

TEMPLATE FOR CHARACTERISING ENERGY TECHNOLOGY ROADMAPS

REFERENCE	
Title:	Rail21: Sustainable rail systems for a connected Europe
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Web Format:	pdf
IEA topics covered	Transport
Geographical focus:	Europe
Brief Abstract:	<p>This brochure will help explain how targeted European, national and private research can meet the key economic and social challenges of the European Union. It sets five broad targets for collaborative surface transport research to be addressed within the "Seventh Framework Programme (2007 to 2013) of the European Community for research, technological development and demonstration activities" and presents them for consideration by the key decision makers at European and national level. The following gives an overview of the five targets:</p> <ol style="list-style-type: none"> 1 promote excellence in railway operations to encourage modal shift and decongest international transport corridors; 2 develop attractive urban transport solutions that ensure sustainable urban mobility; 3 consolidate environmental gains based on the greening of rail surface transport to meet legislative and societal imperatives; 4 assure personal security to encourage increased use of public transport and 5 strengthen the worldwide competitiveness of the European rail industry sector and its ability to supply cost effective products and services.

OUTPUTS	
Short Report?	Yes. (20 pages)
Major report?	No
Visualisations?	No
Information held on dedicated software?	No

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- which package?	NA
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ARCHITECTURE	
Timescales used:	No
Trends and drivers?	No
- list	
Enablers?	No
- list	
Performance measures/targets?	Yes
- list areas	<ol style="list-style-type: none"> 1. promote excellence in railway operations to encourage modal shift and decongest international transport corridors; 2. develop attractive urban transport solutions that ensure sustainable urban mobility; 3. consolidate environmental gains based on the greening of rail surface transport to meet legislative and societal imperatives; 4. assure personal security to encourage increased use of public transport and 5. strengthen the worldwide competitiveness of the European rail industry sector and its ability to supply cost effective products and services.
Mapping of RD&D activities?	Yes
Critical assessment of capabilities?	No

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PROCESS	
Methods used:	
- Desk study?	
- Consultation	
- Interviews?	
- Facilitated workshop(s)	
- Working groups/task force	
- Integrated Process	
Stakeholders engaged:	
- University based researchers	Yes
- Other public sector researchers	
- Business – technology	Yes
- Business – other	
- Government - energy	
- Government – SET	
- Government - other	
- NGOs	
No of people engaged:	45
Budget (if known):	
Commitment to re-visit?	

ACTIONS IDENTIFIED	
List of actions?	Yes
Actions listed according to timescale?	No
Actions prioritised?	No
Sequencing/dependencies identified?	No
Responsibility for actions identified?	No
Types of actions identified:	
- Basic research?	
- list areas	
- Applied research?	
- list areas	
- Development & demonstration	
- list areas?	
- Other types of action?	
- list other types	<p>Operations²¹:</p> <ul style="list-style-type: none"> • Find innovative ways to accommodate traffic growth with existing assets • Increase timetabled speed through higher reliability and less margins • Work towards operational free-flow and clock-faced timetables • Centralise access to data on rail assets

	<p>and content of freight trains</p> <p>Corridor21:</p> <ul style="list-style-type: none"> • Elaborate the most cost-effective solutions/ standards to implement specifications for interoperability • Work on Europe-wide corridor path allocation and logistics chains • Analyse and optimise traffic flows • Identify (socio-)economic and administrative modal shift drivers • Implement “corridor action plans” <p>RegionalRail21:</p> <ul style="list-style-type: none"> • Benchmark global transport systems and analyse barriers for implementation • Analyse the possibilities for “a train with multiple lives”, running on different franchises and networks • Assess the potential for regional high speed • Define cost drivers and public (non-user) values for regional lines <p>CityRail21:</p> <ul style="list-style-type: none"> • Look into the adaptation heavy rail urban infrastructure for light rail (incl. compatibility of rolling stock) • Harmonise urban/regional rail installations (incl. concepts of tram- train design) • Compare the available capacity to the required capacity for passenger traffic (incl. closed or unused lines) <p>Transfer21:</p> <ul style="list-style-type: none"> • Execute town and transportation planning case studies • Develop new concepts for urban rail design (services, infrastructure and rolling stock) • Passenger telematics • Find innovative solutions for sustainable funding of investment in rail systems or services <p>Citizen21:</p> <ul style="list-style-type: none"> • Develop common door-to-door electronic ticketing, integrate with other electronic payment services • Analyse passenger flows: connectivity, intermodality and information systems • Improve the design of transfer facilities, including logistical flows through commercial facilities <p>EcoRail21:</p> <ul style="list-style-type: none"> • Help improve and deliver achievable
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	<p>standards for noise, emissions, diesel engines, etc.</p> <ul style="list-style-type: none"> • Develop new lightweight and low noise freight wagons; greening existing fleet • Look after existing assets: slimming down the infrastructure for more efficient land use (e.g. removing unused sidings, reducing the number of level crossings) <p>Secure21:</p> <ul style="list-style-type: none"> • Better integrate of personal security concerns in (re-)design of infrastructure, stations and rolling stock • Assess the impact of personal security on 'Value of Time' and on modal split • Provide a toolbox of measures for better personal security of public transport staff and customers • Work on effective emergency and crisis management • Develop initiatives for public transport security legislation, standardisation and certification <p>LiteTrain21 & Infra21:</p> <ul style="list-style-type: none"> • Develop new, high-performance and low-cost ("maintenance free") urban and heavy rail infrastructure • Develop innovative systems and constituents for increased performance (e.g. automation) • Use predictive and/or preventive maintenance to increase availability and reduce costs. • Develop a lightweight, safe, interoperable, higher speed, high-capacity European Intercity train • Develop innovative high-capacity urban rail vehicles • Work towards a faster fleet turnover (continuous improvement) <p>Rail-Inno21:</p> <ul style="list-style-type: none"> • European Rail Business School (knowledge / skill base) • Speed to market; (virtual) test centre for certification of components/modules • Driver training on simulators for "European driving license"
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