European Green Cars Initiative

ICT for Fully Electric Vehicles
4th call for proposals
Objective GC-ICT-2013.6.6 Electro-mobility

Marc Boukerche
Unit A4 Components
Directorate General for Communications Networks, Content and Technology
DG CONNECT (former DG INFSO)

European Commission

PPP EGCI Infoday, Brussels, 9 July 2012
European Green Cars Initiative
ICT focus: “FEV, and their infrastructure”
2010-2013

<table>
<thead>
<tr>
<th>Calls</th>
<th>ICT</th>
<th>FP7 (target)</th>
<th>M€</th>
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<tbody>
<tr>
<td>2010</td>
<td>20</td>
<td>105</td>
<td></td>
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<td>2011</td>
<td>30</td>
<td>115</td>
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<td>2012</td>
<td>30</td>
<td>140</td>
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<td>2013</td>
<td>40</td>
<td>140</td>
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<td>Total</td>
<td>120</td>
<td>500</td>
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- Package of 5B€: 4B€ EIB loans, 1B€ R&D funding (500M€ EC grants)
- Research Roadmap by ETPs: ERTRAC, EPoSS, SMARTGRID
- **Benefits** of the fully electric vehicle:
  - At least 40% energy saving
  - Possible reduced fossil fuel dependence & environmental impact
  - Socio-economic impact:
    - 12 million jobs & international competitiveness are at stake
- **Challenges**:
  - From 1 combustion engine to 1, 2 or 4 electric motors
  - Kinetic energy recovery; thermal energy needs
  - Batteries: safety, cost & business model, driving range, lifetime, energy management
  - ICT for safe, energy efficient, and friendly car handling and power management
  - Standards / interoperability
ICT for FEV – where do we stand?

- 3 calls for proposals (+ 1 upcoming call)
- 80M€ spent so far (out of 120M€ in FP7)
- 25 projects launched (STREPs + 2 CSAs)
- **high success rate**: 40-50%
- **high industrial participation**: 66%
- SME participation 20-30%
25 Ongoing Projects @ DG ConNNECT

Electric Power Trains

Battery Management

Cooperative Systems & V2G Technologies

E/E Architectures & Auxiliaries

Vehicle Dynamics

Safety

Source: Siemens VDO

Source: GM Volt

Source: Fraunhofer IISB

Source: VW/ERPC

Source: Intedis
NEW CALL 2013
GC-ICT-2013.6.7

a) Advanced System Architecture

b) Comprehensive Energy Management

c) CSA - International Dimension + SMEs

40 M€ - STREP & IP + CSA

(39M) (1M)

Closing 4 Dec 2012

opens 10 July 2012
Fully Electric Vehicle - Definition

- electrically-propelled vehicles that provide **significant driving range on purely battery-based power**
- incl. vehicles with **range extenders**
- incl. **small light-weight** passenger and light duty vehicles
Call Scope

PROJECTS SHOULD ADVANCE:

... research, development and integration of major building blocks for the FEV, and for its infrastructure integration
a) Advanced System Architecture

- new or expanded **functionality** of **existing hard and software architectures** for electronics towards radical **cost** reduction, reduced **complexity**, increased **reliability** and **flexibility** and higher energy **efficiency**
- smart subsystems for **energy storage, traction**, and **power control** including e.g. **bi-directional energy transfer, energy recovery** and improved **road handling**
Advanced System Architecture

- re-design of the electric and electronic architecture
- assessing safety, security, reliability and robustness of the electric power train operation including EMC and the development of related international standards
- low power consuming cooperative systems for cost efficient, real-time and safe operation of the vehicle.
a) Advanced System Architecture

- **technical solutions** facilitating
  - recycling and reuse of components
  - standardised, cost-efficient and reproducible testing concepts for vehicles and subsystems
  - ICT solutions for cost efficient, flexible production of small volume, customised (sub-) systems and vehicles driven by the different requirements of different customers
b) Comprehensive Energy Management

- ICT for optimising the energy system inside the FEV and the connectivity of the FEV
  - efficient vehicle-based solutions for grid and road integration taking into account aspects of autonomous driving and integration in cooperative systems
- synergies of electric traction, autonomous driving and cooperative road-vehicle systems for energy-, cost- and time-efficiency as well as safe operation of the vehicle including autonomous positioning or guiding
b) Comprehensive Energy Management

- **ICT-based solutions** for
  - optimised **recharging interfaces and methods** (inductive; continuous; fast; en route)
  - vehicle-based **energy harvesting**
  - management of combinations of **different energy sources and storage**
  - management and optimisation of **energy storage ageing, charge monitoring and certification of energy content**
b) Comprehensive Energy Management

- assessment of related **safety and health** concerns
- **common user interfaces** including **privacy and data security standards** for **flexible subsystems and mobile devices** (smart phones, tablets etc.)
- contribution to **standards** e.g. for dynamic and bi-directional **energy exchange** between the vehicles and the smart grid
c) Coordination and Support Actions

- **business models** for the **deployment** of FEV in public, personal, and freight transport
- pilot **educational and training programmes** and curricula
- stimulation of the **international dimension** and impact for European FEV and the **global presence of SMEs**
- contribution to the setting of **standards**
- Proposals should predominantly address SME activities
IMPACT

- Improved **energy efficiency** and extended **driving range** of the FEV
- Increased **performance** and reduced **costs** of the **electronic components** and the overall **FEV produced in Europe**
- Better **integration** of the FEV in the **smart grids** and cooperative **infrastructure**
- Significant improvement of FEVs' **safety and comfort**
- Strengthened **global competitiveness** of the European **automobile, ICT and battery sectors**; **market penetration of key components** of FEVs
• a), b) IP, STREP: It is expected that **at least one IP is selected per target outcome**

• Individual proposals **may address both target outcomes a) and b)**

• Projects under b) are expected to establish **cooperation and to coordinate with relevant projects** under NMP, Environment, Energy and Transport to jointly support the EGCI PPP
... and to keep in mind

- Vehicle-based ICT solutions
- Strong industrial pull
- Vehicle integration
- Focused projects
- Quantified goals
- High exploitation potential

The views expressed in this slide are the sole responsibility of the author and do not replace under any circumstances the official evaluation criteria.
... some “Tips and tricks”

(Referenced in search engines)

- Markus Korn: “Ingredients for successful Photonics proposals”

- Henri Rajbenbach: “How to write a bad proposal”
Future events

- ICT Proposers Days
  26-27 September in Warsaw

Brochure

- 3rd edition to be published
- ICT for FEV Cordis website:
Contact details

Functional mailbox:
INFSO-GREEN-CAR@ec.europa.eu

EC – DG CONNECT / A4:

- Marc.Boukerche@ec.europa.eu
- Cosmin.Codrea@ec.europa.eu
- Joao.Serrano-Gomes@ec.europa.eu
Thank you !