EGVI
European Green Vehicles Initiative

2Zero
Towards Zero Emission Road Transport

An overview of the partnership

Rosalinde van der Vlies

European Commission

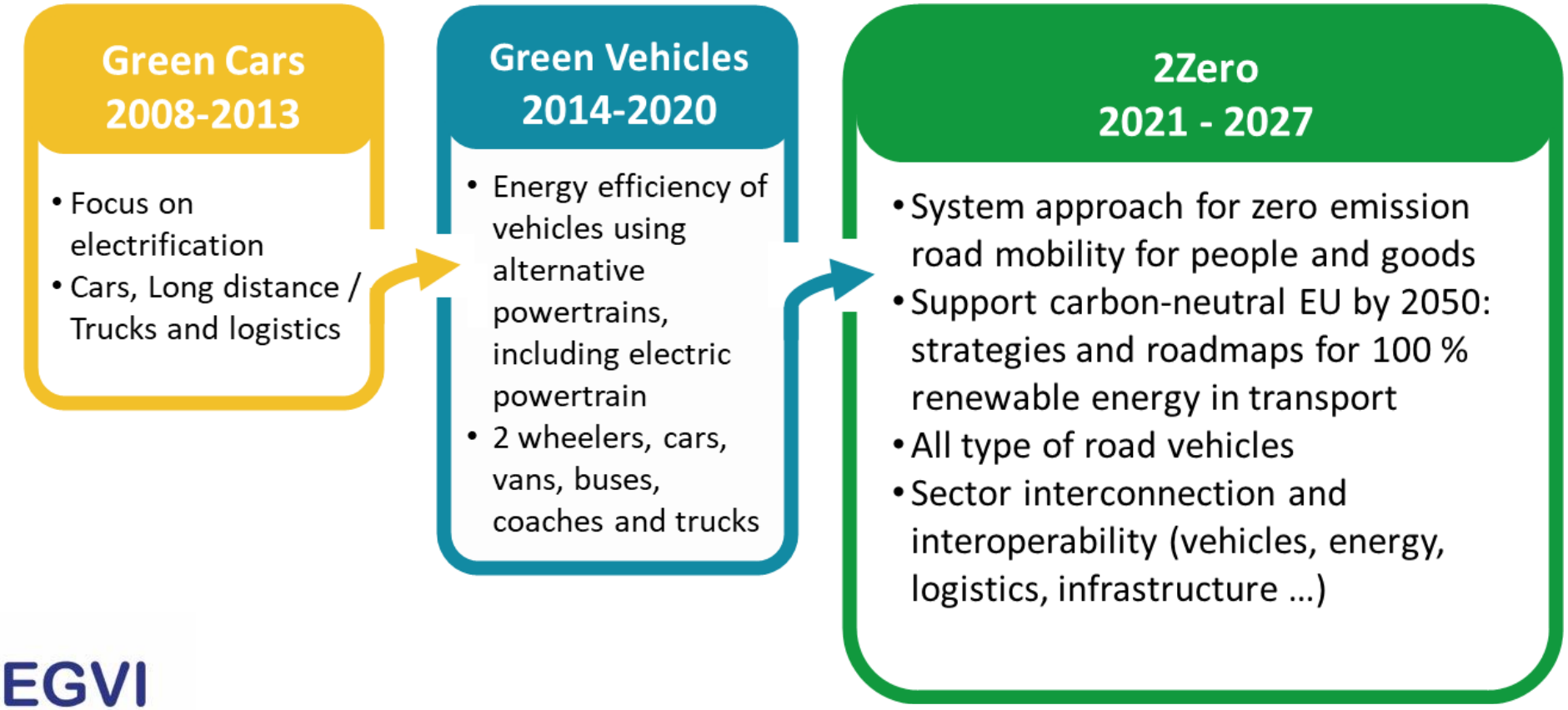
Welcome

Stephan Neugebauer

EGVIA Chairman

Partnership scope & objectives

From a vehicle focus to a system approach



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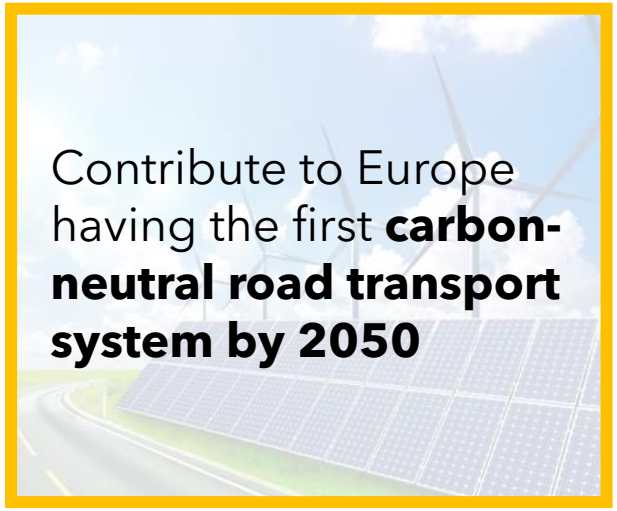
What do we want to achieve?



Contribute to Europe having the first **carbon-neutral road transport system by 2050**

Technology leadership supporting economic growth and job safeguard, creation all over Europe

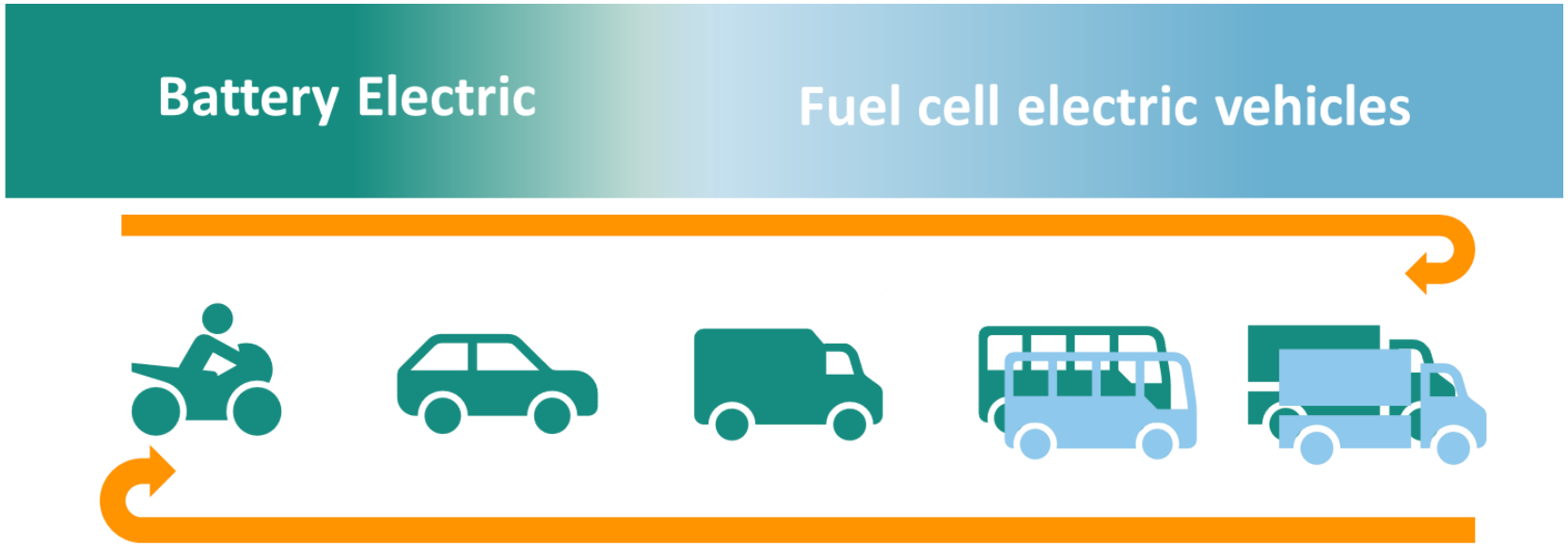
Ensure **European competitiveness** thanks to solutions for an integrated carbon neutral road transport ecosystem

Improve the **health and quality of life of EU citizens** and ensure mobility for people and goods

2Zero 4 pillars

- Vehicle technologies and vehicle propulsion solutions for BEV and FCEV
- Integration of the battery electric vehicle into the energy system and related charging infrastructure
- Innovative concepts, solutions and services for the zero emission mobility of people and goods
- LCA and circular economy approaches for sustainable and innovative road mobility solutions

A focus on zero tailpipe emission solutions



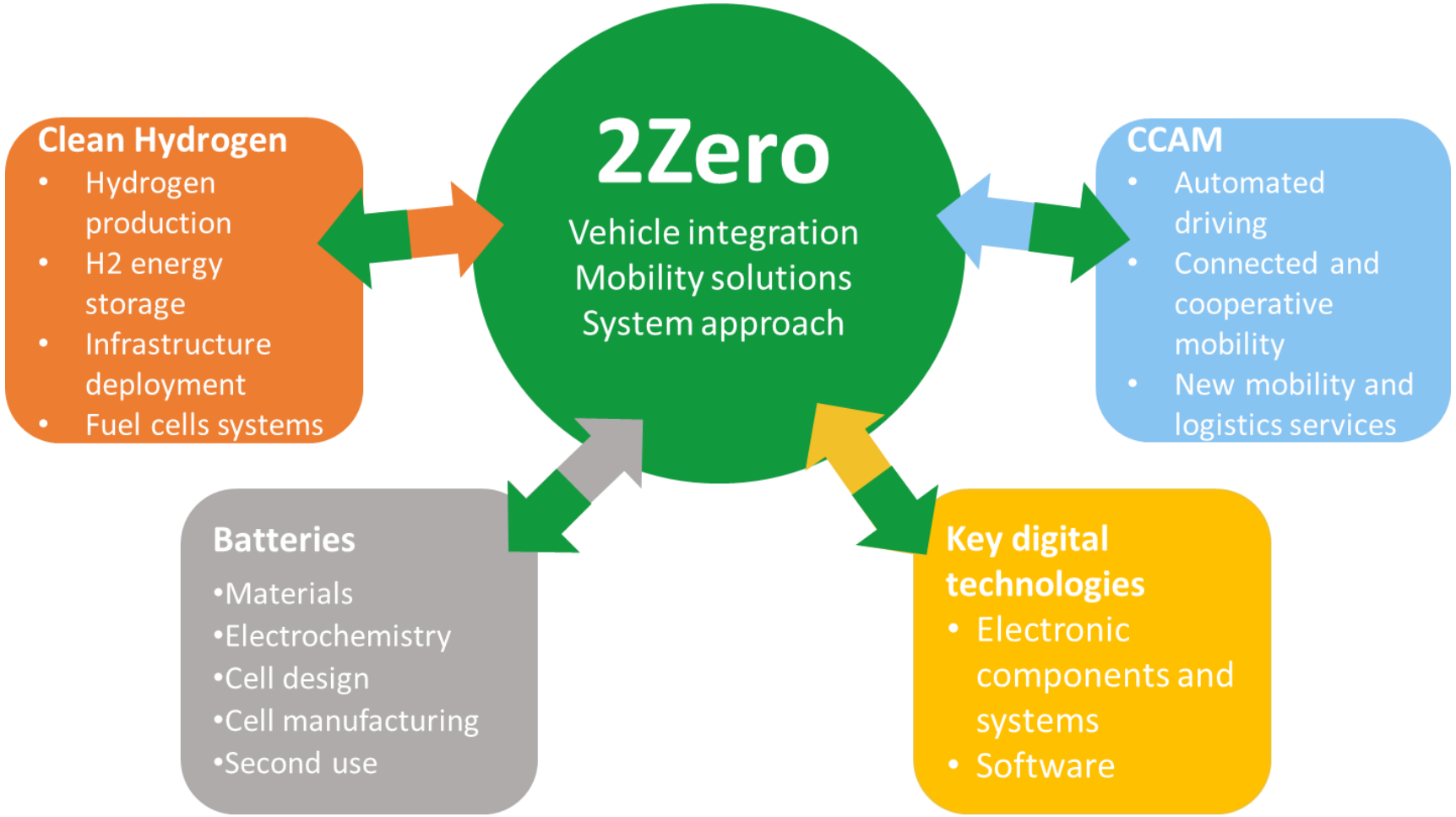
BEV

- Vehicle integration of innovative battery technologies
- Vehicle architecture
- Battery management systems and thermal system
- Battery packs and modules
- Power electronic and charging solutions
- Advanced electric motors
- Integration of BEV into the grid

FCEV

- Electrification of heavy duty vehicles
- Integration of fuel cell systems into vehicles, focusing on heavy duty vehicles
- Synergy of electronics and vehicles architecture with electric vehicles
- Integration of hydrogen components (tank, sensors,…)

2Zero interaction with other co-programmed and institutional partnerships



Ian Faye

Bosch,

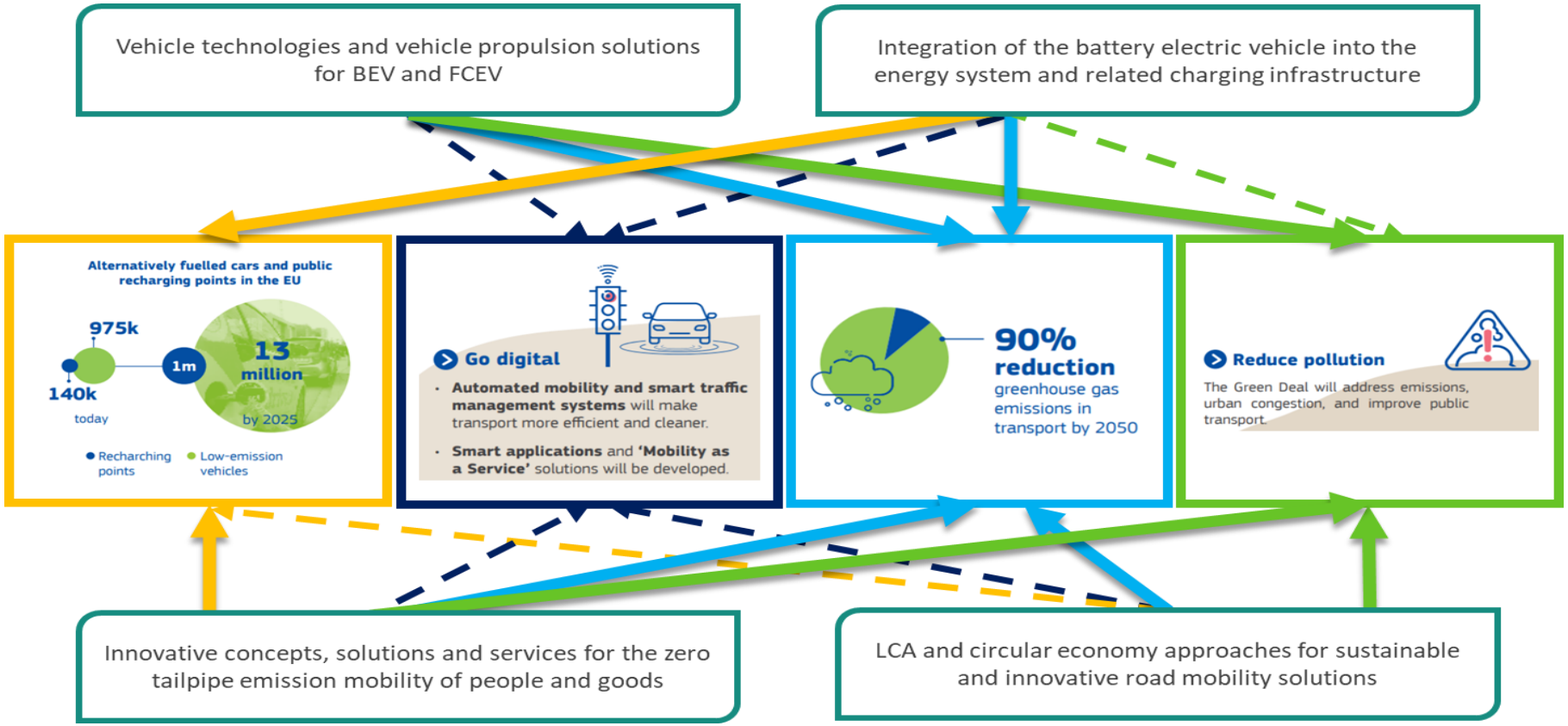
Co-leader WG1

SRIA Pillar 1 - Vehicle technologies and vehicle propulsion solutions for BEV and FCEV

SRIA Pillar 1 - Vehicle technologies and vehicle propulsion solutions for BEV & FCEV

- **Objectives**
  - To establish innovative BEV and FCEV concepts and technologies, for implementation in the generations of vehicles coming after 2025 and 2030
  - To create and validate user-centric vehicle concepts in all categories that fulfil user and operator needs, including both innovative multi-purpose vehicles, and new tailored right-sized solutions for specific applications, considering also eco-system aspects beyond vehicle design
  - To create and prove tools for accelerated product development

SRIA – System perspective with 4 Pillars



SRIA Pillar 1 - Vehicle technologies and vehicle propulsion solutions for BEV & FCEV

- **Advanced vehicle concepts for zero emission road transport**
  - Conceptual vehicle design
  - Zero emission Heavy Duty Vehicle: BEV HD vehicles and FCEV HD vehicles
  - Energy-efficient and user-centric interiors
  - Advance lightweight design for zero emission
  - Digitalization enabled advanced design methods
- **Efficient and affordable drivetrains and control strategies for BEV and FCEV**
  - Efficient control of vehicle operations
  - Powertrain modularity and integration
  - Integration of battery systems
  - Thermal management
  - Charging systems: Fast, wireless
- **Further key R&I actions**
  - Tyres and brakes
  - Safety

SRIA Pillar 1 - Vehicle technologies and vehicle propulsion solutions for BEV & FCEV

- **Areas not covered by EU funding**
  - Hydrogen ICE
  - PHEV (also with e-fuels and H2)
  - Transversal aspects of tyres and brakes (including environmental impact)

Venizelos Efthymiou

University of Cyprus,

Co-leader WG2

SRIA Pillar 2 - Integration of battery electric vehicles into the energy system and related charging infrastructure

SRIA Pillar 2 - Integration of battery electric vehicles into the energy system and related charging infrastructure

- User acceptance of charging options is key for the fast development of the EV market. That implies that the **following challenges should be tackled**:
  - Future charging solutions should be universal, paralleling the growth of EV sales, and become a seamless process: easy, available at any time, while charging duration should be responsive to the user's needs.
  - New technological developments such as smart charging and vehicle-to-grid (V2G) solutions will need to be progressively implemented, creating a flexible, sustainable, affordable and efficient charging environment and grid operation.
  - Upcoming charging solutions should be interoperable in terms of physical interface and information exchange, enabling different charging solutions to satisfy multiple user needs built upon an ecosystem with an open architecture
  - New digital solutions are expected to contribute to improve charging planning and to better display charging prices, giving to the customer an accurate and real-time perception of the final cost of the service, as is the case currently for fuels.
  - Power quality should be ensured

SRIA Pillar 2 - Integration of battery electric vehicles into the energy system and related charging infrastructure

- **Scope of actions**
  - Charging infrastructure
  - The system approach of battery based e-mobility
  - Boosting system approach through smart and bi-directional charging
  - Planning the BEV connectivity to achieve system approach
  - Fast high power charging
  - EU wide solutions for seamless use of EVs

SRIA Pillar 2: Potential range of flexibility services by EVs

SYSTEM FLEXIBILITY		LOCAL FLEXIBILITY	
Wholesale market	**Transmission System Operator**	**Distribution System Operator**	**Behind-the-meter**
• Peak-shaving • Portfolio balancing	• Frequency control • (primary, secondary and tertiary reserve) • Other ancillary services (*e.g.*, voltage management, emergency power during outages)	• Voltage control • Local congestion and capacity management	• Increasing the rate of Renewable Energy self-consumption • Arbitrage between locally produced electricity and electricity from the grid • Back-up power

EVs can contribute to decarbonising the transport sector while facilitating the integration of VRE. If EV charging is adjusted to follow the availability of renewable energy sources, less flexibility from conventional power plants will be needed.

10.05 - 10.20 COFFEE BREAK

Fernando Liesa

ALICE,

Co-leader WG3

SRIA Pillar 3 - Innovative concepts, solutions and services for the zero tailpipe emission mobility of people and goods

SRIA Pillar 3 - Innovative concepts, solutions and services for the zero tailpipe emission mobility of people and goods

- **Objectives**
  - Develop and support evidence-based deployment integrated strategies and solutions allowing quick and effective roll-out and upscale of zero tailpipe vehicle fleets in cities, regions and corridors.
  - Develop and expand the portfolio of zero tailpipe emission mobility and logistics use-cases, with emphasis on feasible and higher socio-economic and financial impacts cases. The objective is to leverage the integrated system approach. (i.e. vehicle, infrastructure, operations and services) to serve the transport demand effectively with zero emission vehicles.
  - Demonstration and validation of zero tailpipe emission fleets and associated infrastructure (charging) in connected, shared and on-demand mobility and logistics networks.
  - Demonstration and validation of zero emission fleets in high frequency and high capacity bus lines and high demand freight transport corridors.
  - Test and learn from use cases to identify and overcome adoption barriers: operational (vehicle performance, integration with charging infrastructure, etc.) user driving behaviours, user acceptance and legal/regulatory aspects and providing input to further vehicle and infrastructure developments.
  - Capacity building and R&I based policy recommendations for the effective transition towards zero tailpipe emission road transport.

SRIA Pillar 3 - Innovative concepts, solutions and services for the zero tailpipe emission mobility of people and goods

- **Zero tailpipe emission vehicles integration into the road mobility and logistics systems**
  - Road mobility for people & logistics systems: pathways towards zero emission.
  - Connected and shared e-services for people and goods mobility. (in collaboration with CCAM)
  - Define right sized vehicles and infrastructure requirements according to user needs and usage models (people mobility, freight and logistics)
- **Testing and demonstrating concepts, solutions and services for the zero tailpipe emission people**
  - Innovative zero emission people mobility solutions in urban, peri-urban and rural areas
- **Testing and demonstration of concepts, solutions and services for long haul, regional and urban zero tailpipe emission freight transport and logistics**
  - Logistics concepts and solutions for Zero tailpipe emission vehicles deployment acceleration

Thilo Bein

Fraunhofer LBF,

Co-leader WG4

SRIA Pillar 4 - LCA approaches and circular economy aspects for sustainable and innovative road mobility solutions

SRIA Pillar 4 - LCA approaches and circular economy aspects for sustainable and innovative road mobility solutions

- **Objectives**
  - ▸ Coherent and systematically harmonised assessment of the ecological footprint of technologies, non-technical measures and product life-cycle processes
  - ▸ Implementation & anchoring of circular economy strategies as measure to lower the ecological footprint (including value and supply chain)
  - ▸ Accelerating the uptake of sustainable solutions towards a zero emission road transport

SRIA Pillar 4 - LCA approaches and circular economy aspects for sustainable and innovative road mobility solutions

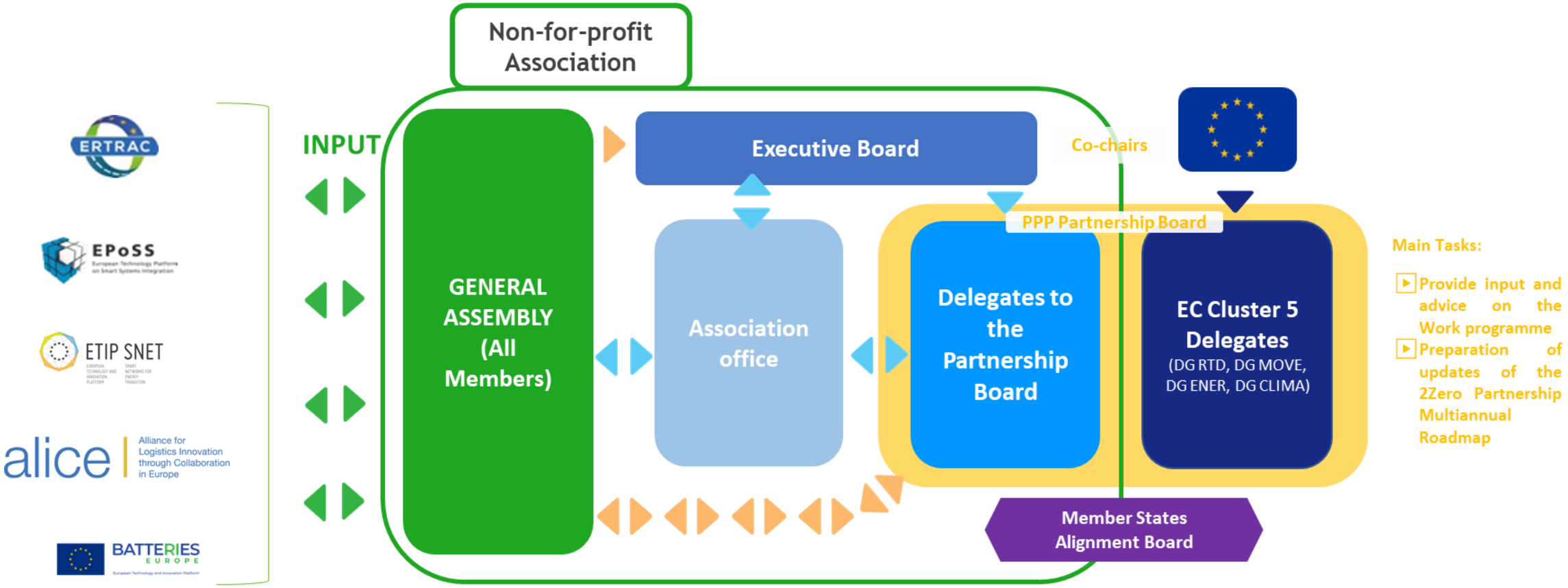
- **Data for comparable and reliable assessments**
  - Life-cycle inventory (LCI) data base
  - Monitoring of the ecological footprint
- **Methods and tools**
  - Methods and tools for LCSA tailored to the transport sector
  - Social LCA for the transport sector
  - Methods, tools and processes for circular economy
  - Development of approaches/methods and tools for system-wide life-cycle and CE strategy modelling
- **Assessment and demonstration**
  - Assessment of mobility scenarios
  - Development and demonstration of CE strategies for zero emission vehicles
  - Development and demonstration of LCSA- and CE-based mobility concepts and scenarios

Stephan Neugebauer

EGVIA chairman

Governance structure and involvement of Member States

Proposal for the 2Zero Governance structure



The non for profit association

The non-for-profit association will be structured around the following bodies:

- Gathering all members, the **General Assembly** will be the main decision body of the association.
- The **Executive Board** will be responsible for the management of the association, chairing the meetings and representing the association in various public events, conferences and towards policy makers at European and national levels.
- **Delegates to the partnership board** will be elected by the General Assembly. This group of experts will reflect the different sectors represented in the association as well as the type of members. Its rôle will be to exchange on priorities for the calls for proposals with the European Commission services and contribute to the SRIA updates. In doing so, it will ensure a continuous exchange with the General Assembly to guarantee that all association members have a similar level of information regarding the partnership activities and ensure transparency.

The European Commission

- The EC delegates will be represented by several of the DGs directly involved in the partnership under Horizon Europe Cluster 5 (**DG RTD, DG MOVE, DG ENER and DG CLIMA**), along with other services, such as DG ENV, DG GROW, DG CNECT and DG JRC.
- The EC services have been directly involved in the definition of the partnership proposal and the drafting of the SRIA, with DG R&I coordinating the co-creation process with Cluster 5 EC services and additional services expected to be active in the 2Zero activities.

The partnership Board

The Partnership Board will be the main governing body and the **official mechanism for dialogue** between the European Commission and the not-for-profit association. The Partnership Board will be responsible for bringing together the stakeholders and the European Commission views on the content of the calls for proposals and SRIA updates. It will be the body discussing research priorities and call recommendations, and ensuring that priorities identified to feed the Work Programme are:

- coherent with the state-of-the-art (avoiding duplication of funding and remaining at the forefront of the international competition);
- consistent with the partnership scope (contributing to achieving the objectives of the partnership);
- in the best interest of European citizens (added value of acting at EU level).

Member States involvement in 2Zero

An “Alignment Board” gathering representatives of the ministries and / or national agencies will be set-up as a side-body to avoid any duplication of activities with the Programme Committee. This “Alignment Board” will have different objectives:

- To align European and national priorities, identify opportunities for collaboration, avoid duplication of funding and disseminate information towards national stakeholders;
- To identify outcomes of EU-funded projects of direct interest to national activities and offer demonstration possibilities to innovative solutions.
- To implement complementary measures to EU funding of projects such as training, standardisation, technology transfer, deployment of innovations and recharging infrastructure contributing to accelerate the uptake of zero tailpipe emission road transport.

Lucie Beaumel

EGVIA Head of Office

How to be involved in the partnership

Different levels of involvement

- Any stakeholders can submit a proposal for any of the topics published as part of the 2Zero Work Programme (competitive process)
- All stakeholders interested to contribute to partnership activities (public workshops and conferences, info days, update of the SRIA …) can be involved.
- Stakeholders willing to be more active can also apply to become member of the non-for profit association: EGVIAfor2Zero

EGVIAfor2Zero: Criteria for membership

Membership of EGVIAfor2Zero, whatever the concerned category, is open to legal entities fulfilling all the following criteria:

1. (i) Companies or institutions **established in a Member State** of the European Union or (ii) companies or institutions having their registered office, central or principal state of business within a State (a) which is a **contracting party to the European Economic Area Agreement** or (b) which is an **Associated or Candidate Country** to the European Union;
2. Companies or institutions with **relevant activities in research & development, demonstration, industrialization or deployment of the technologies and services** covered by the partnership
3. Companies or institutions **sharing and supporting the objectives of EGVIAfor2Zero**;
4. Companies or institutions **committing to the Strategic Research and Innovation Agendas and roadmaps**, and being an active member of one of the European Technology Platforms (ETPs) supporting the 2Zero partnership (ERTRAC, EPoSS, ETIP SNET, ALICE and Batteries Europe), and possibly being a member of the ETPs, if legally constituted, or of one of the European associations involved in these ETPs;
5. Companies or institutions **willing to actively contribute in projects** of the European Framework Programme for Research and Innovation.

EGVIAfor2Zero: Membership categories

Various categories of membership have been defined:

- **Industry Members**
  - ***Automotive industry***: companies involved in engineering and manufacturing of vehicles, automotive systems and components;
  - ***Smart Systems industry***: companies involved in engineering and production of smart systems and their integration at all stages of the supply chain;
  - ***Smart Grids industry***: companies involved in engineering and deployment of smart electricity grids
  - ***Logistics companies and freight transport users***: companies involved directly or indirectly in the transportation of goods including service companies.
- **Research Members**
  - ***Research members:*** research institutes and universities active in the field of conducting research on vehicle technologies in particular in the context of zero-emission vehicles, mobility concepts supporting zero-emission transport, impact assessments of road transport or any other to zero-emission road transport related research area
- **Associate Members**
  - ***Associate Membership*** is open to non for profit organisations (NGO, associations, platforms, clusters …) involved in European transport research, and fulfilling the eligibility criteria. End-users (public authorities, transport operators …) are also entitled to apply as Associate members in the association.

EGVIAfor2Zero: Membership fees

- OEM: € 7 000
- Automotive Suppliers: € 6 000
- Smart system industry: € 6 000
- Smart grid industry: € 6 000
- Logistics companies and freight transport users: € 6 000
- Research center: € 5 000
- University: € 2 000
- Associate member: € 1 000
- Special rate for SME: 50 % reduction

Guido Sacchetto

European Commission

Next steps and AoB

Next steps

- Finalisation of the SRIA (fine tuning of the R&I description and definition of the monitoring framework)
- Drafting of the Memorandum of Understanding (MoU)
- Signature of the MoU is planned in April 2021
- Official publication of the first topics is expected in the first quarter of 2021
- The first General Assembly of the EGVIAfor2Zero association will also be organized in the first quarter of 2021

Interested?

Contact EGVIA for more information :

lucie.beaumel@egvia.eu

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