



Stakeholders Event

Multiannual Roadmap of the European Green Vehicles Initiative PPP in Horizon 2020

25 September 2012, Brussels

Link to draft paper:

[www.green-cars-initiative.eu
/public/documents/PPP-EGVI-Roadmap-07-2012.pdf](http://www.green-cars-initiative.eu/public/documents/PPP-EGVI-Roadmap-07-2012.pdf)

Agenda

- 10:00 **Opening**
- 11:00 Coffee Break
- 11:30 Panel 1: **Vision 2030**
- 12:30 Lunch
- 13:30 Panel 2: **Research and Innovation Strategy**
- 14:30 Coffee Break
- 15:00 Panel 3: **Expected Impacts**
- 16:00 **Wrap Up**
- 16:10 **Closing**





Opening

Agenda

10:00 **Opening**

Introduction

Wolfgang Steiger

Volkswagen / Chairman ERTRAC & EGCI PPP

Keynotes

Rudolf Strohmeier

Deputy Director General, DG RTD

Khalil Rouhana

Director Components & Systems, DG CNECT

Olivier Onidi,

Dir. Innovative & Sustainable Mobility, DG MOVE

11:00 Coffee Break





PPP European Green Cars Initiative

Stakeholder Event for the Multiannual Roadmap of the future European Green Vehicle Initiative Contractual PPP in Horizon 2020

25.09.2012

Wolfgang Steiger

Volkswagen

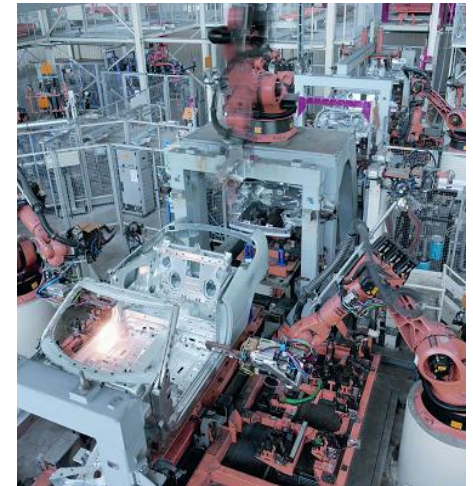
Chairman of the EGCI Industrial Advisory Group

Chairman of ERTRAC



PPP European Green Cars Initiative

- Positive experience as a fast, lean and efficient PPP during FP7
- Needed added value of an integrated R&D & **Demonstration** programme at European level
- Commitment and the shared vision of the sector, setting objectives critical to the EU industrial competitiveness





PPP European Green Cars Initiative

Context:

- PPP in the **European Economic Recovery Plan**
- **PPP** of industry and EC (50% funding)
- **Horizontal** activity (DG RTD, INFSO, MOVE)
- Implementation through **FP7** (WP 2010-2013)
- Major focus on **electrification** (ca. 2/3 of budget)

Objectives:

- **Climate protection - Decarbonisation**
- **Energy security**
- **Local emissions**
- **Safety**
- **Transport reliability**
- **Global competitiveness of the EU automotive industry**



Industrial Advisory Group

Role:

- integration of all involved sectors and EC services
- strategic dialogue between Commission and industry
- implementation of the Green Cars Initiative as a PPP

Members (representing ETPs ERTRAC, EPoSS, SmartGrids, EIRAC):



- AVL
- Bosch
- Continental
- ECT
- FEV
- Fiat Research Center
- Iberdrola
- IFP
- KU Leuven
- Procter & Gamble
- PTV
- Renault
- Ricardo
- Schachinger
- Siemens
- Valeo
- VDI/VDE-IT
- Volkswagen
- Volvo
- +
- DG RTD
- DG INFSO
- DG MOVE
- DG ENVI
- DG ENTR
- EIB



PPP European Green Cars Initiative

The EGCI was set up by the European Economic Recovery Plan, using FP7.

Now, the EGCI must evolve towards
Horizon 2020

The next Framework Programme for
Research and Innovation





MAP for EGVI in Horizon 2020

A Smart, Green, and Integrated Transport is a major **Societal Challenge** for Europe, as recognized by the Horizon 2020 proposal

The Scope of the EGCI has to be **focused** within the road transport sector in order to obtain **visibility**, achieve **critical mass**, and deliver **tangible results**

The objective proposed to define its scope is:
Energy Efficiency of Vehicles & Alternative Powertrains



EGCI in Horizon 2020

The EGCI will become the
European Green Vehicles Initiative

In order to reflect all the vehicles covered:

Passenger cars
Light duty vehicles
Heavy duty trucks
Buses
2-wheelers
New light vehicle concepts



European Green Vehicles Initiative

Three steps from PPP EGCI to Contractual PPP EGVI

1. Establish a Multiannual Roadmap to characterize the Technical Focus of the PPP (**smartgrid?**)
2. Develop a governance structure for the PPP and the industrial Grouping (**EGVI Assoc. +PPP**)
3. Get the approval as Contractual PPP by the European Commission

Keynotes

Rudolf Strohmeier

Deputy Director General, DG RTD

Khalil Rouhana

Director Components & Systems, DG CNECT

Olivier Onidi,

Director Innovative & Sustainable Mobility, DG MOVE





Panel I: Vision 2030

Agenda

11:30 Panel 1: **Vision 2030**

András Siegler, DG RTD

Panelists

Wolfgang Steiger

Volkswagen / Chairman ERTRAC & EGCI PPP

Günter Lugert

Siemens / Chairman EPoSS Executive Committee

Leen Vandezande

KU Leuven / SmartGrids

Thomas Spoormans

DG ENTR / CARS 21

12:30 Lunch



Panel 1: Vision 2030

Key Questions

- How important are the involved sectors to the EU?
- How is the PPP linked to EU policy objectives?
- Which are the relevant economic, environment and social challenges? Which are the trends and drivers?
- What is the overall Vision 2030 and research and innovation strategy of the industrial sectors involved?
- Which are the strategic objectives of the PPP initiative and what is the role of the PPP in the overall industrial strategy?



Panel 1: Vision 2030

Key Questions II

- Why is a contractual PPP needed?
- What is the commitment of industry and partners to the overall vision and objectives and in particular to the PPP goals?



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Panel 1: Vision 2030

Statement Wolfgang Steiger

- Focus: Energy efficiency of road vehicles and alternative powertrains
- Links to EU policies of Transport, Energy, Environment and Climate Protection:
 - Reduction of emissions
 - Improvement of air quality
 - Cut of CO₂ and prevention of climate change
 - Maintaining energy security, and
 - Increased use of renewable energies.
- System approach built on three ETPs integrating automotive, energy, ICT, and smart grids research



Panel 1: Vision 2030

- Vision for coordinated research and innovation activities for 15 to 20 years.
- Proper level of flexibility has to be kept since fundamental framework conditions may change rapidly due to adverse events.
- Close interaction in decision-making between industry and public will be essential to generate market credibility and to justify the strategic allocation of resources.
- A public private partnership based on a process of continuous stakeholders consultation is needed.



Panel 1: Vision 2030

- ERTRAC has set objectives for an overall efficiency improvement of the transport system by 50% in 2030 compared to 2010.
- Specific targets for each of the societal needs are identified: decarbonisation, reliability and safety. Thus, ERTRAC will be a major partner of the EGVI PPP
- ERTRAC topics not covered by the EGVI PPP include
 - development of fuels
 - evolutionary development of ICEs
 - priorities for road infrastructures
 - creation of a multi-modal mobility system
 - safety, noise reduction and performance gains



Panel 1: Vision 2030

- Industry is willing to commit on
 - Reaching the objectives of major EU policies, and in particular the White Paper for Transport
 - Contributing to the deployment of green vehicles such as described in the roadmaps for electrification, hybridization, long distance trucks
 - Matching EU funding with similar private funding (a total programme budget of 3 Bn Euros all along Horizon 2020 will be necessary)
 - Working with principles of transparency and openness in a stakeholder consultation process



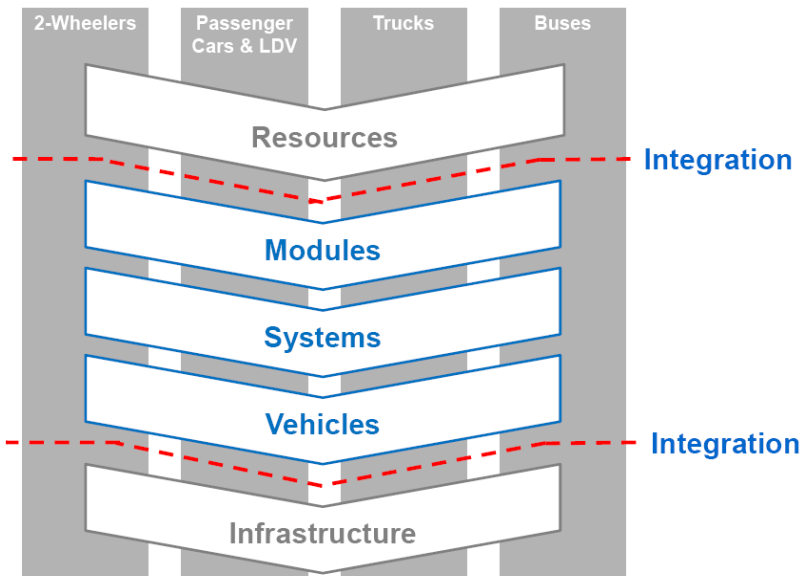
Panel 1: Vision 2030

Statement Günter Lugert

- EGVI PPP will address the societal challenge of sustainable transport and the innovative strength and global competitiveness of the European economy.
- Europe's competitors on the global markets have set up massive R&D support programmes for green vehicles development.
- Europe cannot afford to lack ambition or to let fragmentation reduce efficiency.
- Following the approach of Horizon 2020 R & I will be used for reaching industrial leadership positions.



Panel 1: Vision 2030



- The integrated research and innovation strategy
 - Addresses various product layers from the module to the vehicle as a whole
 - Covers range of vehicles from 2-wheelers to buses
 - Matches the entire process chain from resource application to demonstration and new services

Panel 1: Vision 2030

- EPOSS focusses on Smart Systems, defined as intelligent, often miniaturised, technical subsystems with their own and independent functionality evolving from microsystems technology.
- One of the most important application fields of smart systems is the automobile, particularly the EV. Thus, EPOSS is a natural partner for the EGVI PPP
- EPOSS topics not covered by the EGVI PPP include
 - safety and driver assistance
 - autonomous driving
 - human-machine interfacing



Panel 1: Vision 2030

- Why a contractual PPP?
 - To ensure a lasting commitment
 - To guarantee critical mass of funding
 - To drive forward innovation
 - To set up a collaborative process
 - To make best use the competences of each side
 - To maintain transparency of the priorities setting
 - To guarantee openness for participation
 - To guarantee flexibility and an ability to adapt
 - To ensure a lasting cooperation



Panel 1: Vision 2030

Statement Leen Vandezande

- Acting with a PPP at European level is seen as an added value action complementary to national and local actions.
- Vehicles, mobility services and charging systems have to be developed for international markets, using standardized solutions, and need to be able to compete at a worldwide level.



Panel 1: Vision 2030

- SmartGrids, the European Technology Platform for the Electricity Networks of the Future, focuses on research topics and priorities necessary for the advancement of electricity networks and intelligent electric systems.
- Active in both the European Green Cars Initiative and the European Electricity Grid Initiative (EEGI), SmartGrids will be able to make essential links.
- SmartGrid topics not covered by the EGVI PPP
 - Anything concerning electricity networks and intelligent electric systems.

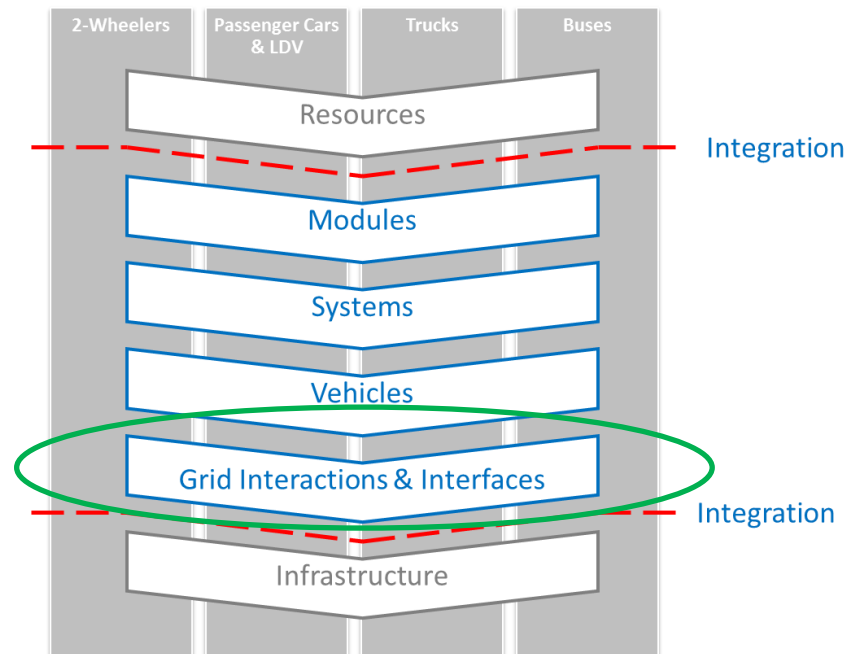


Panel 1: Vision 2030

- European Electricity Grid Initiative focuses on system innovation rather than on technology innovation, and addresses the challenge of integrating and validating new technologies in real life.



- EGVI PPP should better reflect the interactions with the grid



Panel 1: Vision 2030

Remarks from Stakeholders

- The general objectives for SME participation should be adopted by the EGVI PPP
- Excessive concentration of activities in a few actors or geographical areas should be avoided.
- What will happen with logistics (3rd pillar of EGCI)?
- Proposed budget of 3 bn EUR for the EGVI PPP would be tripling of funding for more narrow scope.
- What role will universities play in the EGVI PPP?
- What links will be made to regional activities?
- Cost reduction and affordability are key goals, too.





Panel II: R & I Strategy

Agenda

13:30 Panel 2: **R & I Strategy**

Willy Van Puymbroeck, DG CNECT

Panelists

Lars-Göran Rosengren

Volvo / ERTRAC

Jochen Langheim

ST Microelectronics / EPoSS

Jesus Garcia Martin

Iberdrola / SmartGrids

Rémi Bastien

Renault / Chairman EUCAR

14:30 Coffee Break



Panel 2: R & I Strategy

Key Questions

- What is the technical content of the PPP?
- Which are the industrial needs and the related research and innovation challenges to go beyond the state of the art?
- Which are the main subdomains and related priority areas?
- How is the PPP related to the roadmaps of the involved ETPs?

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Panel 2: R & I Strategy

Statement Lars-Göran Rosengren

- Topics have to match the scope of the EGVI PPP: Energy Efficiency of Vehicles and Alternative Powertrains:
 - Electrification and hybridization of powertrains, and their adaptation to renewable fuels
 - Functionality improvement of the vehicle
 - Reduction of complexity and weight
 - Management of thermal and other energy flows
- A full range of vehicle types are considered, beyond passenger cars, this includes trucks and buses



Panel 2: R & I Strategy

- Development of new fuels and materials or creation of grid and road infrastructures are not within the scope of the PPP
- Integration aspects are key
- Example: Materials for light weight components
 - Adaptation and processing
 - Functionality improvement of the module
 - Integration into the vehicle
 - Prototyping and testing
 - Demonstration of the product.



Panel 2: R & I Strategy

Statement Jochen Langheim

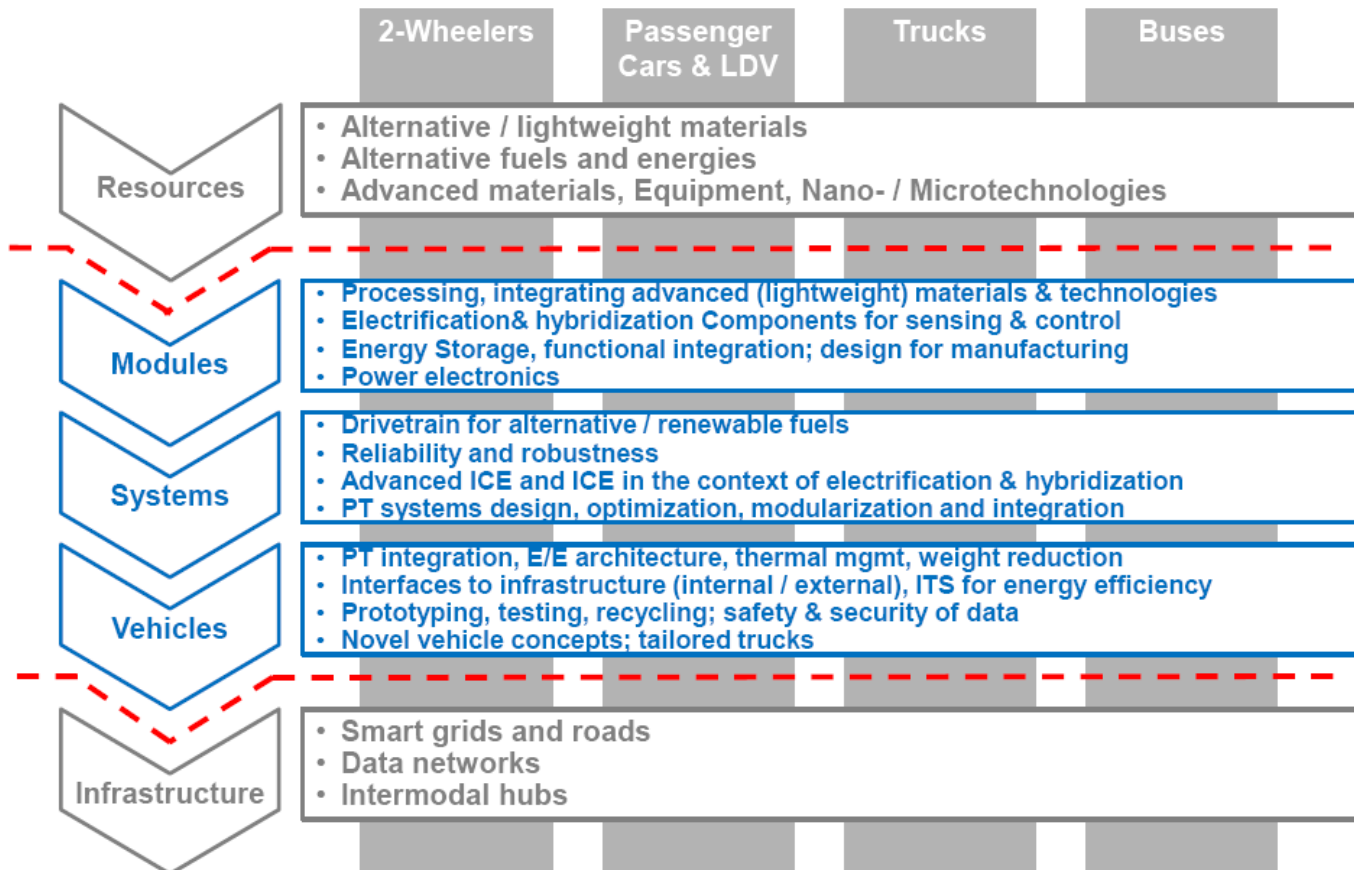
- R & I strategy of the PPP is based on the long-term technology roadmaps from the Strategic Research Agendas of the ETPs
- Roadmaps ensure coherence of technology developments, help to define priorities, time scales.
- Relevant roadmaps include
 - European Roadmap Electrification of Road Transport
 - ERTRAC Roadmap Hybridization of Road Transport
 - EPoSS Strategic Research Agenda
 - ERTRAC roadmaps for Truck, Buses, Production
 - SmartGrids Strategic Research Agenda



Panel 2: R & I Strategy



- Examples of Technology Content



- Key Enabling Technologies (KETs) are linked to products and services via **smart systems** (e.g. PE)

Panel 2: R & I Strategy

Statement Jesus Garcia Martin

- PPP EGVI will create a multitude of close links to innovation, e.g.
 - Feedback of lessons learned in the process chain to the initial research work
 - Advice for EU policies on transport and energy (e.g. standardization, procurement, education)
 - Definition of requirements for infrastructure creation
 - Links to other PPPs and initiatives, e.g. the European Electricity Grid Initiative



Panel 2: R & I Strategy

- Critical issues for the introduction of electric vehicles from the grid perspective:
 - Infrastructure planning and costs.
 - Quick charging impact.
 - Bidirectional energy flow capabilities (V2G).
 - Integration with renewable energy.
 - Standardization.
 - Regulatory aspects
(business models, billing issues...)
- PPP EGVI will include those aspects that are affecting the vehicle's design or the necessary interfaces, due to their reciprocal character



Panel 2: R & I Strategy

- Technology Content:



EPOSS
European Technology Platform
on Smart Systems Integration



Figure 4: examples of technology content of the PPP EGVI (blue)

Panel 2: R & I Strategy

Remarks from Stakeholders

- The topic of standardization should be more emphasized and addressed early
- Some relevant topics (green energy, transport, ITS) and sources of innovation (e.g. resources, new ideas) are not part of the EGVI. Where shall these topics find their place? At what budget?
- Batteries are a core element of the EV. Will design / cell materials / development / manufacturing / charge management / integration / second life be covered?
- How will the EGVI PPP interact with other PPPs?
- Public Procurement is a policy oriented instrument





Panel III: Expected Impacts

Agenda

15:00 Panel 3: **Expected Impacts**

Andreas Dorda

BMVIT / A3PS / Vice-Chairman ERTRAC

Panelists

Jean-Luc di Paola-Galloni

Valeo / Vice-Chairman ERTRAC

David Storer

CRF / EPoSS

Per Olof Granström

General Secretary EDSO / SmartGrids

16:00 Wrap Up and Closing



Panel 3: Expected Impacts

Key Questions

- What is the scale of the resources involved and the ability to leverage additional investments in research and innovation?
- What are the expected impacts on industry and society: e.g. scale of impact on competitiveness, growth, jobs, trade, investment, productivity, accelerated application of new technology, creating opportunities/ mitigating threats, impact on climate and environment?



Panel 3: Expected Impacts

Key Questions II

- What is the added value of the action compared to existing activities?
- What is the benefit of a Contractual PPP in comparison to other options?
- What arrangements will be made to monitor and assess progress towards achieving desired effects?



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Panel 3: Expected Impacts

Statement Jean-Luc di Paola-Galloni

- The European Green Vehicles Initiative must be understood in the context of global competition where the European Automotive industry is challenged by US and Asian competitors.
- Investments in R&D to deliver innovative technologies are the top priority for the industry to stay ahead in this competition, and ensure future market growth.
- Therefore an initiative of a European scale like the EGVI is necessary, for both the industrial players and the public authorities to share research priorities and agendas, and to constitute critical mass.



Panel 3: Expected Impacts

- The PPP EGVI has an important lighthouse role: what will be shared and found in European projects will lead to further investment research and development within the companies.
- Beside the impacts on R&D investments and innovation, there will be economic impacts on future market shares and on the European trade balance.
- The most expected impacts are to preserve on the long term the innovation capacities of the European industry, which means R&D but also production capacities being maintained in the EU. This represents Millions of sustainable jobs.



Panel 3: Expected Impacts

Statement David Storer

- The share of smart systems in the expenses for automotive R&D can be estimated to about 30% of the total.
- The impact of the PPP EGVI on industrial competitiveness will thus go beyond the automotive sector, and include any European industries dealing with smart systems integration.
- Considering these major socio-economic, environmental and technological objectives, an efficient instrument for the EGVI PPP is needed. It has to be fast lean, transparent and flexible.



Panel 3: Expected Impacts

- The Contractual PPP model allows to take on board many actors from several sectors (automotive, ICT and energy) and to keep a full openness for participation to the programme, including academic entities and SME's.
- The continuation of the advisory role of the industry delegation will guarantee that annual calls of the PPP are based on up-to-date industrial needs.
- This will help the effectiveness of the initiative, by targeting R&D deliverables much awaited to enable innovative technologies to reach market maturity.



Panel 3: Expected Impacts

Statement Olof Granström

- The development of electric vehicles goes hand in hand with the development of the electricity networks of the future in Europe, aiming at the development of a user-centered, interactive, reliable, flexible, and sustainable electric Smart Grid.
- It is necessary to have two complementary and well linked activities like the European Green Vehicles Initiative and the European Electricity Grid Initiative (EEGI) in order to obtain System Innovation, involving the two sectors, and at European level.



Panel 3: Expected Impacts

Remarks from Stakeholders

- The roadmap is talking mostly about the expected impacts on the automotive industry, but other industries, such as the smart grid sector, can see important consequences if the electric vehicles are developed as foreseen.
- Impacts from the PPP EGV1 will be much higher if a coordination is set up with similar programmes done at the national level.
- Topics which are not included in the PPP scope will also have major impacts on the automotive industry competitiveness, such as ICE's and ICT for transport.



Agenda

16:00 **Wrap Up**

Josef Affenzeller

AVL

Gereon Meyer

VDI|VDE-IT / EPoSS Office

16:10 **Closing Remarks**

Wolfgang Steiger

Volkswagen / Chairman ERTRAC & EGCI PPP



Wrap Up

- **Vision 2030**

PPP EGV1 will address the objective of **Energy efficiency of road vehicles and alternative powertrains**

by a system approach building on three ETPs

- **R & I Strategy**

The PPP EGV1 will cover various product layers from the **module to the vehicle**, matching the entire process chain **from resource application to demonstration**

- **Expected Impact**

Industry is committed to reach the objectives of major **EU policies**, and to contribute to the **deployment of green vehicles** such as described in the **ETP roadmaps**



Wrap Up Vision 2030

Comments from Discussion

- Clarify and strengthen regional participation (SME, demonstration, roadmap as guidance)
- Ensure parallel developments inside and outside the PPP, e.g. infrastructure
- Make sure user needs and requirements are taken into account in continuous consultation process within PPP
- Consider an additional layer of technologies for the integration in grids and roads



Wrap Up R & I Strategy

Comments from Discussion

- Energy efficiency needs to be considered along the entire value chain
- Intensify links between grid and vehicle sector
- Pilot projects link partner requirements
- Avoid legislative framework becoming a bottleneck
- Global and European standardization should be more emphasized and addressed early
- Clarify process of putting boundaries of layers in practice (example: Batteries)



Wrap Up Expected Impacts

Comments from Discussion

- Consider consequences of impact of mass deployment of electric vehicles on other sectors than automotive (e.g. infrastructure)
- Strive for coordination of programmes at national and European level; links to ERANET+
- Create clear link to sustainable market and deployment
(PPP structure broadens input for market assessment)
- Keep focus of PPP

