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EUROPEAN ASSESSMENT OF GLOBAL PUBLICLY FUNDED AUTOMOTIVE RESEARCH

Publicly funded automotive research in Austria

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This report is a deliverable from the Project EAGAR, “European Assessment of Global Publicly Funded Automotive Research, Targets and Approaches”, supported by the Seventh Framework Programme.

Project Number: 218529

Duration: September 2008 until October 2010.

EAGAR Partner Organisations:

- AVL LIST GmbH, AUSTRIA
- RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN, GERMANY
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- FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V, GERMANY
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Website: www.eagar.eu

Graz, Delft, April 2010

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1 Introduction

1.1 Background

The FP7 project EAGAR benchmarks the current public automotive vehicle research activities at international level, in particular the European Union with Brazil, Canada, China, India, Japan, Malaysia, Russia, South Korea, the United States and 13 EU Member States. EAGAR identifies the national road transport visions and roadmaps, research priorities, supported key topics, technology pathway, as well as the level of investment. This enables a direct comparison of national automotive R&D policies relating to the environment, safety and congestion. The EAGAR study provides a key perspective on global investments designed to improve automotive vehicle technologies for a greener, safer and smarter road transport system.

1.2 Objectives

This deliverable report summarises the situation of the RTD funding system in Austria with respect to published vision statements, research targets and roadmaps, the national funding programmes of the past 4 years and the governance of automotive RTD funding in Austria.

The report is basis for the subsequent benchmarking analysis, which delivers the key results of EAGAR addressing the following issues:

- Overview of national road transport visions, research agendas and roadmaps
- Comparison of automotive research priorities and investments focused on vehicle technologies, namely passenger cars, commercial vehicles and motorised two-wheelers.
- Characteristics of national automotive research funding systems and approaches
- Potential international cooperation areas from a European perspective

This study benefits the competitiveness of Europe and enables the stakeholders to adjust its visions & plans for the future. Date of publication: September 2010. It is available from the EAGAR website WWW.EAGAR.EU

1.3 Methodology

This country report is based on comprehensive investigations via desk research, information from the responsible programme managers and individual feedback from experienced project managers and researchers. The methodology used was developed in the first months of the project. It is consistent for all target countries. The data collection was mainly done from May to November 2009.

The four main categories are:

- General and automotive data about the country
- Published challenges, visions, targets for automotive research
- Funding organisations and hierarchies for automotive research
- National public funding programmes with dedicated calls or permanently open between in the years 2006 to 2009.

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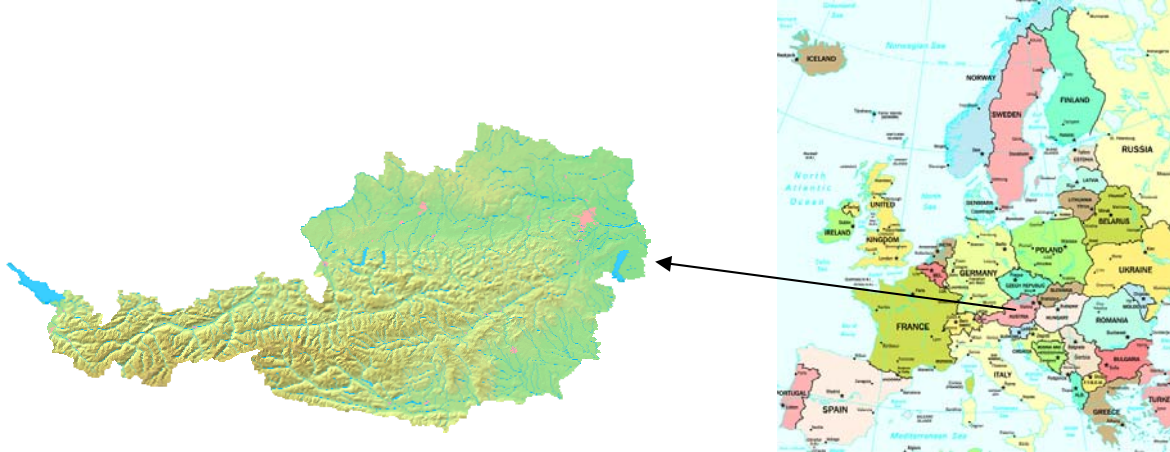
This document presents quantitative and qualitative data from various sources. Due to the complexity of the project and the large amount of sources of data, regularly changing during the duration of the project, it was not possible to thoroughly validate all details. The EAGAR project partners cannot guarantee that the data presented is either complete or correct. The value of some of these data is mainly explorative, as a first step in an indicators development process. In conclusion, the data provided here may be difficult to interpret, are not exhaustive and may need further development. Comments by stakeholders on the coverage, relevance and interpretation of the indicators provided, as well as observations on new indicators that could be employed to improve the analysis of publicly funded automotive research are welcomed by the EAGAR project

consortium. Any quotation of the data in this document should make reference to the above disclaimer. The EAGAR project partners and EC accept no liability for any issues that arise from actions that may be taken as a result of reading this report.

2 Description of the main WP results

2.1 General Information and Automotive Data

The Republic of Austria is located in Central Europe. It has a population of 8,3 Million and covers 83.900 km², of which about 60% are mountainous, 2/3 of the area is above an altitude of 500m. The distance from east to west is maximum 575km, the north-south range is max 294km. In 2008 the World Bank ranked Austria 10th in its global nominal GDP per capita list.¹



The role and importance of road transport in Austria and significance of domestic automotive industry

Some more statistical information from Statistik Austria, EuStat and Fachverbanc der Fahrzeugindustrie für Austria²: In 2007, 82 billion passenger kilometres were traveled by road and 37 thousand million tonne km of goods were transported on road. There are annually 293,700 new passenger car registrations (2008), 41,509 new commercial vehicle registrations (2007) and 54,680 motorised two wheeler registrations (motorcycles) and deliveries (mopeds) in 2007. 510 passenger cars are registered per 1000 inhabitants.

There are no domestic OEMs but a strong automotive supply and automotive industry as well as leading automotive research institutes and engineering companies exist. Some technological highlights of the automotive industry in Austria are e.g. diesel engine design, design of all-wheel powertrain systems and the development of special-purpose vehicles. Several ICT firms have a focus on Intelligent Transport Systems. In 2007 the automotive industry turnover was EUR 15,3 bn and 33,850 people were employed in the automotive industry. Both figures refer to organisations listed in NACE Ref 2 code C29 and its subcategories: Manufacture of motor vehicles, trailers and semi-trailers (including parts).

National spending and funding for research and technological development

The Statistik Austria data show that in 2009 the domestic spending for RTD was EUR 7.65 bn, which is 2.7% of the national GDP. About 45% of this financed by the Austrian private sector, 40% by the public sector and 15% by foreign sources. The automotive industry turnover in 2007 was EUR 15.3 bn, which is 5.4% of the total GDP. The automotive RTD spend of EUR 421 mio (for NACE Ref 2 code 29 organisations), represents 5.5% of total RTD spend. About 75% of this is financed by the private sector, 15.5% by foreign sources and 9.5% by the public sector (including EU funding).

¹ Statistik Austria (2009)

² See Statistik Austria (2009), European Commission (2009), Fachverband der Fahrzeugindustrie Österreichs (2009)

2.2 National Funding Organisations and Hierarchies for Automotive Research

The structure and governance of the national funding system

The structure of the funding organisations for automotive research in Austria is rather centralised. Most programmes for automotive RTD are being administered by one agency (FFG, see below). The automotive research sector is clearly laid-out and the leading actors know each other. Also the government departments which are responsible for programmes liaise with the researchers in both institutes and companies and tend to catch up trends and drivers for key technologies. The influence of the leading competence centres and influential organisations in the definition of RTD themes is a positive aspect. The evaluation of project proposals is usually done by independent panels also staffed with foreign experts.

Funding organisations and key players

Federal Ministry of Transport, Innovation and Technology (BMVIT)

The BMVIT is responsible for both transport infrastructure and transport related RTD. It administrates the largest public funding budget for transport research in Austria (direct funding as well as programme funding).

<http://www.bmvit.gv.at/en/innovation/index.html>

Federal Ministry of Economy, Family and Youth (BMWFJ).

Among various themes that are covered by this ministry are also topics about "economic policy, innovation and technology". This includes location policy for foreign investors, deregulation, sustainable economic development, a Kyoto Task Force as well as supporting measures (e.g. tax allowance for RTD, the participation in the EUREKA programme), consulting services for innovation.

<http://www.bmwfj.gv.at/EN/Topics/EconomicPolicy/Technology/default.htm>

Austrian Federal Ministry of Science and Research (BMBWF)

Focus on Universities, basic research. Main funding for the Austrian Science Fund FWF.

<http://www.bmwf.gv.at/submenu/english/>

Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW)

Together with BMVIT responsible for the Climate and Energy Fund KLIEN.

<http://www.lebensministerium.at/>

Austrian Research Promotion Agency (FFG - Forschungs Förderungs Gesellschaft)

The national funding institution for applied industrial research in Austria. Management of public funding programmes on behalf of the responsible ministries. Consulting services in all phases of technology development and innovation.

<http://www.ffg.at>

KLIEN – Climate and Energy Fund

The Austrian Climate and Energy Fund was established in 2007. It is led by the BMVIT and the BMLFUW. From 2007 until 2010 the fund has up to EUR 500 Mio available to support innovative projects and activities that aim at an environmentally friendly and energy saving future. The focus is on energy efficient technologies, climate research, regional mobility projects, freight transport, mobility management. Administration of calls is done by FFG.

<http://www.klimafonds.gv.at>

FWF Austrian Science Fund

The Austrian Science Fund (FWF) is Austria's central funding organization for basic research. The purpose of the FWF is to support the ongoing development of Austrian science and basic research at a high international level.

<http://www.fwf.ac.at/en/index.asp>

Austrian Council for Research and Technology Development

The Council advises the federal government, the ministers and the regional governments in all matters related to research, technology and innovation, defines a long-term national RTD strategy and gives recommendations for strengthening Austrias position in international programmes and co-operations.

<http://www.rat-fte.at/view.mc?docid=107>

A3PS - Austrian Agency for Alternative Propulsion Systems

The A3PS is a coordination platform between the Austrian research and development institutions and the BMVIT's Technology policy in the field of alternative propulsion systems and fuels. It is also acting as the Austrian National ERTRAC platform. All major players in automotive participate in this platform, which is chaired by the BMVIT's responsible for the automotive research programmes.

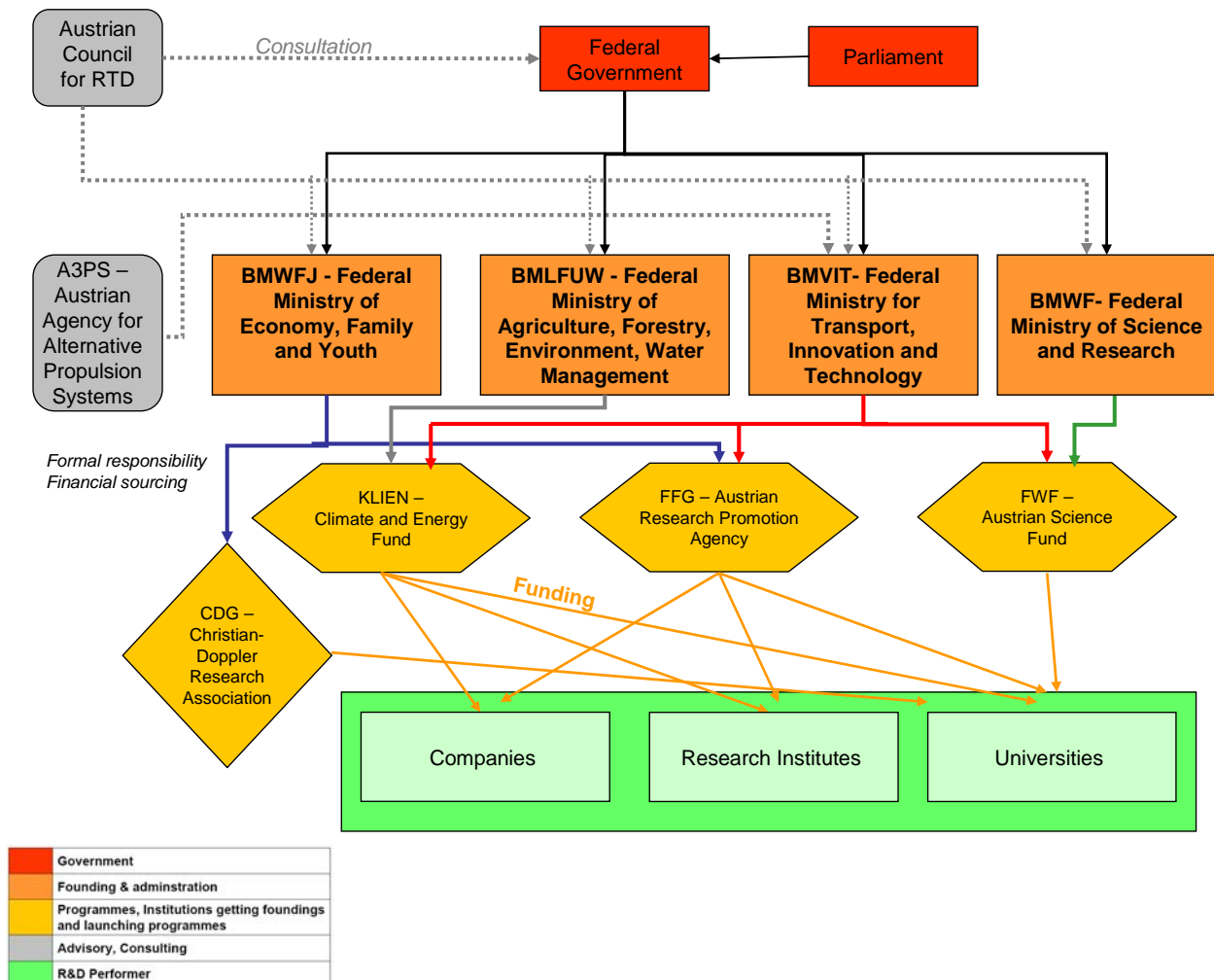
http://www.a3ps.at/site/index.php?lang=en_EN

CDG - Christian Doppler Research Association

The CDG supports application-oriented fundamental research. The CDG research laboratories are set up in universities and research institutions in collaboration with companies. The funds for a CDG lab provided by member companies are doubled by the CDG in the scope of its "matching funds".

<http://www.cdg.ac.at>

Overview of the national Austrian RTD Funding System (simplified, January 2010)



There are three regional Automotive clusters with in total about 550 member organisations, mainly industry and Small and Medium size Entreprises.

- **Automotive Cluster Upper Austria:** www.automobil-cluster.at
- **Automotive Cluster Styria:** www.acstyria.com
- **Automotive Cluster Vienna Region:** www.acvr.at

The main objective of the clusters is to provide a platform for networking, qualification initiatives and support for business development.

2.3 Automotive Visions and Strategic Research Agendas

Significant challenges for the national road transport sector.

Due to the importance of the automotive industry as mentioned above, and because of its geographically central position in Europe as an important transport corridor from north to south and east to west, the grand challenges of European transport are an important background for the RTD objectives of the Austrian automotive sector.

1	Fuel efficiency & GHG emissions	Reduce the environmental impact of automotive transport due to fossil fuel depletion & GHG production: On average the new vehicle fleet in Austria emits 157.7g CO ₂ per kilometre (2008) ³ . In the transport sector (~31% of total GHG emissions) Austria is 3 rd highest GHG emittant (per capita) in the EU, behind Luxembourg and Ireland. ⁴
2	Pollution & noise	Reduce the environmental impact of automotive transport due to toxic emissions and noise pollution.
3	Mobility	Improve the mobility of people and transport of goods: In 2007 there were 81.82 bn passenger km travelled on road and 37.4 bn tonne km goods transported on road.
4	Safety & security	Improve the safety and security of road vehicles. In 2007, 691 persons were killed in road transport and 53,211 were injured. ⁵
5	Competitiveness	Improve the competitiveness of the automotive sector.

There is no prioritisation of these challenges but looking at targets and programmes for automotive research there is a clear focus on improvement of fuel efficiency and the reduction of GHG emissions.

Visions & focused targets for road transport

In general Austria follows the European Union’s vision and targets for road transport. Concerning future powertrain concepts it is stated that alternative combustion concepts and fuels will gradually replace the current combinations of Spark Ignition or Compressed Ignition engines with conventional petrol and diesel fuels. In the longer term, combustion-free drive systems such as electric engines and fuel cells will achieve even greater reductions in energy consumption and emissions of pollutants and noise. Austria aims at generating most of the required energy from renewable sources. The required conversion of the entire power chain to electric components is facilitated through considerable advances in battery technology. Natural gas and biofuels will achieve increasing market shares in both gaseous, fluid and liquefied form. Sustainable hydrogen will be obtained in these scenarios pursued by the automobile industry either with electricity

³ Federal Ministry of Agriculture, Forestry, Environment and Water Management –BMLFUW (2009)

⁴ Tichler, Robert (2009)

⁵ Austrian Federal Ministry of Transport, Innovation and Technology – BMVIT (2009)

generated from renewable sources from water through electrolysis, or be produced from biomethane resulting from biomass recycling.⁶

Target name	Corresponding challenges (from above)	Description including addressed research themes, technologies	By date	Year of publication
20-20-20 targets for GHG reduction	1	20% reduction of GHG (based on 1990 figures) until 2020 in line with EC regulation	2020	2008 ⁷
Electric Vehicles	1, 2	2020: 250.000 EV (incl PHEV, excl 2-wheelers), which will be about 5% of all PC	2020	2010 ⁸
Biogas-CNG-fuelled vehicles	1, 2	200.000 vehicles running on a biogas-CNG-mix fuel with min 20% biogas	2020	2010 ⁷
Alternative Fuels	1, 2	Replacement of 20% of the total transport fuel consumption by alternative propellants by 2020	2020	2007 ⁹
Alternative Propulsion	1, 2	5% of new passenger car vehicle fleet with alternative propulsion system until 2010	2010	n.a
E85	1, 2	E85 broadly available until 2010	2010	n.a. ⁹
Minus 50% fatalities	4	Minus 50% fatalities until 2010 (based on 2001 figures)	2010	2002 ¹⁰
Reduction of injury accidents	4	2010: Reduction of injury accidents by 20% (based on 2001 figures).	2010	2002 ⁸

Obviously several targets have as target date the year 2010. During the data collection for this study no more recent information could be obtained. Unknown if there are any updates of national visions and targets planned. The mobility in Austria as well as the competitiveness of the automotive sector are seen as challenges. However, no targets regarding these challenges have been set.

2.4 Funding Programmes

The link between vision & targets and funding allocation

In general the vision topics and stated targets are matched with corresponding funding programmes. As shown below the national funding programmes are more up-to-date than the above mentioned, published targets, and they deal with the research themes that should provide the answers (technologies, methodologies, products) to master today's road transport challenges.

⁶ Austrian Federal Ministry of Transport, Innovation and Technology – BMVIT (2007)

⁷ European Commission (2008)

⁸ Federal Ministry of Economy, Family and Youth (BMWFJ) and Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW) (2010)

⁹ Target of Austrian Government, see: <http://www.bmlfuw.gv.at/article/articleview/71373/1/4961>, (22 Apr 2010)

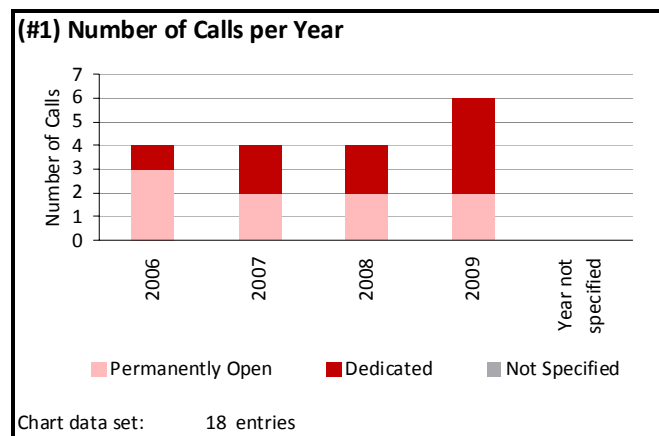
¹⁰ Austrian Federal Ministry of Transport, Innovation and Technology – BMVIT (2009)

Funding programmes and states of RTD as well as different types of instruments

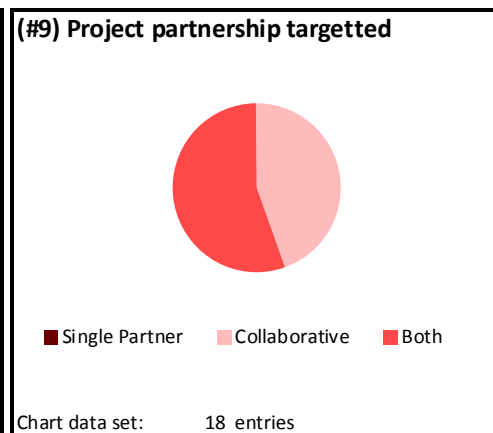
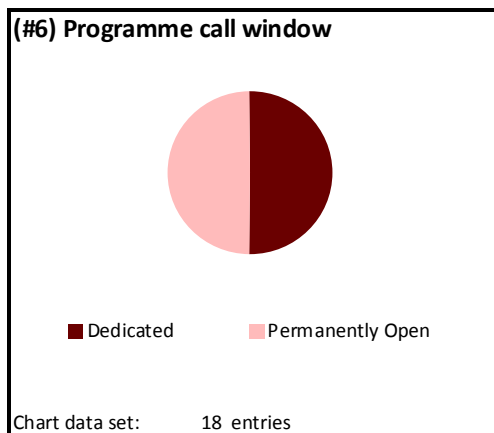
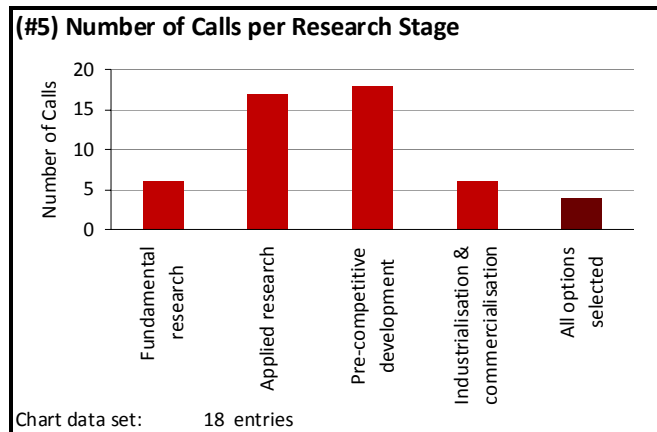
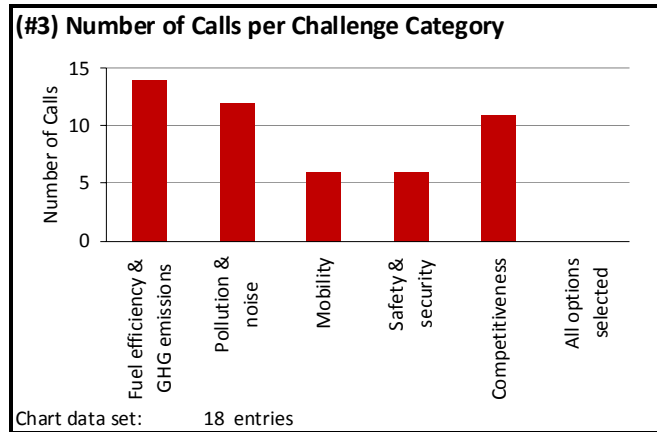
The study focused on the automotive RTD programmes published between 2006 and 2009. There are three programme initiatives with in total 9 dedicated calls in this period and two programmes with an open proposal submission scheme. These were counted as one call per year. The European EUREKA initiative financed with national funding was counted once.

In the analysed Austrian funding programmes there is a clear dominance of applied research and pre-competitive development. The majority of programmes is channeled through the Austrian Research Promotion Agency (FFG) which is responsible for the administration on behalf of the Ministry of Transport, Innovation and Technology (BMVIT) and also on behalf of the Austrian Climate and Energy Fund (KLIEN). There are only very little demonstration and industrialisation aspects included in programmes, such as for example the KLIEN’s lighthouse projects for e-mobility demonstration. Fundamental research is mainly performed by Universities and this research is organised in a separate fund: the “FWF - Austrian Science Fund”, with a bottom-up principle funding scheme. Due to the lack of available information the FWF was not considered for the subsequent analysis.

Most programmes are made for collaborative initiatives, with still growing importance. According to State-Aid regulations a bonus in funding rates can be obtained, if collaboration can be shown and a certain distribution of the project budget to various partners is ensured¹¹. In general there is decreasing importance of single partner programmes although many research performing companies clearly appreciate these programmes even if financial support is lower. In the automotive sector none of the identified programmes with dedicated calls offered opportunities for single-partner projects. The programmes are in general open to all organisation types. ¾ of the analysed programmes have dedicated calls for specified technological themes.



¹¹ Austrian Federal Ministry of Transport, Innovation and Technology – BMVIT (2007)

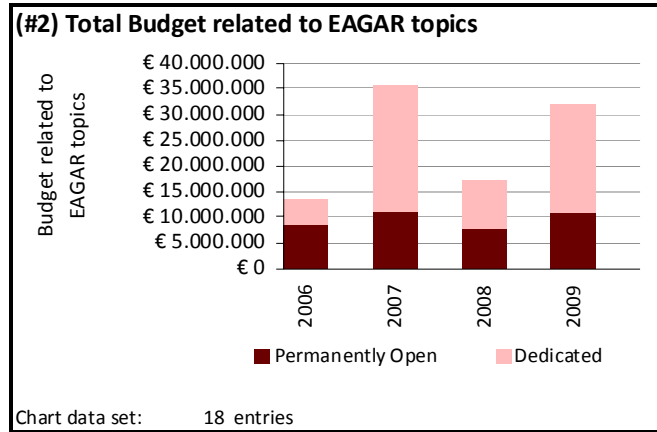


Overview of technology specific programmes for automotive RTD

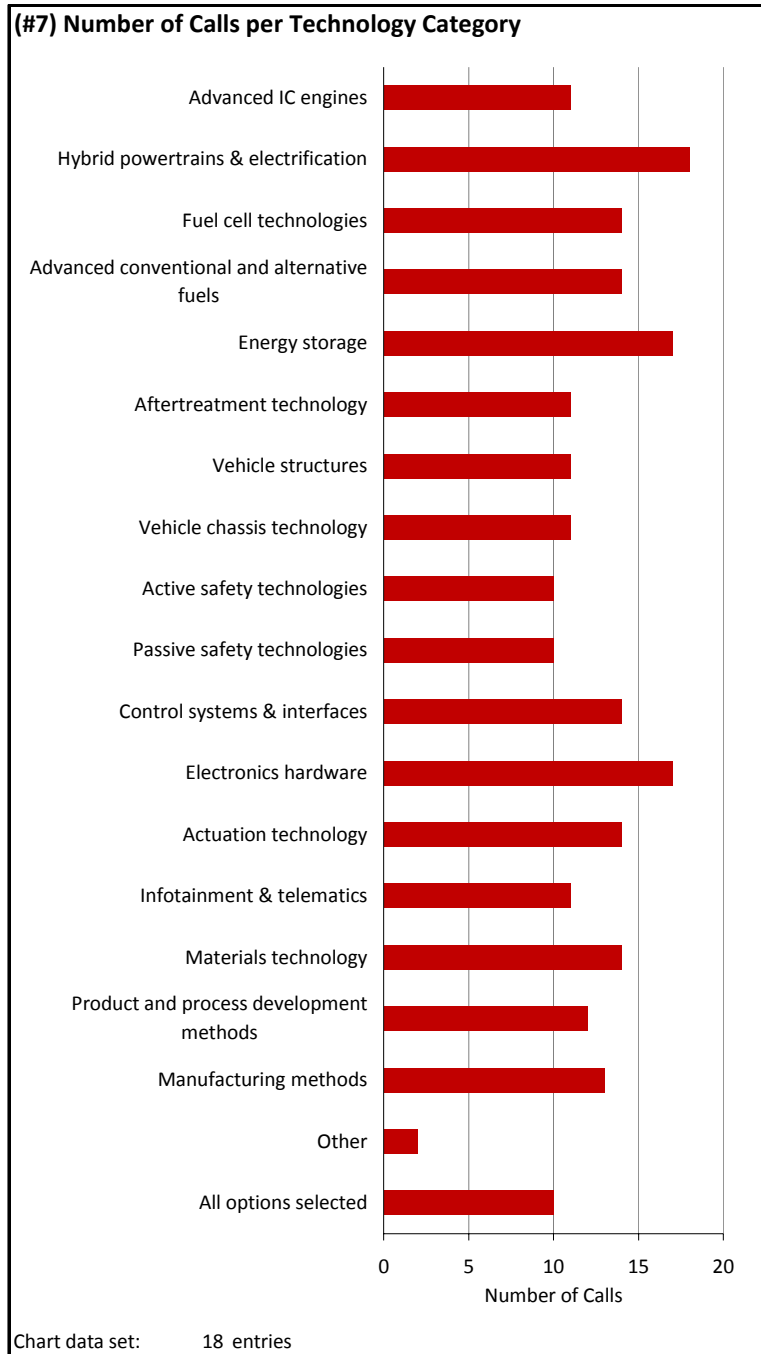
As far as possible the contents of the analysed calls were categorised using the research topics relevant for EAGAR. These topics were predefined by the EAGAR project partners (see diagramme N° 7 on page 12). Energy and energy efficiency related themes were predominant in the analysed calls. In particular the dedicated calls deal with alternative propulsion systems with Hybrid technologies and the electrification of road vehicles incl. energy storage, also material technologies e.g. for weight reduction play an important role. See also section 5, the annex with the list of all analysed calls. The permanently open calls follow the bottom-up principle, consequently allow RTD in all automotive technology domains.

The authors also tried to identify the available programme budgets for automotive RTD projects for each year. As shown in the diagramme below the 2007 budget is significantly higher than the funding in the other analysed years. The reason is the programme for centres of competence,

where the 2007 call lead to the creation of a large automotive research centre with 10 year duration and EUR 21 Mio national funding for the first five years until the first evaluation in 2012. This RTD centre receives also significant regional funding, which is not considered here due to the EAGAR focus on federal programmes only. The funding overview below is based on information from the project websites as well as from FFG¹². The permanently open calls includes the funding for the NACE ref 2 Code C29 listed organisations.



¹² Austrian Federal Ministry of Transport, Innovation and Technology – BMVIT (2007)



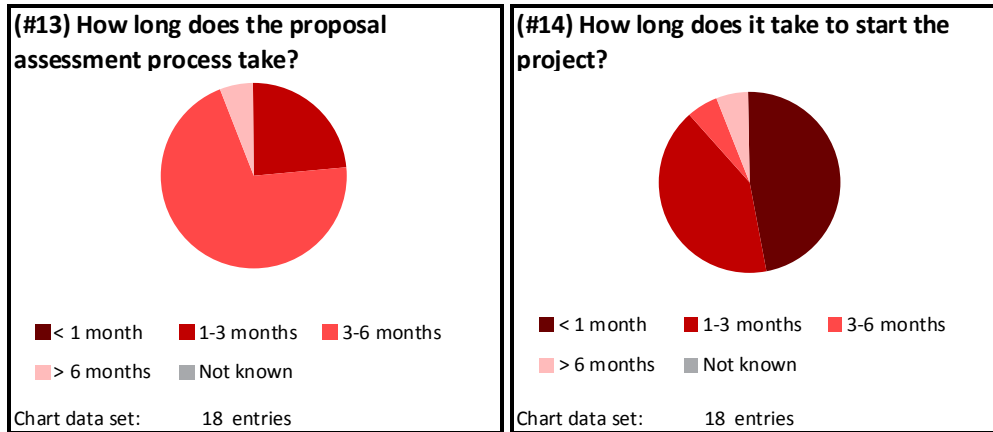
2.5 The efficiency, flexibility, and experienced bureaucracy of the funding process

The flexibility to release new calls in response to changing situations

Although the Austrian funding system is also linked to the annual national budget planning, it is flexible in releasing new calls for “hot” topics. This is also due to the fact that the government is rather centralised with one executive agency (FFG) and one ministry (BMVIT) which is responsible for the majority of programmes. In most thematic programmes there is one call per year (with exceptions). The bottom-up programmes, which are not so relevant for automotive RTD have 3-5 evaluations per year. There is another positive aspect regarding the flexibility in response to changing situations: the time from proposal submission to project start is reasonable, see below.

The application process

Usually it takes 1 to 3 months between the call end date and notification of acceptance or rejection and another 1 to 3 months between finding out that an application has been successful and the project actually starting. In some programmes the project can start with the date of proposal submission, of course with the risk of not being funded.



Anyway if one missed a call, it can take a year until the next opportunity to submit a proposal with the same or similar topic.

In general the administrative effort for the individual applicants has increased in the past years. Although there is one major funding agency (FFG) the requirements can be different for different programmes but with a (slow) tendency to align the administrative part of the different calls to a single e-call system.

All analysed programmes used independent review panels to evaluate project proposals.

For all collaborative programmes it is mandatory to have a Consortium Agreement concluded between all involved organisations. Only then the funding organisation signs the contract to support the project.

For the usually multi-annual project (on an average 3 years), a more detailed annual work plan has to be set-up. This work plan is being reviewed annually and then also changes in the scope of the project can be made and have to be justified.

Remit for organisations & calls: overlaps or conflicts

In general the centralised programme management FFG tries to minimise overlaps and conflicts. However, some overlaps exist between the programmes of the two funding agencies FFG and KLIEN, in particular with respect to GHG reduction RTD programme topics. For participating research organisations there seems to be no harmonisation regarding timing of calls and submission deadlines. Cooperation with EC programmes and alignment of topics via participation in the Joint Undertakings ARTEMIS and ENIAC.

Project Implementation

In most of the calls projects may start a few days after submission of the proposal, project costs are eligible with the acknowledgement of receipt of the proposal by the funding organisation, usually FFG. Obviously this implies the risk of not being selected for funding by the independent evaluation panel. After the signing of the contract with the funding agency the advance payment is transferred within a few weeks directly to the project partners. The contract also already details the subsequent payments, when and what amount, anticipating that the progress of the project and reporting are as planned.

Funding process - exploitation

Several programmes require short descriptions of dissemination and exploitation plans. After the project has been finished a publishable summary of the project and main outcomes is usually requested. Sometimes also additional information for programme promotion brochures or presentations at conferences organised by funding organisations are required. The exploitation of the results has to be detailed on forehand in the mandatory Consortium agreement prior to the signing of the contract.

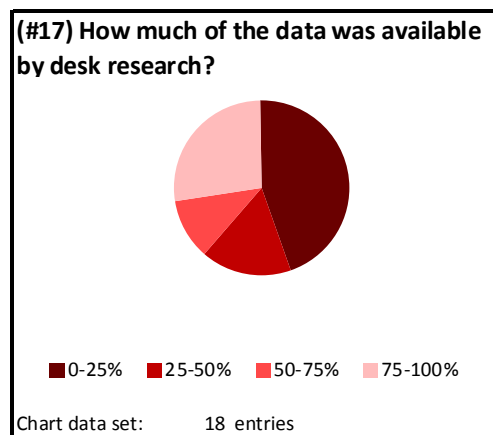
Funding process – feedback

There is no standardised system to provide feedback to the funding organisations. Nevertheless this can be done via the A3PS platform and also in the course of the (annual) financial project reviews and audits, run by the FFG financial department.

Transparency & openness

The process is very transparent, all information is available online but usually only in German. There are no pre-defined guidelines for public dissemination of results but usually basic project information has to be published, for example for promotion activities of the responsible ministry or agency (e.g. via programme brochures, website).

The data collection for this study showed that for the dedicated calls and for the EUREKA programme more than 50% of the required information was available by desk research, the other 50% based on information from national contact points for the various programmes. For the permanently open calls, which are also bottom-up, nearly no information was available by desk research.



Foreign collaboration

Half of the analysed Austrian programmes are open to foreign organisations. However, it has to be proved that the requested know-how is not available in Austria or that industrial exploitation can only be done in cooperation with foreign industry partners, which have to be included in the RTD work. Obviously foreign companies usually do not get funding from the Austrian sources, the funding for foreign research organisations has to be very limited and must be justified. In the same way it is possible to involve different legal entities of a project partner (also of located abroad), but also here their project share has to be limited and justified.

3 Discussion and Conclusion

Although there are no domestic automotive OEMs in Austria, there is a lively automotive research sector. An innovative supply industry, engineering companies and research institutes play a vital role in the national research and innovation landscape.

Consequently there are a number of research programmes for all stakeholders. For this study covering the years 2006 – 2009 six programme initiatives with 18 calls and in total 854 million EUR funding were analysed. Nearly 100 million EUR of this was dedicated to the funding of automotive vehicle technology RTD. The analysis was done only on national level, not covering regional funding initiatives. Most of the programmes administration is performed by the Austrian Research Promotion Agency “FFG”, which is also responsible for the formal administration of the programmes of the Climate and Energy Funds KLIEN. With the administration being rather centralised it has to be stated that four federal ministries (in various compositions) are responsible for the individual programmes. Most important is the Federal Ministry for Transport Innovation and Technology – BMVIT.

The development of the programmes and the called research topics is managed by the ministry departments based on an informal consultation process with the leading centres of competence, institutes and companies and also via the active involvement in international initiatives such as the European Technology Platform ERTRAC, ERANET-Transport of the OECD Implementing Agreement groups.

In terms of vision and targets the national publications follow in principle the EC objectives. Obviously six out of ten identified specific RTD targets have as end date the year 2010.

The RTD programmes are open, most of the information is publicly available, and for many calls also the funded projects can be identified. Also the participation in programmes is rather open, to all types of organisations and also to foreign organisations, if their expertise is needed and not available in Austria. Funding of foreign organisations is very limited.

In the past 4 years there was a clear tendency towards technologies which improve energy efficiency of vehicles and reduce GHG emissions. There was less budget available for vehicle safety technologies or for exhaust gas emission reduction. This can be explained with the global importance of the challenge to reduce the environmental impact of automotive transport due to fossil fuel depletion & GHG production. It can also be explained due to the active role of the A3PS agency, which links the BMVIT with the national key players in alternative propulsion systems.

The major limitation in this study is the fact that the activities of the Austrian Science Fund were not considered for the programme analysis. The FWF is mainly dealing with fundamental research projects, supporting University institutes. Due to the heterogeneity of the University landscape and many institutes being active in RTD for automotive application this might be an important factor but there is simply no detailed information about available funding and research themes. Also the Austrian seed funding for research institutes couldn't be specifically allocated to road vehicle technologies.

4 References

- Statistik Austria (2009), Erhebungen über Forschung und experimentelle Entwicklung (F&E) in Österreich, 2009
http://www.statistik.at/web_de/statistiken/forschung_und_innovation/f_und_e_in_allen_olkswirtschaftlichen_sektoren/index.html
- European Commission (2009), EU energy and transport in figures, statistical pocketbook 2009, ISSN1725-1095, Belgium, 2009.
http://ec.europa.eu/transport/publications/statistics/doc/2009_energy_transport_figures.pdf
- Fachverband der Fahrzeugindustrie Österreichs (2009), Statistikjahrbuch 2009,
http://www.wko.at/fahrzeuge/main_frame/statistik/JB/Seite1.3%20-%201.8%202009.pdf
- Tichler, Robert (2009), Energie Info No. 6, 2009, Energie Institut der Johannes Kepler Universität Linz, Linz, Austria, 2009.
- Austrian Federal Ministry of Transport, Innovation and Technology – BMVIT (2009), Austrian Road Safety Programme 2002 – 2010, Strategie for Improving Road Safety, 3rd Edition, Vienna, Austria 2009.
http://www.bmvit.gv.at/en/service/publications/downloads/brochure_roadsafety2010.pdf
- Federal Ministry of Agriculture, Forestry, Environment and Water Management –BMLFUW (2009), Umweltbundesamt, CO₂ Monitoring 2009, Vienna, Austria, 2009
- European Commission (2008), 20 20 by 2020 Europe’s climate change opportunity, COM(2008)30 final, Brussels, 2008
- Austrian Federal Ministry of Transport, Innovation and Technology – BMVIT (2007), Intelligent Mobility Transport in Changing Times, Research, Technology, Innovation, Vienna, Austria, 2007
- Forschungsförderungsgesellschaft FFG, Jahresberichte 2006 – 2008, see:
<http://www.ffg.at/content.php?cid=498> and FFG-internal funding statistics.
- Federal Ministry of Economy, Family and Youth (BMWFJ) and Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW) (2010) Energiestrategie Österreich, Vienna, Austria, 2010, <http://www.energiestrategie.at>

5 Annex

Pro-gramme Initiative	Programme Call	Description	Funding Organi-sation	Reference
IV2S	A3 - Austrian Advanced Automotive Technology 4th Call	The A3 Impulse Programme was strategically targeted towards reinforcing and further developing Austria's internationally renowned competence in the automotive sector. A3 especially promoted projects aiming at supporting technological advances and innovative approaches in the Austrian automotive supplier industry.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=673
IV2Splus	A3plus 1st Call	The principal aims of the programme are: to increase considerably energy efficiency of vehicles in all surface transport modes, to decrease drastically the level of exhaust gas emissions, in particular CO2	FFG on behalf of BMVIT	http://www.bmvit.gv.at/en/innovation/mobility/a3plus.html
IV2Splus	A3plus 2nd Call	The principal aims of the programme are: to increase considerably energy efficiency of vehicles in all surface transport modes, to decrease drastically the level of exhaust gas emissions, in particular CO2	FFG on behalf of BMVIT	http://www.bmvit.gv.at/en/innovation/mobility/a3plus.html
IV2Splus	A3plus 3rd Call	The principal aims of the programme are: to increase considerably energy efficiency of vehicles in all surface transport modes, to decrease drastically the level of exhaust gas emissions, in particular CO2	FFG on behalf of BMVIT	http://www.bmvit.gv.at/en/innovation/mobility/a3plus.html
Structural programmes	1st Call: COMET - Competence Centres for Excellent Technologies	Bottom-up programme. Special support will be given to those research activities which operate at the cutting-edge and which also promise a high international profile. The competences of the players working at the centres are to be bundled to a greater extent than in the past, with the aim of systematically leveraging content-related synergies in order to obtain a global competitive advantage.	FFG on behalf of BMVIT and BMWFJ	http://vif.tugraz.at/en
Basisprogramme	Basisprogramme 2006	As part of this headquarter policy, the programme "Headquarter Strategy – R&D" stimulates the sustainable development of new research and development competences, thereby strengthening existing R&D businesses in Austria and attracting the establishment of new ones.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=8
Basisprogramme	Basisprogramme 2007	As part of this headquarter policy, the programme "Headquarter Strategy – R&D" stimulates the sustainable development of new research and development competences, thereby strengthening existing R&D businesses in Austria and attracting the establishment of new ones.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=8
Basisprogramme	Basisprogramme 2008	As part of this headquarter policy, the programme "Headquarter Strategy – R&D" stimulates the sustainable development of new research and development competences, thereby strengthening existing R&D businesses in Austria and attracting the establishment of new ones.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=8
Basisprogramme	Basisprogramme 2009	As part of this headquarter policy, the programme "Headquarter Strategy – R&D" stimulates the sustainable development of new research and development competences, thereby strengthening existing R&D businesses in Austria and attracting the establishment of new ones.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=8
Headquarter Strategy – R&D	Headquarter Strategy – R&D 2006	As part of this headquarter policy, the programme "Headquarter Strategy – R&D" stimulates the sustainable development of new research and development competences, thereby strengthening existing R&D businesses in Austria and attracting the establishment of new ones.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=56

EAGAR – Publicly funded automotive research in Austria

Pro-gramme Initiative	Programme Call	Description	Funding Organi-sation	Reference
Headquarter Strategy – R&D	Headquarter Strategy – R&D 2007	As part of this headquarter policy, the programme "Headquarter Strategy – R&D" stimulates the sustainable development of new research and development competences, thereby strengthening existing R&D businesses in Austria and attracting the establishment of new ones.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=56
Headquarter Strategy – R&D	Headquarter Strategy – R&D 2008	As part of this headquarter policy, the programme "Headquarter Strategy – R&D" stimulates the sustainable development of new research and development competences, thereby strengthening existing R&D businesses in Austria and attracting the establishment of new ones.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=56
Headquarter Strategy – R&D	Headquarter Strategy – R&D 2009	As part of this headquarter policy, the programme "Headquarter Strategy – R&D" stimulates the sustainable development of new research and development competences, thereby strengthening existing R&D businesses in Austria and attracting the establishment of new ones.	FFG on behalf of BMVIT	http://www.ffg.at/content.php?cid=56
Climate and Energy Funds	New Energies 2020 1st Call	Wide range of RTD for climate and energy related topics from energy production, distribution, storage to conversion. We listed only the vehicle related technologies. Total budget coversl whole call.	Climate and Energy Fund (admin by FFG)	www.klimafonds.gv.at
Climate and Energy Funds	New Energies 2020 2nd Call	Wide range of RTD for climate and energy related topics from energy production, distribution, storage to conversion. We listed only the vehicle related technologies. Total budget coversl whole call.	Climate and Energy Fund (admin by FFG)	www.klimafonds.gv.at
Climate and Energy Funds	New Energies 2020 3rd Call	Wide range of RTD for climate and energy related topics from energy production, distribution, storage to conversion. We listed only the vehicle related technologies. Total budget coversl whole call.	Climate and Energy Fund (admin by FFG)	www.klimafonds.gv.at
Climate and Energy Funds	E-Mobility	Lighthouse initiative for electric vehicles RTD and demonstration including infrastructure selected regions	Climate and Energy Fund (admin by FFG)	http://www.ffg.at/content.php?cid=1026
EUREKA	Network for Market Oriented R&D 2006	Intergovernmental initiative supporting European innovation. Bottom-up. Although a European programme, the funding comes from national governments	FFG on behalf of BMVIT	www.eureka.be