

Shift2Rail: driving innovation on railways

- Improving quality of rail services by increasing reliability and punctuality by as much as 50%;
- Reducing congestion and CO2 emissions by doubling railway capacity;
- Cutting the costs of infrastructure and rolling stock by up to half;
- Retaining Europe's leadership in the global rail market.



What are the challenges?

Rising traffic demand, congestion, security of energy supply and climate change are some of the major issues that the European Union and the wider world are facing. Tackling these challenges will require the railway sector taking on a larger share of transport demand in the next few decades. The European Commission is working towards the creation of a Single European Railway Area and has promoted a modal shift from road to rail in order to achieve a more competitive and resource-efficient European transport system. However, the share of rail on the European freight and passenger transport markets is still not satisfactory. EU research and innovation must therefore help rail play a new, broader role in global transport markets, both by addressing pressing short-term problems that drain rail business operations, and by helping the sector to achieve a stronger market position.

What is the Shift2Rail Joint Undertaking?

The Shift2Rail Joint Undertaking (S2R JU) is a new public-private partnership in the rail sector, providing a platform for cooperation that will drive innovation in the years to come. The S2R JU will pursue research and innovation activities in support of the achievement of the Single European Railway Area and improve the attractiveness and competitiveness of the European rail system.

Activities will be organised around five key "Innovation Programmes": cost-efficient and reliable trains, including High Speed trains and high-capacity trains; advanced traffic management & control systems; cost-efficient and reliable high capacity infrastructure; IT Solutions for Attractive Railway Services; Technologies for Sustainable & Attractive European Freight.

The Founding Members of the Joint Undertaking are the European Union plus eight representatives of the rail industry, including rail equipment manufacturers Alstom, Ansaldo STS, Bombardier, Construcciones y Auxiliar de Ferrocarriles (CAF), Siemens and Thales, as well as infrastructure managers Network Rail and Trafikverket. Additional members will be selected through an open call. The aim is to ensure that railway undertakings and other important public and private stakeholders in the railway sector, as well as research organisations, SMEs and actors from outside the sector, are fully represented.

What results and benefits do we expect?

Shift2Rail will contribute to:

- Cutting the life-cycle cost of railway transport (i.e. costs of building, operating, maintaining and renewing infrastructure and rolling stock) by as much as 50%;
- Doubling railway capacity;
- Increasing reliability and punctuality by as much as 50%.

The proposed initiative will help boost the competitive edge of the rail supply industry, opening new market perspectives and offering significant employment and export opportunities.

Railway undertakings, infrastructure managers and public transport operators will also benefit from innovations that drastically reduce infrastructure and operating costs. This should also help to reduce the subsidies paid out by national governments – estimated at €36-38 billion in Europe in 2012.

Passengers and freight service users will benefit from a step change in the reliability and quality of services. Improved competitiveness and attractiveness of rail services, combined with increased capacity, will help rail take on an increased share of transport demand, thereby contributing to the reduction of traffic congestion and CO2 emissions. Citizens' health and wellbeing will also benefit thanks to reduced noise pollution from rail.

How much will it cost?

The estimated budget of the S2R JU will be at least €920 million (for the period 2014-2020). The EU's share of the funding, amounting to a maximum of €450 million, will come from the Horizon 2020 programme. To access this funding, the rail industry will have to commit to a contribution of at least €470 million. Additional funding, complementing the Horizon 2020 funds, may be allocated from other EU instruments, such as the Connecting Europe Facility, to support actions for the deployment of innovative outcomes of the S2R Joint Undertaking.

How will it be managed?

Within the S2R JU, all relevant stakeholders will be involved in the decision-making processes and share responsibilities. The JU will set out its research and innovation priorities in a Strategic Master Plan. The main bodies of the S2R JU will be the Governing Board, in charge of strategic decision-making, and the Executive Director, responsible for day-to-day management. There will also be two advisory bodies: a Scientific Committee and a States' Representatives Group. The European Commission and the

Lightening the load with aeronautic technology

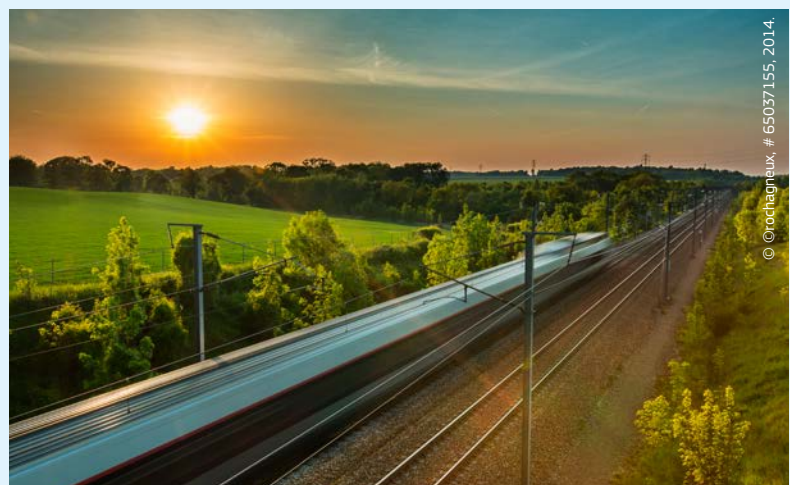
Reducing the energy consumption of railway rolling stock is crucial to improving the performance of the rail system. The REFRESCO project, run under the EU's current seventh research funding programme, will contribute to this goal through evolution of certification processes facilitating the use of new materials, such as composites and light metallic alloys, for the construction of lighter rolling stock. Such materials are already used in aeronautics and the wind power sector, as well as for the manufacture of some parts of rolling stock, but there is currently no way to certify a rail vehicle built entirely, or in large part, from non-metallic materials.

REFRESCO brings together 18 partners, including the main European railway system integrators and equipment suppliers, railway undertakings and infrastructure managers, universities and research centres, as well as companies active in material supply, design, manufacturing, testing, and certification, to pool their knowledge of rolling stock certification.

REFRESCO will pave the way for concrete demonstrations in Shift2Rail. Thanks to adaptations of the regulatory framework, it will support the introduction of research results to the market.

More information:

REFRESCO: www.refresco-project.eu



REFRESCO: New lightweight materials for the next generation of railway vehicles.

industrial JU members will have equal voting rights in the Governing Board.

Useful links

Shift2Rail: www.shift2rail.org