



# ICT For a Low Carbon Economy

## Challenge 6

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Workshop on European Smart Grid projects – Brussels – 17 October 2011



European Commission  
Information Society and Media

# Outline



- The Context



- RTD on ICT and Sustainability - Challenge 6



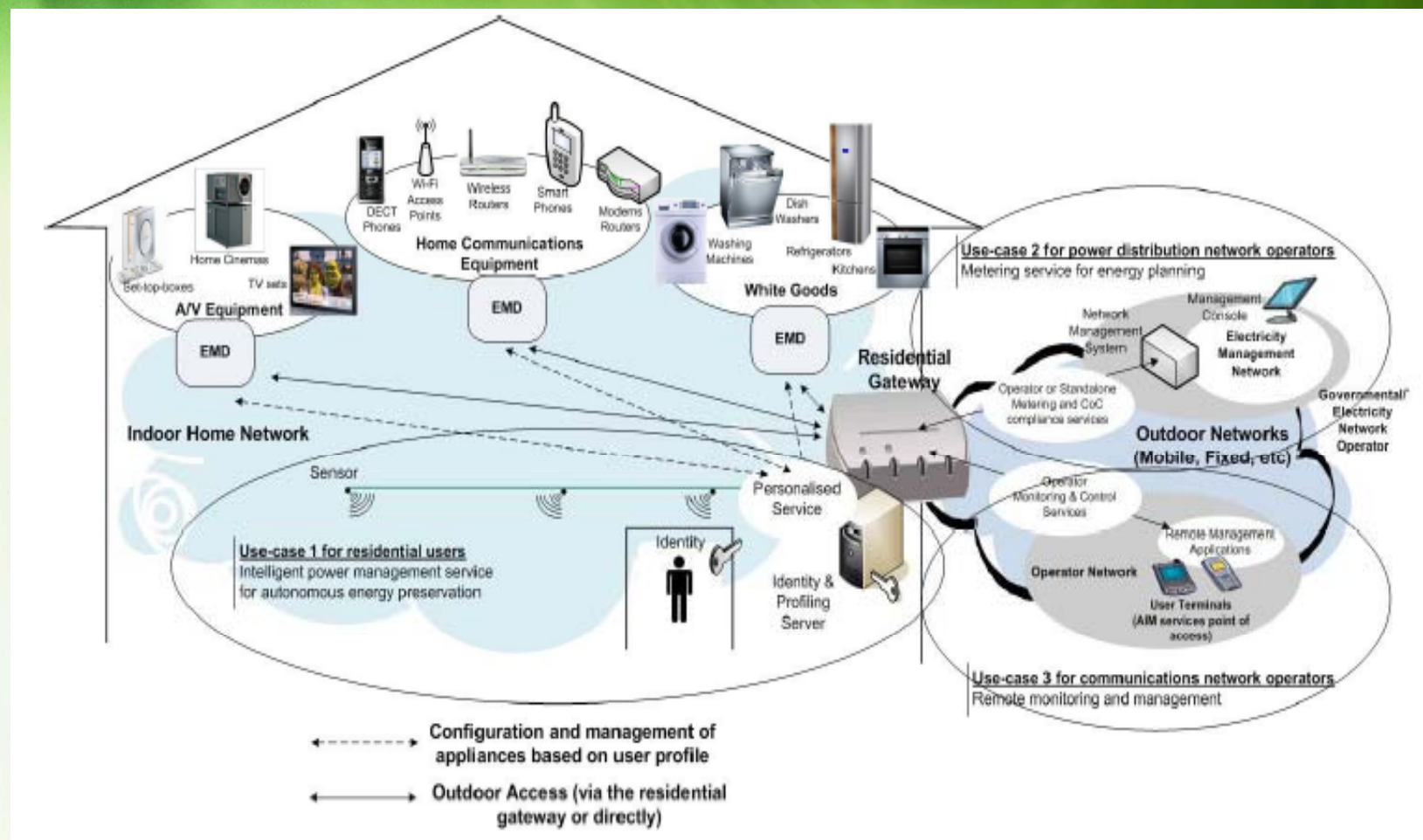
# Transformation of the energy sector

The illustration depicts a comprehensive energy system. At the top left, a satellite is shown with labels 'Satellite' and 'GPS'. The main body of the image shows a landscape with green hills, a blue river, and various energy sources. Four red circles are drawn around specific areas, each with a label: 'Large Power Plants' (top left), 'Virtual Power Plants' (center), 'Micro-grids' (bottom left), and 'Peer-to-peer' (top right). The background includes wind turbines, solar panels, hydroelectric dams, and residential buildings. The overall theme is the transformation of the energy sector into a smart, interconnected network.

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# Management of energy consuming devices

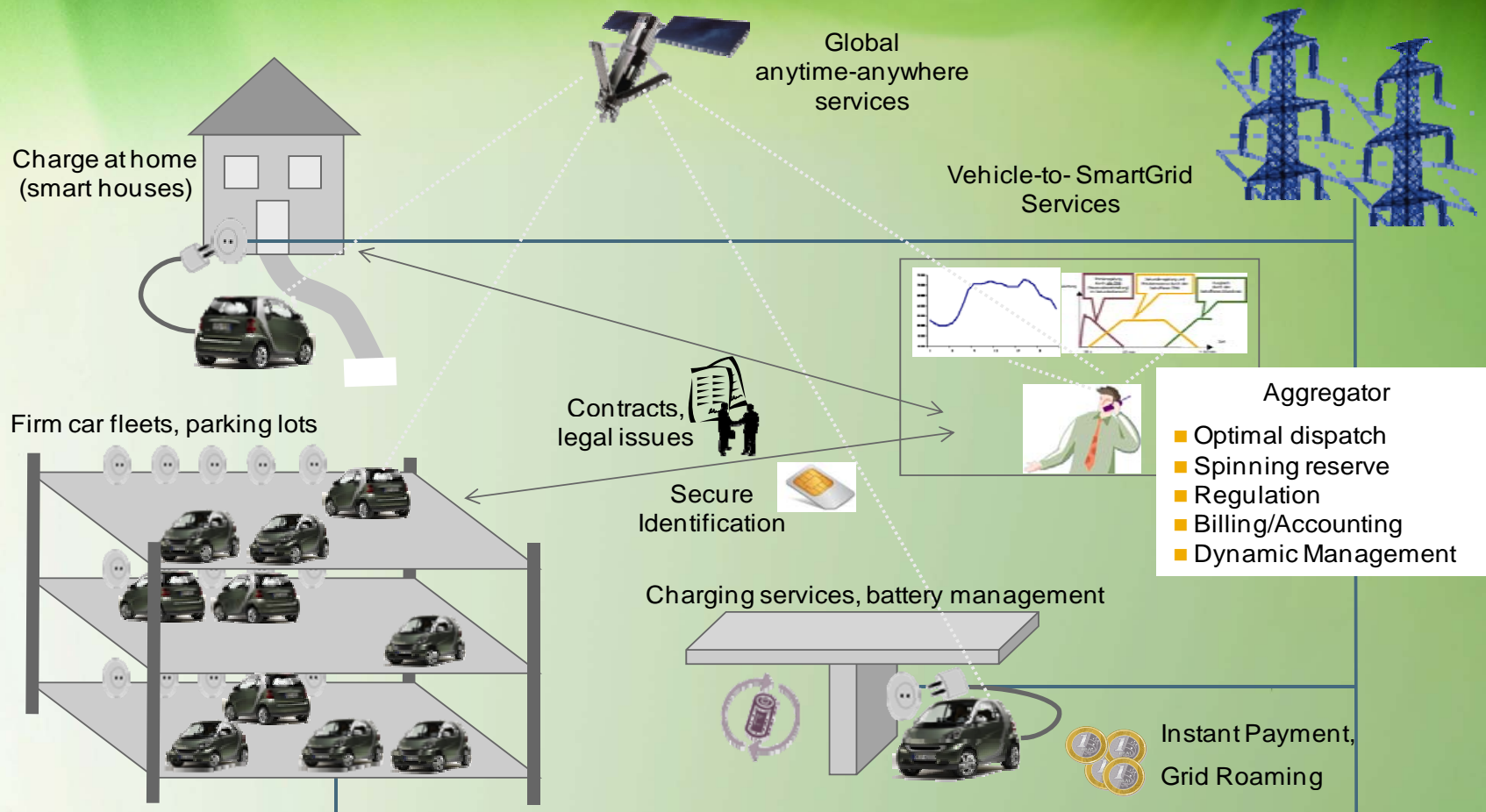


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# Not only clean mobility but also storage of electricity

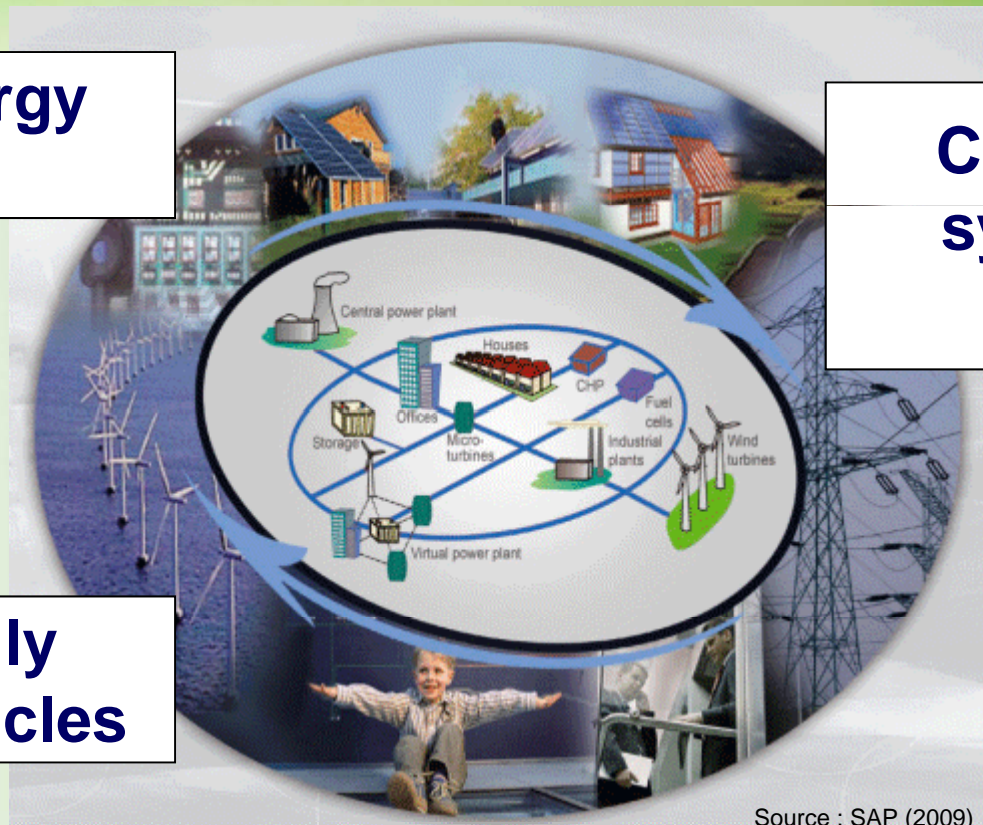


# Research support

**Smart Energy  
Grids**

**Cooperative  
systems for  
mobility**

**ICT for fully  
electric vehicles**



## Objective ICT-2011.6.1 Smart Energy Grids

- Targeted Outcome: ICT systems to assist in the management of the **electricity distribution grids** in an optimized, controlled and secure manner.

STREPS

- a) Strengthening the distribution grid by providing control systems, management and decision support tools that enable the **integration of renewable energy sources**.

STREPS

- b) Advancing **security and reliability**, as well as protection of equipment, fault detection and alert, and self-healing through development of high power electronics.



## Objective ICT-2011.6.1 Smart energy Grids

STREPs

- c) Data management infrastructures to allow electricity production and consumption to be measured, reported and controlled.

STREPs

- d) Home energy controlling hubs that will collect real-time or near real time data on energy consumption data from smart household appliances and enable intelligent automation.

- e) Building consensus on industry-driven open standards to ensure the interoperability of smart grids control and management systems.

CSA





## Objective ICT-2011.6.1 Smart Electricity Grids

- **Projects should focus on one or a combination of the previous points.**
- **Consortia must be compact with partners each making substantial contributions.**
- **In all cases, projects shall include an appropriate validation phase to draw conclusions for future deployment.**



# Objective ICT-2011.6.7 Cooperative Systems for energy efficient and sustainable mobility

## Targeted outcome:

### a) Cooperative Systems for low-carbon multi-modal mobility

- covering cooperative applications and services for energy efficiency and eco-friendly mobility
- Focus should be on road transport but projects can address all transport modes

IP  
STREP

### b) European Wide Service Platform for cooperative system enabled services

- aiming at providing to the drivers a large variety of energy efficiency, mobility, comfort and safety related services

IP  
STREP

### c) Coordination and Support Actions

CSA



# Objective ICT-2011.6.7 Cooperative Systems for energy efficient and sustainable mobility

## a) Cooperative systems for low-carbon multimodal mobility

- Increase the "time horizon", the quality and reliability of information available to the drivers about their immediate environment, the other vehicles and road users
  - enabling improved driving conditions leading to enhanced safety and mobility efficiency
- Co-operative Systems offer increased information about the vehicles, their location and the road conditions to the road operators and infrastructure
  - allowing optimized and safer use of the available road network, and better response to incidents and hazards.



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# Objective ICT-2011.6.7 Cooperative Systems for energy efficient and sustainable mobility

## b) European Wide Service Platform (EWSP) for cooperative system enabled services







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

- 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

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





# Objective 6.8 - Green Car: Call FP7-2012-ICT-GC ICT for the Fully Electric Vehicle

## 2012 Call - Targeted outcomes:



Integration in cooperative transport Infrastructure



Electric Drive & Electronic Components



Functional Safety & durability



CSA "FEV made in Europe"



## Administrative details

**2 December 2011 !**

- **Call deadline: 2/12/2011**

**GC-ICT-2011-6.8 ICT for the Fully Electric Vehicle**

- **Call deadline: 17/01/2012**  
**ICT-2011.6.1 Smart Energy Grids**

**17 January 2012 !**

**ICT-2011-6.7 Cooperative Systems for energy efficient and sustainable mobility**

- **Indicative budget distribution:**

ICT-2011.6.1                      29M€ + 1M€ for CSA

ICT-2011-6.7                      37M€ + 3M€ for CSA

GC-ICT-2011-6.8                      29M€ + 1M€ for CSA



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For reflection:

**« ... the future belongs to  
multinational science »**

George Emil Palade  
Nobel Prize in Medicine in 1974



Thinker of Hamangia (Neolithic Culture)



***Thank you for your attention!***

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Disclaimer: the opinions in this presentation are those of the author and do not commit in any way the European Commission

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