Climate Change Adaptation: impact and requirements for the rail sector

Adaptation of Transport Networks to Climate Change, 25 June 2012, Alexandroupolis

Libor Lochman
The EU takes concrete steps to adapt to climate change

- **2009 Adaptation White Paper**: make EU more climate resilient
  - Mainstream adaptation into EU policies
  - Define a EU adaptation strategy
  - Introduce climate change adaptation requirements for EU financing

- **2013 EU Adaptation Strategy**: roadmap to make EU climate resilient
  - Assess costs, benefits and impact of adaptation
  - Enhance knowledge
  - Foster the use of standards and guidelines
  - Collect and share best practices
In parallel: EU sets clear modal shift objectives

- **2011 Transport White Paper: ambitious goals for rail**

  - Rail: backbone of EU transport system
  - By 2050: complete a EU high speed network
  - By 2030: functional, multimodal TEN-T core network
  - By 2050: high quality and capacity network
Climate change: a reality for the rail sector

- Hotter summers, wetter winters, sudden switch of seasons
  - Increased traffic disruptions
  - Increased energy consumption for airco in summer
  - High wind causing trains to blow over or loss contact with overhead wire

- Bigger impact expected in next 2-3 decades

- How to get prepared?
  - Climate change adaptation strategy
  - Maintenance plans
  - Vulnerability mapping
  - Climate change requirements in call for tenders for rolling stock
The European Rail sector strategy 2020, 2030 and beyond - principle mitigation initiative

The strategy provides an agreed framework to the European rail industry that matches the overarching political priorities

- **Target 2020**
  Reduction of specific CO2 emissions from train operation by 30% compared to 1990

- **Target 2030**
  Reduction of specific CO2 emissions from train operation by 50% compared to 1990
  Reduction of specific final energy consumption from train operation by 30% compared to the base year 1990

- **Vision 2050**
  Strive towards Carbon-free train operations
  Strive towards halving the specific final energy consumption from train operation compared to 1990
Adaptation: Railways get active at EU and international level

- CER launched dedicated adaptation working group
  - What is needed now?
    - Have reliable climate forecasting,
    - Exchange best practices
    - Integrate climate change requirements into standards and funding

- Cooperation with existing initiatives
  - EU Adaptation Steering Group
  - EU research projects
  - Partner of the UN Adaptation Private Sector Initiative
  - Sectoral workshop held on 19 April 2012
Railway system adaptation: from research to strategy

Tomorrow’s Railway and Climate Change Adaptation, Network Rail

Climatic and air resistance tests at Rail Tec Arsenal in Vienna

Source: Climatic Wind Tunnel Vienna

UK Department for Environment Food and Rural Affairs

SNCF Adaptation Strategy
ARISCC: two-year project funded by UIC members

- European scope

- Aims
  - Find and disseminate good practice for weather event / natural hazard management
  - Find good examples of how railways are assessing infrastructure vulnerability
  - Understand how railways can incorporate longer term climate predictions into infrastructure management and planning process
  - Propose new management approaches to bring these issues together
  - Disseminate results
ARISCC: natural hazard management good practice

- ARISCC provides a broad collection of good practice examples for integrated natural hazard management
- www.ariscc.org

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25 June 2012
Standards: the challenges and the key areas of action

Infrastructure
• Power Supply (incl. Catenary)
• Permanent way
• Earthworks
• Bridges, Water ducts, tunnels

Rolling Stock
• Loco-pulled, EMU, DMU

Train Control and Command Systems,

Subsystems and their interaction
Financing adaptation: opportunities of the next EU multiannual financial framework

- TEN-T Reform / Connecting Europe Facility
  - Additional 10% co-financing rate for actions enhancing climate resilience

- Cohesion Policy

Enhance, together, the resilience of rail to climate change!

- Foster exchange of **best practices**
- Develop **links** between existing initiatives
- **Mainstream adaptation** into key EU policies and standards
- Ensure greater visibility and availability of **EU funding**
- Encourage Member States to define **national adaptation plan**

Join the CER second sectorial workshop in Spring 2013!
Thank you for your attention!

For further information, visit our website: www.cer.be

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