Guide for proposers
Austrian Electric Mobility Flagship Projects

3rd Call
A funding programme of the Climate and Energy Fund of the Austrian Federal Government

Vienna, June 2011

"Flagship Projects of Electric Mobility" is the research and demonstration programme of the Climate and Energy Fund in the area of sustainable mobility and energy supply. It takes into consideration the particular strategic concerns and areas of focus of the Climate and Energy Fund.
The 3rd call aims at creating a network and functionally bundling successful ongoing activities and projects in Austria which contribute to the gradual market launch of electric mobility in Austria. The focus is on the user- and vehicle-oriented development and implementation of need-based and technically functional systems and services. The call "Austrian Electric Mobility Flagship Project" corresponds with point 2.1.1 of the annual programme of the Climate and Energy Fund.
Every effort has been made to ensure the accuracy of this translation. Nevertheless, the Climate and Energy Fund and the FFG cannot assume responsibility for any errors that may inadvertently have occurred. In the event of any discrepancy, the German version is to be taken as valid.

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Preface

The future will drive electrically. There is no stopping this trend, and it can also be seen in a whole host of projects and initiatives in this field. The Climate and Energy Fund recognised this very early, and since 2008 has been funding research and also market launch activities connected with electric mobility as part of different programmes.

In the area of research there have already been two calls as part of the programme "Technological Flagship Projects of Electric Mobility", which led to a total of five projects dealing extensively with questions in the area of vehicles, infrastructure and also users. These projects are closely connected with the "Model Regions of Electric Mobility" of the Climate and Energy Fund. This leads to intensive exchanges according to the motto "research meets practice". This interaction gives valuable insights from which both sides benefit, and the development of electric mobility in Austria is, on the whole, progressing more quickly.

But it is not only in the area of research, industry and the awareness of the population that the topic of electric mobility is becoming increasingly important. Policy makers have also taken up this issue in order to establish ideal conditions for future green electric mobility. For this purpose an inter-ministerial steering group was set up which deals with important questions in the area of electric mobility as part of ten working groups.

The Climate and Energy Fund supports this process and has already modified this third call based on the first available results. Thanks to the support of the Federal Ministry for Transport, Innovation and Technology (BMVIT), it was possible to adapt the call according to the current status of discussions and therefore integrate this call in the overall strategy of the Climate and Energy Fund. The goal is clear: Austria needs to become a pioneer, a "flagship", in the area of electric mobility. For this purpose the current call, as well as aiming at the new and further development of systems and components, also aims specifically at the networking and functional bundling of successful projects and activities with the goal of creating the basis for a joint electric mobility solution for Austria.

We invite you to send us your innovative project and help shape Austria's electric mobility future.

DI Theresia Vogel
General Manager, Climate and Energy Fund

DI Ingmar Höbarth
General Manager, Climate and Energy Fund

01. Key items at a glance

The Climate and Energy Fund supports technology- and implementation-oriented "flagship" projects in the area of electric mobility in Austria with focus on user- and vehicle-related components, systems and services. Charging infrastructure solutions are limited to the application at mobility hubs of public transport.

Eligible are companies and research institutions based in Austria and the public administration, which form project consortia with at least two participants.

Consortia with foreign partners are possible. Foreign partners are not allowed to be economically linked (linked under company law) with Austrian companies in the consortium. The costs of foreign partners – from EU member states and also from outside the EU – can be funded under the following conditions:

- The funding of the foreign partner must be justified in detail in the grant application in terms of the benefit for the economic location or research location of Austria.
- The total funding of the foreign partners does not amount to more than 20% of the entire funding for the project.
- The jury expressly recommends providing the funding for the foreign partner.

This year's focus is on networking and bundling promising and/or successful activities and projects in Austria. This comprises in particular the programmes of the Climate and Energy Fund such as the "Electric Mobility Model Regions", "New Energies 2020" and "Flagship Projects Electric Mobility" (first and second call), but also transport and mobility projects such as the "Graph Integration Platform".

To pay due attention to the "flagship" idea - that is "to enable first-hand experience of electric mobility in and from Austria and make it visible in everyday life" - the call focuses on large-scale projects (at least EUR 2 million) which produce sustainable electric mobility offers. Up to two projects will be funded as part of this call.

The topic areas of this call are technical innovations in the following areas:

- Vehicle(s)
- Applications and users (integration into the transport system)
- Infrastructure (need-based charging infrastructure at transport hubs)

Submissions must cover all topic areas but not entail further developments for each technological subcomponent. Solutions for already existing technical and organisational gaps or application areas according to the "Plan for the Introduction of Electric Mobility" (http://emobil.bmvit.gv.at/) will be funded. With this in mind, cooperation with existing projects and initiatives is expressly encouraged. Funds of EUR 6 million are available for the call.

The call "Austrian Electric Mobility Flagship Project" is open from 15 June 2011
to 1 September 2011.
Full applications must be submitted
by 1 September 2011, 12 noon at the latest
via eCall to the FFG, https://ecall.ffg.at/
Austrian Research Promotion Agency (FFG),
Thematic Programmes Division
Sensengasse 1, 1090 Vienna

Since technical problems can never be excluded shortly before the end of the submission deadline, you are urged not to submit your applications in the last 24 hours.

In order to receive a project number of the Climate and Energy Fund proposers have to register in advance on the homepage of the Climate and Energy Fund www.klimafonds.gv.at

1.1 Application forms and language

For the application you must definitely use the corresponding forms from the homepage of the FFG: www.leuchttuerme-e-mobilitaet.at. The applications must be submitted in English because the assessment will be made by an international (non-German-speaking) jury. A German version can be enclosed but this will not be considered in the project assessment.

1.2 Information and advice

Austrian Research Promotion Agency (FFG)
E-mail: leuchttuerme-e-mobilitaet@ffg.at
www.leuchttuerme-e-mobilitaet.at

Compulsory preliminary discussion
To clear up the requirements and targets, the submission of a project requires a compulsory preliminary discussion with the Climate and Energy Fund and the Research Promotion Agency (FFG) one month before the submission deadline at the latest.

1.3 Process and project evaluation

The submitted project applications are subject to a formal examination by the FFG. Projects with an environmentally-relevant investment cost portion are also checked additionally by Kommunalkredit Public Consulting (KPC). The technical aspects and content are evaluated by independent international experts, and here all people dealing with the assessment process or present at the meeting of the jury are sworn to secrecy with regard to the information disclosed to them as part of their position. As part of the jury process the applicants are invited to a hearing with the programme committee, consisting of the jury, the office of the Climate and Energy Fund, the funding agencies FFG and KPC and the BMVIT.

There is also a check of the economic capacity (creditworthiness) of the participating companies by internal experts at the FFG.

Connection to the call "Model Region of Electric Mobility"
While in the call "Model Region of Electric Mobility" fully-developed technologies are provided to the general public using new business models, the call "Austrian Electric Mobility Flagship Project" combines the development of Austrian technologies which are not yet ready for the market with the implementation and testing of systemic solutions for new electric mobility offers.

To guarantee the link and networking and also the interoperability of the different solutions and systems between existing and new model regions, flagship projects or other electric mobility initiatives, cooperation between the projects and actors is recommended.

02. Direction and objectives of the programme

2.1 Starting situation

The technological trend in the automobile sector shows a clear development towards the gradual electrification of the power train. Most car manufacturers run research programmes for the development of technologies to ensure more sustainable mobility in the future. The previous and a newly developing vehicle supply industry are working on new solutions. Power supply companies are reconsidering their traditional role and are developing innovative infrastructure and business models. In short: many new and traditional actors are investing large parts of their research budget in technological and systemic innovations. The Climate and Energy Fund has supported these activities with various funding programmes in recent years.

With this in mind, in recent years a series of projects and initiatives have emerged which deal with this topic. As part of this call it is necessary to build on existing projects and initiatives in order to close systemic gaps. The funding applicants have to prove that there are discussions on this with existing projects and initiatives (e.g. LoI, MoU etc.). Need-based electric mobility solutions for future mobility requirements are the focus here.

2.2 Vision and objectives

The future belongs to electric vehicles. "Flagship projects of Electric Mobility" secure the R&D field of competence of electrified Austrian drive technologies, prepare the production location of Austria for the technological change and make innovations visible and possible to experience in everyday life.

The aim of "Flagship Projects of Electric Mobility" is to gain national and international attention for Austrian technologies. They need to prove the daily applicability of these technologies in Austria. At the same time important signals are being sent to the global partners and customers of Austrian research and industry.

2.3 Programme orientation

By developing and using innovative technologies, the funding programme "Flagship Projects of Electric Mobility" wants to help increase efficiency in the transport system, make a contribution to the reduction of energy consumption and bring about positive environmental effects. It is based on the results and experiences of the calls "A3plus" and "New Energies 2020" and takes into consideration the particular concerns and areas of focus of the Climate and Energy Fund.
The programme is oriented towards three funda-

mental medium- and long-term goals:

(1) Efficient energy use
Electric vehicles are much more efficient than conventional vehicles because of the higher efficiency of the power train. Here there are a series of key aspects such as the reduction of conversion losses from the electricity grid on to the storage system and the motor. In the production and recycling of the technologies attention also has to be paid to efficient energy and resource use (life cycle costs). The highest consumption savings can be made if paths which have to be travelled are avoided, shortened or tackled in an energy-efficient way using new mobility models (e.g. electric scooters instead of cars).

(2) Intelligent energy and transport systems
Intelligent energy and transport systems can bring supply and demand perfectly in line with each other. Excess capacities can be avoided and better integration of renewable energies made possible. Supply and demand are influenced via information and communication systems with the information carrier "price". Intelligent "vehicle to grid" solutions which use "smart meter" and "smart billing" applications are a classic example of sustainable, efficient and intelligent energy systems.

Systemic solutions from energy production onto infrastructure and consumption of energy in the vehicle are indispensable for mobility models which are intelligently compatible with each other.

(3) Cost-efficient renewable energies
Although electric mobility, including when electricity is generated according to the Austrian electricity mix, has clear advantages over conventional combustion engines in terms of all pollutant emissions, with the use of cost-efficient renewable energies the advantages of electric mobility over "fossil mobility" are particularly clear. It is only by using renewable energies that CO_2 emissions sink towards zero.

Other pollutants like NO_X and fine particulate matter are avoided entirely. Electricity from fluctuating renewable energies like sun and wind can be stored in batteries and provides new application combinations. In the long term renewable energy and electric mobility will enter into a symbiotic relationship and strengthen each other thanks to the synergies which can be generated. For the Climate and Energy Fund the use of renewable energies plays a key role, especially in the area of electric mobility.

2.4 Programme strategy

Technical innovations with a long-term perspective need to be integrated into convincing systems with the help of this programme and be taken towards the market. Here application- and user-oriented technological system solutions in and from Austria need to be taken into account – this means transport- and mobility-related projects which become particularly visible, whether because of their technical and organisational system view, their level of innovation, their scope of integration of innovations or their technological advantage.

The technological presentation and testing of mobility solutions must take place in Austria, cross-border, application-oriented cooperation ventures are particularly welcome at an advanced stage, however (details on eligibility for funding can be found in the RTD/UFI guidelines – see chapter 4).

Actors from the regional economy and public users need to be actively integrated. Willingness to cooperate with successful existing or new projects and activities such as "Flagship Projects of Electric Mobility" and also "Model Regions of Electric Mobility" is a requirement. The user-specific, operating and interface data that is collected while the project is running and which may be of interest for reuse by other consortia or operators etc. (e.g. data on user behaviour, on the utilisation of charging stations, vehicle-specific field data, interface specifications, etc.) needs to be made available for other projects in statistically anonymous form.
The technical innovations need to lead to results

which can be multiplied and have economic potential in order to safeguard and create jobs. The basis here has to be provided by new Austrian electrical drive technologies in significant quantities and new electric mobility services. The public needs to gain confidence in the sustainability of new Austrian drive technologies via the route of hybridisation.

During the project planning phase, potential future standardisation and norm trends already need to be taken into account. An open design of interfaces within the "flagship projects" has to prevent stranded investments and ensure the targeted connection with other projects. A corresponding strategy must be presented in the project application. One or two connecting projects will be initiated as part of the current call "Austrian Electric Mobility Flagship Project".

03. Call topics

As part of this call "Austrian Electric Mobility Flagship Project" the Climate and Energy Fund funds the following:

- **New and further development and implementation** of necessary technological components and systems in the area of vehicle development, new electric mobility offers for users and (to a small extent) also need-based infrastructures at transport hubs with public transport, including the investments directly connected with this
- **Networking and functional bundling** of successful ongoing projects, activities and initiatives in Austria for the gradual market transition of electric mobility in the whole of Austria

As part of the projects both new and further developments and also the networking and functional bundling of the described technologies need to be addressed. The submitting consortium may set its own priority area if it can justify its choice.

The projects need to focus on **vehicle technologies** and on systems for combining technical and organisational innovations to implement **new mobility offers and services.** The area of charging infrastructure is limited to 10% of the entire funding volume. **This call focuses in particular on connecting and missing elements,** i.e. gaps and interfaces to nationally and internationally successful ongoing projects and activities which enable and promote the gradual Austria-wide implementation of electric mobility applications in and from Austria in technical and organisational terms.

To take the needs of road users appropriately into consideration, it is obligatory to integrate regional or national **mobility providers and transport operators** and also **infrastructure operators.** It is necessary to present at least one cooperation agreement in the form of a LoI/MoU with a transport operator in an ongoing project.

To ensure lasting compatibility throughout Austria between vehicles and infrastructure and prevent stranded investments, it has to be shown in the project application how the applicant will respond to current developments while the project is running. With this in mind, interoperability of the different solutions and systems must also be ensured so that all users – including of other "flagship projects", model regions or other electric mobility initiatives – have at least one way open to use the public and semi-public charging infrastructure created as part of the "flagship" project for their electric vehicle (e.g. open interfaces for communication, charging control and billing, charging connector compatibility, etc.).

In this call too all three topic areas "vehicle", "users" and "infrastructure" must be examined integratively, but here the priority needs to be clearly on the first two topic areas and the focus must be on connecting and missing elements of ongoing projects. Prioritisation shall also be taken into consideration additionally by limiting the "charging infrastructure" part to approx. 10% of the entire funding volume.

3.1 Vehicle(s)

To meet the particular challenges electric mobility is still facing in terms of costs, range and the weight of the battery, the focus with partly- and fully-electrified vehicles in the 2011 call is on the integration of energy efficient components and the energy storage system in the vehicle.

Object of the call:

- Development of "on board" components and systems for new manufacturer-independent electric mobility offers (electric car sharing and electric fleet sharing "version 2.0")
- Development of vehicle concepts and integration of vehicle components in the single- or two-track complete vehicle which has to be constructed for private and business uses
- Further developments to increase the energy efficiency of the complete vehicle
- Development of on-board components for energy-efficient charging technologies
- Further development of comfort systems (such as heating and air conditioning) and also of energy management

3.2 Applications and users (integration into the transport system)

On the user side, the focus is on the development and integration of technical and organisational intermodal electric mobility services to enable integrative use of single- and multi-track vehicles with public transport. It is possible to focus on promising user groups, vehicle categories and fields of application here.

Object of the call:

- Development of systems for the fleet management of electric vehicles
  - For the multiple use of a fleet by different companies (well-defined vehicle use)
  - For the use of electric vehicles as part of a vehicle pool by companies and private individuals (open vehicle use)
- Development of interoperable mobility information, electric mobility offers and electric mobility billing by public transport service providers and operators and their integration in a functioning system environment by using linked ICT systems
  - Development of tools to predict mobility behaviour and timetable management –
  - Development of new electric mobility services and billing systems with national electric mobility tickets (including booking, reservation and billing systems)
- Development and integration of organisational and technical systems for a mobility offer with electric vehicles based on user-specific incentive systems for urban and rural regions
  - Conception and implementation of combined mobility offers with the additional use properties of hybrid and battery vehicles
  - Development of bonus algorithms for need-based mobility offers with electric vehicles

3.3 Infrastructure (need-based charging infrastructure at transport hubs)

Testing need-based charging infrastructures is limited to a small part of the entire project (approx. 10%) and needs to be done primarily at mobility hubs with public transport, when not it must be done exclusively in semi-public and private areas.

Object of the call:

- Development and construction of innovative application-specific charging solutions for single- and two-track electric vehicles including billing interfaces
- Development and implementation of:
  - Charging stations which can be controlled in the short term in car parks and private garages to prevent peak charging
  - Fast charging systems at railway stations or frequently-visited mobility hubs with public transport
  - Inductive charging systems for single- and two-track vehicles
  - Battery exchange systems solely for single-track vehicles and buses
- Development, construction and system testing of charging and refuelling facilities which can be realised in the short term and controlled in terms of time in the medium term with innovative data, communication and billing technologies (including definition and establishment of interfaces and communication protocols) to prevent peak charging times

04. Administrative information

4.1 Call documents

As part of this call the following call documents are relevant:

Document	Web address
This **guide for proposers**	http://www.ffg.at/technologische-leuchttuerme-der-elektromobilitaet-das-programm
Special provisions for the funding instruments for programmes of the Climate and Energy Fund	http://www.ffg.at/technologische-leuchttuerme-der-elektromobilitaet-das-programm
Guide for flagship projects including evaluation scheme and evaluation process	www.ffg.at/Leitprojekt
Application forms to be submitted **via eCall** • Project description for grant applications • Costs projection for funding • Statement under oath confirming SME status	In the download centre at http://www.ffg.at/technologische-leuchttuerme-der-elektromobilitaet-das-programm and in eCall
Guide for handling **project costs** in grant applications and reports	www.ffg.at/kostenleitfaden
RTD guidelines	http://www.ffg.at/foerderrichtlinien
Guidelines for **environmental grants** in Austria	www.umweltfoerderung.at

Tab. 4.1

4.2 Legal basis

As the legal basis the guidelines for the promotion of economic/technical research and technological development (RTD guidelines) pursuant to Section 11 (1 to 5) of the Research and Technology Promotion Act (FTFG) are used.

Regarding the company size the corresponding valid SME definition according to EU competition law shall be decisive (from 1 January 2005: SME

definition according to Commission Recommendation 2003/361/EC from 6 May 2003 (Official Journal L 124 from 20 May 2003, p. 36-41)). All EU regulations in the currently valid version must be applied.

Investment costs of demonstration facilities shall be funded on the basis of the guidelines for environmental grants in Austria based on the Austrian Environmental Aid Act (Federal Law Gazette no. 185/1993) as amended.

4.3 Submission and coordination between the funding agencies FFG and KPC

The programme is implemented on behalf of the Climate and Energy Fund by the Austrian Research Promotion Agency (FFG) and Kommunalkredit Public Consulting GmbH (KPC). Applications must be submitted to the FFG via eCall in the form of a grant application for flagship projects of the research category "experimental development". Before that it is absolutely necessary to register on the Climate and Energy Fund's homepage (www.klimafonds.gv.at).

As mentioned in the "Special provisions for the funding instruments for programmes of the Climate and Energy Fund", projects with investment cost shares (for demonstration facilities of the project) are additionally forwarded to Kommunalkredit Public Consulting GmbH (KPC), which will examine them.

Coordination with regard to the funding portion in line with environmental grants in Austria, which is determined by KPC, is carried out automatically by the funding agencies. If necessary the respective funding agency may contact applicants so they can submit additional information. In the case of additional funding of investment costs by KPC, two grant agreements will be drawn up:

- FFG grant agreement for R&D-related costs
- Kommunalkredit Public Consulting GmbH grant agreement for investment costs

4.4 Admissible costs

Flagship projects of the research category "experimental development" are eligible within the framework of "Technological Flagship Projects of Electric Mobility". For admissible costs, please refer to the "Guide for handling project costs in grant applications and reports for projects with grant agreements pursuant to the RTD Guidelines and the FFG Guidelines".

For an optionally complementary investment share for demonstration facilities, the provisions for environmental grants in Austria apply:

Investments in terms of the guidelines for environmental grants in Austria (UFI) are those which are related to the companies' transport measures and local facilities and comprise, in particular, means of transport, facilities and services such as construction work, assembly and planning services. According to the guidelines for "environmental grants in Austria", which are handled by KPC, the Climate and Energy Fund provides non-repayable grants for investment costs related to demonstration facilities as long as there is a direct ecological benefit (climate protection effect, keeping air clean).

Non-eligible costs - apart from general non-admissible costs (see "Guidelines for environmental grants in Austria") - include:

- Services or deliveries which were performed or received before the funding agency or application office received the application, with the exception of preliminary work
- Administration fees, court charges and notary fees, as well as linking or connection fees
- Financing costs

Additional information about the grant area "investments" can be obtained from the "Guidelines for environmental grants in Austria", which can be downloaded using the following link: www.umweltfoerderung.at

4.5 Amount of funding

The amount of funding will depend on the eligible costs based on the RTD guidelines for the R&D part and the "Guidelines for environmental grants in Austria" for the investment part.

Amount of funding for R&D part:

Research category	Small enterprises	Medium-sized enterprises	Large enterprises	Research institutions
Experimental development	60%	50%	35%	60%

Tab. 4.2

For details see www.ffg.at/Leitprojekt.

Amount of funding for investment part:
According to the "Guidelines for environmental grants in Austria", the following applies: Investment costs can be funded for up to 40% of environmentally-relevant additional investment costs but never for more than 30% of environmentally-relevant investment costs.

"Investment part" fact box	
Project form	Only cooperative projects
Suggested project duration	3 years
Max. funding intensity of environmentally-relevant additional investment costs (KPC environmental grants in Austria)	Max. 40% of environmentally-relevant additional investment costs but never for more than 30% of environmentally-relevant investment costs
Admissible costs	Investments in terms of the "Guidelines for environmental grants in Austria" are those which are related to companies' transport measures and to local facilities and comprise, in particular, means of transport, facilities and equipment, services such as construction work, assembly, planning services.

Tab. 4.3

05. Contact

5.1 Programme mandate

Climate and Energy Fund
Gumpendorfer Straße 5/22, 1060 Vienna

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5.2 Programme management

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5.3 Funding agency for investment projects

Kommunalkredit Public Consulting GmbH
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