

# Support for research and innovation by the federal office of transport (FOT)

## Why does the FOT fund research and innovation?

- FOT spends CHF 6 billion annually on public transport (including rail freight)
- CHF 10-15 million annually for R+I → 2 ‰ of expenses
  - » Implements funding as efficiently and effectively as possible
  - » Generates knowledge and implements innovations
  - » Optimises costs and boosts safety, energy efficiency and environmental compatibility
  - » Making public transport and rail freight more attractive and competitive

- The FOT funds R+I via subsidies and in the form of commissioned research/innovation
- Its R+I activity is organized by a central contact point and a decision-making body (funding and innovation board)

## Research and development

## Innovation

Rail infrastructure research programme

Service level agreements/system leaderships/funding for development

Funding for regional passenger Transport


Promoting investment in technical innovations for freight

Energy Strategy for Public Transport 2050 research programme

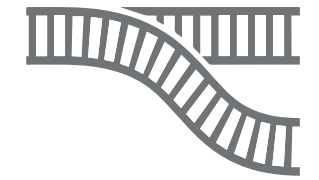
Government research into noise control measures

Investment aid for low-noise freight transport

Areas of research [www.bav.admin.ch/research](http://www.bav.admin.ch/research)



Rail infrastructure



**Goals**

Preservation of value, efficient and safe operation as well as maintenance or expansion of the railway infrastructure. This, taking into account the current safety and environmental regulations.


**Budget**

CHF 3-5m/year

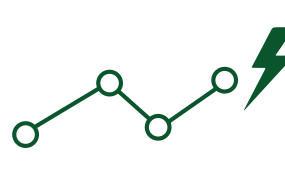
**Priorities/ concerned research areas**

Research priorities 2021-2024:

- Capacity optimization
- Integrated multi-modal mobility planning for future expansion steps
- Environmental impact of railway infrastructure
- Wear-optimized railway operation
- Improvements in substance preservation for railway infrastructure
- Future safety requirements of railway infrastructure
- Human-machine interaction



Energy Strategy for public transport 2050



**Goals**

Increase energy efficiency, opt out of nuclear energy, reduce CO2 emissions and produce renewable energy


**Budget**

CHF 3m/year


**Priorities/ concerned research areas**

Research priorities 2021-2024:

- Energy optimisation and reducing CO2 emissions
- Energy production
- Intelligent management of the energy system
- Instruments and other key factors involved in the energy transition
- Data, monitoring and reporting
- Knowledge transfer and good practice
- Energy management within organisations



Technological developments in freight transport



**Goals**

Efficient and sustainable development in Swiss rail freight transport - especially in single wagon freight traffic


**Budget**

CHF 3-7m/year


**Priorities/ concerned research areas**

Focus: Optimisation of last mile train formation

- automatic coupling
- automatic brake test
- Industry Commitment Technical Innovations CFS - VöV - FOT as „Research Programme“



Rail noise control



**Goals**

Reducing railway noise through emission-limiting measures on rail vehicles or infrastructure


**Budget**

- Research: max. CHF 25m (2013-2028)
- investment assistance: max. CHF 25m (2013-2028)


**Priorities/ concerned research areas**

Priorities:

- Vehicle-specific features such as wheels, bogies, brake systems, electronic monitoring and control,
- Track-specific smooth rail, track damping



Regional passenger transport



**Goals**

Long-term consolidation of the role of regional passenger transport in the Swiss public transport network by strengthening its attractiveness and improving its profitability.

**Budget**

CHF 5m/year

**Priorities/ concerned research areas**

Priorities 2021-2024:

- Vehicle technology and vehicle related fixed installations
- Transport production and vehicle maintenance
- Offer concept
- Ticketing
- customer experience

**Broader framework:**

**Innosuisse**  
Innosuisse especially promotes the partnership between academia and the market with innovation projects, networking, training and coaching, laying the groundwork for successful Swiss start-ups as well as innovative products and services. It provides considerable benefits for a prosperous and sustainable economy.

**Research concept for sustainable transport 2021-2024**  
The research programmes of the FOT fall within the broader framework of the research concept for sustainable transport 2021-2024. This research concept allows for the coordination and transparent presentation of the sectoral research of federal services interested in the theme of sustainability in transportation. It also provides a platform for information and cooperation with researchers outside the administration. Finally, this concept helps to strengthen sectoral research, so that it can provide an even stronger foundation for the short and long-term tasks of Confederation.

**Federal Office of Roads, FEDRO**  
The research programme of the FEDRO considers sustainability in all of its five research thematic sub-divisions. These divisions cover all aspects related road transport, from pedestrians to drivers to vehicles to traffic and finally to the road structures. Each of these impact and are impacted by future mobility. Information on specific research focal topics, current calls for proposals as well as background on how the research programme functions can be found on our website.

**Federal Office of Energy, SFOE**  
The **mobility research programme** is based on the Energy Strategy 2050 and the federal council's climate targets. The research priorities 2021-2024 are: new mobility concepts; fundamentals, analyses and perspectives of the transport system; technical optimisation of vehicles and drives.

The **pilot and demonstration programme** promotes the development and testing of new technologies, solutions and concepts relating to the economical and ecological use of energy, the transmission and storage of energy and the use of renewable forms of energy.

The **sustainable mobility coordination office** supports innovative approaches and projects in sustainable mobility. It funds projects that promote the development of modes of travel conducive to physical activity and respectful of the environment and resources.

