



ERA-NET Cofund Electric Mobility Europe (EMEurope)

D6.3 – R&D&I Agenda

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1. Introduction

Transport is a major contributor to climate change and a key source of air pollution. According to a report from the International Energy Agency¹, transportation is responsible for 24 % of direct carbon dioxide (CO₂) emissions from fuel combustion. The electrification of transport is very important to support the reduction of the emission of Greenhouse Gases (GHG) and other pollutants released to the atmosphere by conventionally fueled vehicles. It can help countries to achieve climate goals and, which consequently, help citizens and the environment.

Several countries apply regulatory frameworks that stimulate car makers to produce and offer more electric cars, other countries offer EV incentive measures to increase demand. By the end of 2020, such incentives have been put in place in 26 out of the 27 EU countries² including all EMEurope countries/regions. The most common governmental incentives are financial ones, such as purchase incentives and tax benefits for zero- or low-emission automobiles. The number of incentive measures increased in some countries in 2020 as part of corona economic stimulus packages.

Though the number of (nearly) zero emission vehicles on the road is currently increasing, further incentives and measures are necessary for a faster upscaling of zero emission vehicles in Europe. Research and innovation play a key role in this equation, providing answer to many arising issues, such as grid balance, interoperability, use of resources, recycling procedures, etc.

The European Union has recognised the importance of research and innovation for the deployment of electric vehicles and developed several dedicated programmes in the past few years. As an example, a partnership with the industrial sector on electric vehicles was initiated over 10 years ago, the European Green Vehicles Initiative Association (EGVIA). In addition, the EU supported the creation of two ERA-NET initiatives (Electromobility+, 2010-2015; EMEurope, 2016-2021), the Battery Alliance and most recently the creation of two partnerships mainly dealing with electrification topics (2Zero and Batteries, both 2021-2027) plus a number of initiatives having electrification of road transport as key topic (Clean Energy Transition, Clean Hydrogen, Driving Urban Transitions, etc.).

The automotive sector is the EU's number one investor in research and development. According to the European Automobile Manufacturers' Association (ACEA) the automotive sector is Europe's largest private contributor to innovation, investing EUR 62 billion in R&I annually and accounting for 32.8% of total EU spending³. The demand for electric vehicles is increasing and new and stricter directives are coming into play. Therefore, the automobile industry needs heavily investment in research and innovation of clean vehicles, focussing on topics such as new materials, products and services.

Though research and innovation fund is necessary along the whole production chain, in recent years focus has shifted from the product (vehicle) itself to implementation. Further vehicle

¹ IEA (2020), Tracking Transport 2020, IEA, Paris, link www.iea.org/reports/tracking-transport-2020

² ACEA (2020): Overview - Electric vehicles: Tax benefits & purchase incentives in the European Union, link www.acea.be/publications/article/overview-of-incentives-for-buying-electric-vehicles

³ ACEA (2021): R&D shares of industrial sectors in the European Union - ACEA - European Automobile Manufacturers Association, link www.acea.auto/figure/rd-shares-of-industrial-sectors-in-european-union/

development (e.g. batteries, materials) is highly important to make electrification more efficient and ecological, however, current investments also strongly focus on processes (e.g. recycling, energy production, resources use, harmonization) and services (e.g. adjustments to local needs, digitalisation, system integration).

Many EU member states have dedicated research and innovation programmes for electrification of road transport. In coordination with Member States and transport stakeholders, the Strategic Transport Research and Innovation Agenda (STRIA), a roadmap for Transport Electrification⁴ aims to set out common priorities to support and speed up the research, innovation and deployment process leading to radical technology changes in transport. According to the EMEurope Survey¹³ realised in July and August 2020, 11 out of 13 countries and regions responding to the survey dispose of specific funding schemes for small electric vehicles. This number dropped to 8 and 7 out of 13 for the categories “public transport” and “urban freight and logistic”, respectively. However, even if these countries and regions do not offer a dedicated funding programme to the research and innovation of specific vehicle types and segments, all EMEurope partner countries and regions invest in research and innovation for the electrification of road transport. In these cases, the programmes available have usually a broader scope and/or specific user/stakeholders groups, as e.g. SMEs, Industry, Universities and Research Organisations.

The name of the document does not reflect its content, as in this document a compilation of current research and innovation funding programmes is presented and not an agenda of activities. The change of scope was made in agreement with the European Commission as a compilation of current programmes was rated of greater value by the EMEurope participating countries and regions and networks of stakeholders.

In this document, funding programmes having electrification as thematic focus in countries and regions partners in EMEurope are compiled. The overview focusses on current ongoing programmes and gives an overview of the large number and variety of programmes, foci and their target audiences. It does not pretend to be all-encompassing and apart from EMEurope partner regions, Catalonia and Piedmont, it does not include funding programmes on regional level. Whenever possible, a short description, volume of call and link to the website is displayed.

⁴ SWD(2017) 223 final, Commission Staff Working Document - Towards clean, competitive and connected mobility: the contribution of Transport Research and Innovation to the Mobility package, May 2017

¹³ State of the art survey No. 2 -National, Regional and EU measures to establish and support electric mobility, ERA-NET COFUND EMEurope, survey carried out in July-August 2020, link: www.electricmobilityeurope.eu/networks

2. Programmes per country

I. Austria



1. Energie.Frei.Raum

Description: The "Energie.Frei.Raum" funding programme serves as a preparatory phase for a possible experimental clause, which subsequently creates experimental spaces for companies in which the systemic implementation of new market models for the system integration of renewable energy technologies and storage and energy efficiency technologies can be tested.

The strategic goal of the "Energie.Frei.Raum" programme is to break down barriers in the field of testing and implementation of energy innovations and corresponding technologies in order to enable them to have a sustainable opportunity in the international environment based on the Austrian market.

Operational goals:

Goal 1: Representation of the range of needs of relevant stakeholders and elaboration of proposals for optimized framework conditions for a nationwide flexibility of the energy system.

Goal 2: Testing the systemic implementation of new integration and market models for the system integration of renewable energy technologies as well as storage and energy efficiency technologies.

Goal 3: Improvement of the transferability and scalability of innovative technologies and services for an accelerated market introduction at home and abroad.

Funding Organisation: Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)

Volume [EUR]: 4.4 M

Link: www.ffg.at/Energie.Frei.Raum

2. E-MOBILITÄTS-MANAGEMENT

Description: Funding is provided for the purchase of electric cars of the classes M1 and N1 as well as (e-) transport bikes, e-mopeds, e-motorcycles and light e-commercial vehicles in the context of e-fleets, for example. Furthermore, the purchase of e-minibuses and e-buses of the classes M1, M2 and M3, as well as e-commercial vehicles of the classes N2 and N3 as well as e-charging infrastructure are supported.

Note: Vehicle models PHEV, REEV and REX with diesel drive are not eligible for funding.

Funding for vehicles with electric drives is only possible if they only use electricity from renewable energy sources.

The establishment of multimodal mobility nodes is also supported. A corresponding system bonus is also awarded for projects with a systemic approach.

The combination of several measures or the additional implementation of awareness-raising measures is desirable and can have a positive effect on the amount of funding.

You can find detailed information for your project in our guide.

E-MOBILITÄTS-MANAGEMENT is a part of the E-Mobilitätsoffensive 2021 which provides funding for electric vehicles for private individuals, companies, local authorities and associations.

Funding Organisation: Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)

Duration: 10/02/2021 - 31/03/2022

Link: www.umweltfoerderung.at/betriebe/e-mobilitaetsmanagement.html

3. Zero Emission Mobility

Description: This programme forms the research core for the implementation of the e-mobility offensive of the Austrian federal government and thus makes a significant contribution to the transformation of the automotive sector in Austria.

The funds are to be used to support lead projects and cooperative R&D projects. The projects are intended to promote 100% electrification of vehicles and enable the development and testing of intelligent e-mobility and hydrogen infrastructure and their embedding in publicly accessible mobility systems and logistics solutions. In addition R&D services are to shed light on actual questions in the field of electric mobility.

Zero Emission Mobility 2021:

The 4th “Zero Emission Mobility” tender focuses on the goal of 100% electrification (batteries, fuel cells, high-performance capacitors, no ICM) of vehicles and the development and testing of intelligent charging infrastructure. One focus is on the integration of electrified, automated publicly accessible mobility services in urban and rural transport offers as well as solutions for zero emission logistics services. Another focus is on sector integration, experimentation rooms, the testing of new structures, business areas and solutions.

The projects should also deal with innovative technologies, business models and solutions that are not yet feasible in the current legal framework, but could be tried out in the context of possible future experimentation rooms. However, the overall success of the project must not depend on the granting of special permits in this regard.

Both innovative systemic technology developments and integrated mobility solutions with value creation prospects for Austria are relevant as project results. The focus is on the scalability of solutions and the integration of existing components in new zero emission developments.

There are 3 subject areas to achieve these results in the context of the tender:

- Zero Emission Vehicles
- Zero Emission Infrastructure
- Zero Emission Logistics & Mobility Solutions

Funding Organisation: Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)

Duration: 2021

Volume [EUR]: 8 M

Link: www.klimafonds.gv.at/call/zero-emission-mobility-2021

4. Zero Emission Mobility – Implementation

Description: Zero Emission Mobility Implementation aims to support the rapid and large-scale rollout of zero-emission technologies in the mobility sector. For this purpose, research and demonstration projects in the fields of "Zero Emission Freight Transport" and "Zero Emission Passenger Transport" are funded.

Zero Emission Mobility Implementation is the Climate and Energy Fund's programme for the large-scale demonstration of innovative zero-emission technologies and services in the field of electromobility. Last research and development work for the market transition are supported. The tender is designed to be technology-neutral and mission-oriented and focuses on 100% electrification and zero local emissions. The focus is on systemic, holistic solutions. Furthermore, the potential for the scalability of solutions and thus the generation of a contribution to the reduction of emissions in the transport sector as well as the creation of new value creation potential for Austrian companies is essential. The continuation and large-scale rollout of successfully completed zero-emission mobility projects is desirable.

Funding Organisation: Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)

Duration: 2021

Volume [EUR]: 7.7 M

Link:

www.ffg.at/sites/default/files/allgemeine_downloads/thematische%20programme/Energie/Leitfaden_Zero_Mobility_Emission_Implementation_2020_BF_RZ_final.pdf

5. Aktionsprogramm klimaaktiv mobil - Radverkehr und Mobilitätsmanagement

Description: Investments in climate-friendly mobility solutions, mobility management and active mobility are funded. The eligible costs result from the additional investment costs as well as costs for planning, operation and assembly. Operating costs are funded for five years from the start of implementation to support the economic recovery in the wake of the Covid-19 pandemic. Furthermore, with the investments and Intangible inputs related to operating costs are funded. Examples of eligible measures are given below:

Measures to promote cycling and active mobility:

- Bicycle traffic infrastructure (e.g. cycle paths)
- Bicycle parking facilities also with e-charging points
- Signposting and information systems, guidance systems and floor markings
- Permanent counting stations
- Establishment of a bike rental, establishment of bike & ride systems
- Acquisition of (electric) bicycles, etc.
- Bike fast connections
- Foot traffic
- For integrated mobility management projects with a mix of e-mobility measures: e-mobility management, E-fleets and e-logistics
- Mobility management for environmentally friendly freight mobility: switching from trucks, for example to an electric conveyor belt, transport rationalization, conversion to CO₂-neutral logistics, etc.
- Mobility management for environmentally friendly personal mobility: implementation of sharing models (e.g. bike sharing and car sharing models), setting up demand-oriented transport systems, such as hiking bus, community bus, company bus, on-call bus or taxi, taster tickets, Mobility centers, job bike, job tickets, event mobility, etc.
- Awareness-raising measures, such as education and training programmes, events
- Information measures for active mobility and climate-friendly mobility solutions, target group-oriented marketing, etc.

- Costs for intangible services related to the investment and operating costs such as Business planning and consulting services, traffic and mobility management concepts, studies and reports

Funding Organisation: Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)

Duration: until 28/02/2022

Link: www.umweltfoerderung.at/betriebe/mobilitaetsmanagement-eler.html

6. R&I Agenda Mobility 2026

Description: The R&I Agenda Mobility 2026 is the short-to-medium term implementation concept for BMK's "Research & Innovation Strategy for Mobility 2040" focusing on transformation of the mobility system and following a mission-orientation innovation policy approach, with the vision "Innovations in and from Austria for a climate-neutral mobility system in Europe". It involves 4 mission areas: cities, regions, digitalization, and technology. BMK as R&I-political initiator strives for implementing this agenda using four R&I measures: R&I funding, experimental rooms, alliances and implementation partnerships, and European and international positioning. Thus, the R&I Agenda Mobility 2022-2026 represents the concretization of mission areas and R&I measures for the next 5 years in terms of target image, objectives, and target groups. For each mission area, it defines three objectives and depicts their respective R&I topics. For the mission area Cities, e.g., which intends to promote climate-neutral urban mobility, the objectives comprise: Developing innovative concepts and mechanisms for climate-friendly usage and behavior patterns in the urban mobility context; Creating innovative services for climate-neutral urban mobility; Creating innovative building blocks for a future-proof redesign of the urban mobility system. At the level of R&I topics, this involves requirements and concepts for: accessibility and usability of the urban transport system for everyone - enabling self-determined mobility; climate-neutral mobility and logistics on the (sub)urban "first / last" mile; (supra)regional urban mobility and logistics for the climate-friendly connection of cities and the region.

Funding Organisation: Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)

Duration: 2022-2026

Volume [EUR]: 42 M in 2022; 28 M in 2023

Link: mobilitaetderzukunft.at/de/strategie/fti-agenda2026.php

7. Mobility of the Future

Description: The "Mobilität der Zukunft" programme promotes R&D projects which can be expected to contribute significantly to solutions to social challenges relevant to mobility and which stimulate existing markets or generate new ones through innovations. The current

programme includes the subject areas "Innovative design of personal mobility", "Reorganize freight mobility", "Develop alternative vehicle technologies" and "Develop transport infrastructure together".

Funding Organisation: Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)

Duration: 2012-2020, prolonged until end 2021 (no more calls)

Link: 1. mobilitaetderzukunft.at/de 2. www.ffg.at/mobilitaetderzukunft

II. Belarus



1. State Programme of Scientific Research “Mechanics, Metallurgy and Diagnostics in the Engineering”

Description: The programme is focused on research and development of methods, mathematical and physical models, the establishment of new patterns of processes of functioning of machines; development of performance management theory and methodology; etc. (adopted by the Resolution of the Council of Ministers of the Republic of Belarus dated 10.06.2015 № 483 “The List of State Research Programmes for 2016-2020”, continued for 2021-2025 by the Resolution of the Council of Ministers of the Republic of Belarus dated 27.07.2020 № 438 “The List of State Research Programmes for 2021-2025”).

Funding Organisation: National Academy of Sciences of Belarus

Duration: 2016 - 2020, continued for 2021-2025

Link: oim.by/en

2. State Programme of Scientific Research “Informatics, space and security”

Description: The programme is focused on research and development of intelligent information analysis systems, including ultra-large amounts of data, artificial intelligence, cognitive processes and robotics; recognition and processing of images, signals, speech and multimedia information; development of methods for high co-performance computing and cloud technologies; mathematical and computer modeling and design ration of high-tech products and processes; optimal planning and logistics, etc. (adopted by the Resolution of the Council of Ministers of the Republic of Belarus at 10.06.2015 № 483 “The List of State Research Programmes for 2016-2020” , continued under the name "Digital technologies and

space informatics" for 2021-2025 by the Resolution of the Council of Ministers of the Republic of Belarus dated 27.07.2020 N 438 "The List of State Research Programmes for 2021-2025").

Funding Organisation: National Academy of Sciences of Belarus

Duration: 2016 - 2020, continued for 2021-2025

Link: uijp.bas-net.by/work/perspectiv.php (Russian language)

3. State Programme of Scientific Research “Economy and humanitarian development of the Belarusian society”

Description: The programme is aimed to the development of the theoretical and methodological substantiation of the new strategy growth of the competitiveness of the Belarusian economy taking into account the volume of challenges and trends in the development of the world economy; development of mechanisms and practical recommendations aimed at aimed at increasing the level of socio-economic and innovative development of the country; etc. (adopted by the Resolution of the Council of Ministers of the Republic of Belarus at 10.06.2015 № 483 “The List of State Research Programmes for 2016-2020” continued under the name "Society and humanitarian security of the Belarusian state " for 2021-2025 by the Resolution of the Council of Ministers of the Republic of Belarus dated 27.07.2020 N 438 "The List of State Research Programmes for 2021-2025").

Funding Organisation: National Academy of Sciences of Belarus

Duration: 2016 - 2020, continued for 2021-2025

Link: docviewer.yandex.by/view/0 (Russian language)

4. State Scientific and Technical Program "Mechanical Engineering and Engineering Technologies" (subprogramme "Auto-Tractor-Harvester-Construction")

Description: The programme is focused on creation and development in the production of competitive high-tech automotive, quarry, tractor, combine, other self-propelled equipment of a new generation, development and implementation of advanced technologies, meeting the modern requirements of industry, state defense, agriculture, construction and other significant industries; increasing volumes export of high-tech products and expansion of markets for their sales; improving the industrial safety of the state; formation of scientific and technical groundwork for the further development of the machine-building complex, etc. (adopted by the Resolution of the Council of Ministers of the Republic of Belarus at 25.02.2016 № 153 “The List of State Scientific and Technical Programmes for 2016-2020”, continued under the name "Innovative mechanical engineering and engineering technologies" for 2021-2025 by the Resolution of the Council of Ministers of the Republic of Belarus dated 26.03.2021 N 173 "The List of List of State and Regional Scientific and Technical Programmes for 2021-2025").

Funding Organisation: National Academy of Sciences of Belarus

Duration: 2016 - 2020, continued for 2021-2025

Link: www.gknt.gov.by/deyatelnost/gosudarstvennye-nauchno-tehnicheskie-programmy.php
(Russian language)

III. Denmark



1. Energy Cluster Denmark

Description: Increase electrification and sector coupling. Electrification and deployment of PtX in transport, including heavy transport, land transport, public transport, aviation, etc.

Electrification of processes in industry requires the development and demonstration of high-temperature heat pumps, hybrid technology and electric incinerators.

Interaction between energy and supply infrastructure and integration between sectors, including electricity, heating (district heating and gas) and water (and wastewater) to ensure cross-sectoral flexibility.

Digitization of processes and increased use of data in the energy sector, including in particular the supply sector's core processes as well as forecasting, trade, etc.

Funding Organisation: Danish energy agency

Link: www.energycluster.dk/en/energy-cluster-denmark-lancerer-nyt-roadmap-for-alle-energiklyngens-innovationsprojekter

2. Innovation Fund Denmark

Description: Innovation Fund Denmark creates a framework for entrepreneurs, researchers and businesses so they can develop innovative and viable solutions to society's challenges.

For example new climate mitigating solutions, healthier food, a more effective health care, cleaner environment, green transport, start-up journeys – and much more.

It is important that the Danish society benefits as much as possible from the money Innovation Fund Denmark invests in research and investment. That is why we prioritize responsibility highly. All projects we invest in have requirements of societal engagement, transparency, education and ethics.

Compared to other investors Innovation Fund Denmark's results do not necessarily need to be seen in share prices or end of year financial results. Innovation Fund Denmark's results must also be evaluated on social welfare improvements, increased societal wealth, jobs, reduction of CO₂ emissions, cleaner environment etc.

Interaction between energy and supply infrastructure and integration between sectors, including electricity, heating (district heating and gas) and water (and wastewater) to ensure cross-sectoral flexibility.

Digitization of processes and increased use of data in the energy sector, including in particular the supply sector's core processes as well as forecasting, trade, etc. Calls for proposals are published on the website.

Funding Organisation: Innovation Fund Denmark

Link: innovationsfonden.dk/en/about-innovation-fund-denmark

IV. Finland



1. Smart Mobility and Batteries from Finland

Description: List of topics:

Batteries and Electrification:

- Battery raw materials
- Battery materials
- Batteries and cells
- Applications
- Reuse
- Recycling

Smart Mobility Solutions

- Smart Mobility: MaaS, connected cars, trucks – smart vehicles, digital solutions - traffic infrastructure, traffic data
- Smart City Mobility: experiments, testbeds, innovative public procurement
- Drones
- E-scooters, e-bikes and new mobility innovations for citizens
- Smart trams, e-buses

Smart Logistics

- Digital & autonomous smart ships, passenger vessels
- smart ports

- Cargo handling
- Marine logistics, icebreakers
- Railway logistics
- Industrial logistics
- Smart working vehicles

Funding Organisation: Business Finland

Duration: until 2022

Volume [EUR]: 60 M

Link: www.businessfinland.fi/en/for-finnish-customers/services/programs/smart-mobility-finland

2. Infrastructure support for electric vehicles and the use of biogas in transport

Description: The purpose of the amendments to the government decree is to permit more targeted allocation of financing to projects with the greatest impact. Specifically, efforts will be made to improve the coverage of the EV charging station network by prioritizing projects in municipalities which, at the start of the tendering process, had no high power charging stations.

The amendments also partly implement the recommendations of the national biogas programme. Other improvements include clarifications to the rules and terminology of the aid programme in parts where the original wording of the decree left room for interpretation. The programme will remain in force until the end of 2021, which is why the primary purpose of the amendments is to streamline the final tender processes of the programme rather than to achieve big changes.

Financing will be awarded to drive investment in fixed gas refueling stations located outside gas transmission and distribution networks (group 1), charging systems for local public transport (buses) (group 2), high power charging systems (DC charging power of more than 22 kW) (group 3) and conventional charging stations for vehicles (group 4).

Funding Organisation: Ministry of Economic Affairs and Employment

Duration: 2018–2021

Volume [EUR]: approximately 5.5 M available in 2020: 3.0 M will be allocated to projects in group 1; 750,000 to projects in group 2; and 1,750,000 to projects in group 3. No support will be granted to projects in group 4 this year.

Link: valtioneuvosto.fi/en/-/1410877/updates-to-the-decree-on-infrastructure-support-for-electric-vehicles-and-the-use-of-biogas-in-transport

V. France



1. Pole Vehiculo de future

Description: A benchmark competitive cluster for vehicles, mobility solutions and related services, the Pôle Véhicule du Futur brings together and manages an ecosystem of 500 members in the Bourgogne-Franche-Comté and Grand Est regions. As the regional representative of the PFA Filière Automobile & Mobilités, it faces the major challenges of the evolution of mobility and the manufacturing industry of the future. It brings together companies, public research bodies, training institutions and territories to develop joint innovation projects, industrial performance improvement programmes, new training opportunities and qualifications with an economic objective.

The cluster aims at the further development of the following topics:

- Electrification
- Hydrogen
- connected and autonomous car
- mobility services
- materials and processes
- industry of the future
- business performance

Duration: since 2005

Link: www.vehiculedufutur.com

VI. Germany



1. GreenBatt

Description: The cluster's mission is to develop, design and apply innovative technologies, methods and tools for an energy- and material-efficient battery life cycle and closed material and substance cycles.

Cluster goals of GreenBatt include:

- Development and application of innovative recycling and resynthesized processes.
- Increasing the quality and availability of data to develop multidisciplinary lifecycle models and tools
- Recommendations for design for recycling and end-of-use

Funding Organisation: Federal Ministry of Education and Research (BMBF)

Volume [EUR]: 30 M

Link: www.greenbatt-cluster.de/de

2. Battery materials for future electromobile, stationary and other industry-relevant applications (Battery 2020 Transfer)

Description: The aim of the funding guidelines is to promote developments along the entire value chain for rechargeable, electrochemical energy storage devices (secondary batteries) in line with the circular economy. Resource efficiency and conservation as well as value retention and an extended usage phase of the secondary batteries are the primary goals.

The purpose of the funding is to carry out research and development projects in which aspects with a view to the circular economy are implemented and a decisive contribution is made to sustainable electromobility and other industrial battery applications. One focus of the funding guideline is on the value-added stages of product and process design, the synthesis of materials and the manufacturing processes for battery cells. Other focal points are the reuse of secondary raw materials and battery material recycling.

In addition to applications in electromobility (land vehicles, air transport, shipping), stationary storage, other industry-relevant applications (such as high-performance tools), use in mobile work equipment (agricultural machinery, forklifts, industrial trucks, etc.) as well as in work equipment for household and garden or medical technology can be addressed will.

This funding measure is part of the Federal Government's High-Tech Strategy 2025 with the aim of promoting innovation and growth in industry in Germany. The close cooperation between companies and research institutions in the university and non-university area is of particular importance. In particular, the integration of small and medium-sized enterprises (SMEs) as well as the exploitation of the project results by them are aimed at.

Funding Organisation: Federal Ministry of Education and Research (BMBF)

Link:

www.bmbf.de/bmbf/shareddocs/bekanntmachungen/de/2020/09/3130_bekanntmachung

(only in German)

3. Electromobility - R&D

Description: The Federal Ministry of Transport and Digital Infrastructure (BMVI) is funding research and development projects that support the market ramp-up of electric vehicles and innovative concepts for climate-friendly mobility.

Eligible for R&D-funding are:

- Projects for the development, initiation and extensive testing of electric mobility usage and operating concepts
- Application-oriented projects for the development and advancement of components and systems of battery electric vehicles
- Projects for the development and testing of innovative charging technologies that enable timely implementation of the technology and can support the ongoing expansion of charging infrastructure
- Projects to significantly increase the share of renewable energy for electric vehicle charging
- Projects for the development, technical implementation and evaluation of system solutions and services in the context of electric mobility
- Projects to strengthen electrification in the areas of public transport, freight, commercial and special transport as well as maritime or other applications relevant to transport policy

- Procurement of battery electric vehicles and the charging infrastructure required for their operation
- Municipal and commercial electric mobility concepts
- Research and development projects

Funding Organisation: Ministry of Transport and Digital Infrastructure (BMVI)

Duration: until end of 2025

Link: www.now-gmbh.de/en/funding/funding-programmes/electric-mobility

4. Electromobility - Municipal and Commercial Electric Mobility Concepts

Description: The BMVI supports the development of electric vehicle fleets and the corresponding charging infrastructure. As part of this effort, the conceptual preliminary assessment makes a contribution towards the market ramp-up of electric mobility.

The funding guideline for electric mobility focuses on municipal and commercial fleets with high traffic volumes in the municipal environment. The content of municipal and commercial electromobility concepts can range from general analyses of the potential of electromobility to special concepts such as the charging infrastructure requirements for special applications.

Funding Organisation: Ministry of Transport and Digital Infrastructure (BMVI)

Duration: until end of 2025

Link: 1. www.now-gmbh.de/en/funding/fundingfinder/municipal-and-commercial-electric-mobility-concepts/, 2. [/www.ptj.de/projektfoerderung/elektromobilitaet-bmvi/konzepte](http://www.ptj.de/projektfoerderung/elektromobilitaet-bmvi/konzepte)

5. Climate-Friendly Commercial Vehicles (with alternative drives)

Description: Funding for the purchase of new climate-friendly commercial vehicles in EC vehicle classes N1, N2 and N3 as well as commercial vehicles in EC vehicle classes N2 and N3 that have been converted to alternative drive systems, amounting to 80 % of the additional investment costs compared to a conventional diesel vehicle.

Funding of the refueling and charging infrastructure required for the operation of climate-friendly commercial vehicles in the amount of 80 % of the total project-related expenditure eligible for funding,

Funding for the preparation of feasibility studies on the possible use of climate-friendly commercial vehicles and the construction or expansion of the corresponding infrastructure amounting to 50% of the eligible project-related expenditure.

Funding Organisation: Ministry of Transport and Digital Infrastructure (BMVI)

Link: www.now-gmbh.de/en/funding/funding-programmes/climate-friendly-commercial-vehicles

6. Buses With Alternative Drives

Description: The programme supports the implementation of projects in the field of electromobility.

The following projects are funded:

- Financing of municipal and commercial electromobility concepts (environmental studies).
- Procurement of electric vehicles and charging infrastructure (fleet program).
- Research and development to support the market ramp-up of electric vehicles and innovative concepts for climate-friendly mobility.

Funding is granted for these topics. The amount of the grant depends on the nature of the project. Small or medium-sized enterprises (SME) can receive a bonus under certain conditions if they meet the EU criteria for SMEs.

For environmental studies or the fleet program, the funding process is one-step and for research or development projects, the application process consists of two stages.

Funding Organisation: Ministry of Transport and Digital Infrastructure (BMVI)

Link: www.now-gmbh.de/en/funding/funding-programmes/buses-with-alternative-drives

7. “Transport Infrastructures for Green Hydrogen” in cooperation with EUREKA countries

Description: Hydrogen technologies offer enormous opportunities - both for the climate and for the economy. European and international cooperation in research and development is particularly important to better exploit the potential of these new technologies.

This is precisely where the Federal Ministry of Education and Research's call for funding comes in: Under the umbrella of the EUREKA network, Germany and seven other partner countries have joined forces to promote cross-border cooperation projects on the topic of transport infrastructures for green hydrogen. German institutions can cooperate with partners from the following countries: Belgium (Flanders), Finland, Ireland, Canada, the Netherlands, Portugal and Spain.

Funding Organisation: Federal Ministry of Education and Research (BMBF)

Duration: until end of 2025

Volume [EUR]: max 1 M per project

Link: www.dlr.de/pt/en (only in German)

8. Funding of grants for international projects on the topic of green hydrogen, funding call for cooperation with Canada

Description: Funding is available under this call for proposals for collaborative research projects that address one or more of the following topics in international collaboration with partners from Canada:

- Applied research to advance fundamental understanding of hydrogen production, including electrochemistry, photocatalysis and storage technologies or media.
- Research, development and advanced characterization of new or novel materials and components, including catalysts, electrodes and membranes to improve devices, production and transport of hydrogen.
- Advanced methods for the fabrication, characterization and analysis or classification of materials or components, e.g.: using high-throughput methods such as advanced modelling or artificial intelligence-assisted methods and platforms.
- Use of novel system modelling techniques for production or process design, in particular to increase the cost-effectiveness of hydrogen technologies. This includes the use of techno-economic as well as life cycle assessments of hydrogen production pathways in the context of Canadian or German energy systems.
- Equipment development, prototyping and system validation related to hydrogen production, storage and use, as well as hydrogen transport infrastructure and logistics.
- Novel solutions for the integration of hydrogen value chains into national energy systems.

Funding Organisation: Federal Ministry of Education and Research (BMBF)

Duration: until end of 2025

Volume [EUR]: max 750,000 per project

Link: www.dlr.de/pt (only in German)

9. Call for proposals to make electric mobility more competitive and to integrate it into the energy system

Description: The focus of this round is on projects fostering the integration of electric mobility into the energy system, and especially on:

- Interoperability of charging infrastructure and vehicles between different manufacturers and countries.
- Fast and super-fast charging systems, e.g. for commercial vehicles and heavy-duty vehicles.
- Automatic or inductive charging systems for automated driving and the demonstration of viable business models for operating charging infrastructure and of integration into the electricity market.
- Charging infrastructure 4.0: smart, safe and secure charging that serves the electricity market and the grid and delivers the energy transition via smart meter gateways.

- Innovations for considerable cost-reduction, significant increases in functionality, and cross-vehicle or cross-fleet optimization.

Funding Organisation: Federal Ministry for Economic Affairs and Energy (BMWi)

Volume [EUR]: 180 M

Link: www.bmwi.de/Redaktion/EN/Pressemitteilungen/2020/20200702-economic-affairs-ministry-launches-call-for-proposals-to-make-electric-mobility-more-competitive.html

10. Electromobility with battery

Description: For this reason, the Federal Ministry of Transport and Digital Infrastructure promotes battery-electric applications in research and development (R&D), at the conceptual level (electromobility concepts) and the procurement of electric vehicles and charging infrastructure (investment funding). The funding is based on the Electromobility Funding Guideline (adapted in 2020 and extended until 2025) and investment funding programmes in the area of local public transport, regional passenger transport and commercial vehicles. These funding programmes focus on the further market ramp-up and support not only the conversion of vehicle fleets but also the development of the necessary charging infrastructure.

The funding guideline for electric mobility focuses on municipal and commercial fleets with high traffic volumes in the municipal environment. Municipal and commercial electromobility concepts can also be funded, the content of which can range from general analyses of the potential of electromobility to special concepts such as the charging infrastructure requirements for special applications. Another focus of this directive is the funding of application-oriented research and development projects.

Funding Organisation: Ministry of Transport and Digital Infrastructure (BMVI)

Link: www.bmvi.de/SharedDocs/DE/Artikel/G/elektromobilitaet-mit-batterie.html (only in German)

11. Elektro-Mobil

Description: The funded projects contribute to lowering the overall system costs of electromobility, reducing the hurdles in industrial production and removing barriers to purchase for consumers. The focus of the project work includes, among other things, the structured development of networked charging infrastructure in the municipal context, load management at the local level and in the distribution grid, or questions of energy law. Other projects deal, for example, with the electrification of freight transport and flexible models for the production of electric vehicles and charging stations.

With the funding programme, the BMWi also wants to intensify the networking of various actors around the energy transition. Municipalities, grid operators, providers of electric mobility services and research institutions are working on interdisciplinary and systemic solutions in the projects.

Funding Organisation: Federal Ministry for Economic Affairs and Energy (BMWi)

Link: www.bmwi.de/Redaktion/DE/Artikel/Industrie/elektromobilitaet-foerderprogramm-elektro-mobil.html (only in German)

12. Funding guidelines for commercial vehicles with alternative drives

Description: Funding for the purchase of new climate-friendly commercial vehicles in EC vehicle classes N1, N2 and N3 as well as commercial vehicles in EC vehicle classes N2 and N3 that have been converted to alternative drive systems, amounting to 80% of the additional investment costs compared to a conventional diesel vehicle.

Funding of the refueling and charging infrastructure required for the operation of climate-friendly commercial vehicles in the amount of 80 % of the total project-related expenditure eligible for funding,

Funding for the preparation of feasibility studies on the possible use of climate-friendly commercial vehicles and the construction or expansion of the corresponding infrastructure amounting to 50% of the eligible project-related expenditure.

Funding Organisation: Ministry of Transport and Digital Infrastructure (BMVI)

Link: www.bmvi.de/SharedDocs/DE/Artikel/G/Alternative-Kraftstoffe/foerderrichtlinie-alternative-kraftstoffe-eu.html (only in German)

13. The Renewable Mobile funding programme

Description: Climate protection is a precaution for the future. For an environment worth living in, for a sustainable and long-term competitive economy, for a secure energy supply and, last but not least, for a just society. The climate and energy policy goals for the transport sector will not be achieved without increased use of electric vehicle drives in road transport. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) therefore supports research projects on the topic of electric mobility for the purpose of raising its potential for climate, environmental and resource protection and as a contribution to increasing the quality of life and sustainable urban development.

Since 2009, more than 100 projects have been carried out within the framework of the BMU's electromobility funding. After successful implementation of the projects of the Second Economic Stimulus Package, the "Renewably Mobile" programme was launched in 2011. On 26 March 2021, the fifth funding announcement was published, again as a joint initiative of the Federal Ministry of Economics and Technology (BMWi) and the BMU. The funding initiative continues to focus on research and development projects that tap the energy and climate policy potential of electromobility and at the same time contribute to strengthening the competitive position of German industrial sectors. Accordingly, the established cooperation between lead sectors and science is to be intensified and networking between the individual sectors strengthened. The R&D projects should contribute to reducing the overall system costs of

electromobility, lowering hurdles in the industrialisation of the new technology, removing barriers to purchase and integrating electromobility economically into the energy transition.

Funding Organisation: Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU)

Link: www.erneuerbar-mobil.de/foerderprogramme/das-foerderprogramm-erneuerbar-mobil
(only in German)

VII. Hungary



1. NOHAC

Description: NOHAC's mission is, helped by other clusters and scientific and trade development institutes, to enhance co-operation among members to promote the exchange of information, to support innovation, best practices and joint investments in order to increase competitiveness of SME'S and attract the settlement of new automotive ventures in the region.

Funding Organisation:

- BOKIK - Kereskedelmi és Iparkamara
- DELPHI-Calsonic Magyarország Kft.
- Heves Megyei KIK
- ImKKK - Miskolci Egyetem
- Miskolci Egyetem
- Nógrád Megyei KIK
- REMY Automotive Hungary Kft.
- Technoplast McD Kft.
- ZF Hungária Kft.

Link: www.nohac.hu/index.php/en/about-us

2. NRDIFund

Description: The NRDIO do not have a named research innovation program specifically related to electromobility.

Funding Organisation: National, Research, Development and Innovation Office

Link: nkfih.gov.hu/for-the-applicants/funding-schemes

VIII. Italy



1. Cluster Trasporti Italia 2020

Description: The aim of the TRANSPORT ITALIA 2020 cluster is to establish a link between the development of the modal chains of road, rail and water transport means and systems and the inter-modality between them, in order to develop guidelines focused on systems approaches to restore the competitiveness of the Made in Italy.

Priorities for action

The environmental sustainability of mobility shall be pursued by continuously improving the efficiency of all processes related to the production, use and disposal of transport and related energy sources.

Competitiveness of vehicles and infrastructures through the development of innovative systems and products that meet the needs of the market in terms of comfort, perceived quality and new functions.

Volume [EUR]: 500 M

Link: 1. www.researchitaly.it/cluster-tecnologici-nazionali/mezzi-e-sistemi-per-la-mobilita-di-superficie-terrestre-e-marina, 2. www.clustertrasporti.it/marittima/trim/

2. National Research Plan PNR - Mobilità sostenibile

Description: Research and development activities must be aimed at optimizing the various opportunities offered by propulsion electric and hybrid. The diffusion of electric vehicles and vehicles is severely limited by the lack or absence of battery charging or hydrogen distribution infrastructures and requires the search for new solutions such as wireless charging, the use of

photovoltaics and, above all, the development of new materials and technologies for the accumulation of power. Particular attention is deemed necessary towards the new design, testing and validation paradigms based on the tools of co-simulation (mobility, traffic, vehicle and components) in XIL environment (MIL, SIL, HIL, VHEIL etc.).

Research priorities:

- Biofuels, e-fuels and green and clean energy carriers;
- New materials and technologies for high capacity batteries, hybrid and photovoltaic assisted batteries, a fuel and other energy storage systems for the mobility and transport sector; • methods of analysis, co-simulation and physical modeling (MIL, SI, VHIL);
- Methodologies for the optimal management of multi-energy systems;
- Life Cycle Management, SWOT, PESTE (Political, Economic, Social, Technological, and Environmental) and cost-benefits;
- Active safety systems for reducing the mass and energy requirements of vehicles;
- Multimodal and multifunctional platforms for mobility and transport specialized for different applications (air, sea, rail, road, heavy vehicles, off-roads);
- Thrusters and propulsion systems with hybrid (bimodal), electric and hydrogen technology;
- Vehicles and nets for micro-mobility and other special applications;
- Technologies and systems for the management and recharging of batteries;
- Innovative systems for the generation, transport and storage of hydrogen;
- Multi-energy systems to integrate infrastructures, networks, technologies and means for mobility;
- Systems and technologies for the ecological conversion of vehicles;
- Upgrading and development of battery recharging and hydrogen distribution infrastructures;
- Infrastructures and energy supply systems for means of transport;
- Lightening technologies for road, rail and waterborne vehicles;
- Testing, demonstration, approval, certification and pre-industrialization of prototypes.

Funding Organisation: Ministry of Economic Development and the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA)

Duration: 2019-2021

Link: www.mur.gov.it/sites/default/files/2021-01/Pnr2021-27.pdf

3. RICERCA DI SISTEMA ELETTRICO NAZIONALE

Description: The type b call for tenders, referred to in the directorial decree of 7 December 2020, concerns applied research projects, aimed at technical and technological innovation of general interest for the electricity sector, for the benefit of users of the national electricity system and at the same time of interest of subjects operating in the electricity sector.

Duration: 2021-2027

Volume [EUR]: 35.8 M

Link: www.mite.gov.it/pagina/ricerca-di-sistema-elettrico-nazionale (Italian language)

Italy – Piedmont

1. ERDF 2021/2027

Description: Smart Specialisation Strategy of Piemonte for ERDF 2021/2027 provides the electric mobility (and in general the green mobility) among the overall specialisation areas. According to the regional SSS, R&D&I funding of next program period will be address to projects that will explore, study an test different aspects of the electric mobility (components for alternative propulsion, development of infrastructures, technologies for integration and connectivity, etc.) in order to support and spread a sustainable mobility.

Funding Organisation: FINPIE

Duration: 2021-2027

2. Financing Program of Italian Ministry of Ecological Transition - Programma del Piedmont

Description: Piedmont is involved in the Financing Program of the Italian Ministry of Ecological Transition that aims to support and promote actions for the improvement of air quality and the reduction of pollution in the Italian area "Bacino Padano". This area counts Piedmont, Lombardia, Veneto and Emilia-Romagna. The program was launched at the end of 2020 and has a multi-year duration (at least until 2035).

The Italian Program provides funds to each Region to implement its specific regional program.

Actions are related both to mobility and energy efficiency. In the following the actions related to mobility:

- a) limitation of pollutant vehicles circulation, supporting collective mobility or individual mobility with low environmental impact;
- b) direct incentives for the purchase of green vehicles (also electric) in substitution of pollutant ones (for example Piedmont has launched calls of direct incentives to SME, Private citizen and public/local Administrations);
- c) promotion of sustainable mobility (cycling, electric mobility). Piedmont is launching a call addressed to Municipalities that implement actions to support and promote the sustainable mobility in their district;
- d) integration of private and public transportation, with focus on infrastructures and vehicles;
- e) promotion of inter-modality in logistic freight.

Funding Organisation: FINPIE

IX. Spain



1. Programa Tecnológico de Automoción Sostenible (PTAS)

Description: Financing of R&D projects, carried out by consortia and aiming to contribute to the development of relevant technologies and their application in the automotive field.

Specific measures/related topics include:

- Development of components and platforms for electric vehicles, plug-in and hydrogen-powered hybrids
- Autonomous driving and connected mobility
- Adaptation of production environments with safe and robust systems for human-machine interaction, aimed at manufacturing of components and systems for electric, plug-in hybrid and hydrogen powered vehicles.

Funding Organisation: Centre for the Development of Industrial Technology (CDTI)

Duration: 2021

Volume [EUR]: 40 M

Link:

www.cdti.es/index.asp?MP=4&MS=0&MN=1&textobuscado=movilidad&tipo=1&TR=A&IDR=38&tipoO=Contenido&id=3018&xtmc=movilidad&xtcr=23 (Spanish language)

2. Plan MOVES Singulares II

Description: Financing of technological development projects and innovative initiatives that promote a technological leap towards electric and fuel cell vehicles. Projects must show a significant degree of innovation in specific topics e.g.:

- Electric mobility and ITC
- Projects related to connectivity and communication between electric vehicles and charging infrastructure

Innovative electric vehicle charging infrastructure, hydrogen charging for vehicles and integration with other smart grids

Funding Organisation: Instituto para la Diversificación y Ahorro de la Energía

Duration: 2021

Volume [EUR]: 100 M

Link: www.idae.es/en/node/23363 (Spanish language)

Spain – Catalonia

1. Business Enterprise R&D nuclei

Description: The Business Enterprise R&D nuclei are grants targeting Catalan companies that wish to develop new high-risk technological products or services that respond to market needs. The general requirements for applying for the grant are:

- It must involve an innovative R&D initiative.
- Have the technical capacity to carry out the R&D activity.
- The project must be carried out in Catalonia.
- Companies must have three years old. It is recommended that you validate your financial viability with the Financial self-assessment.

Funding Organisation: ACCIÓ - Agency for Business Competitiveness

Duration: until 2021

Volume [EUR]: max 150,000 EUR per project (non-refundable)

Link: www.ciac.cat/ciac/sobre/qui-som

2. Business Enterprise R&D nuclei

Description: The Business Enterprise R&D nuclei are grants targeting Catalan companies that wish to develop new high-risk technological products or services that respond to market needs.

New characteristics to be defined. That you validate your financial viability with the Financial self-assessment.

Funding Organisation: ACCIÓ - Agency for Business Competitiveness

Duration: until 2022

Volume [EUR]: tba

Link: www.ciac.cat/ciac/sobre/qui-som

3. RIS3CAT Communities

Description: RIS3CAT Communities are voluntary groups of companies and players in the Catalan research and innovation system promoting R&D+i projects in the leading areas of the RIS3CAT sectors. RIS3CAT Communities offer:

- Direct access to national and international projects.
- Current knowledge and evolution of the main R&D+I projects in the main leading sectors of RIS3CAT.
- Access to business management and technological development methods.
- Promotion, prestige and credibility.
- Access to the best practices of the sector.
- Participation in defining necessary technological and research priorities for the sector.
- Coordination of national and European public and private R&D+I investments.

Any company or player in the Catalan R&D and Innovation system related to the key ideas of the RIS3CAT strategy in the following leading areas of the sectors can form part of an RIS3CAT Community:

- Food industry
- Chemical, energy and resources industries
- Sustainable mobility industries
- Design industry
- Cultural and experience-based industries
- Health and life science industries
- Industrial systems

Funding Organisation: ACCIÓ - Agency for Business Competitiveness

Duration: 2017 – no end

Volume [EUR]: tba

Link: www.accio.gencat.cat/en/serveis/innovacio/innovacio-empresarial-i-rd/comunitats-ris3cat

4. MOVES III in Catalonia. Incentives for efficient and sustainable mobility 2021

Description: Acquisition of electric vehicle or electric motorcycle, charging infrastructure (Beneficiaries: Individuals, companies, administrations).

Funding Organisation: The Catalan Energy Institute (L'Institut Català d'Energia)

Duration: Call open until December 31, 2023

Volume [EUR]: 65.6 M

Link: icaen.gencat.cat/ca/energia/ajuts/mobilitat/pla-moves-iii

5. MOVES II in Catalonia. Incentives for efficient and sustainable mobility 2020

Description: Acquisition of electric vehicle or electric motorcycle, heavy natural gas vehicles, LPG and gasoline - gas hybrids, recharging infrastructure, electric bicycle loan systems, implementation of sustainable mobility measures at work (Beneficiaries: Individuals, companies, administrations).

Funding Organisation: The Catalan Energy Institute (L'Institut Català d'Energia)

Duration: Completed on September 16, 2021

Volume [EUR]: 21 M

Link: icaen.gencat.cat/ca/energia/ajuts/mobilitat/pla-moves-ii

6. SINGULAR PROJECTS MOVEMENT PROGRAM II

Description: Efficient & sustainable mobility. In the framework of the Recovery, Transformation and Resilience Plan "Spain can". Funded by the European Union – NextGenerationEU. Funding of unique projects and projects related to experimental and innovative developments (Beneficiaries: Companies, universities, research centers, business groups, institutional public sector).

Funding Organisation: Institute for Diversification and Saving of Energy - IDAE - (Institut per a la Diversificació i Estalvi de l'Energia)

Duration: Published the regulatory bases and the call (September 24). Deadline for submitting applications: 2 months from the publication of the call

Link: www.idae.es/ayudas-y-financiacion/para-movilidad-y-vehiculos/programa-moves-proyectos-singulares-ii

X. Sweden



1. Seek support for research and innovation in electromobility

Description: Test methodology and development and modelling of test systems. For the field of electromobility to develop successfully, further testing, modelling and experimentation is required. The development of various test methods and models is therefore an important factor in facilitating research in this field. The Swedish Energy Agency is therefore calling for submissions of projects that aim to develop test methods, test systems and modelling in the field of electromobility.

Funding Organisation: Swedish energy Agency and the Swedish government

Duration: 2018 until 2023

Volume: 2018 - 2020 SEK 14 M

2020 ca. SEK 50 M

Link: www.energimyndigheten.se/utlysningar/sok-stod-for-forskning-och-innovation-inom-elektromobilitet (Swedish language)

2. Batterifondsprogrammet

Description: Before 1 January 2009, when the Regulation (2008:834) on producer responsibility for batteries came into force, a charge was levied on the sale of batteries to pay for collection and recycling. The funds that have not been used up have been saved in the Battery Fund. Batterifondsprogrammet allocates financing from this fund. The second phase of the programme began in 2017 and runs until 2027-12-31. During this phase, approximately SEK 280 million will be distributed through annual calls.

Funding Organisation: Swedish energy Agency and the Swedish government

Duration: 2017 - 2027

Volume: SEK 280 M

Link: www.energimyndigheten.se/en/news/2020/eighth-call-batterifondsprogrammet

3. Batteries Sweden

Description: ASE is a competence center for battery research funded by Vinnova.

The goal is to develop ultra-high performance batteries and novel supporting battery production processes to consolidate the strong Swedish battery research community.

The research is carried out through collaborations between academia and companies and comprises of three thematic areas, which are then embedded in five cross-cutting activities.

The long term goal is to support Swedish industry in different sectors of the circular battery value-chain: from mining, materials, battery production, battery usage etc., to second-life use, and recycling.

Link: www.batteriessweden.se/research

4. InnovFin Energy Demonstration Projects

Description: Provides loans, loan guarantees or equity-type financing typically between EUR 7.5m and EUR 75m to innovative demonstration projects in the fields of energy system transformation, including but not limited to renewable energy technologies, smart energy systems, energy storage, carbon capture and storage or carbon capture and use, helping them to bridge the gap from demonstration to commercialization. The product is rolled out directly by the EIB

Funding Organisation: The product is rolled out directly by the EIB

Volume [EUR]: Provides loans, loan guarantees or equity-type financing typically between 7.5 M and 75 M

Link: www.vinnova.se/en/m/strategic-vehicle-research-and-innovation/about-ffi

5. Strategic vehicle research and innovation programme (FFI)

Description: The Strategic vehicle research and innovation programme (FFI) provides around SEK 1 billion per year in funding for research and development activities. Public funds comprise half of this sum. The partnership programme is important, since development in road transports and the Swedish automotive industry play a major role in achieving sustainable growth in Sweden.

FFI's overarching objectives are:

- To reduce the environmental impact of road transports
- To reduce the number of people injured and killed in traffic accidents
- To strengthen international competitiveness

FFI's activities focus on the climate, environment and safety. The programme is divided into five permanent focus areas or sub-programmes. Each sub-programme is governed by its own road map. The programme also includes shorter-term focus areas that are collectively referred to as strategic initiatives, each with its own programme description.

There are currently five collaboration programmes within FFI: road safety and automated vehicles, electronics, software and communication, sustainable production, efficient and connected transport systems, and energy and the environment.

FFI Energy & Environment

The Swedish Energy Agency is responsible for the collaboration program Energy & Environment. The Energy & Environment program focuses on vehicle-related research, innovation and development activities in energy efficiency, drive systems for renewable fuels, electric power, local and / or regional environmental impact and other energy technology with potential to strengthen Sweden and the Swedish automotive industry's competitiveness in a global perspective. The background to the FFI investment is that developments in road transport and the Swedish automotive industry are of great importance for growth.

Funding Organisation: FFI is a partnership programme run jointly by the Swedish state and the Swedish automotive industry

Duration: 2018 until 2023

Volume: SEK 1 billion per year

Link: www.vinnova.se/en/m/strategic-vehicle-research-and-innovation/about-ffi

XI. The Netherlands



1. Innovation Credit

Description: Promising projects with high risks that banks and other investors will not invest in. That is when the Netherlands Enterprise Agency can help you. We can supply you with a direct loan that enables you to finance part of the project costs: Innovation Credit.

All companies, whether start-ups or well-known companies, can apply for the Innovation Credit. Innovation Credit will help companies become more innovative and help the Dutch economy become more sustainable.

Duration: 2018

Volume [EUR]: The total 2021 budget is 60 M: 30 M for technical development projects. For technical projects there is a maximum of 10 M

Link: www.rvo.nl/subsidie-en-financieringswijzer/innovatiekrediet

2. Innovation and market development schemes

Description: Several schemes promote innovations at the various stages, starting with fundamental research and ending with demonstration projects:

- The Promotion of Research and Development Act (WBSO) is a tax innovation scheme that reduces the costs of R&D (Research & Development).
- The SME Innovation Stimulation Region and Top Sectors (MIT) stimulates innovation in small and medium-sized enterprises.

- The Demonstration Energy and Climate Innovation -DEI+ scheme is a subsidy for entrepreneurs with an energy innovation that offers opportunities for high turnover, employment in the Netherlands and sales abroad.
- The Subsidy Scheme Demonstration Climate Technologies and Innovations in Transport (DKTI-Transport) is a subsidy scheme for transport solutions with low or no CO₂ emissions.

Funding Organisation: Netherlands Enterprise Agency

Link: 1. www.rvo.nl/subsidie-en-financieringswijzer/wbso

2. www.rvo.nl/subsidie-en-financieringswijzer/mit-regeling

3. www.rvo.nl/subsidie-en-financieringswijzer/demonstratie-energie-en-klimaatinnovatie-dei

4. www.rvo.nl/subsidie-en-financieringswijzer/dkti-transport

XII. Turkey



1. HAMLE-Mobilite

Description: Ministry of Industry and Technology had a call about selected products on transportation vehicles and its electronic units. The long term goal of the this call is increase the market share of electric vehicle up to 35% and number of charge points to 250K (at least 20% of this points has to be DC). With this call R&D projects on autonomous and semi-autonomous concept vehicles, advanced driver-assistance systems (ADAS), battery and battery management system technologies are supported.

Funding Organisation: TÜBİTAK Ministry of Industry and Technology

Duration: 2018

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