ICT for Fully Electric Vehicles
3rd call for proposals

Objective GC-ICT-2011.6.8
Target Outcomes e) to h)

PPP Infodays
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European Green Car Initiative
ICT focus: “Fully Electric Vehicle and its infrastructure” 2010-2013

<table>
<thead>
<tr>
<th>Year</th>
<th>ICT</th>
<th>FP7</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>20</td>
<td>105</td>
<td>120 M€</td>
</tr>
<tr>
<td>2011</td>
<td>30</td>
<td>115</td>
<td>145 M€</td>
</tr>
<tr>
<td>2012</td>
<td>30</td>
<td>140</td>
<td>170 M€</td>
</tr>
<tr>
<td>2013</td>
<td>40</td>
<td>140</td>
<td>180 M€</td>
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<tr>
<td>Total</td>
<td>120</td>
<td>500</td>
<td>620 M€</td>
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</tbody>
</table>

- Package of 5 B€: 4 B€ EIB loans, 1 B€ research grants
- Research Roadmap by ETPs: ERTRAC, EPoSS, SMARTGRID
- Benefits of the **fully electric vehicle**:
  - At least **40% energy saving**
  - 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
Results from the **first call**
ICT-2010-10.3
ICT for the Fully Electric Vehicle

Closed 3 Nov 09  
Budget 20 M€

<table>
<thead>
<tr>
<th>Funding scheme</th>
<th># received</th>
<th># above threshold</th>
<th># retained / reserve</th>
</tr>
</thead>
<tbody>
<tr>
<td>STREP</td>
<td>12</td>
<td>6 (50%)</td>
<td>6 / 0</td>
</tr>
<tr>
<td>CSA</td>
<td>3</td>
<td>1 (33%)</td>
<td>1 / 0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>7 (47%)</strong></td>
<td><strong>7 / 0</strong></td>
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</table>

**SUCCESS RATE: 1:2** (in terms of number of proposals & budget)

**Participations in retained proposals: 66% from industry (18% SMEs)**
### Results from the second call
**ICT-2011-6.8**
**ICT for Fully Electric Vehicles**

Closed 2 Dec 2010  
Budget 30 M€

<table>
<thead>
<tr>
<th>Funding scheme</th>
<th># received</th>
<th># above threshold</th>
<th># retained / reserve</th>
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</thead>
<tbody>
<tr>
<td>STREP</td>
<td>17</td>
<td>10 (59%)</td>
<td>8 / 0</td>
</tr>
</tbody>
</table>

- **SUCCESS RATE: 1:2** (in terms of number of proposals & budget)
- Participations in retained proposals: 67% from industry (28% SMEs)
Objective 6.8: ICT for Fully Electric Vehicles
Bi-annual Work-Programme

Target outcomes:

2011 - closed

* Energy / Power Storage Systems
* Architecture for Energy, Communication & Thermal Management,
* Vehicle 2 Grid Interface
* Vehicle Stability Control

2012

* Electric Drive & Electronic Components
* Integration in cooperative transport Infrastructure
* Functional Safety & Durability
* CSA “FEV made in Europe”

Call FP7-2011-ICT-GC  30M€ Streps

Call FP7-2012-ICT-GC  30M€ Streps / CSA (29M€) (1M€)

Closing 1 Dec 2011
e) Electric Drive and Electronic Components

• **Power devices**, converters, inverters and electrical interconnects that **simplify**:
  - packaging and cooling
  - EMI-EMC designs
  - the management of **high voltages, currents and temperatures**
  - **hardware-in-the-loop technologies** for algorithm and component testing.

• Integration between the drive and the motor while **maximising the efficiency of the drive**
  - over a **wide range of operation** of the motor,
  - in relation to **temperature** excursions,
  - **voltage** variability and
  - **fail-safe tested components**.
f) Integration of the FEV in the cooperative transport infrastructure

- **ICT-based interaction** between the driver, the vehicle and the transport and energy infrastructures
- **Trip planning and optimization** including energy use and charging
- Gains in energy efficiency, charging strategies and route optimisation by using traffic information
- **Adaptive strategies**, algorithms and operation modes for the charge and discharge management
  - predict the range and adapt to the energy needs of the user in respect of the properties of vehicle’s battery and the grid
- improving energy efficiency by **automated driving and driver training**
g) Functional Safety and Durability of the FEV

- Requirements and standards related to electromagnetic compatibility and health impacts of electromagnetic fields
- Improvements against low frequency electromagnetic fields as well as on local sensing of currents and electromagnetic fields
- Safe and robust components and subsystems
- In-vehicle active safety
- Integrated driver - vehicle - infrastructure safety
- Protection of vulnerable road users
- Emergency handling procedures
- Test methods
h) Coordination and Support Action “FEV made in Europe”

- **Strategic Research Agenda** for ICT, components and systems,
- **Clustering** of R&D projects
- **Training, education and dissemination** activities
- Investigate **new usages for the FEV**
  - last mile delivery and
  - mobility for the elderly and disabled
- **Standardisation** measures
- **Harmonisation** of national research policy measures and programmes
- Actions for **international collaboration**
- Involving **relevant** electrical vehicle **stakeholders**
Expected Impact

- Improved **energy efficiency** and extended **driving range**
- **Reduced costs** of the electronic components and the overall FEV
- **Mitigated constrains** for the user of the FEV versus the ICE vehicle
- **Seamless integration** of the FEV into the smart grids and the existing infrastructure
- Significant improvement in terms of **safety, comfort** and new information and comfort **services** for FEV users
- Strengthened global **competitiveness** of the European automobile, ICT and battery sectors
Brochure

- 2nd edition already published
- ICT for FEV Cordis website:
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