION AMONG MORE RECENT ENTRANTS TO THE RAILWAY WORKFORCE.

IN-DEPTH ANALYSIS OF 54 UIC MEMBERS, PRIMARILY FROM EUROPE



8 DECENT WORK AND ECONOMIC GROWTH



Time to be better. Time to get greener.



SBB CFF FFS

Challenge

Despite implementing more than 200 sustainability measures, SBB found that public and political awareness of its environmental commitment did not match its sustainability efforts. The challenge was to increase the visibility and credibility of its sustainability programme, encourage rail travel over private cars, and maximise the impact of this communications initiative.

Solution

SBB launched the “Time to be better. Time to get greener.” campaign, centred on the iconic station clock with its second hand temporarily coloured green. Combining owned, paid, and earned media, the campaign integrated sustainability messaging into existing communications and used the clock as a consistent symbol to showcase SBB’s sustainability programme.

Impact

The campaign increased the perception that “SBB is sustainable” by +11.4% within nine months, while 37% of surveyed respondents said it motivated them to travel by train more often. The initiative achieved a media efficiency factor of 7.7.



Credit: SBB CFF FFS

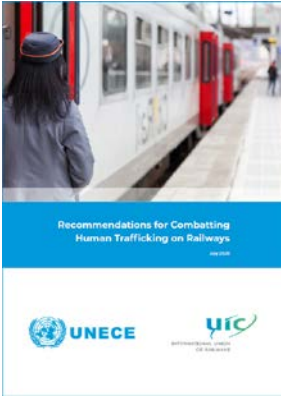
13 CLIMATE ACTION



8 DECENT WORK AND ECONOMIC GROWTH



COMBATTING HUMAN TRAFFICKING ON RAILWAYS



Human trafficking remains one of the world’s most serious forms of organised crime and human rights abuses. With railways transporting millions of passengers every day across national and international routes, traffickers can exploit rail networks to recruit, move and control victims. At the same time, railway staff and operators are uniquely positioned to identify indicators of trafficking, report suspicious activity and support law enforcement efforts.

Despite the railway sector’s strategic role in combating human trafficking, there has been limited international guidance specifically tailored to railway operations, which is why on 30 July 2026, the World Day Against Trafficking in Persons, UNECE and the UIC Security Platform released new recommendations. They provide practical, evidence-based measures and good practice examples that can be incorporated into railway security, operational and procurement policies [11].

INVESTMENTS IN RAIL INFRASTRUCTURE

Investment in transport infrastructure continues to vary significantly across countries. According to the latest International Transport Forum at the Organisation for Economic Co-operation and Development (OECD/ITF) data, average investment between 2022 and 2024 ranged from 0.2% of GDP in Ireland to 3.5% in Azerbaijan, with around half of the countries investing less than 1% of GDP. While transport infrastructure investment has generally declined over the past decade in most countries, investment priorities are gradually shifting. Road infrastructure continues to receive the largest share of funding, with more than half of transport infrastructure investment allocated to roads in almost all countries in 2024. There are some indications that rail is strengthening its position, with 20 of the 32 countries with available data increasing the share of investment directed to rail infrastructure over the last decade. The largest increases were recorded in Estonia, Serbia, Bulgaria, Ireland, Poland and Norway, reflecting a growing recognition of rail’s role in developing more sustainable and resilient transport systems [12].

NATIONAL SPOTLIGHT: ESTONIA INVESTS IN RAIL MODERNISATION



ESTONIA IS STRENGTHENING ITS RAIL NETWORK THROUGH MAJOR INFRASTRUCTURE INVESTMENT. BETWEEN 2021 AND 2026, €500 MILLION IS BEING INVESTED TO MODERNISE THE NATIONAL RAILWAY SYSTEM, INCLUDING ELECTRIFICATION, TRACK UPGRADES, IMPROVED SAFETY SYSTEMS, AND TRAFFIC AUTOMATION.

HIGHLIGHTS

- €500 MILLION INVESTMENT (2021–2026)
- ELECTRIFICATION AND INFRASTRUCTURE UPGRADES
- ELECTRIFIED TRAINS OPERATING AT 160 KM/H BETWEEN TALLINN AND TARTU BY 2026
- EUROPEAN INVESTMENT BANK (EIB) LOAN IN 2025 TO SUPPORT FURTHER ELECTRIFICATION AND RAILWAY RENEWAL

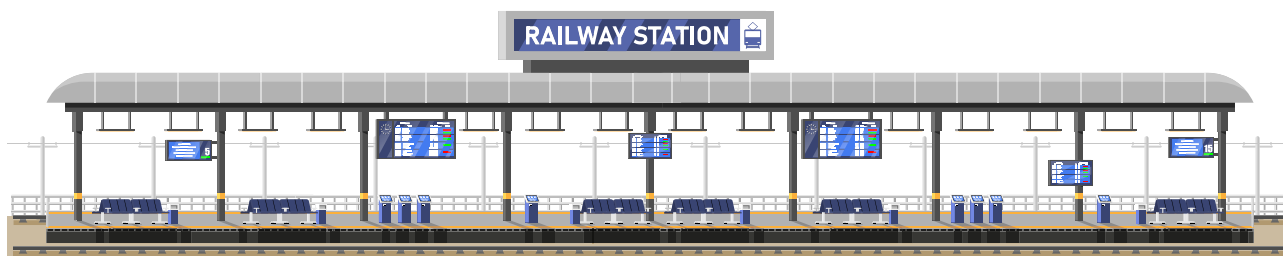
[12]

FINANCING HIGH-SPEED RAIL AND THE ROLE OF CARBON PRICING

High-speed rail infrastructure requires substantial upfront investment, long construction periods and extended payback horizons, making stable, long-term financing essential. The UIC *Financial Models for High-Speed Rail Infrastructure* report published this year, based on more than 20 high-speed rail projects across Europe, Asia, and the Americas, concludes that while public delivery remains the predominant financing model, alternative approaches such as Public-Private Partnerships (PPPs) and the Regulated Asset Base (RAB) model can complement public investment if appropriate institutional and financial conditions are provided. The report also identifies carbon pricing revenues, including emissions trading systems (ETS), as a promising future source of funding. Although ETS revenue is not yet used to finance high-speed rail infrastructure, it could support both new projects and the modernisation of existing networks while aligning climate finance with long-term transport decarbonisation objectives [13].

CASE STUDY | Switzerland's Rail Infrastructure Fund

Switzerland is a leading example of long-term rail financing through a dedicated Rail Infrastructure Fund (FIF). By combining earmarked revenue with multi-year investment programmes, the fund provides stable financing for rail infrastructure while reducing dependence on annual budget cycles. The UIC study identifies this approach as an effective mechanism for ensuring long-term investment certainty and supporting the continuous development and modernisation of the rail network.





CO₂ EMISSIONS, DECARBONISATION, AND MITIGATING CLIMATE CHANGE

Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

Target 13.2: Integrate climate change measures into national policies, strategies and planning.

Transport remains one of the largest sources of global greenhouse gas emissions and one of the most challenging sectors to decarbonise. Transport emissions must decrease significantly this decade, requiring a rapid shift towards low- and zero-emission mobility solutions.

Rail is the least emissions-intensive mode of passenger transport. Despite carrying around 8% of global passenger-kilometres and 7% of freight tonne-kilometres, rail accounts for only around 1% of transport emissions. Expanding rail networks, increasing rail use, and accelerating electrification will be essential to reducing emissions from the transport sector and achieving global climate goals.



13 CLIMATE ACTION



Target 13.1

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Target 13.2

Integrate climate change measures into national policies, strategies and planning

Of the RSi reporting companies:



95%

have a board-level oversight of climate related issues



98%

had an emission target active in 2023
95% have integrated targets in the industrial plan



95%

collaborate with governments on policies or solutions for climate change and scaling up climate actions



95%

take part in public-private partnerships or initiatives on climate related issues

THE RSI RESPONDENTS ARE CONTINUING TO STRENGTHEN THEIR CLIMATE GOVERNANCE INITIATIVES. IN 2024, **95%** REPORTED HAVING BOARD-LEVEL OVERSIGHT OF CLIMATE-RELATED ISSUES, WHILE **98%** HAD ACTIVE EMISSIONS REDUCTION TARGETS, UP FROM 57% IN 2022. MOST ORGANISATIONS HAVE ALSO EMBEDDED THESE TARGETS WITHIN THEIR *INDUSTRIAL PLANS*, DEMONSTRATING THAT CLIMATE ACTION IS INCREASINGLY INTEGRATED INTO LONG-TERM BUSINESS STRATEGY. COOPERATION REMAINS EQUALLY STRONG, WITH **95%** OF RESPONDENTS WORKING WITH GOVERNMENTS ON CLIMATE POLICIES AND 95% PARTICIPATING IN PUBLIC-PRIVATE CLIMATE INITIATIVES, REFLECTING THE SECTOR'S GROWING COMMITMENT TO JOINT CLIMATE ACTION.





Beyond mobility: coordinating a net-zero future via railway energy synergy



Challenge

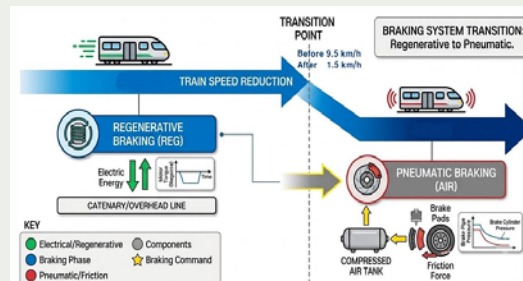
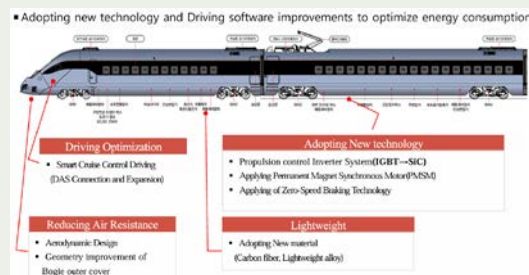
The Korea Railroad Corporation (KORAIL) is expanding renewable energy use while reducing electricity consumption and carbon emissions across the railway network.

Solution

The programme installs solar power systems on railway infrastructure, including sound barriers and fences, and combines AI-based Smart Cruise, a tablet-based peak demand management system, permanent magnet synchronous motors (PMSM), and three-level propulsion control systems. KORAIL is also developing energy storage system (ESS) transport using the railway network.

Impact

A pilot solar power system generates 230 MWh of electricity annually for on-site consumption. The Smart Cruise system demonstrated up to a 9.35% reduction in energy consumption, while the peak demand management system demonstrated a 12.6% reduction in energy demand during peak periods. By 2034, KORAIL aims to reduce electricity consumption by 293,010 MWh and carbon emissions by 134,612 tonnes annually.



Credit: Korail





Simpler, better, greener – using greener as a driving force for change



Challenge

Network Rail adopted “Simpler, Better, Greener” as its vision for Control Period 7 (2024–2029), creating an opportunity to insert sustainability more thoroughly into the organisation. The challenge was to build a consistent sustainability culture and engage employees and the supply chain through a shared understanding of what a greener railway means.

Solution

The sustainability team delivered a communications campaign centred on relatable content, employee stories, seasonal themes, training, and a dedicated Greener Railway Hub. Sustainability messaging was also integrated into recruitment, induction, staff awards, and e-learning.

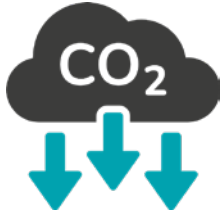
Impact

In 2025, positive responses to the statement that “*Network Rail is an environmentally and socially responsible organisation*” increased from 64% to 68%, while 62% of respondents said they understood how their role contributes to a greener railway. Within six months of launch, 1,298 colleagues completed the Greener Railway e-learning module.



Credit: Network Rail





According to the UIC Traction Energy and Emissions Database (TED), total CO₂-equivalent emissions from European train operations increased in 2024 following the reduction observed in 2023, reflecting a fluctuating trend in recent years from 2020 onwards.

Despite this variability, the sector's performance remains well below its climate targets. Between 2005 and 2024, total CO₂eq emissions were reduced by 57% calculated using the market-based approach and by 58% using the location-based approach [14].

PASSENGERS

PASSENGER RAIL HAS CONTINUED TO REDUCE ITS CARBON FOOTPRINT SINCE 2005:

- **51.2% MARKET-BASED**
- **60.9% LOCATION-BASED**

FREIGHT

FREIGHT RAIL REDUCED CO₂EQ EMISSIONS PER TONNE SINCE 2005:

- **52.3% MARKET-BASED**
- **61.7% LOCATION-BASED**





Challenge

Rails, concrete sleepers, and ballast are the largest sources of embodied carbon in track renewals. Network Rail sought to reduce emissions while ensuring replacement materials met the railway's strict technical and safety requirements.

Solution

Network Rail developed a low-carbon track demonstrator combining green steel rails, low-carbon concrete sleepers, and reused blended ballast. Extensive testing and product approval confirmed the new materials performed well, so that they are now deployed for track renewals.

Impact

The combined solution reduces embodied carbon in track renewals by up to 55%, lowering emissions from 402,000 to 186,000 kg CO₂eq per kilometre of track. It also enables the reuse of up to 0.6 million tonnes of ballast annually and is estimated to save 65 million kg CO₂eq each year across average annual renewals.



Credit: Network Rail





RESILIENT INFRASTRUCTURE

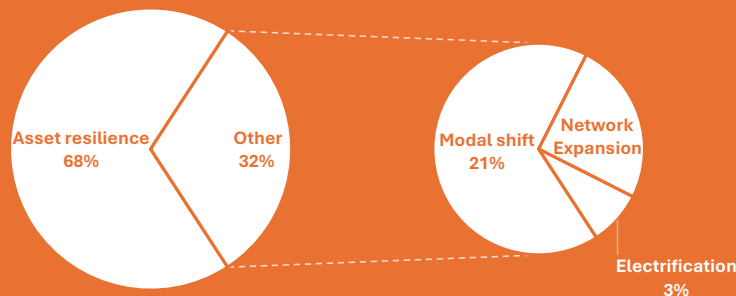
Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.

National policy plays a critical role in rail climate resilience because National Adaptation Plans (NAPs) help translate climate risk into priorities, standards, projects, and financing strategies. Recent UIC analysis indicates that where rail is clearly referenced in NAPs, it is more likely to be integrated into planning, design, and funding frameworks.

UIC analysis of 44 official NAPs found that transport is referenced in 39 plans, while rail is included in a mere 23, showing that rail remains unevenly represented in national adaptation policies. Where rail is addressed, the main areas of focus are on making assets more resilient, engendering a modal shift to rail, network expansion, and electrification. The study also highlights that NAPs are more likely to unlock finance when they include measurable elements such as targets and indicators.

THEMES IN NATIONAL ADAPTION PLANS (OF THE 44 ANALYSED)





Challenge

The renewal of the Jauntal Bridge required a solution to be identified that would meet the requirements of a high-capacity railway line while minimising the environmental impact and resource use.

Solution

Extensive investigation demonstrated that the existing piers and abutments could be renovated and reinforced instead of being completely rebuilt. Austrian Federal Railways (ÖBB) Infrastruktur AG used a comparative lifecycle assessment to evaluate the differences between renovation, new construction, and new construction with demolition and recycling, using the results to support project decision-making.

Impact

According to the lifecycle assessment, the renovation option produced around 6% of the carbon footprint of a new construction project, saving approximately 4,000 tonnes of CO₂eq (corresponding to approximately 94% greenhouse gas savings). The project also demonstrated the potential of extending infrastructure service life through renovation and reinforcement measures.



Credit: ÖBB



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Target 9.1

Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

Target 9.4

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

Of the RSi reporting companies:



HAVE PUT PROCESSES IN PLACE FOR IDENTIFYING, ASSESSING, AND MANAGING CLIMATE-RELATED ISSUES INTEGRATED INTO THE OVERALL RISK MANAGEMENT

ALL OF THEM REPORT ON THESE PROCESSES
83% IN COMPLIANCE WITH TCFD



HAVE FRAMEWORKS OR PROCEDURES IN PLACE TO INCLUDE CLIMATE-CHANGE RELATED RISK ANALYSIS FOR NEW OR UPGRADING INFRASTRUCTURE PROJECTS



PRODUCE SCENARIO ANALYSES AS DESCRIBED IN THE TCFD

CLIMATE RISK MANAGEMENT HAS NOW BEEN FIRMLY INCORPORATED INTO THE VARIOUS RSI ORGANISATIONS.

IN 2024, **100%** OF RESPONDENTS REPORTED HAVING PROCESSES IN PLACE TO IDENTIFY, ASSESS, AND MANAGE CLIMATE-RELATED RISKS WITHIN THEIR OVERALL RISK MANAGEMENT FRAMEWORK, AND ALL OF THEM PUBLICLY REPORT ON THESE PROCESSES. IN ADDITION, **83%** STATED THAT THEIR REPORTS ARE IN LINE WITH THE RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD), UP FROM 70% IN 2023.

THE INTEGRATION OF CLIMATE RESILIENCE INTO INFRASTRUCTURE PLANNING HAS ALSO STRENGTHENED. **ALL INFRASTRUCTURE MANAGERS** NOW INCLUDE CLIMATE-RELATED RISK ASSESSMENTS IN NEW AND UPGRADED INFRASTRUCTURE PROJECTS, WHILE **81%** OF RESPONDENTS UNDERTAKE CLIMATE SCENARIO ANALYSES, COMPARED WITH 58% IN 2023.





Bimodal railway pilot project for the salmon industry: Biobío–Frutillar–Puerto Montt logistics connection

Challenge

The Chilean salmon industry relies heavily on road transport, creating congestion, emissions, and logistical vulnerabilities while limiting the use of lower-carbon freight alternatives.

Solution

EFE implemented a bimodal rail-road pilot project along the Biobío–Frutillar–Puerto Montt corridor, integrating rail services into the salmon supply chain for the first time. The project supported cold-chain performance, operational reliability, and end-to-end traceability through collaboration between 21 public and private stakeholders.

Impact

The pilot project transported 15 containers carrying approximately 400 tonnes of salmon and achieved a 59% reduction in greenhouse gas emissions compared with road-only transport. It also demonstrated the feasibility of a scalable multimodal logistics model that can reduce road congestion, strengthen logistics resilience, and support the decarbonisation of freight.



Credit: EFE Trenes de Chile





Coordination and Monitoring Centre (CC&M)



Challenge

Following a number of incidents in 2023, EFE identified limitations in its reactive management model, which lacked integrated real-time information and the ability to anticipate operational risks.

Solution

EFE established a 24/7 Coordination and Monitoring Centre (CC&M), integrating the Synchronous Digital Hierarchy (SDH) railway communications and Supervisory Control and Data Acquisition (SCADA) energy control systems into a single platform. The project also introduced bridge sensors, CCTV, and level crossing monitoring to support predictive asset management and centralised operational coordination.

Impact

The integrated platform reduced mean time to recovery by providing continuous technical support and real-time critical asset monitoring. Bridge instrumentation enables structural anomalies to be detected early on, while CCTV and level crossing monitoring have reduced operational risks associated with theft and vandalism and supported faster responses to operational events.



Credit: EFE TRENES de Chile





Analysing the potential impact of natural hazards on Austrian rail infrastructure



Challenge

Following the 2024 Central European floods, ÖBB-Infrastruktur AG launched a project to assess the impact of natural hazards on rail infrastructure and identify measures to strengthen resilience against floods, storms, heavy rainfall, and extreme temperatures.

Solution

A company-wide working group developed and prioritised 42 measures for existing infrastructure and future projects. Those already implemented include raising electrical systems above flood level, sealing cable entries at Tullnerfeld station, and introducing redundant pump power supplies and deployable flood barriers in high-priority tunnels.

Impact

The project produced a company-wide report with over 70 pages of measures and established a programme to implement flood protection at nine high-risk tunnels by 2027. The outcomes support long-term updates to internal policies and the integration of resilience measures into future infrastructure projects.



Credit: ÖBB-Infrastruktur AG, Presse





GreenResilience: Sustainable corrosion protection for railway infrastructure in extreme desert environments



The Railways of the Islamic Republic of Iran

Challenge

Railway fastening systems operating in desert environments were exposed to high salinity, extreme temperatures and sandstorms, causing rapid corrosion, frequent replacement and high maintenance costs. Conventional coating provided insufficient long-term protection, while new technologies required validation under real operating conditions.

Solution

The Railways of the Islamic Republic of Iran (RAI) developed and validated a nano-coating system through laboratory testing, electrochemical analysis, and a three-year field exposure study. Lifecycle cost analysis demonstrated that there were the long-term benefits, such as extending component life and reducing maintenance frequency.

Impact

The nano-coating achieved 1,200 hours of salt spray resistance, outperforming hot-dip galvanising (1,000 hours) and Dacromet (500 hours). Electrochemical testing showed corrosion resistance 315 times higher than uncoated steel, while extending fastening system service life by more than 100%.



Credit: The Railways of Islamic Republic of Iran



ENERGY CONSUMPTION AND EFFICIENCY

Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix.

Target 7.3: By 2030, double the global rate of improvement in energy efficiency.

As the most electrified mode of transport, rail can help reduce dependence on fossil fuels while supporting the integration of renewable energy sources and improving energy security. However, diesel still accounts for over half of rail's global energy demand and remains particularly important for freight operations, highlighting the need for continued electrification and alternative traction solutions.

7 AFFORDABLE AND CLEAN ENERGY



Target 7.1

By 2030, ensure universal access to affordable, reliable and modern energy services

Target 7.2

By 2030, increase substantially the share of renewable energy in the global energy mix

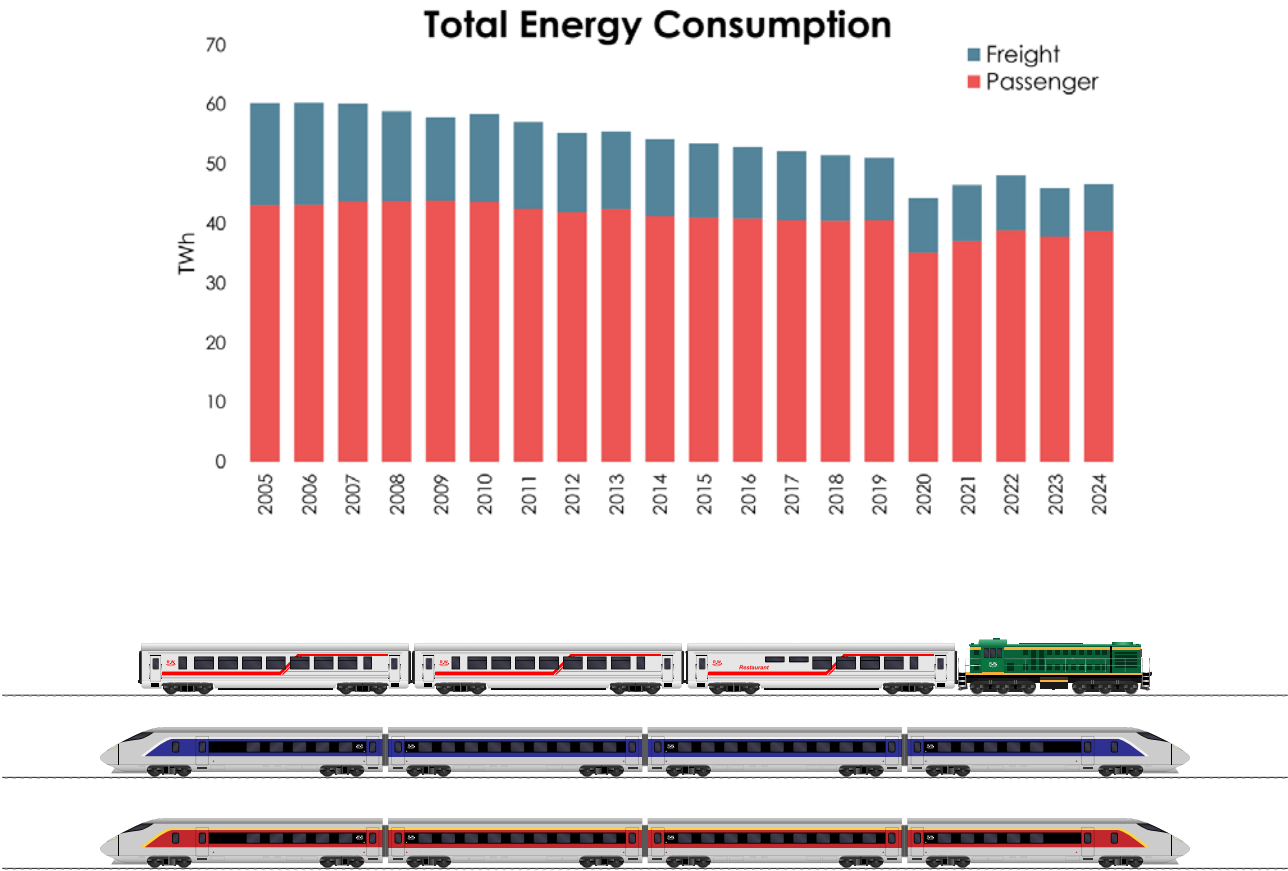
Of the RSI reporting companies:



THE RSI RESPONDENTS ARE CONTINUING TO INCREASE THEIR ADOPTION OF RENEWABLE ENERGY TARGETS. IN 2024, **90%** OF PARTICIPATING ORGANISATIONS HAD MONITORING TARGETS FOR RENEWABLE ENERGY CONSUMPTION, UP FROM 53% IN 2021. AT THE SAME TIME, RENEWABLE ENERGY ACCOUNTED FOR **48%** OF TOTAL ENERGY CONSUMPTION, REMAINING BROADLY STABLE COMPARED WITH PREVIOUS YEARS AND REFLECTING THE SECTOR'S CONTINUED TRANSITION TOWARDS CLEANER ENERGY SOURCES.

According to the UIC Traction Energy and Emissions Database (TED), total energy consumption from European train operations decreased by 23% between 2005 and 2024. While energy consumption increased slightly (+1.45%) in 2024 following the post-COVID-19 pandemic fluctuations observed in recent years, the long-term trend remains strongly downward. Energy consumption from passenger train operations decreased by 10% between 2005 and 2024, while freight energy consumption fell by 54% over the same period [14].

This continued reduction in energy consumption highlights the ongoing improvement in operational efficiency. In 2024, energy consumption from passenger trains was 27.5% lower than in 2005, remaining well below the downward trend required to meet long-term targets. Energy consumption for freight transport was 21.6% lower than in 2005 and remained broadly aligned with the sector's 2050 objectives [14].



7 AFFORDABLE AND CLEAN ENERGY



Conservation-led deep energy retrofit of a national monument (protected structure) - Connolly Station, Dublin, Ireland



Challenge

Retrofitting the 1844 Connolly Station building required reconciling stringent conservation requirements with modern energy performance standards while preserving its historic structure and restoring obscured interior spaces.

Solution

Irish Rail applied a fabric-first retrofit strategy supported by Passive House Planning Package (PHPP) energy modelling to identify thermal weaknesses. Natural materials, including cellulose and sustainably sourced timber, were used alongside traditional craftsmanship to improve performance while integrating modern building services and Universal Design features.

Impact

The retrofit reduced heating requirements in the station from 616 to 72 kWh/m²/year and achieved an embodied carbon footprint of 2.5 kg CO₂eq/m². The project restored historic interiors, created an accessible workspace, and is projected to recover its capital costs within 12 years.



Credit: Irish Rail

3 GOOD HEALTH AND WELL-BEING



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



While electrification remains the preferred solution for reducing emissions from rail transport, it cannot always be economically justified, particularly on low-density lines. In this case, alternative propulsion technologies are becoming increasingly important to replace diesel traction. Battery-electric trains, hydrogen, biofuels, and hybrid solutions are being deployed or tested across Europe, with the most suitable technology depending on operational requirements, infrastructure characteristics, and local conditions. Rather than relying on a single solution, the sector is increasingly adopting a technology-neutral approach, combining electrification with alternative propulsion systems to accelerate decarbonisation across the entire railway network.

SUSTAINABLE PRACTICES ALONG RAILWAY SUPPLY CHAINS

Target 12.2: By 2030, achieve the sustainable management and efficient use of natural resources.

Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment.

Target 12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

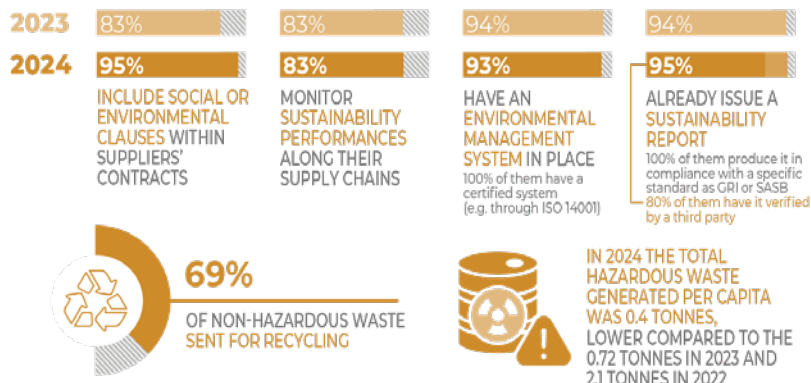
Target 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

Responsible consumption and production are fundamental to ensuring that rail delivers sustainable transport while also minimising the use of natural resources and reducing its environmental impact throughout the asset lifecycle. As infrastructure-intensive systems with long-lived assets, railways rely on global supply chains for materials, equipment and services, making responsible resource management an important component of sustainable railway operations.

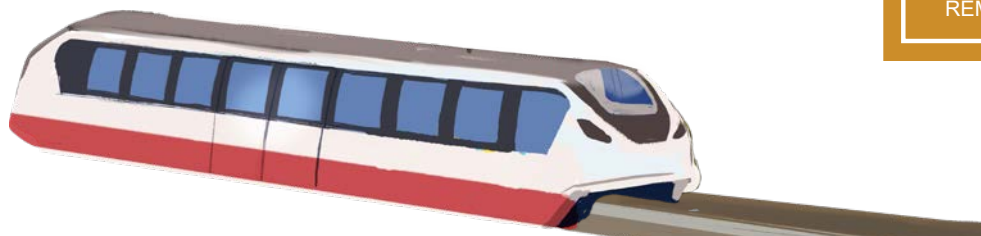
12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Of the RSI reporting companies:



THE RSI RESPONDENTS ARE CONTINUING TO STRENGTHEN THEIR SUSTAINABLE PROCUREMENT AND CORPORATE REPORTING PRACTICES. IN 2024, **95% OF ORGANISATIONS** INCLUDED SOCIAL OR ENVIRONMENTAL CLAUSES IN SUPPLIER CONTRACTS AND MONITORED SUSTAINABILITY PERFORMANCE ACROSS THEIR SUPPLY CHAINS, A SUBSTANTIAL INCREASE FROM 68% AND 59%, RESPECTIVELY, IN 2021. ENVIRONMENTAL MANAGEMENT ALSO REMAINS WELL ESTABLISHED, WITH **93% OF RESPONDENTS** OPERATING A CERTIFIED ENVIRONMENTAL MANAGEMENT SYSTEM, WHILE **95% PUBLISH** SUSTAINABILITY REPORTS AND ALMOST ALL FOLLOW RECOGNISED REPORTING STANDARDS. RESOURCE MANAGEMENT ALSO SHOWED POSITIVE PROGRESS, WITH HAZARDOUS WASTE GENERATION DECREASING FROM **0.7 T TO 0.4 T PER CAPITA**, WHILE THE SHARE OF NON-HAZARDOUS WASTE SENT FOR RECYCLING REMAINED STABLE AT **69%**.





Industrialised ballast renewal at SNCF: All is well with the ballast!



Challenge

Ballast is the most widely used material in the French railway sector, with 1.7–2 million tonnes being used annually. However, traditional reprocessing methods allowed only limited reuse, with most removed ballast being diverted to lower value uses.

Solution

The French National Railways (SNCF) developed a mobile ballast reprocessing system combining screening, washing and in-line inspection to produce railway-grade ballast near construction sites. Operating at industrial scale since 2024, the system processes up to 2,000 tonnes per day using a closed-loop water system and continuous quality monitoring.

Impact

In 2025, 400,000 tonnes of ballast were returned to the rail network, achieving recovery rates of up to 72%, generating over 230,000 tonnes of co-products, and delivering more than €5.5 million in savings on purchased ballast.



Credit: SNCF



The railway sector has traditionally always had an integrated lifecycle approach by maintaining, refurbishing and extending the service life of infrastructure and rolling stock. Today, these practices are increasingly complemented by circular economy initiatives that promote resource efficiency, waste prevention, material recovery, and sustainable procurement across the entire value chain.

UIC members are continuing to develop innovative solutions that improve circularity in railway infrastructure and operations. Initiatives focusing on the reuse and recycling of key railway materials, such as ballast and sleepers, demonstrate how the sector is moving beyond waste management towards a more systematic approach to resource efficiency and circular asset management.



Reintroducing rapidly renewable (biobased) materials in trains: The WoodFlow Ceiling Demonstrator Project



Challenge

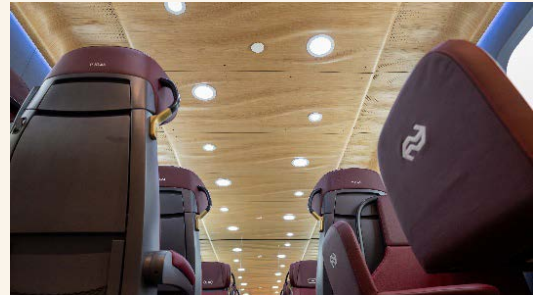
Train interiors currently rely predominantly on finite materials, with less than 1% of materials being easily renewable. This creates challenges related to sustainability, circularity, resource availability, and carbon footprint.

Solution

To combat this, Dutch Railways (NS) launched the WoodFlow Demonstrator project, which developed and installed full-scale bio-composite ceiling panels made primarily from rapidly renewable wood fibres. The panels were designed to meet railway requirements for safety, durability, and maintenance while supporting modular, reversible installation and end-of-life recycling.

Impact

The project demonstrated the feasibility of replacing traditional ceiling materials with a lightweight bio-composite alternative. The WoodFlow panels support circular material approaches through modular maintenance and recycling, while their reduced weight contributes to lower energy consumption during train operation. Full-scale panels were successfully fabricated and installed in an NS ceiling mock-up, integrating lighting and other onboard systems.



Credit: Nederlandse Spoorwegen





Making the most of every drop



Challenge

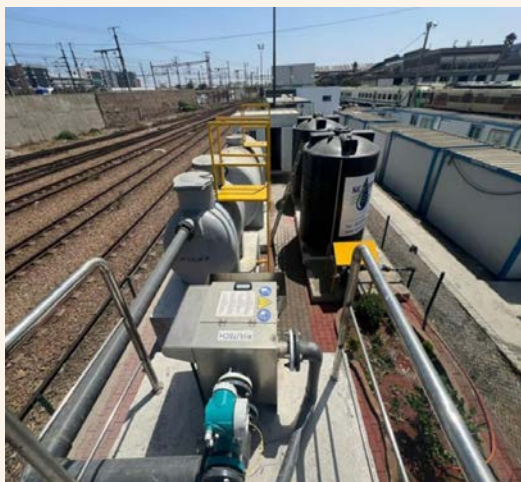
Train washing operations require large volumes of water and generate wastewater with variable physicochemical characteristics, making treatment and reuse technically challenging while increasing pressure on water resources.

Solution

ONCF installed a washing water treatment and recycling plant at its Casablanca maintenance centre. The system combines screening, sand removal, degreasing, hydrocarbon separation, aeration, filtration, disinfection, and pH regulation to recover, treat, and reuse at least 90% of the water used for train washing, with a treatment capacity of approximately 40 m³ per day.

Impact

Since being commissioned in July 2024, the system has recycled 8,000 m³ of water, reduced well water consumption by 70% compared with 2023, and eliminated the use of drinking water for washing operations. The project also achieved estimated annual savings of 183,960 MAD, with a payback period of approximately 5.4 years.



Credit: ONCF





ENVIRONMENTAL IMPACT: PROTECTING BIODIVERSITY

Biodiversity continues to decline globally due to habitat loss, changing land-use, pollution, issues with invasive species, and climate change, making ecosystem conservation and restoration essential for sustainable development [15]. As one of the most land-efficient modes of mass transport, rail helps reduce pressure on natural ecosystems while supporting low-carbon mobility [16, 17].



Irish Rail – Woodbrook DART Station



Challenge

The project sought to introduce rail infrastructure into a sensitive coastal landscape without the visual and ecological impacts typically associated with conventional station designs.

Solution

Woodbrook Station adopted a landscape-led design combining a modular galvanised steel structure with “ha-ha” (multi-level) boundary ditches that keep the line secure while maintaining visual and wildlife corridors. The project also implemented a “Zero-Lift Strategy”, using 1:20 gradient ramps to provide level access across all platforms.

Impact

The station has 100% LED lighting, manages 100% of surface water on site through Sustainable Urban Drainage Systems (SuDS), and uses native coastal planting to support local biodiversity. The ramp-based design eliminates the operational energy demand associated with mechanical lifts while providing uninterrupted access for passengers with reduced mobility, cyclists, and parents with strollers.



Credit: Irish Rail, Discover Dublin



At the same time, railways both depend on and influence the ecosystems through which they pass. Healthy ecosystems provide essential services that support safe and resilient railway operations, including flood regulation, slope stabilisation, carbon sequestration and water regulation. However, railway infrastructure can also fragment habitats and alter environmental processes.

Despite these interdependent factors, ecosystem services have rarely been considered systematically in railway planning and asset management. To address this gap, UIC developed the Ecosystem Valuation for Railways (ECOV4R) framework, which applies a natural capital approach to identify, assess and, where appropriate, monetise the impacts of railway projects on ecosystem services. By complementing existing environmental and economic appraisal methods, ECOV4R enables biodiversity and ecosystem services to be more effectively integrated into railway decision-making [18].





Sowing a sunny tomorrow



Challenge

Slovenian Railways (SŽ) sought to raise awareness of sustainable mobility while demonstrating how railway corridors can support biodiversity and community engagement. The challenge was to connect municipalities, schools, and local communities through a credible, low-cost initiative while avoiding perceptions of greenwashing.

Solution

Launched on World Bee Day 2025, the *Sowing a Sunny Tomorrow* initiative invited communities to sow sunflower seeds alongside railway lines, creating pollinator-friendly habitats. Delivered entirely in-house, the campaign combined environmental action, inclusive seed preparation involving people with disabilities, and partnerships with municipalities, schools, and local communities.

Impact

The campaign created multiple pollinator-friendly habitats – with hundreds of citizens, schoolchildren, and local representatives taking part – generated over 100 positive media mentions with an estimated reach of more than 500,000 people, and enhanced the travel experience through the visible transformation of railway landscapes.



Credit: Slovenian Railways





HUMAN HEALTH AND WELL BEING: REDUCING NOISE AND IMPROVING AIR QUALITY

Transport plays an important role in public health through its effects on air quality, exposure to noise, and access to essential services. While rail is the lowest-emission mode of transport, managing its environmental impact remains essential to protecting the health and well-being of passengers, railway workers, and neighbouring communities.

Noise remains one of the most significant environmental externalities associated with transport. Although road transport continues to account for the largest share of transport-related noise exposure, rail has a substantially lower noise impact per passenger and continues to be an important part of sustainable travel. At the same time, reducing railway noise through quieter rolling stock, improved track maintenance, and operational measures remains a priority for the sector.

Air quality is another important aspect of SDG 3. Continued electrification, improved diesel technology, and operational measures have contributed to reducing nitrogen oxide (NO_x) and particulate matter (PM_{10}) emissions from railway operations.

According to the UIC Traction Energy and Emissions Database (TED), total PM_{10} emissions in 2024 were approximately 46% lower than the 2005 baseline, while NO_x emissions decreased by almost 44%. Both reductions are well ahead of the UIC- Community of European Railway and Infrastructure Companies (CER) 2030 Commitment Targets, exceeding the expected performance by around 16% for PM_{10} and 14% for NO_x respectively, at this stage. As a result, the sector has already achieved its 2030 targets for both pollutants.

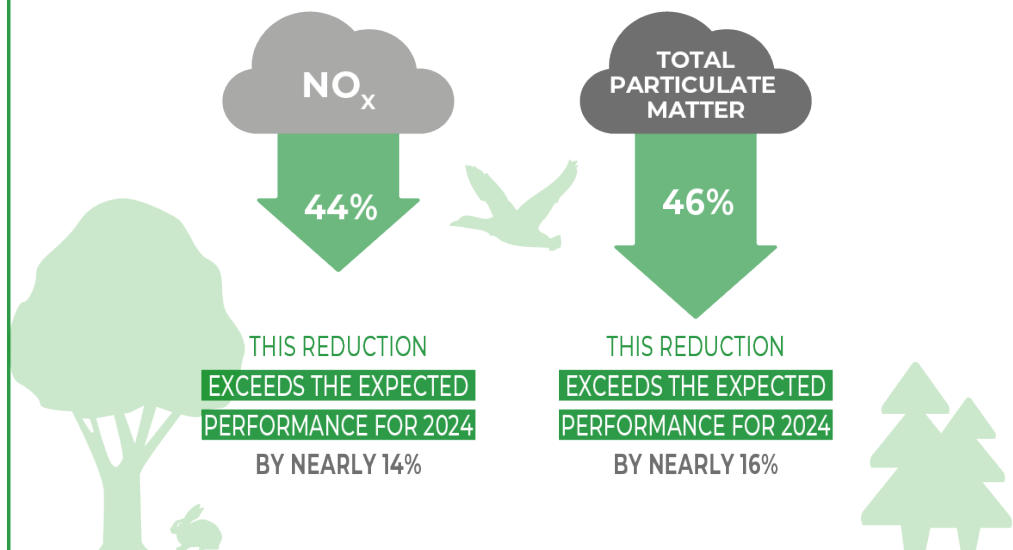
3 GOOD HEALTH AND WELL-BEING



Target 3.9

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

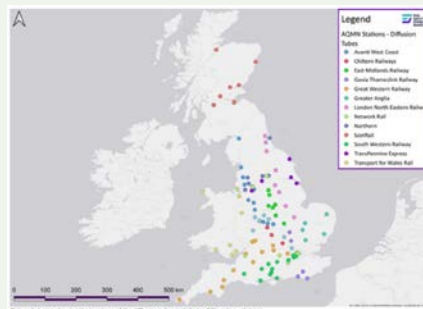
The UIC Traction Energy and Emissions Database recorded from 2005 to 2024



Before the Air Quality Monitoring Network (AQMN), air quality monitoring at railway stations in Great Britain was fragmented, making it difficult to consistently assess exposure to pollutants such as nitrogen dioxide (NO_x) and particulate matter.

RSSB established the AQMN across 72 higher-risk stations, creating a standardised national monitoring network using reference-grade monitors, low-cost sensors, and diffusion tubes. The programme was supported by guidance and Air Quality Improvement Plans.

AQMN data informed the Government's Rail Air Quality Policy Statement and identified around 50 stations requiring improvement plans. At Birmingham New Street, revised diesel engine shutdown procedures and Intelligent Engine Stop-Start technology reduced train idling by 15%, with air quality expected to improve by up to 7%.



5 key locations
Continuous, highly
accurate
reference-grade
data



16 stations
High-resolution
real-time readings



All stations
Average 5 points per
station
Monthly and annual
data

CONCLUDING MESSAGE FROM THE UIC SUSTAINABILITY PLATFORM CHAIR

As I conclude my second year as Chair, I am deeply moved by the work presented in this fourth Global Rail Sustainability Report. We stand at a defining moment, at the start of the UN Decade of Action for Sustainable Transport. This report is both a celebration of our members' dedication and an invitation to the global transport community to embrace the power of rail. Through both the convincing data and the 27 case studies featured here, we hope to have demonstrated that the transition to sustainable mobility is already happening through real-world action and knowledge sharing. I want to congratulate our members for their excellent work and for providing a roadmap that the rest of the world can follow. It has been a privilege to lead UIC during such a transformative era, and I am confident that the spirit of collaboration found in these pages will continue to drive our industry toward a resilient and sustainable future for all.

Lia Talarico
FS International
Chair of UIC Sustainability Chair
(July 2024 - July 2026)

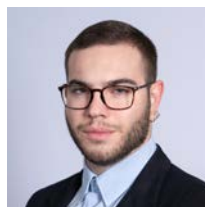


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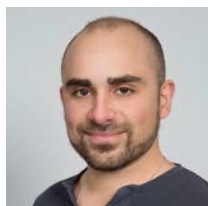
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REFERENCES

- [1] International Association of Public Transport (UITP), «Housing, Public Transport, and Sustainable Cities: Delivering SDG 11.2,» 2026.
- [2] UIC, «High-Speed Rail Atlas,» 2026.
- [3] UIC, «UIC Safety Report 2025,» 2025.
- [4] UIC, «UIC Virtual Training Course on ACCESSIBILITY IN RAIL,» 2026.
- [5] I. Granada, A.-M. Urban, A. Monje Silva, P. Ortiz, D. Perez, L. Montes et A. Caldo, «The Relationship Between Gender and Transport,» 2016.
- [6] The European Institute for Gender Equality (EIGE), «Gender in Transport,» 2016.
- [7] N. Bergmann, F. Enengl et R. Nikolatti, «NEW WOMEN IN RAIL (WIR)-REPORT 2025,» 2025.
- [8] Y. Davidich et A. Galkin, «Towards gender-responsive transport planning: A case study of suburban passenger travel,» Journal of Urban Mobility, 2025.
- [9] M. Lawrence et R. Bullock, «The Role of Rail in Decarbonizing Transport in Developing Countries. Mobility and Transport Connectivity Series. © World Bank» 2022.
- [10] World Bank Group, «Transforming Logistics: The Power of Rail Investment,» 2025. <https://www.world-bank.org/en/results/2025/08/28/transforming-logistics-the-power-of-rail-investment>.
- [11] UIC and UNECE, «Recommendations for Combatting Human Trafficking on the Railways,» 2026.
- [12] ITF, «Investment in transport infrastructure: Latest global data comparison,» 2026.
- [13] UIC, «Financial models for high-speed rail infrastructure,» 2026.
- [14] UIC, «TRACTION ENERGY AND EMISSION DATABASE,» 2025.
- [15] IPBES, «The global assessment report on biodiversity and ecosystem services,» 2019. https://files.ipbes.net/ipbes-web-prod-public-files/inline/files/ipbes_global_assessment_report_summary_for_policymakers.pdf.
- [16] ERA, «2024 Rail Environmental Report,» 2024 https://www.era.europa.eu/system/files/2024-07/20242052_PDF_TR0924239ENN_002.pdf.
- [17] UIC, «European Railways: Strategy and Actions for Biodiversity, rEvERsE Final Report,» 2022.
- [18] UIC, «ECOV4R Framework: Assessing and Valuing Ecosystem Services in Railway Infrastructure (Ecosystem Valuation for Railways project),» March 2026.

SDG PROGRESS ASSESSMENT: REPORTING METHOD

The reporting method adopted for each SDG for the 2025 edition of the report follows its predecessor's structure, relying on the following key components:

1. Data and information gathering from internal UIC sources: the UIC RAIL Information System and Analyses (RAILISA), the Rail Sustainability Index (RSi), the Rail Safety database, the Traction Energy and Emissions Database (TED), and the UIC Sustainability Impact Awards.
2. Analysis on progress towards achieving the United Nations SDGs within the rail sector. The SDGs included in the report reflect those selected in the Collaborative Materiality Assessment for the RSi.
3. Geographic coverage remains concentrated. While striving to provide a global overview, the majority of TED and RSi data comes primarily from European UIC members.

UIC MEMBERS DELIVERING SDGS – THE RAIL SUSTAINABILITY INDEX



In 2022, the UIC Rail Sustainability index (RSi) was introduced as a benchmarking tool to measure rail's contribution to achieving the SDGs.

Materiality assessment

A comprehensive materiality assessment was conducted by the project working group on all 17 SDGs, aiming to identify those most relevant to the rail sector and the objectives of the UIC Sustainability Platform. This led to seven SDGs being selected, which represent areas where rail can make the most significant contribution.

Key performance indicators (KPIs) and variables

Based on the shortlist of seven SDGs, a set of more than 70 Key Performance Indicators (KPIs) and more than 100 quantitative and qualitative variables was developed. Quantitative indicators are benchmarked against the previous year, considered against the average, and calculated with data from participating companies. These indicators are also benchmarked considering their trends within the company in question across the two previous years. Each qualitative indicator is assessed through two yes/no questions and one open text question.

Scoring and benchmarking

The working group assigned a weighting to each SDG based on a prioritisation exercise, leading to a performance assessment which was balanced out across all relevant areas as shown in Table 1.

SDG Rail Index	SDG weight
SDG 5: Achieve gender equality and empower all women and girls	10%
SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	20%
SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	10%
SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation	15%
SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable	10%
SDG 12: Ensure sustainable consumption and production patterns	15%
SDG 13: Take urgent action to combat climate change and its impacts	20%
Company SDG Rail Index Score	100%

Table 1: SDG Rail Index, UIC

RSi participants can compare their performance with the anonymised average scores of other members around the world. This allows for insight to be gained on areas of strength and opportunities for improvement.

Participation

In total, 40 companies participated in RSi 2025:

- 12 companies are infrastructure managers, passenger railway undertakings, and freight railway undertakings combined (i.e. integrated companies), representing 30% of the total
- 12 companies are infrastructure managers only, representing 30% of the total
- 8 companies are passenger railway undertakings only, representing 20% of the total
- 4 companies are freight railway undertakings only, representing 10% of the total
- 2 companies are infrastructure managers and passenger railway undertakings, representing 5% of the total
- 2 companies are both freight and passenger railway undertakings, representing 5% of the total

The RSi participants were based in three different world regions, with 34 from Europe, 4 from Asia-Pacific, 1 from North America and 1 from South America. UIC members have exclusive access to this system at no extra charge, and participation is voluntary. The data used to draft this report was provided by the individual companies and was collated into totals, averages, and ranges.



UIC RAIL INFORMATION SYSTEM AND ANALYSES (RAILISA)

Railisa is a UIC online tool allowing members to visualise and download the data provided by more than 100 railway companies worldwide. Some of the indicators reported in the tool have been documented since 1995 with continuous updates. Railisa includes parameters such as the size of the infrastructure network, electrification, level crossings, fleets, traffic volumes, train punctuality, financial results, staff, energy consumption, and accidents. For more detailed information, readers are encouraged to refer to IRS 30398 on UIC Railway Statistics and the user guide for data queries through the Railisa web interface and API.

TRACTION ENERGY AND EMISSIONS DATABASE (TED)

The Traction Energy and Emissions Database (TED) was developed to facilitate monitoring, reporting, and benchmarking for UIC members regarding energy consumption and emissions in relation to targets defined by UIC and CER. This database offers insights into energy consumption and emissions within the railway market, encompassing traction energy usage, auxiliary systems, and heating, ventilation, and air conditioning (HVAC).



In the TED 2025, 25 companies provided data covering their 2024 activity (while for 6 companies the data was estimated based on the previous year's values).

As the database was initiated as a European initiative, the data still comes predominantly from European UIC members. The database provides a comprehensive overview of the European railways' achievements towards the joint targets to reduce traction energy consumption and related emissions. In 2021, TED data covered approximately 84% of passenger traffic and 47% of freight traffic in the EU reported by Eurostat. Nonetheless, 2022 was the first year that the data collection cycle was promoted to non-European members, reflecting its significance in tracking environmental performance worldwide. TED is now open to all UIC members around the world.

Since the beginning, the database has evolved to address changing environmental goals, with targets initially being set for 2020 and then revised for 2030 and beyond. For example, the 2025 campaign increased its scope to cover the use of major alternatives to diesel, namely Hydrotreated Vegetable Oil (HVO) and Fatty Acid Methyl Ester (FAME) fuels.

UIC Members are invited to review and contribute to the [TED dataset](#), showcasing rail's role in decarbonising the transport sector.

UIC SAFETY DATABASE

The UIC Safety Platform supports continuous improvement in railway safety through the UIC Safety Database, which brings together safety data from infrastructure managers worldwide and forms the basis of the annual UIC Safety Report. Since 2015, the database has also included the UIC Global Safety Index (GSI), a composite indicator that not only evaluates the number of accidents but also their severity. The index assigns greater weight to accidents involving passengers and railway staff, internal railway causes, and higher numbers of victims, providing a more comprehensive measure of railway safety performance than accident counts alone.

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