INTERNATIONAL UNION
OF RAILWAYS

CIRCULAR ECONOMY

Helping the rail sector decarbonise

Isabelle De Keyzer
Senior advisor Sustainability

UIC - The Worldwide Organization of Railways

A long history of serving member railways and facilitating international railway cooperation

1921

Intergovernmental (diplomatic) conference in Portorož, Slovenia (formerly in Italy)

1922

Intergovernmental (diplomatic) conference in Genoa, Italy

October 1922

Constitutive Assembly of UIC (Paris): UIC statutes adopted by 51 railway administrations in 29 countries (Europe, Asia)

2022

200 member railways in 95 countries

100th anniversary

100 YEARS ANNIVERSARY

INTERNATIONAL UNION OF RAILWAYS

3
fora

9
platforms

23
sectors

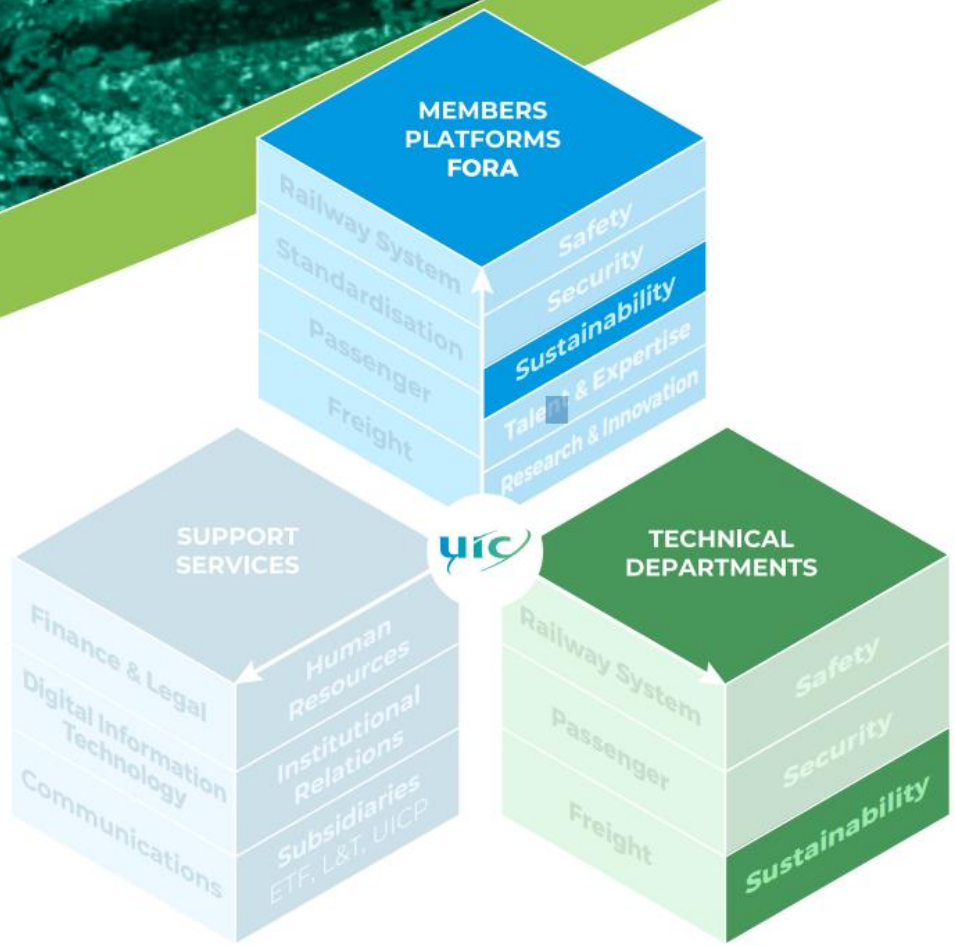
136
working groups

9
special groups

95
countries

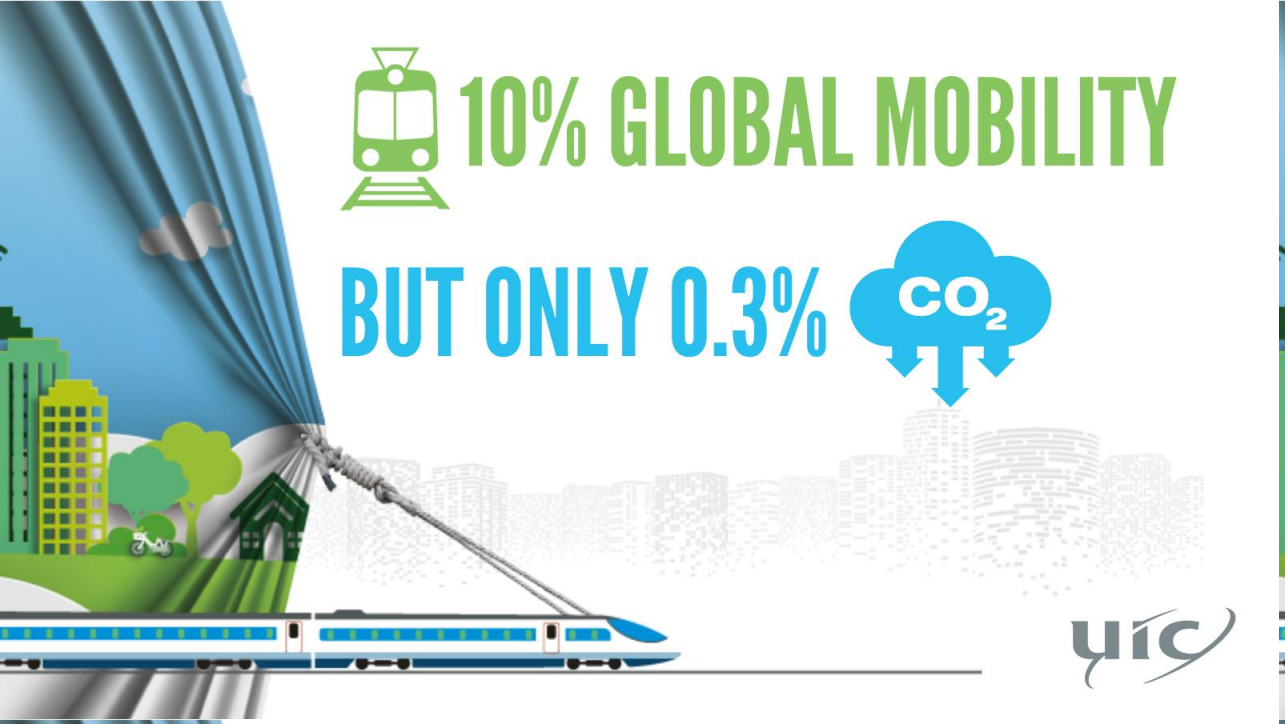
200
members

2000
experts

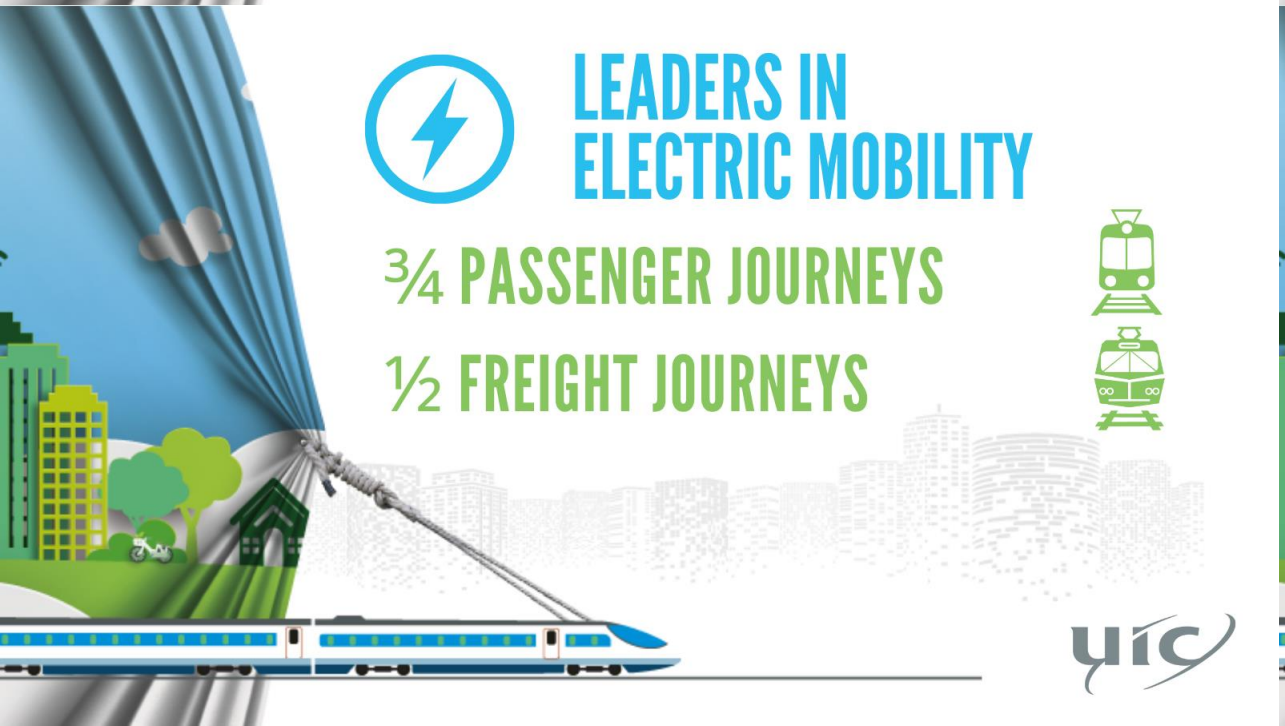


Sustainability at UIC

INTERNATIONAL UNION
OF RAILWAYS


10% GLOBAL MOBILITY
BUT ONLY 0.3%
CO_2


LAST 4 x LONGER
THAN


LEADERS IN
ELECTRIC MOBILITY
¾ PASSENGER JOURNEYS
½ FREIGHT JOURNEYS


THE ONLY MODE TO HAVE
REDUCED
EMISSIONS
CO_2

Our Vision

INTERNATIONAL UNION OF RAILWAYS

A railway that supports a green recovery as the backbone of sustainable mobility. Connectivity that contributes to healthy and sustainable lifestyles and economies on every continent – that is zero emissions, resource efficient, a community hub, accessible for all, and is both biodiverse and a good neighbour.

SUSTAINABILITY @ UIC MISSION

TO EMPOWER THE GLOBAL RAILWAY COMMUNITY TO BE A DRIVING FORCE IN A GREEN RECOVERY THROUGH COLLABORATIVE KNOWLEDGE AND ADVOCACY

Strategic Objectives

Advocate

COP28 UAE

MoreTRAINS
Global Rail Vision 2030

International Transport Forum

Convene

Circular Economy

Air Quality

Energy & CO2

Sustainability Platform

Gender Equality

Noise & Vibration

Sustainable Land Use

Solve

TEE DATABASE

IRS

Railisa
UIC STATISTICS

eco passenger

Rail Sustainability Index
Rail delivering the SDGs

EcoTransIT World

THE REUSE PROJECT -

Sustainable management of resources in railways

https://uic.org/projects/article/reuse

COORDINATOR

CONSULTANT

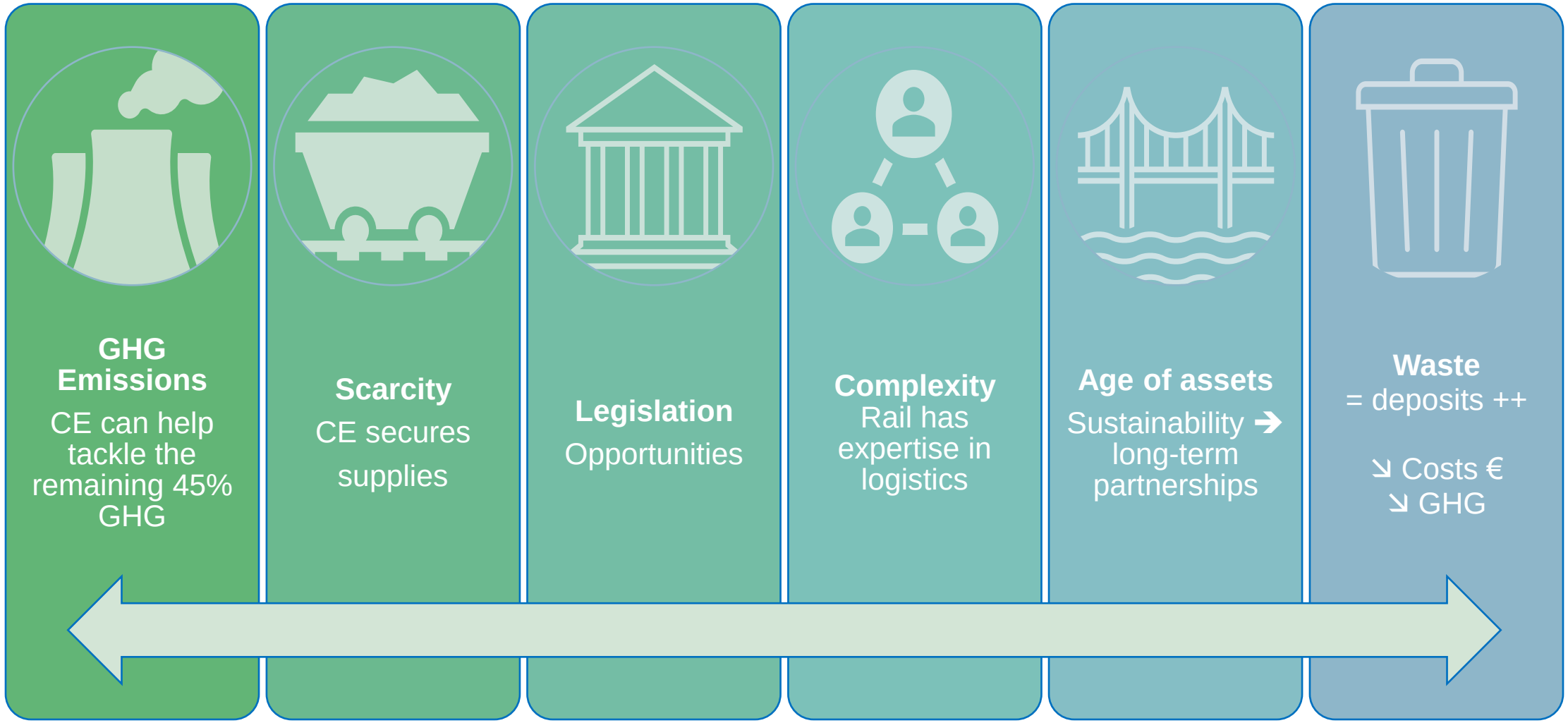
PARTNERS

CONTRIBUTORS

The REUSE project →the Goals

- **Challenges and opportunities for** rail in its journey towards CE and decarbonisation
- **Key concepts** of CE applied to rail to reduce GHG emissions/costs
- Identify **Good practices**
- Provide **practical cases** to organisations in developing their CE strategies

Sustainable resource management
Challenges and opportunities for railways



Meeting the challenge

Project methodology

I. Literature review

II. A questionnaire and interviews

III. Online workshop (in April 2021)

IV. Final report

Innovative approaches published in the railway press and in other sectors

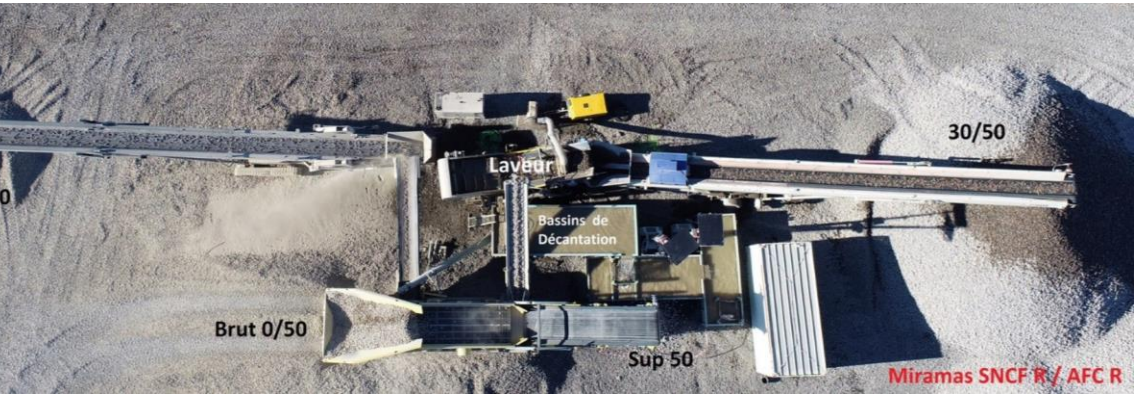
Targeted high volume raw materials: ballast, steel and concrete

Sharing examples of good practices, learning needs and issues

Enriching report content : priority actions, issues and ideas to overcome them -> established **5 key areas of success & includes case studies**

Success factor 1 →Strategic planning and Capacity building for transformation to CE

SNCF RESEAU (France)



SNCF Réseau has set up a 10-person CE strategy team

Strategic goal = achieve 100 % reuse or recycling by 2025

In 2020

Recycling →25 Mio € revenue

Reuse →3 Mio € in savings

Strategic goal by 2026

100 % circular, would **reduce GHG emissions by 25 %**

Success factor 2 → Ecodesign

Include circularity into early design objectives

TRAFIKVERKET
(Sweden)

"Design, Bid, and Build" approach

- **Buyer** makes accurate technical descriptions of the functional requirements
- **Contractors** are responsible for detailed planning.

Assessment of GHG emissions
at each life cycle stage (based on the LCA)

Climate requirements specified met with
1. Reduced material use
2. Improved climate performance of material

Effect →Optimised design
- Reduced material need
- re-use and use of recycled materials promoted
- Improved production techniques
- New materials

GOOD PRACTICE:

Procurement of sleepers

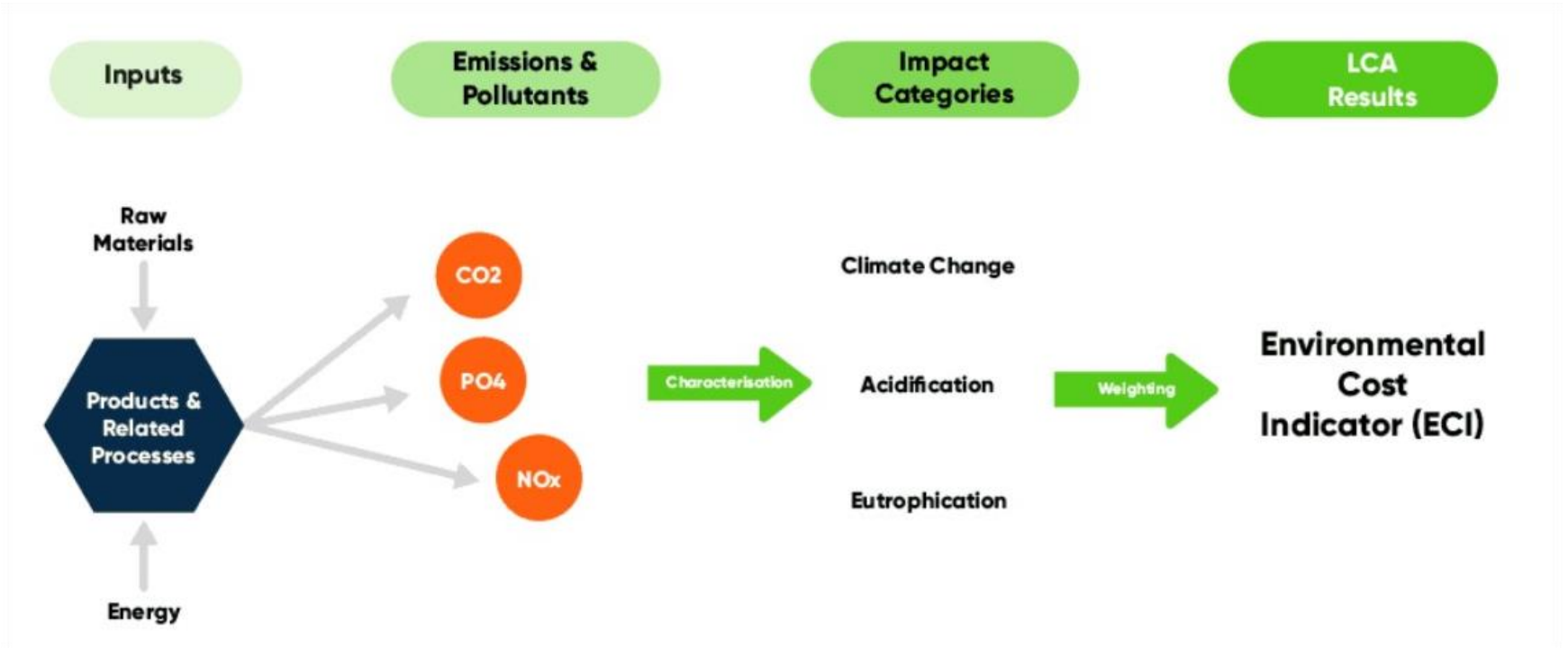
- 400,000 units/yr
- Spec: A 20% reduction of GHG emissions over 2018-2022

Result:

- Reduction of GHG emissions (-26%) and of costs (-14%)
- 2 suppliers have produced EPDs to verify climate performance

Success Factor 3 →Green public procurement
Use influence as a buyer to affect change in the value chain

ProRail (NL) Environmental Cost Indicator (ECI) – Calculation in 4 Steps



Environmental cost indicator. Ted Luiten April 15th 2021.

Success factor 4 → Make the dedicated space

Invest in internal facilities to store, process and reuse materials back in the system

Network Rail (UK)

- **Processing** ballast, sleepers and rails
- **Centralised** screening, cleaning, control and storage **facility**

Nota

The **main costs** (€, GHG) of ballast are related to its **transport**, not to the raw material

Recycling Centre of Whitemoor

https://www.networkrail.co.uk/stories/recycling-recovered-railway-materials-at-our-whitemoor-facility/

Success factor 5 →Digital tools
Digitalisation as key enabler of circular economy

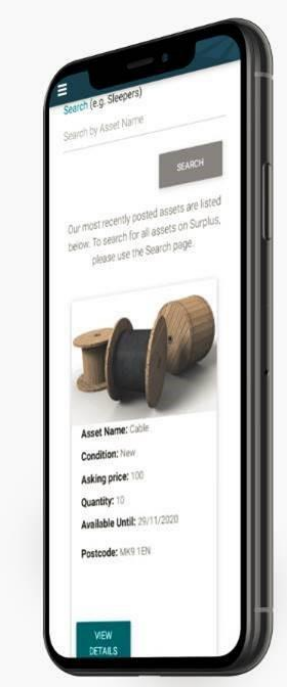
IT can help

- Increase **visibility**,
- **Smartness** of organisations
- **Establish centralised systems** that can
  - Track the journey of assets
  - Record their material composition,
  - Keep track of ownership
  - Monitor condition

Network Rail (UK)

Internal marketplace

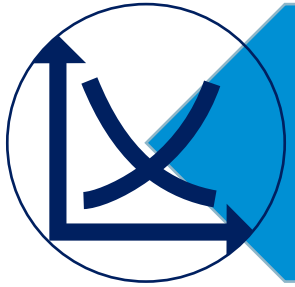
App « Surplus »



Measuring circularity – rules, data and indicators

Strategic indicators of the EU monitoring Framework for CE, and other documents covering…

each phase of the products' lifecycle



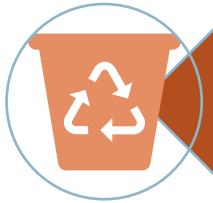
competitiveness aspects

REUSE survey and webinar ➔

Operational performance indicators defined at organizational level and linked to

asset **design**

procurement of assets and products



valorisation of used products

How to get started?

PRIORITISE

RENT RATHER THAN BUY

EASY ALTERNATIVES

CREATE (A) NETWORK(S) OF CHAMPIONS

PILOT PROJECTS

More information

On the **REUSE** project and the sources of the final report
https://uic.org/projects/article/reuse

On UIC activities related to circular economy, visit
https://uic.org/sustainability/circular-economy/

Or contact:
dekeyzer@uic.org
circular@uic.org

100 YEARS ANNIVERSARY

INTERNATIONAL UNION OF RAILWAYS

Stay in touch with UIC:

www.uic.org

#UICrail

Thank you for your attention.