

Welcome to the 14th A₃PS Conference

Diverse Powertrain Concepts for a carbon-neutral future

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Austrian Ministry for Transport, Innovation and Technology
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Austrian Association for Advanced Propulsion Systems

Public private partnership initiated by the Austrian Ministry for Transport, Innovation and Technology (BMVIT)

- **Networking:** Stimulation of national and international R&D-cooperations and participation in technology programs and projects
- **Information:** Technology foresight, collection, compilation and dissemination of information in a targeted way to the A₃PS-members.
- **Marketing:** Presentation of technological know-how, engineering competence and products in Austria.
- **Lobbying:** Supporting the representation of Austrian interests in international committees and initiatives of the EU, IPHE and IEA.
- **Explanation:** Information of the public about the upcoming technological change in fuels and propulsion systems and their future opportunities
- **Orientation:** Providing well-founded and balanced advice for policy makers on technology trends by roadmaps and joint strategies to support the optimization of their policy instruments.

System approach is required for efficient cooperation between the vehicle and energy industry, supply companies, research institutions, public administration and national and European policy makers in order to overcome the “chicken and egg problem”.

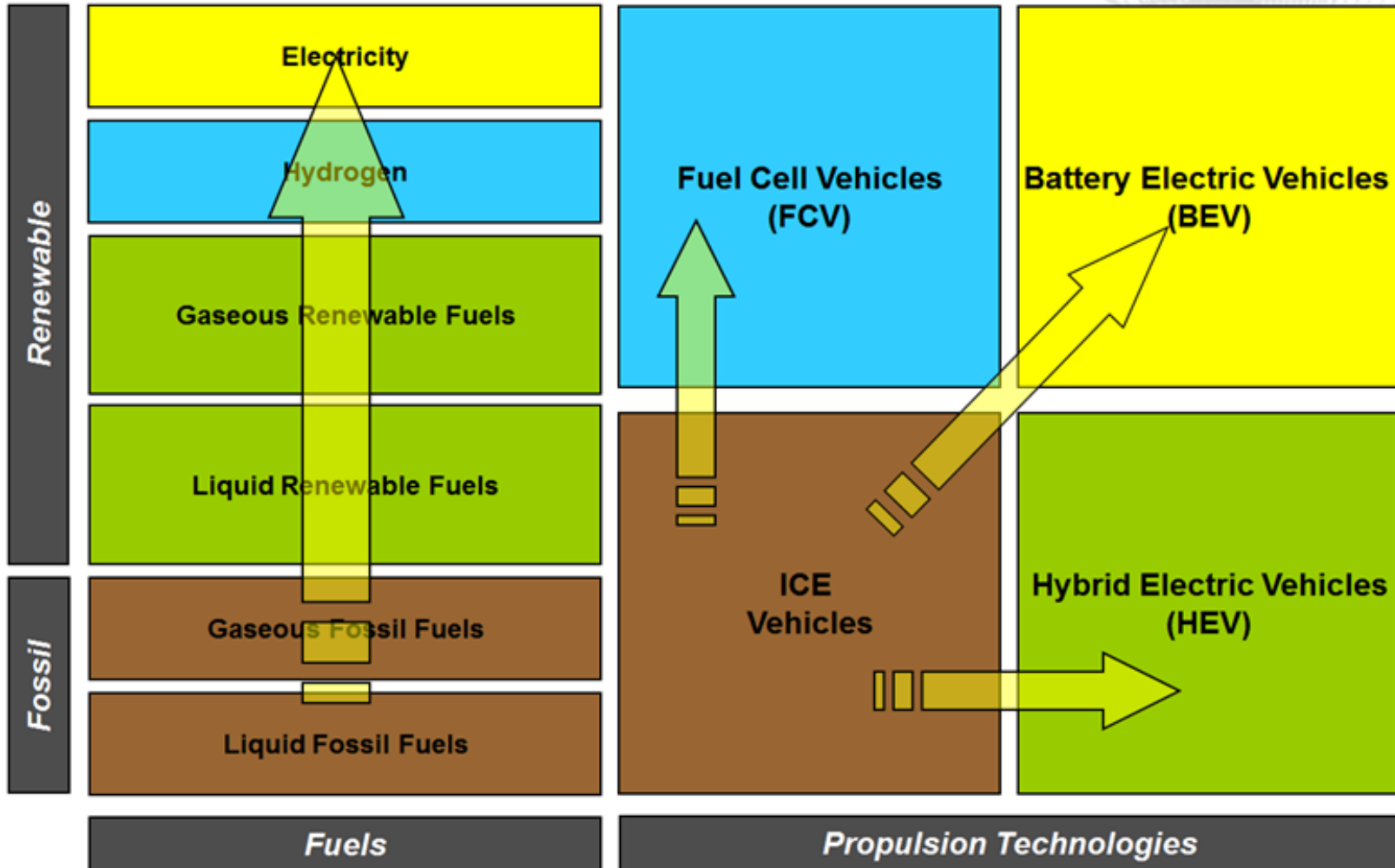
2 Major Policy Drivers for the Global Automotive Industry shaping its main R&D-focus:

- Decarbonisation (climate policy and COP21)
- Digitalisation (automated and connected vehicles)

Strategy of the ministry:

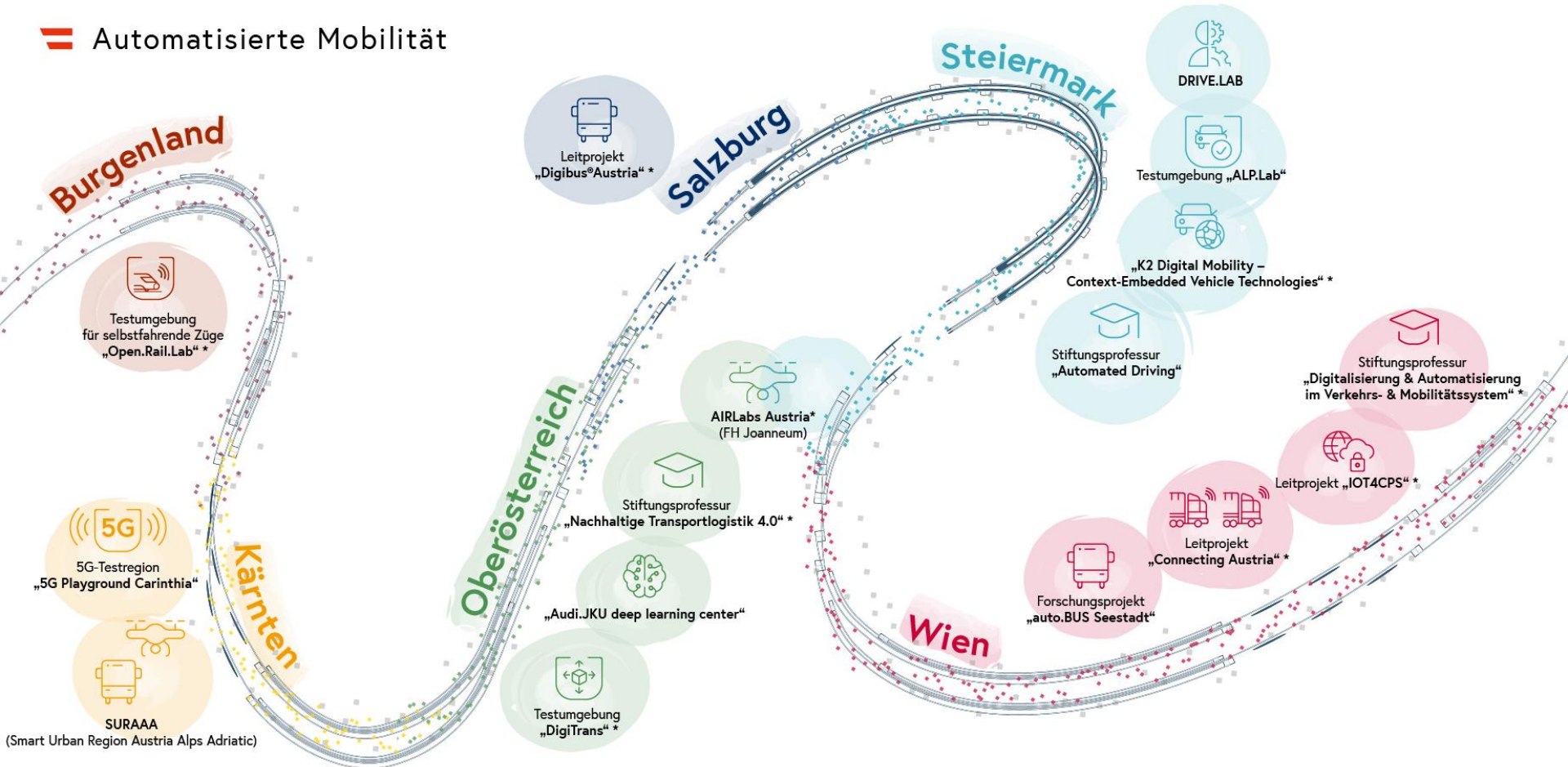
- Advanced propulsion systems, light-weight construction, vehicle electronics and automated driving are key technology for industrial **competitiveness** and a **sustainable transport system**.
- The ministry follows a **technology neutral approach** defining only goals like emission reduction targets for greenhouse gases and pollutants, industrial competitiveness and job security.

Development of Propulsion Systems & Energy Carriers



Competence Map of Austria

Automatisierte Mobilität



* Die aufgelisteten Projekte stellen einen Auszug aller BMVIT-unterstützten Projekte zur automatisierten Mobilität in Österreich dar. Darüber hinaus unterstützt das BMVIT eine Vielzahl an interdisziplinären Projekten aus den Bereichen Informations- und Kommunikationstechnologien, Mobilität und Sicherheitsforschung.

Austrian Automotive Industry

- Automotive Industry is a global key industry sector and one of the most successful branches in Austria.
- More than **370.000 employees** (including upstream and downstream services (in the production sector 41.000 employees))
- Turnover of **43 Billion €/year** (including upstream and downstream services)
- **17,1% of employees in R&D**
- **24.900 € for R&D per employee** (industrial average 8.700 €)
- **export quota 88%**

Promotion of alternative propulsion systems and fuels

Overall R&D-funding volume: ~ 60 M€ per year:

- Program “Mobility of the future”: funding of cooperative R&D-projects
- FFG basis program: Bottom-up product-optimization
- FFG-Headquarter program
- Research infrastructure (e.g.: Hydrogen Center Austria)
- Centers of competence (e.g. K2-Mobility, ViF)
- Climate & Energy fund: Research in energy technologies
- Climate & Energy fund: Program “Zero Emission Mobility” (Demonstration projects preparing market introduction)
- Operational agencies: FFG, KPC, AWS,...
- International networking (H2020, Horizon Europe, ERTRAC, IEA, IPHE,...)
- Austrian Association for Advanced Propulsion Systems

BMVIT-Program „Mobility of the Future“ **Program running 2012 – 2020 Thematic Field: “Vehicle Technology”**

From 2012 – 2018: 40Mio € for 59 Projects in the field of Batteries, Fuel Cells & Hydrogen, Light Weight Construction, Thermal Management

Open Call from **23.10.2019- 12.02.2020** of National Battery Initiative:

1. Development of improved battery systems and modules
2. Thermal management
3. Development of flexible, scalable and efficient production and process solutions
4. Development and use of test equipment and test procedures
5. Control, regulation and feedback
6. Reuse and recycling of battery modules and battery packs
7. Optimization of the design of electric motors
8. Integration of the cell into the battery module and the total battery

Follow-up Program of „Mobility of the Future“

“Mobility of the Future“: timeframe 2012-2020

Negotiations preparing EU-FP-Program “Horizon Europe” (2021-2027)

Development of a National Mobility-RTI-Strategy: broad set of instruments supporting the development transport technologies and innovation for the transport system

Kick-Off Event 25.-26.11, Tech Gate, Vienna

Working groups and public consultation

Final presentation: May 2020

Implementation starting Jan. 2021

Target Group: Companies, university and non-university research institutions, regional and local authorities, transport service providers and their clients, NGOs,...

KLIEN

1. Zero emission Mobility

Call was open till 08.10.2019 - funding volume of EUR 7 million

Demonstrating readiness of electric vehicles and their charging infrastructure as well as user requirements paving their way on the market in a technology neutral way (BEV,FCV)

2. Energy Research Programme 2019

The mission-oriented programme promotes the research and development of forward-looking energy and mobility solutions along the entire energy value chain, from primary energy to functionality.

In the past:

- Light weight construction, biofuels, ICE, IEA-research cooperations
- Showcase regions (including FCV and Hydrogen System/Storage/Refueling)

Strategy processes and documents

- Integrated Climate & Energy Strategy
- Integrated National Energy & Climate Plan
- National Hydrogen strategy
- Electromobility in and from Austria
- Action Plan Automated Mobility (2019-2022)
- National RTI-strategy
- Negotiations preparing Horizon Europe (2021-2027)
- IPCEIs - „Important Project of Common European Interest“ (Batteries, Hydrogen & Microelectronics)

#mission 2030

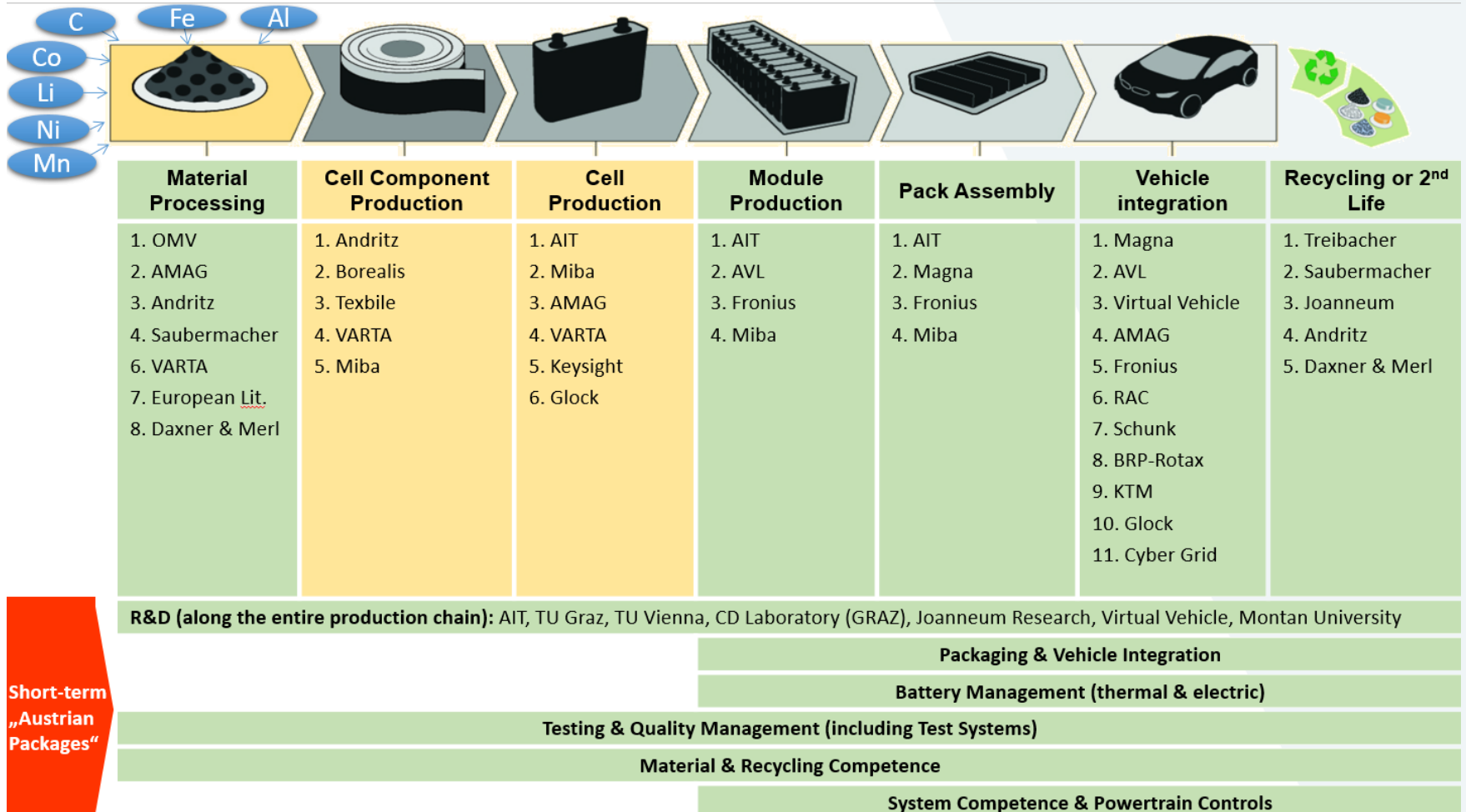
FTI Lighthouse 9 "Building blocks for energy systems of the future":

- Energy efficient Mobility Systems of the future

FTI Lighthouse 10 „Program Mission Innovation Austria “:

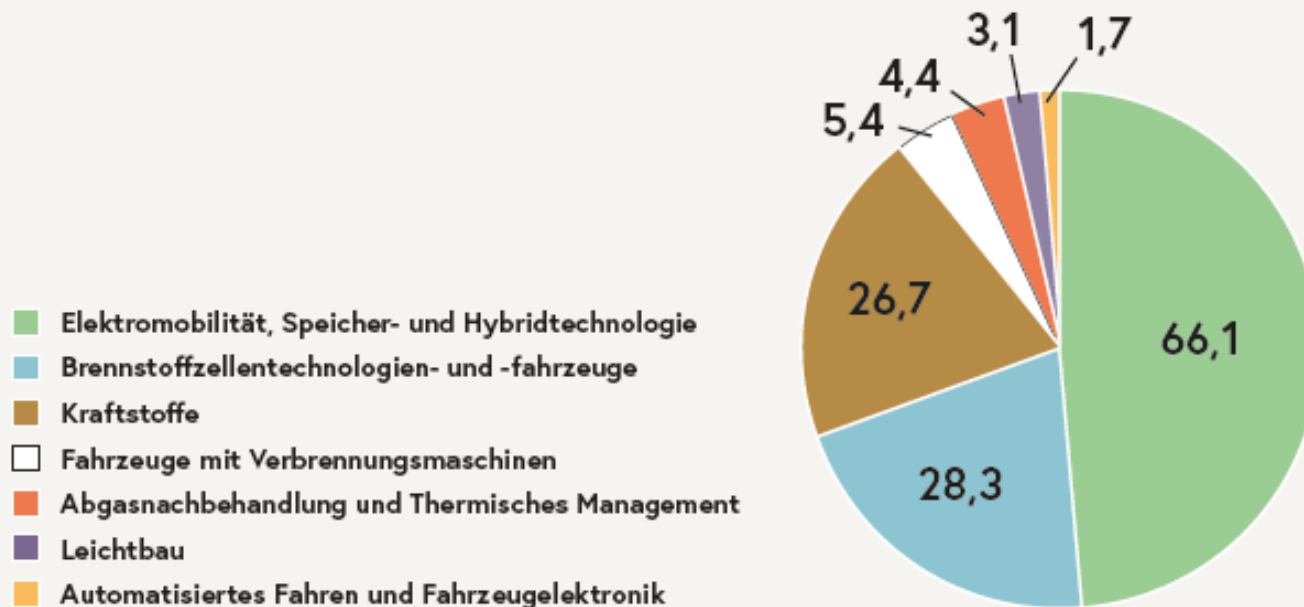
- Mobility laboratories: Large scale test regions for intelligent, safe and affordable mobility systems and regions

Battery-IPCEI: Production Process & Stakeholders



Brochure Vehicle Technologies in and from Austria Distribution of technologies in funded R&D-projects

Fördermittelaufteilung über alle Technologiekapitel in Millionen €



Horizon 2020 Transport Calls 2020

	Deadline	Budget (M€)
Mobility for Growth (1 st stage)	09.01.2020	92
Mobility for Growth (2 nd stage)	08.09.2020	92
Mobility for Growth	21.04.2020	99
Automated Road Transport	21.04.2020	50
Green Vehicles	21.04.2020	55
Next-Gen. Batteries	21.04.2020	132

Horizon Europe

Three Pillars

- 1) Excellent Science
- 2) Global Challenges and European Industrial Competitiveness
- 3) Innovative Europe

Five Mission Areas: Mission Area 4: Climate-Neutral and Smart Cities

Three types of Partnerships

- Co-programmed European Partnerships (comp.: cPPPs):
 - Towards zero-emission road transport
 - Towards a competitive European industrial battery value chain
- Co-funded European Partnerships (comp.: EN-CF/EJP)
- Institutionalised European Partnerships (comp.: JTI/JU):
 - Mobility and Safety for Automated Road Transport
 - Clean Hydrogen

Thank you
for your attention!

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