

Keep on rolling



Road Transport Research in the Seventh Framework Programme



European Commission



The automotive sector is a key component of the European economy and society. It spends €20 billion per year on research and technological development (RTD), making it the largest private investor in RTD in Europe.

A timely implementation of RTD results in design and manufacturing phases is critical for EU industrial competitiveness. Over the years, European road research has assisted manufacturers in establishing harmonised testing and validation procedures, for the fulfilment of EU directives in areas such as ELV (end-of-life vehicles), EMC (electromagnetic compatibility) and vehicle emission limits (such as EURO 5, establishing car emission standards).

Road transport facts and figures

The automotive sector alone:

- provides 1.9 million direct jobs and 10 million indirect jobs;
- generates €340 billion in tax revenues;
- spends €20 billion per year on research;
- has an annual turnover of €489 billion;
- accounts for 3% of EU GDP.

While early research EU Research Framework Programmes emphasised technology, design and manufacturing processes, today's research is increasingly responding to larger societal needs, addressing issues of infrastructure, environmental performance and mobility patterns, and the importance of intermodality, helping to improve the lives of ordinary citizens while strengthening Europe's position as a world competitor.

ERTRAC paves the way

The 'European Road Transport Research Advisory Council' (ERTRAC) was launched in

2003, bringing together representatives from the road transport industry, including auto manufacturers, suppliers and infrastructure operators, local and national governments, the research and academic communities, NGOs and the European Commission. Like similar initiatives in the aeronautics, rail transport and waterborne transport sectors, ERTRAC has had, as its main goal, the elaboration of a Strategic Research Agenda (SRA). Delivered in January 2005, the SRA addresses a variety of challenges for road transport research and has made an important contribution to the FP7 road transport work programme.

Strengthening competitiveness

European industry has been quick to take advantage of the freedom and flexibility offered by road transport. Ensuring the competitiveness of the road transport industry will involve delivering new products and systems that meet customer expectations, and developing design and manufacturing processes for an efficient production base.

The greening of surface transport

Under the Kyoto Protocol, the EU is committed to reducing greenhouse emissions by 8% of the 1990 level by 2008-2012. However, if current trends continue, emissions will go up instead, due to increased road traffic.

FP7 research will develop technologies for reduced pollution (air, water and soil) and environmental impact, improving the cleanliness and energy-efficiency of power trains and promoting the use of alternative fuels.

Improving safety and security

Ensuring safety and security for drivers, riders, passengers, crew and pedestrians is another key priority; there are currently 42 000 fatalities every year due to road transport alone. Advanced engineering systems and risk analysis methodologies will be developed for the design of vehicles and infrastructures. Emphasis will be placed on integrative approaches linking human elements, structural integrity, preventive, passive and active safety, rescue and crisis management.

Encouraging modal shift and decongesting transport corridors

A key priority will be to develop seamless, door-to-door transport systems for people and goods, as well as technologies to ensure effective intermodality. This includes activities addressing the interoperability and operational optimisation of local, regional, national and European transport networks, systems and services and their intermodal integration.

Ensuring sustainable urban mobility

About 80% of the EU population lives in cities, and congestion costs represent 2% of EU GDP. Research will focus on the mobility of people and goods, including 'next generation vehicles' and market take-up, bringing together all elements of a clean, energy efficient, safe and intelligent road transport.

Surface Transport Research website:
http://ec.europa.eu/research/transport/index_en.html

Proven strengths

European Transport Research in the Seventh Framework Programme

Transport research is a major contributor to the European economy

Efficient transport is a fundamental requirement for sustainable wealth and prosperity in Europe, driving employment, economic growth and global exports. It provides citizens and societies with essential resources and means of mobility, while transport-derived technological advances stimulate knowledge acquisition, innovation and European integration. All of this makes transport a key element of the Union's Lisbon Strategy for building the greatest knowledge-based economy in the world.

The mid-term review of the Transport White Paper recognises the need for research and innovation in preparing the transport system of the future. Europe needs to innovate to remain a global leader in specialised industrial sectors where its competence is based on knowledge and new technologies. Investment in research, through the EU Framework Programme and public-private partnerships, is an important element of European Transport Policy.

New for 2007-2013: Joint Technology Initiatives

In large-scale European research, the stakes are high, but so are the potential gains. A new element under the Seventh Framework Programme (FP7) will be the 'Joint Technology Initiatives', bringing together public and private research efforts and consolidating them under a single programme, enabling maximum synergies and increasing efficiency. Joint Technology Initiatives will be undertaken only in selected areas, where large-scale research is necessary to reach specific targets. One area has already been identified: the greening of aircraft will be addressed under the 'Clean Sky' Joint Technology Initiative.

'Technology platforms' are key strategic leaders

Maximising the positive effects of transport research requires coordinated action by all stakeholders. Technology platforms bring together the principal actors within the various transport modes, to define and implement strategies for reaching European political targets.

- **ACARE** – the Strategic Research Agenda (SRA), developed by the 'Advisory Council for Aeronautical Research in Europe', remains a key starting point for the EU's overall aeronautics research programme.
- **ERRAC** – launched in 2001, the 'European Rail Research Advisory Council' delivered its Strategic Rail Research Agenda (SRRA) in December 2002, seen as a guide to the planning of national and EU rail research programmes;
- **ERTRAC** – the 'European Road Transport Research Advisory Council' was launched in 2003. It delivered its Strategic Research Agenda (SRA) in January 2005 and is now working towards its implementation;
- **WATERBORNE^{TP}** – the technology platform for waterborne transport research, launched in January 2005, delivered its Strategic Research Agenda in May 2006.

Towards 'greener', 'safer' and 'smarter' pan-European transport

Transport is responsible for 25% of all EU emissions of CO₂, hence the absolute need for a 'greening' of the system to ensure more sustainable transport patterns and compatibility with growth rates, as developed in the mid-term review of the Transport White Paper.

Meanwhile, European policies are strongly encouraging towns and cities to implement sustainable urban

transport policies. Driving this effort are several complementary policy areas, such as meeting the agreed Kyoto emission targets and Europe's own renewable energy targets.

The enlargement (increasing land surface by 25% and population by 20%) and economic development of the EU present new challenges for transporting people and goods efficiently, cost-effectively and in a sustainable manner. Transport also has a direct relevance on other major policies such as trade, competition, employment, cohesion, energy, security and the internal market. Investment in RTD in EU transport industries is a prerequisite to ensure technological competitive advantage in global markets. Activities at European level will also stimulate the restructuring of the industry, including the integration of the supply chain and SMEs in particular.

Transport in FP7 – how much and what for?

Under FP7, the Commission is proposing a 'greener', 'safer' and 'smarter' pan-European transport system, supported by a research budget of **over €4 billion in seven years**. The EU's new technology platforms have made major contributions to the Union's future transport research strategies.

FP7 will also seek to stimulate the ongoing restructuring of the transport industry, including the integration of the supply chain and, in particular, **small and medium-sized enterprises (SMEs)**, key players that provide necessary dynamism and innovation.

The **GALILEO** system and its applications will also be a key priority. This European satellite radio-navigation programme will revolutionise many sectors of the economy – starting with transport – and will be essential in implementing European policies in a variety of areas.

For more information on FP7:
<http://cordis.europa.eu/fp7/>