
Transport Technology Programmes in Austria

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Federal Ministry
for Transport,
Innovation and Technology

Research theme – definition

Vehicle technology

- All technologies related to vehicles of all modes
- Targeted to the sustainable policy objectives within transport.
 - analytical, experimental and conceptual work
 - hardware development for research purposes.
- Creates synergies by interdisciplinary co-operation between industrial, academic and public stakeholders as well as users and suppliers of technologies.

Important policy objectives

Technology Policy Goals:

- Strengthen competitiveness of Austria's economy
- Support sustainable socio-economic development
- Improve quality of business location and secure employment

Transport Policy Goals:

- Increase efficiency of transport system
- Improve intermodality between transport modes
- Increase sustainability, safety and security in transport

Important research programmes

IV2S

Intelligent Transport Systems and Services

I2

**Intelligent
Infrastructure**

ISB

**Innovative
System Railway**

A3

**Austrian
Advanced
Automotive
Technology**

**Austrian
Hydrogen and
Fuel Cell
Initiative
(AHFI)**

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Federal Ministry
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Technology Programme

Intelligent Transport Systems and Services



Technology Policy Goals:

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Transport Policy Goals:

- Increase efficiency of transport system
- Improve intermodality between transport modes
- Increase sustainability, safety and security in transport

Intelligent Transport Systems and Services

user friendly, sustainable, safe and efficient through

- International co-operation
- Austrian participation in development
- Active implementation

Subprogrammes

MOVE (Mobility and Transport Technology)

Telematics for Public Transport

Logistics Austria Plus

Innovative Mobility Services

Intelligent Infrastructure

Multimodal Transport Data Network

Multimodal Information Services

Integrated Satellite Navigation

Inland water way Danube

Innovative Railway System

Austrian Advanced Automotive Technology

Research for sustainable and user friendly mobility

Education and Training

Communication and Public Relations

AAA-Technology Programme



- **Secure competitiveness of an Austrian key industry**
(8,7 Bill. Euro, 35.000 employees)
- **Strategy for technological breakthroughs**
(e.g. alternative propulsion systems, new materials and fuels, drive by wire, vehicle electronics)
- **Concentration on problems of public concern not solved by market forces alone**
- **Direct R&D-Investments more than 20 M€ Indirect R&D Investments: around 70 M€**

Thematic areas:

New
Propulsion
Systems

Energy
efficient
Auxiliary
Units

Alternative
Fuels

New
Vehicle
Concepts

Intelligent
Vehicles

Low
Noise
Vehicles

regular calls with
internat. evaluation

National and international Demonstration Projects

Horizontal activities:

A: Integration into the European Research Area

B: Special support for SME

C: Education and Training to create human resources

regular calls with
internat. evaluation

Studies on issues of strategic importance and in preparation of programme activities

Suitable elements for supranational / international co-operation

- **Interdisciplinary co-operation** with at least 3 partners in the projects.
- **Funding instruments** ranging from studies, basic research, applied research to demonstration and pilot projects.
- **Education and training projects** in fuel cell technologies, **mobility** of researchers (funding of thesis at a foreign research institute, **international R&D-co-operation** with foreign partners in the projects.
- **Niches** for a small country like Austria and includes for this reason also R&D activities beyond the actual main stream.

SWOT-Analysis General

Strengths

- ⇒ Individually outstanding scientific personnel / background
- ⇒ Solid technology base
- ⇒ Mid size company response speed
- ⇒ Successful instruments for technology policy Competence Centres (ACC, ECHEM, etc.)

Opportunities

- ⇒ New solutions with very limited competition may be turned into a whole new industry
- ⇒ Risk of substitution may be controllable

Weaknesses

- ⇒ Largely limited networking / awareness of other activities
- ⇒ Partially exotic technology approaches
- ⇒ Mid size resource structure

Threats

- ⇒ Too many, too little, too late
- ⇒ Cost structure for mass manufacturing

SWOT-Analysis Technology Segments

Strenghts

- ⇒ FC's with circulating Elektrolyt
- ⇒ Material technology (Elektrodes, Interconnectors, Bipolar Plates)
- ⇒ Elektric Drives
- ⇒ Fuel storage technology
- ⇒ Sensors / Instrumentation
- ⇒ Simulation
- ⇒ Vehicle application and manufacturing in small to mid quantities

Opportunities

- ⇒ Establishing a Component Industrie for a Bln. EURO Market

Weaknesses

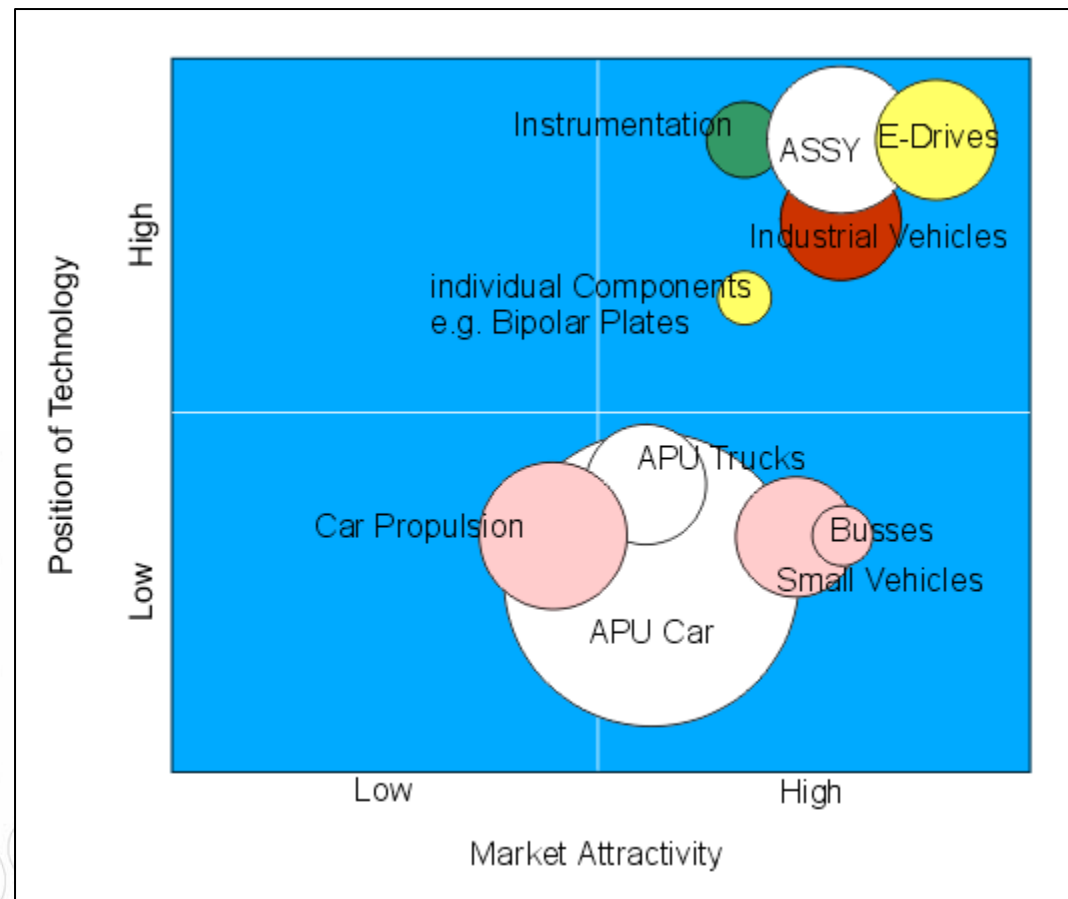
- ⇒ PEM Membrane Technology (Exception FumaTech (D) als bwt subsidiary)
- ⇒ Fuel reformers for standard fuels
- ⇒ Low R&D activity in the high temperature sector

Threats

- ⇒ Markt Timing
- ⇒ IPR in mature Technologies

H. Wancura: "Brennstoffzelle für mobile Anwendungen - Österreichische F&E Aktivitäten und Strategieoptionen für die Zukunft" erstellt im Auftrag des bmvit durch INTEMA Consult GmbH, Graz

First Portfolio Analysis



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Strategy Options

- **„Reserve-the-right-to-play“**: Minimal investment, mainly observation
- **„Hedging“**: Only technologies will receive funds which will be successful independent of the success of the fuel cell
- **„Focus“**: Pushing of selected specific technology / component sectors
- **„Leadership“**: Establish leadership by consistent use of synergies and comparatively high levels of investment, while scales are still relatively low.

Main research questions

→ A3-Focus

- Propulsion systems (Otto, Diesel, EV, Fuel cells, hybrids)
- Pollution and Particulate Reduction
- Noise Abatement Measures
- Alternative fuels
- Innovative vehicle concepts and light weight materials
- Energy efficient vehicle air-conditioning and auxiliary units
- Vehicle electronics and communication systems

Main research questions

→ **Austrian Hydrogen and Fuel Cell initiative**

Vision for the AHFI focusing on 3 important objectives:

- Development of a high efficient electric powertrain as important element of an efficient overall system
- Propulsion systems using hydrogen from renewable sources
- Development of a fuel cell as auxiliary power unit

Main research questions

→ ISB-Focus

| Topics´ Matrix | | Track System (incl. Stations) | Vehicles & Traction | Soft- & Org- Ware, Process |
|----------------------|--|----------------------------------|------------------------|-------------------------------|
| Interoperability | Standardised technical and operational solutions | | | |
| Safety & Security | Safety of railway lines | | | |
| | Safety of railway tunnels | | | |
| | Safety of vehicles (passive & active) | | | |
| | Personal security / human factor | | | |
| Environment | Noise performance | | | |
| | Emissions | | | |
| | Energy consumption | | | |
| | Environmental sustainability of materials | | | |
| "Rail System" | Intelligent Mobility | | | |
| | Innovative Materials & Production Methods | | | |
| | Intermodality | | | |
| | Innovative rail transport systems | | | |

Project proposals to be classified to a module



Contact details



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