



INTERNATIONAL UNION
OF RAILWAYS



SUSTAINABLE DEVELOPMENT

Making railways greener, quieter and more energy efficient

Published in
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CONTEXT

Achieving sustainable development is one of the main global challenges. Transport, both of people and goods, has major environmental impacts such as emissions of pollutants and noise or land use. UIC and its members must demonstrate how rail can be part of the solution for many of the challenges the world is facing.

In recent years, civil society, citizens and decision makers have become much more aware of rail transport's role as a key factor in achieving sustainable development and reducing the effects of climate change. UIC has built constructive links of cooperation between the relevant actors worldwide and continues to advocate the benefits of a strong railway system for sustainable development.

While the shift to more sustainable transport modes is important, railway companies must also strive to improve their own sustainability performance (in terms of environmental, social and economic impacts).

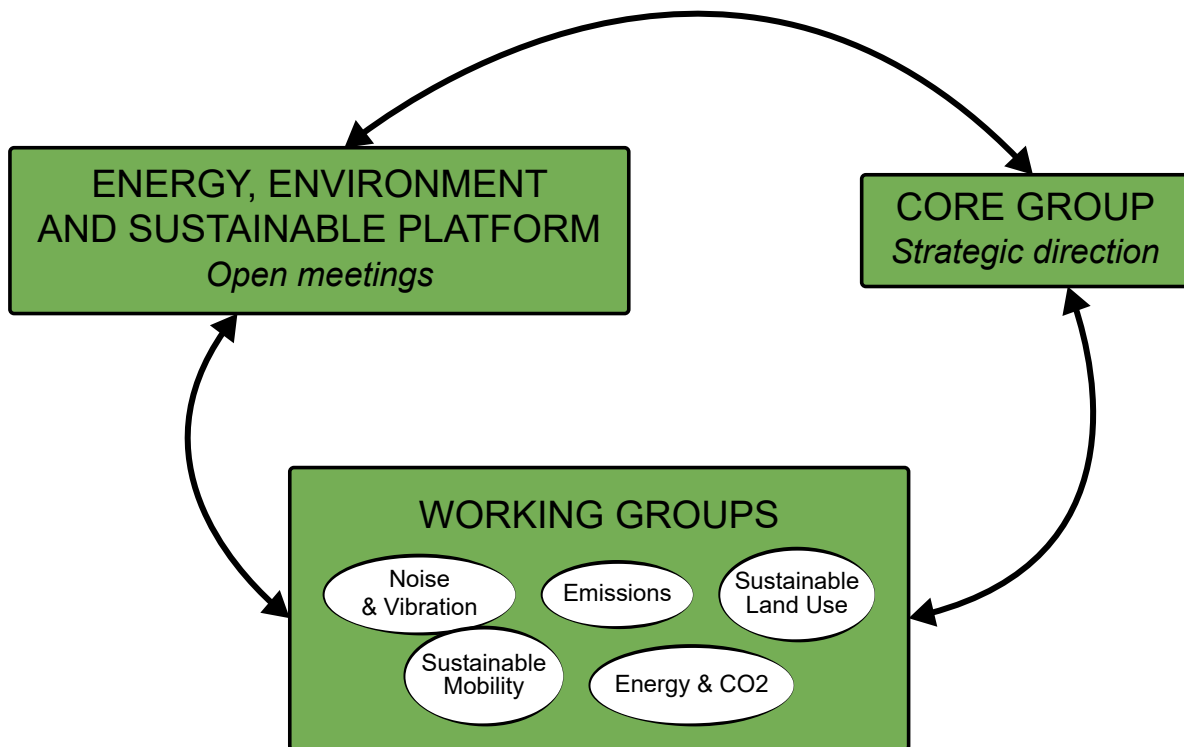
UIC offers its members its expertise on sustainability issues and its experience working in close cooperation with high-level stakeholders, as for example in the UN framework or with other important and worldwide organizations.

Together with its members, UIC continues its efforts to daily promote the benefits of rail in order to meet the global challenges of mobility and sustainable development and to communicate the sustainable development advantages of the railway sector.

ORGANISATION

PRESENTATION

The work is governed by the Energy, Environment and Sustainability Platform, a platform open to all UIC members which meets twice a year. The EES platform includes a Core Group that provides strategic guidance to the five Working Groups (Emissions, Noise, Energy & CO2, Sustainable Land Use, Sustainable Mobility).



WORKING GROUPS



Mission statement



Vision

SUSTAINABLE MOBILITY EXPERT NETWORK



The UIC Sustainable Mobility Expert Network will provide strategy, guidance and leadership for UIC members with respect to the sustainable development of the railway sector.

The rail industry becomes a leading light for sustainable development in the transport sector, helping to achieve a more sustainable transport system.



The vision of the sustainable mobility expert network has been duplicated in the mission statement.

EMISSIONS EXPERT NETWORK



The UIC Emissions Expert Network is responsible for sharing best practices, reporting and identifying upcoming issues and needs for the future including around the following topics:

- Impact of Diesel and other local emissions
- Air quality requirements
- Impact of brake materials about human health and the environment

ENERGY AND CO2 EMISSIONS EXPERT NETWORK



The UIC Energy Expert Network provides strategy, guidance and leadership across the work of the UIC and the rail sector in general for UIC members with respect to projects and issues related to energy efficiency and renewable energy in the railway sector. It also provides a forum to share good practices. It consults or advises on energy-efficiency related UIC projects led by other platforms and working groups and provides expert positions on current issues at the request of UIC (e.g. pending legislation, media inquiries).



The UIC Energy Expert Network deals with all aspects of energy efficiency and CO2 emissions. More specifically it is committed to publishing information on progress against the targets set in the UNEP Sustainable Development Goals, the Paris Process on Mobility and Climate, etc. by means of the data collected via the Environment Strategy Reporting System (ESRS) and CO2 database.

Through the various projects it runs and its advisory role, the UIC Energy Expert Network also responds to the need for increased energy efficient rolling stock and railway equipment. It reviews and assesses the various technological solutions and international regulations to achieve the goals of energy efficiency and CO2 emissions reduction in order to ensure rail transport keeps its “label” of most environmentally-friendly transport mode.

The projects it runs cover the following issues:

- CO2 Database
- UIC IEA Railway Handbook
- Environment strategy reporting system (ESRS)
- Projects addressing Energy optimisation topics

NOISE AND VIBRATION EXPERT NETWORK



The UIC Network Noise promotes effective management of railway noise and vibration in the context of sustainable development. The group forms a centre of excellence; it supports transfer of knowledge, coordinates events/activities, leads research projects and facilitates communication with key stakeholders. It works in close cooperation with other railway organisations, the EU Commission and national authorities. The work of the Network is based on the Environmental Strategy of UIC and CER of December 2010.



The UIC Network Noise is concerned with all aspects of railway noise, e.g. rolling noise, stationary noise, and noise from shunting yards. It will also consider ground borne noise and vibration in a dedicated sub-group.

It provides a technical lead on transport noise and vibration policy, in particular:

- The rail sector response to growing pressure from the EU, national governments, lineside inhabitants, health organisations and NGOs.
- Evaluation, review and guidance on upcoming new noise and vibration legislative initiatives and mitigation policy ideas and incentives (e.g. noise differentiated track access charges, prohibition of cast iron brake blocks, rail dampers etc.). In addition it will consider the effects of noise mitigation methods on vibration and vice versa.

SUSTAINABLE LAND USE EXPERT NETWORK

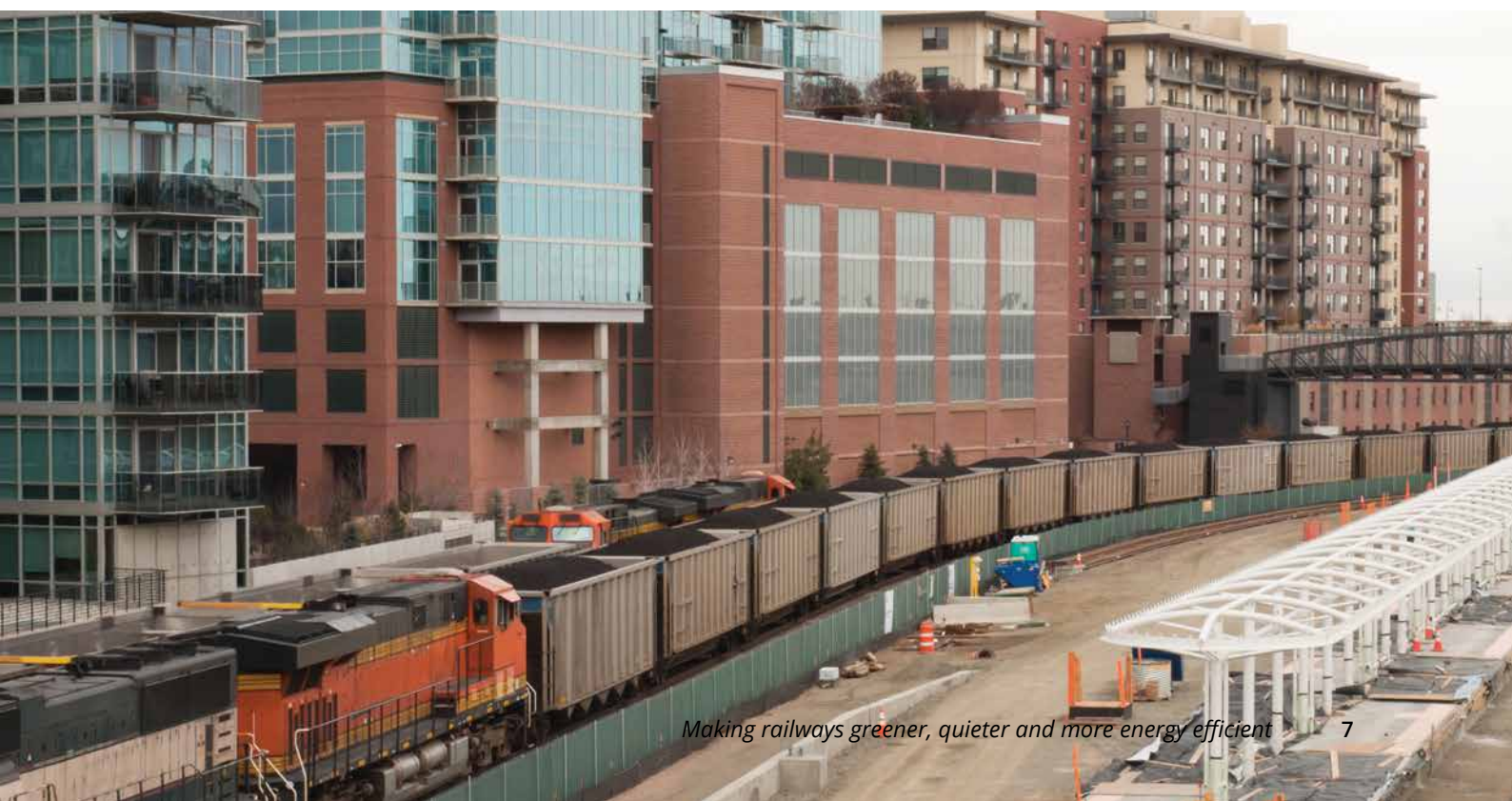


The Sustainable Land Use Network will provide strategy, guidance and leadership for UIC members with respect to the following issues:

- Biodiversity: Understanding the impact of railway lines and developing mitigation measures
- Vegetation management: Find the balance between safety, cost, and nature protection
- Soil Pollution: Ensure technical knowledge of the railway is kept up to date



By 2050 the railway is a naturally integrated part of nature.



UIC & UN ENTITIES

Such as UNFCCC, UNEP, UNDESA and HLG

UIC and UN entities such as UNFCCC, UNEP, UNDESA or HLG have fostered several ties of cooperation over many years and they have demonstrated their capacity to act together on topics that deserve greater understanding at international level.

PARTNERSHIPS:

- ✓ at the occasion of COP15 in 2009, representatives of both UNFCCC and UNEP rode the Train to Copenhagen
- ✓ in 2015 at the occasion of the “Train to Paris” campaign, UIC signed memorandums of understanding with both UNFCCC and UNEP.

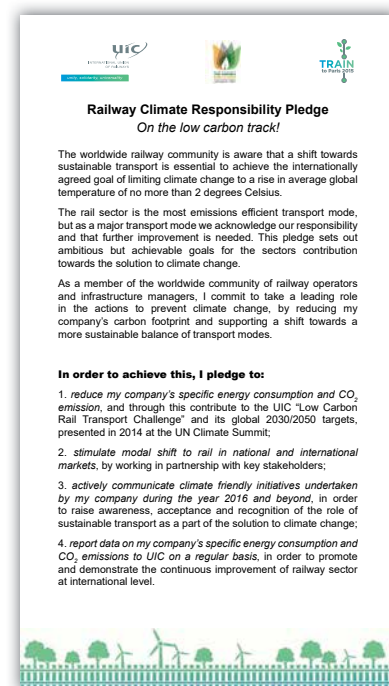


THE HIGH-LEVEL ADVISORY GROUP ON SUSTAINABLE TRANSPORT

UIC was a Member of The High-level Advisory Group on Sustainable Transport created in 2014 to provide recommendations on sustainable transport actionable at global, national, local and sector levels. The Advisory Group, established for a period of three years, worked with Governments, transport providers (aviation, marine, ferry, rail, road, and urban public transport), businesses, financial institutions, civil society and other stakeholders to promote sustainable transport systems and their integration into development strategies and policies, including in climate action.

The Advisory Group launched its recommendations in the report **“Mobilizing Sustainable Transport for Development”** on 28 October 2016 at the United Nations Headquarters in New York.

UIC contributed every year to the climate summits and related events and in 2015, UIC encouraged the railway community to sign the Railway climate responsibility Pledge. This pledge referred to the **“UIC Low Carbon Rail Transport Challenge”**, approved by Members at the UIC 2014 General Assembly, and presented at the New York UN Climate Summit in September 2014, highlighted by former UN Secretary General Ban Ki-moon as one of the 3 “key “initiatives for transport”.



UIC & CER

Moving Towards Sustainable Mobility

A STRATEGY FOR 2030 AND BEYOND FOR THE EUROPEAN RAILWAY SECTOR

'Moving towards Sustainable Mobility: European Rail Sector Strategy 2030 and beyond' was jointly agreed and endorsed by members of UIC and CER in December 2010 to provide a unified approach to environmental and sustainability topics in the European rail sector. It outlines how the rail sector should be performing in environmental terms in 2030 and 2050, and provides a framework that allows companies in the rail sector to make suitable long-term plans.

The rail system offers unparalleled energy efficiency and very low carbon emissions when coupled with modern clean energy sources. These characteristics are based on very high levels of resource efficiency, immediate compatibility with modern renewable and clean energy mean that rail transport can play an important role in delivering a wide range of sustainable development goals and their supporting targets. The rail sector is also investing heavily in climate change adaption to ensure resilience services for the years to come. Resilience, resource efficiency and renewable energy are recurring themes in the sustainable development goals.



ADAPTATION TO CLIMATE CHANGE

RAILADAPT PROJECT

RailAdapt is a UIC initiative aimed at keeping UIC Members informed and prepared, in support of national Adaptation Plans, UN agreements (COP21 and Sustainable Development Goals), and EU encouragement to reduce risks and costs whilst improving railways' resilience in the face of Climate Change.

Building resilience in transport has been given a boost since the United Nations climate negotiations in Paris (COP 21 2015) and Marrakech (COP 22 2016), where all of the world governments agreed to develop adaptation plans. Railways will play no small part in this.

Weather resilience and climate change have impacts on both the cost and reputation of the rail sector. Cities and regions rely on modern rail transport both internally and as links to elsewhere and therefore the disruption caused by extreme weather is acutely felt both economically and socially. The failure of a critical piece of infrastructure can cost millions of dollars to replace in an emergency. The economic and reputational damage to the regions and companies involved cost millions more.



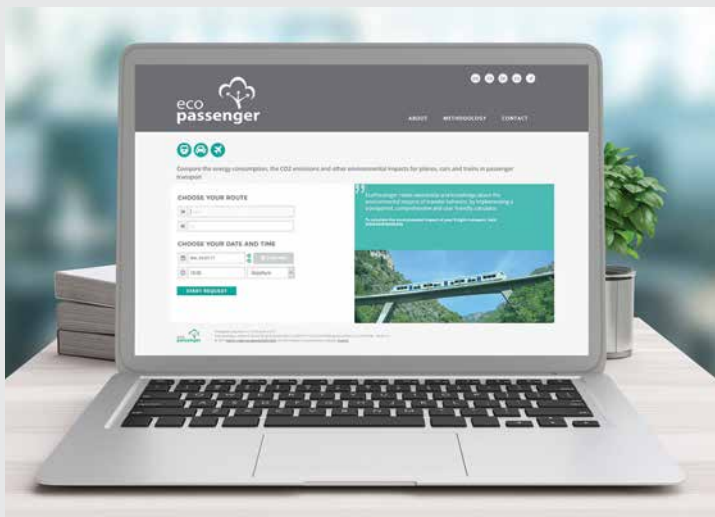
Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change.

Source: UNFCCC

ECOTOOLS

Ecopassenger & EcoTransIT

The contribution of railways to sustainability is to provide efficient services, offering a real alternative to less sustainable transport modes. Rail is a vital part of the solution to the global challenge of climate change.



More than a quarter of greenhouse gases emissions come from the transportation sector, showing the highest growth in these emissions on the last decades and it is not stopping. UIC has recently launched a new version of EcoPassenger – first created in 2005 - in order to increase awareness among users.

The new EcoPassenger calculator aims to spread knowledge about the consequences of our travel choices and to give support to decision makers on how to facilitate sustainable choices.

A new methodological report produced by IFEU and Hacon is published on the website containing all the data and sources used to perform the calculations. The new version of EcoPassenger shows that it is possible to have right information and data through international and technical cooperation. With the energy consumption information provided by this tool, everyone can take decisions in order to mitigate GHG emissions, and it enables the environmental advantages of the railways – compared to main competitors – to be highlighted.

UIC invites you to check emissions at <http://ecopassenger.org>



For Freight transport, have a look at EcoTransit, a very sophisticated tool, developed by a consortium of shippers and transport companies and technical consultants.

<http://www.ecotransit.org>



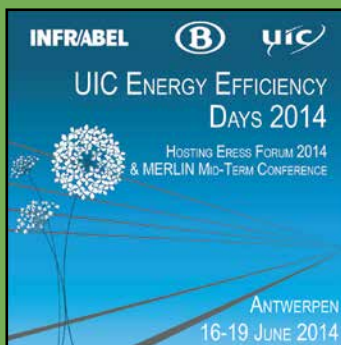
EVENTS

**JUNE
2014**

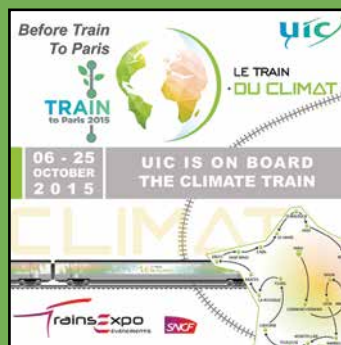
**OCTOBER
2015**

**FEBRUARY
2016**

**MARCH
2016**

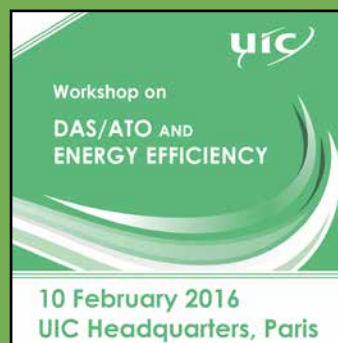


**UIC ENERGY EFFICIENCY
DAYS 2014**

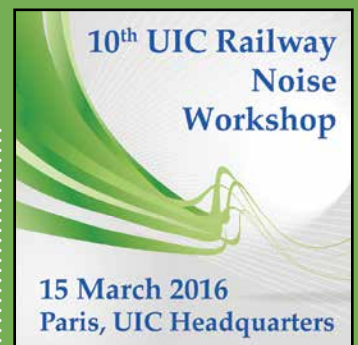


THE CLIMATE TRAIN

**DAS / ATO AND
ENERGY EFFICIENCY**



**10 February 2016
UIC Headquarters, Paris**



**10TH UIC RAILWAY
NOISE WORKSHOP**

ENERGY CONFERENCE

Every two years UIC organises a conference on Energy efficiency.
The last one was in June 2014 in Antwerpen – co-hosted with Infrabel and SNCB.

The conference addressed a wide range of topics concerning energy use within the rail sector, including: prices, government policy, security of supply, future availability of renewable energy, the electricity market, major drivers for energy efficiency, innovation, energy efficiency measures and solutions, day to day energy management & more.

UIC organises events and workshops all year round at UIC headquarters and also co-hosts events.

**MAY
2016**



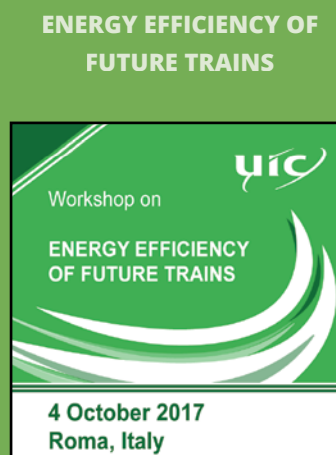
2ND INTERNATIONAL WORKSHOP ON VEGETATION MANAGEMENT

**OCTOBER
2016**



13TH UIC SUSTAINABILITY CONFERENCE

**OCTOBER
2017**



**NOVEMBER
2017**



11TH UIC RAILWAY NOISE WORKSHOP

SUSTAINABILITY CONFERENCE

Every two years UIC organises a conference on Sustainability.

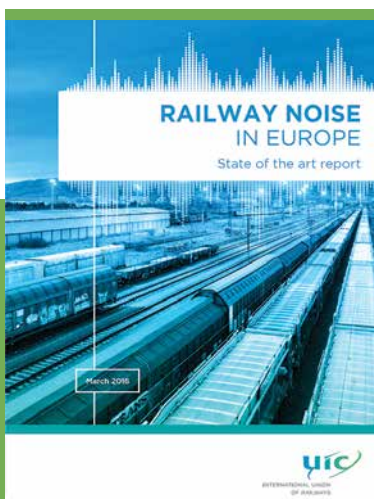
The last one took place in October 2016 in Vienna – co-hosted with Austrian railways, ÖBB.

The conference examined both the contribution that rail can make towards delivering the 2030 sustainable development agenda and also how sustainability can give rail a competitive advantage.

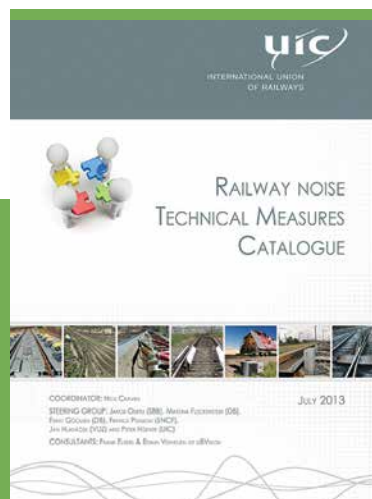
PUBLICATIONS

GUIDANCE, GUIDELINES, REPORTS, DATABASE...

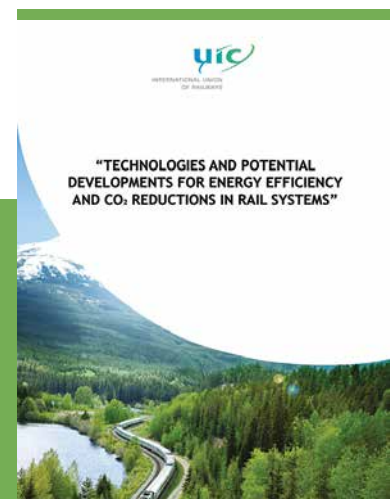
Every year the Sustainable unit edits a number of publications such as:



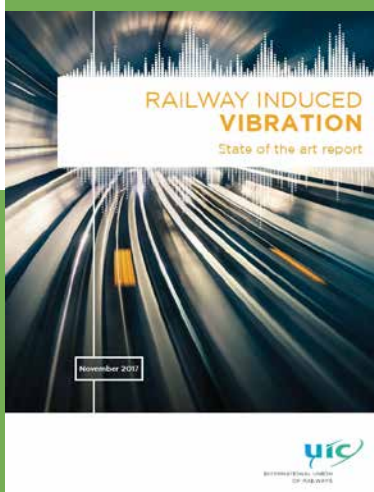
RAILWAY NOISE IN EUROPE
State of the art Report



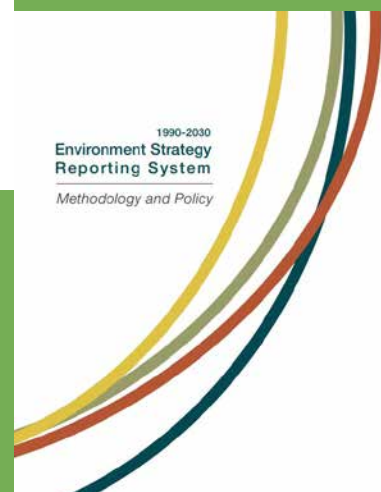
RAILWAY NOISE
Technical Measures Catalogue



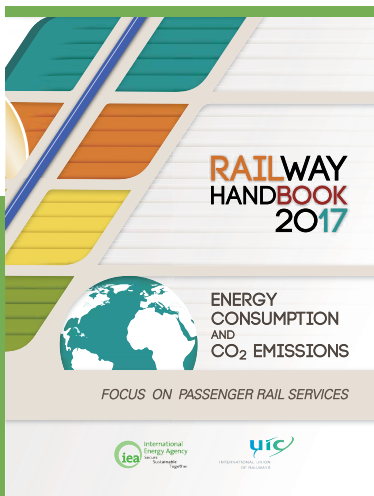
ENERGY EFFICIENCY AND CO2 REDUCTIONS
Technologies and potential developments for energy efficiency and CO2 reductions in rail systems



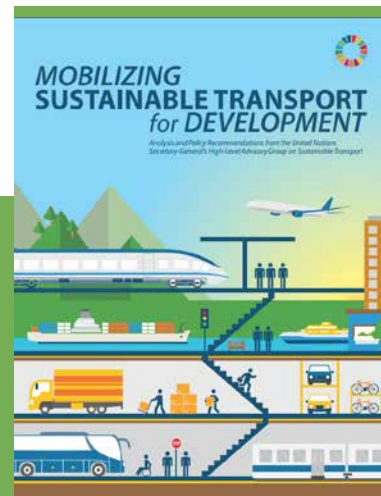
RAILWAY INDUCED VIBRATION
State of the art report



UIC ESRs METHODOLOGICAL RULES
Methodology and Policy



ENERGY CONSUMPTION & CO2 EMISSIONS
UIC-IEA Railway Handbook



MOBILIZING SUSTAINABLE TRANSPORT FOR DEVELOPMENT
UN analysis and policy recommendations

ETF RAILWAY TECHNICAL PUBLICATION
<http://www.shop-ETF.com>

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