

Workshop

"Portfolio of the European Green Cars Projects"

High Level Event European Green Cars Initiative

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Global Challenges for a New Mobility Approach

- Global recession
- EU 20-20-20 climate/energy targets
- Sustainable transport
- Competitiveness
- Economic & Social benefit



Current challenges & opportunities

SWOT for the EV in Europe

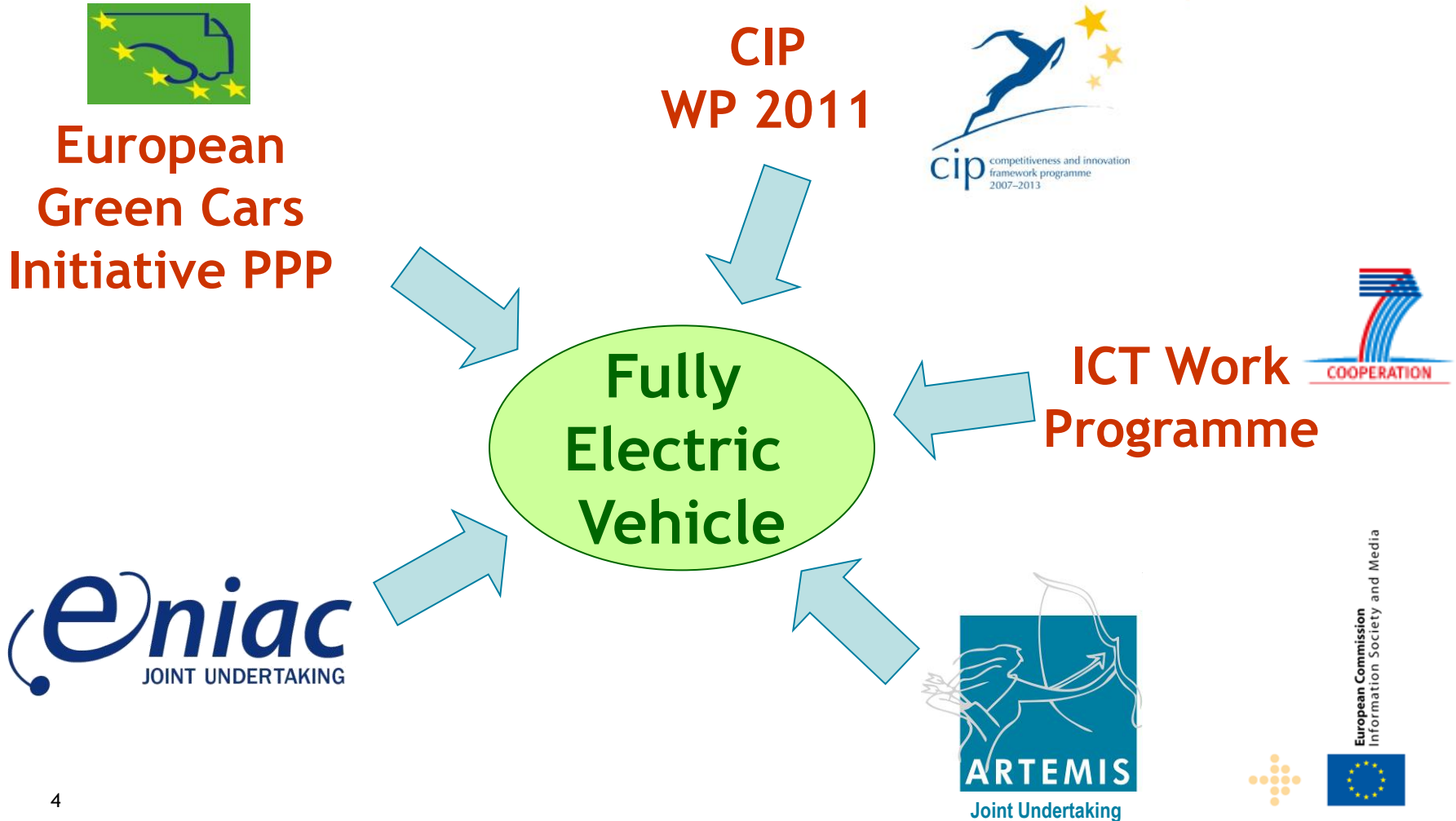
- Ambitious energy policy
- Strong automotive sector and technological basis
- CO₂ emission reduction and reduced fossil fuel dependence

- Next automotive generation
- Formidable research on basic components & electronics
- Strengthening of global competitiveness

- Committed giants are needed
- No European or global standards
- Limited performance: driving range, costs, ...
- Missing charging infrastructure
- Scattered research

- European market will be taken over by foreign manufacturers
- Safety issues
- Raw earth magnetic materials & lithium supply limitation







European Green Cars Initiative

ICT focus: “Fully Electric Vehicle and its infrastructure” 2010-2013

	M€	
	ICT	FP7
2010	20	105
2011	30	115
2012	30	140
2013	40	140
Total	120	500

- **Research Roadmap by ETPs:** ERTRAC, EPoSS, SmartGrids
- **Benefits of the fully electric vehicle:**
 - At least **40% energy saving** (engine + transmission)
 - Reduced fossil fuel **dependence** & environmental impact
 - Socio-economic impact:
12 million jobs & international competitiveness
- **Challenges:**
 - From 1 combustion engine to 2 or 4 **in-wheel electric motors**
 - Energy recovery from braking
 - **Batteries:** cost & business model, driving range, lifetime, energy management
 - Power electronics and safety
 - EU-wide **standards** for chargers/plugs





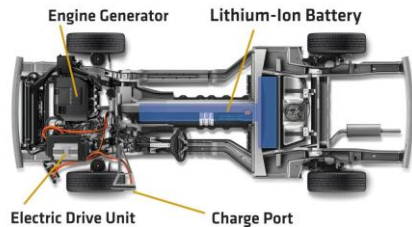
The Electric Vehicle Disruption vs. Evolution ?

- The engine - no longer THE core technology
- Distributed propulsion
- New/Old electronic architectures ?
- Batteries - the bottleneck for the moment
- V2G - a new challenge
- New services & business models
- New manufacturing & new skills



15 Ongoing Projects - main objectives (DG INFSO)

Electric Power Trains



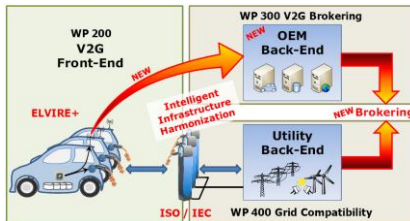
Source: GM Volt

Battery Management



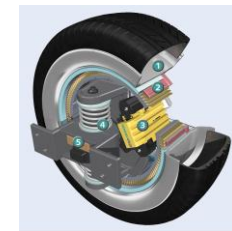
Source: pickeringtest.net

Cooperative Systems & V2G Technologies



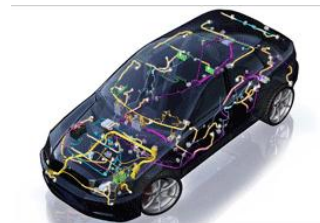
Source: VW/ERPC

Vehicle Dynamics



Source: Siemens VDO

Electronic Architectures



Source: Delphi



The Europe 2020 Strategy

Addressing the Challenge with ICT

- **Priorities**

- I. **Smart growth** - knowledge, innovation, education, digital society
- II. **Sustainable growth** - low-carbon, efficient and competitive economy
- III. **Inclusive growth** - high employment economy, social and territorial cohesion

- **Green Car PPP expected impact**

- I. **Investment in R&D**
- II. **GHG reduction**
- III. **Employment**

Seven Flagship initiatives:

- **Innovation union**
- Youth on the move
- **Resource-efficient Europe**
- **A Digital Agenda for Europe**
- An industrial policy for green growth
- An agenda for new skills and jobs
- European platform against poverty



- Fully Electric Vehicles: challenge and opportunity to keep Europe leading in high-end ICT
- The connected car as first instantiation of Internet of Things
- Advanced, efficient manufacturing with high ICT content:
Factories of the Future PPP

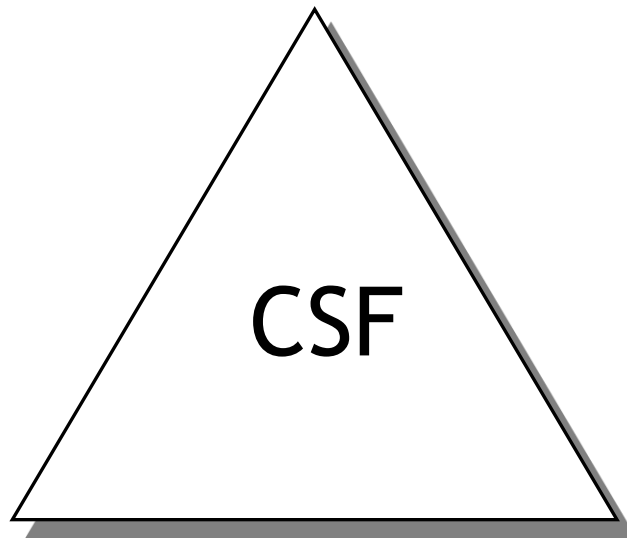




Innovation Union The Common Strategic Framework (CSF)

Competitiveness

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Societal Challenges

Science Base (MS)



Public Private Partnerships

- From research ...
to research & innovation ... to market impact
- We are fully committed to sustain the PPP
- Full commitment from all parties required
- What future form for the Green Cars PPP ?