European Green Cars Initiative: a coordinated approach

Transport Directorate, DG Research and Innovation - European Commission

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A European Economic Recovery Plan

- Adopted by the EC on 26 Nov 2008 and endorsed by the EU Council on 11-12 Dec 2008 *"To support innovation in manufacturing, construction and in the **automobile sector**, which have recently seen **demand plummet** as a result of the **crisis** and which face significant challenges in the transition to the **green economy**…"*
- The **European green car initiative** is one of 3 Public-Private Partnerships (PPPs) proposed, along with:

  - European energy efficient buildings initiative

  - Factories of the future initiative

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Public-Private Partnerships

- **Objective:** to promote the convergence of **public interest** with **industrial** commitment and leadership in determining strategic research activities
- **Quick response:** use existing schemes & structures (**FP7** and **ETPs**)
- **Smart investments** : to improve **competitiveness** of European industries & **environmental protection**
- **Implementation approach: cross-thematic calls** and exploitation of other possibilities

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EGCI: interface with the industry

ERTRAC

EPoSS
European Technology Platform on Smart Systems Integration

SMARTGRIDS

Ad-hoc advisory group

European Commission

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Ad Hoc 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
- give advice for the R&D priorities of FP7 calls

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

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- DG RTD
- DG INFSO
- DG MOVE
- DG ENVI
- DG ENTR
- EIB

ERTRAC

EPoSS
European Technology Platform on Smart Systems Integration

SMARTGRIDS

EIRAC
European Intermodal Research Advisory Council

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European Green Cars Initiative: 3 main streams of actions

- Research activities

  Budget: €1 billion (€500 million from FP7 matched by a similar amount from industry and Member States)

- EIB loans in support of industrial innovation

  Budget: €4 billion (additional amount for 2009-2010)

- Demand size measures & public procurement: e.g. reduction of circulation and registration taxes for cars with low CO2 emission (no budget foreseen)

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Estimated Budget Breakdown for the Green Car Initiative: FP7 contribution

Year	EC funding (€ Mio)
2010	ca. 118
2011	ca. 112
2012	ca. 143
2013	ca. 145
Total	518

	Transport	NMP	Energy	Envir.	ICT
Total (M€)	ca.238	ca.60	ca.75	ca.25	ca.120
%	*44%*	*12%*	*15%*	*5%*	*24%*

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EIB Loans

- Can be used in addition to FP7 grants
- Best tool for R&D or innovation support that involves greater risk
- A new loan instrument (ECTF) has been designed specifically for the transport industry.

European Investment Bank

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EIB Loans: RSFF Risk-Sharing Finance Facility"

- What is RSFF?
  Loans for research, development and innovation.
  A tool for implementing the Green Car Initiative.
- What does it offer?
  Loans of up to 50% of cost of research projects.
- Who can apply?
  Entities of any size and ownership.
- What specific requirements?
  Projects must be in line with FP7 objectives.
- How to apply?
  Contact RDI@eib.org

EIB Loans: ECTF
"European Clean Transport Facility"

- What is ECTF?
  Investment support for research in emission reductions.
  ECTF is <u>in addition to</u> the Green Car Initiative.

- What does it offer?
  Loans of up to 75% of eligible project costs.
  4 billion euro budget per year.

- Who can apply?
  OEMs and Suppliers in the automotive industry.
  Industries in other transport modes (rail, air, shipping)

- What specific requirements?
  Emissions reduction projects only.

- How to apply?
  Contact: RDI@eib.org

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EGCI: research activities

Heavy duty vehicles (Internal combustion engines, technologies for energy optimisation)

Road and urban transport electrification

Logistics, co-modality and Intelligent Transport Systems

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Electrification - Challenges

- **Energy Storage Systems**
  (cost, performance, lifetime, safety)
- **Drive Train Technologies**
  (energy recovery, range extenders)
- **System Integration**
  (energy efficient interplay of components)
- **Grid Integration**
  (charging, metering, renewables, V2G)
- **Safety**
  (crashworthiness, HV, emergency)
- **Transport System Integration**
  (road infrastructures, intermodal use)

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Long Distance Truck - Challenges

A. Vehicle efficiency

B. Driveline efficiency

C. Driver efficiency

A. Vehicle efficiency

1. The safe and intelligent truck (v2v & v2i)
2. Matching vehicle to operation
3. Design dimensions for optimised load capacity
4. Aerodynamics
5. Low Rolling Resistance
6. Energy Management & Efficient Auxiliaries
7. Advanced Materials and Design

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Long Distance Truck - Challenges

B. Driveline efficiency

1. Future Powertrain concepts & complete system integration
2. Advanced Combustion and Aftertreatment
3. Waste Heat Recovery
4. Advanced Powertrain Control
5. Alternative and multi-fuel capabilities
6. Friction
7. Hybrid Powertrain
8. Innovative high efficiency energy conversion

C. Driver Efficiency

1. Driver support systems
2. Freight handling

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Logistics and Co-Modality - Challenges

A. City logistics

B. Green hubs and green corridors

C. Intelligent logistics systems, optimising e-freight

Main targets:

- Improve **load factors** and the balanced use of modes of transport across the European freight transport system.
- Reduce **CO2 emissions** as well as other emissions.
- Remove **congestion**, delay and time loss.

	2015	2020	2025
Transport efficiency: load factors	65%	75%	85%
Environmental footprint: CO2	230 mln ton (-/- 15%)	200 mln ton (-/- 25%)	162 mln ton (-/- 40%)
Negative effects: congestion	6500 km (-/- 15%)	5600 km (-/- 25%)	4500km (-/- 40%)

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State of play/ major achievements

- Calls for proposals launched in 2010 and 2011
- Joint call on electric batteries in 2010 (electro-chemistries) and in 2011 (production and recycling)
- Strategic analysis for calls 2012/2013
- Other Thematic calls (DG INFSO)

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Achievements cont.

- Concentration of the research around three key priorities
- Composition of the industrial advisory group
- An ERANET+ on electro-mobility
- 3 multi-annual road-maps
  - electrification of road transport
  - long distance truck
  - comodality and logistics
- Combining research with industrial exploitation of the results, demand side measures and legislation/standardisation
- Contribution to the Communication on “clean and energy efficient vehicles”

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Call FP7-SST-2010-RTD-1 Green Car projects

Topic	Projects
Electrical machines	2
Integrated electric auxiliaries and on-board systems	2
Optimised thermal engine development and integration	2
Smart storage integration	1
Advanced electric vehicle concepts	6
Implementing Public-Private Partnership in the 'European Green Cars Initiative'	1
Raising awareness of potential job opportunities related to the electrification of road transport	1
	15

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EM SAFETY

- Deals with the assessment, measurement and modelling of potential Electromagnetic Radiation (EM) radiation hazard for EV users
- Coordinated by SINTEF, Norway
- Total EU funding: 2.25M€

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WIDEMOB

- Deals with the development of a small, lightweight urban vehicle with high safety requirements, improved total efficiency and solar panels for zero carbon extended autonomy
- Coordinated by Fiat Research Center
- Total EU funding: 2.6M€

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HI WI

- Deals with the development of an innovative electric motor architecture, based on magnetic nanomaterials, that might improve total efficiency and reduce rare earth content
- Coordinated by the University of Cambridge
- Total EU funding: 2.4M€

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Call FP7-SST-2011-RTD-1
Green Car projects

Topic	Projects
Electric vehicles	
Specific safety issues of electric vehicles	1
Integrated Thermal Management	-
Architectures of Light Duty Vehicles for urban freight transport	3
ERA-Net Plus "Electromobility"	1
Heavy duty vehicles	
Efficient long distance transport - waste heat recovery	1
Efficient long distance transport - future power train concepts (includes advanced combustion and after-treatment)	1
Logistics and Co-modality	
Urban – interurban shipments	1
Integrated intermodal traveller services	1
Capability of improving and exploiting capacity	1
E-freight solutions and supply chain management	1

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Joint call on electrochemical storage - 2010

- 7 projects:
  - 1 project develops advanced metal air batteries, aiming at developing chemistries capable of delivering more than double the range of the best current Lithium cells for a given weight;
  - 4 projects aim to improve the performance of lithium based cells, while improving cost, safety and environmental features (getting away from costly and harmful materials like nickel, cobalt, organic electrolytes…);
  - 2 projects propose to improve the performance of supercapacitors

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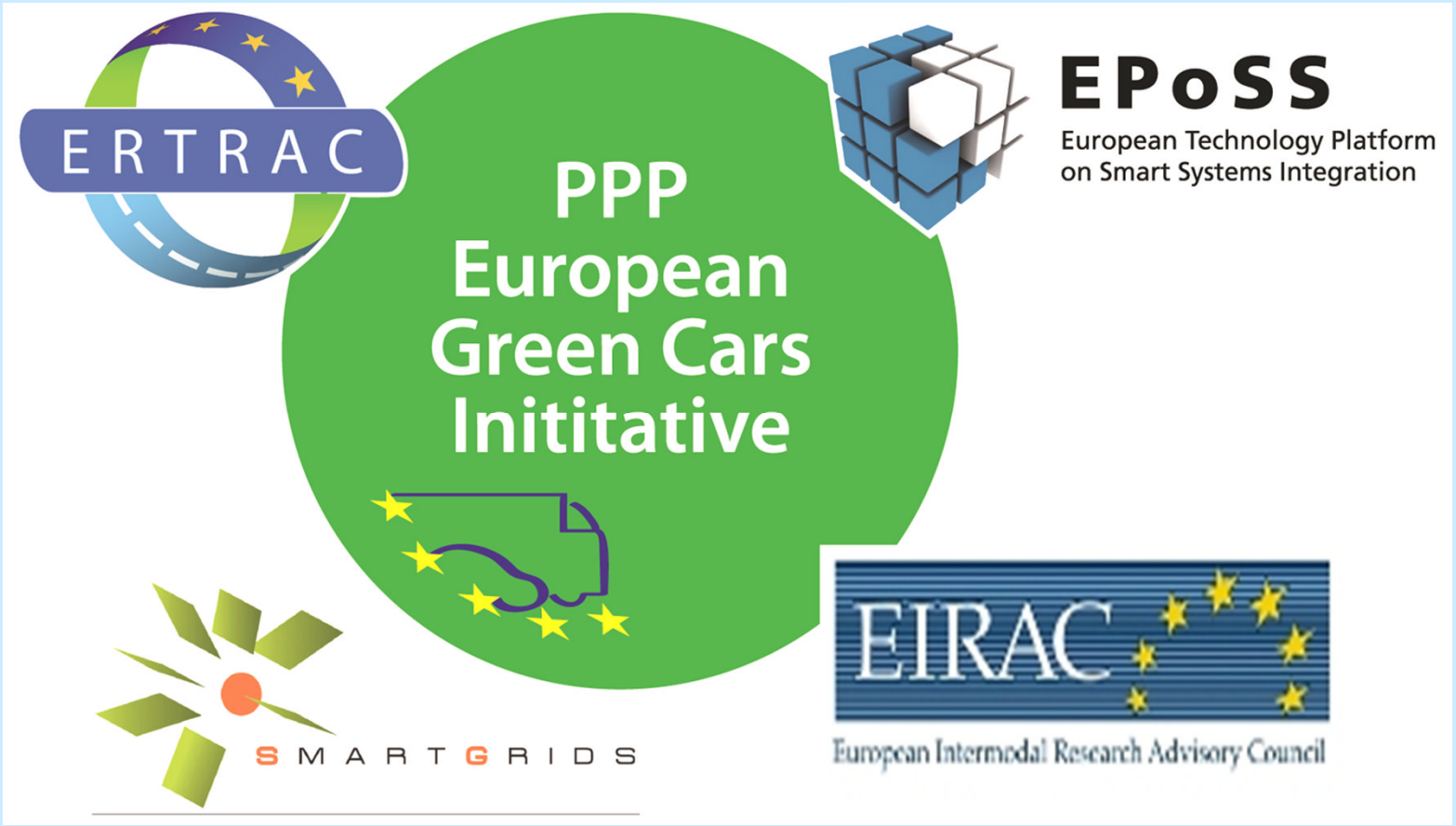
Joint call on electrochemical storage - 2011

- 5 projects:
  - ➔ 4 large-scale projects addressing advanced eco-design and manufacturing processes for batteries and electrical components
  - ➔ 1 project on operational guidance for life cycle assessment studies of the European Green Cars Initiative

www.green-cars-initiative.eu



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Thank you for your attention