Objective ICT-2011.6.1
Smart Energy Grids

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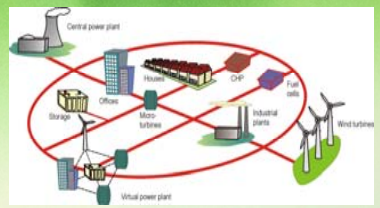
Outline

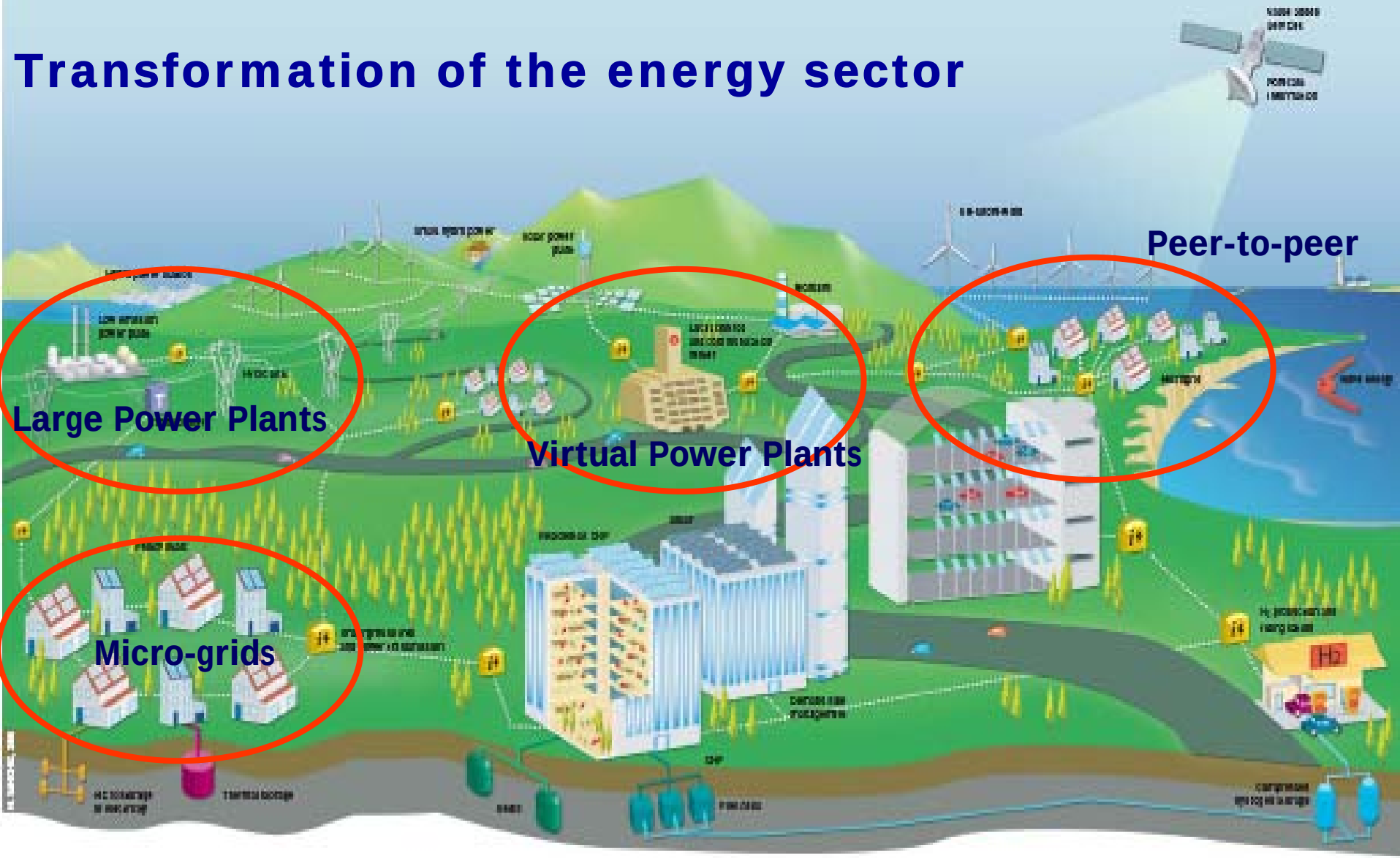


- The Context

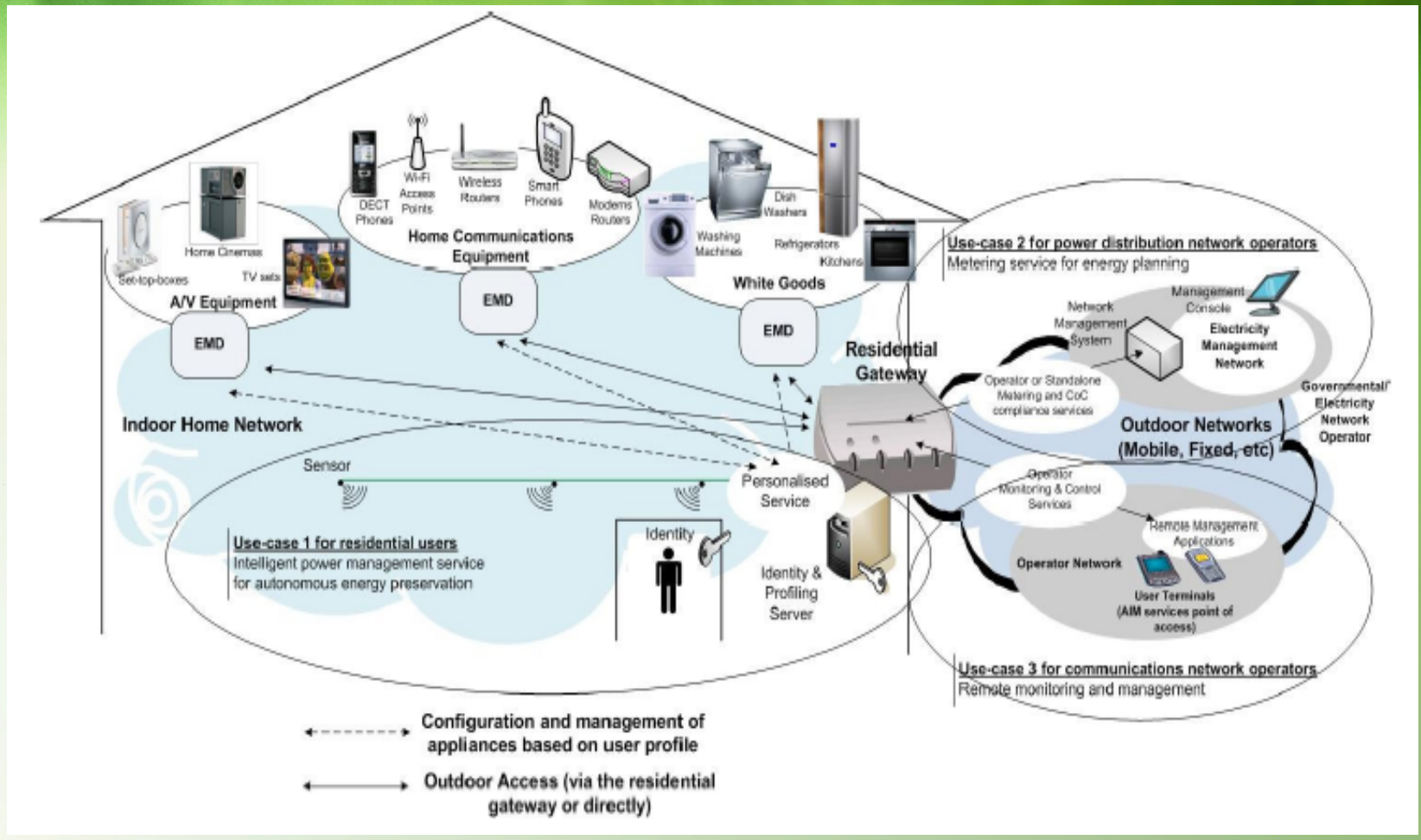
- European policy on Smart Grids

- RTD on Smart Grids in ICT Call 8

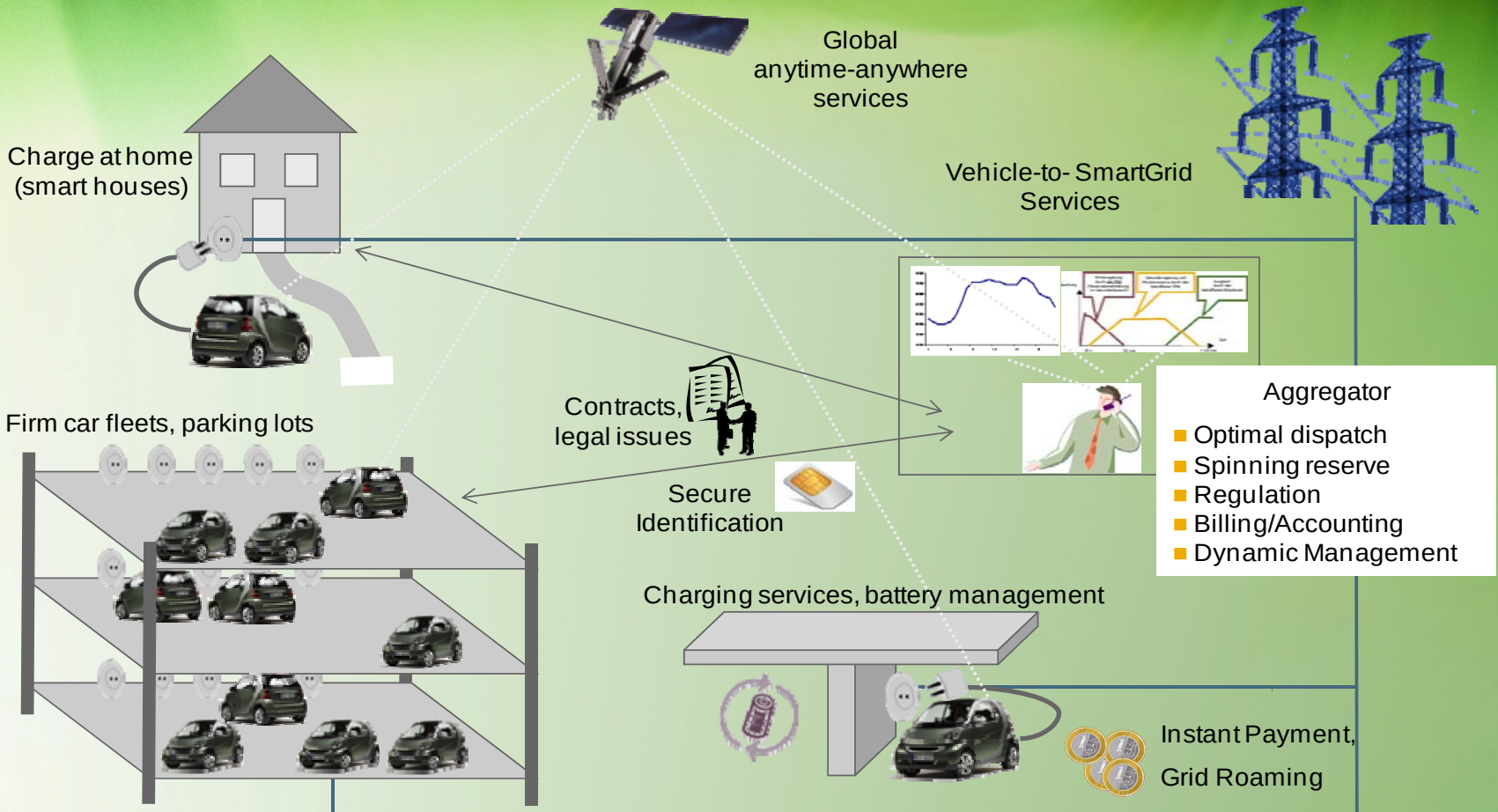
Transformation of the energy sector



Management of energy consuming devices



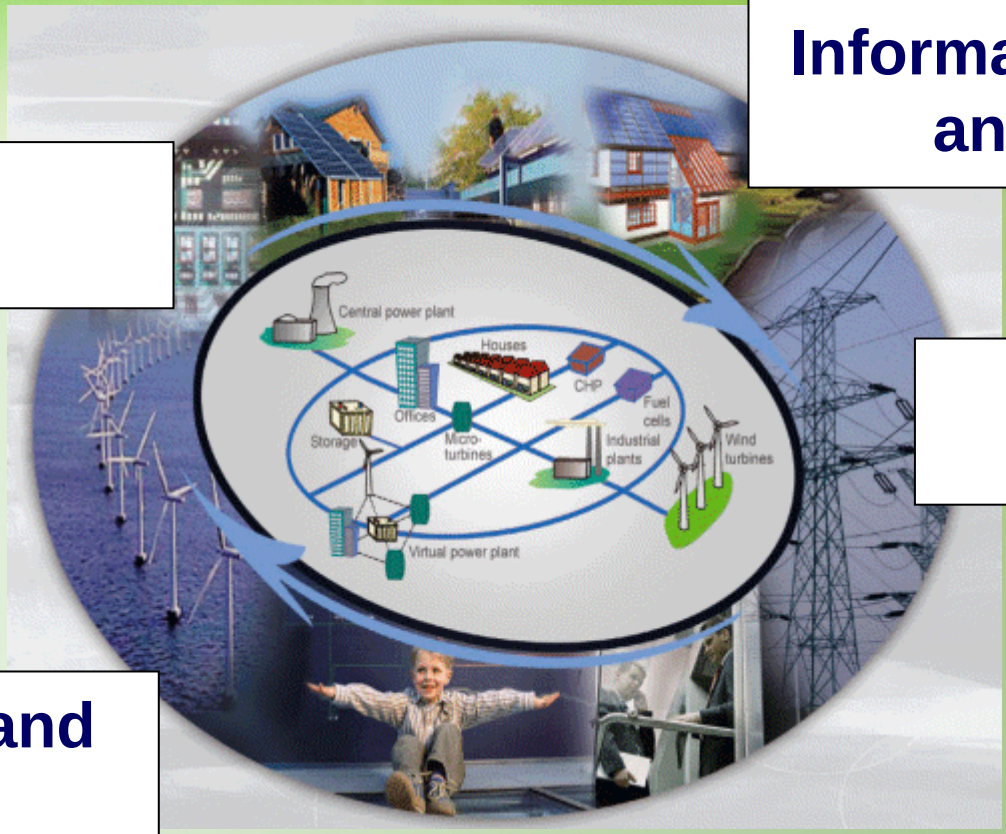
Not only clean mobility but also storage of electricity



POLICIES

Information Society and Media

Energy



Research

Enterprise and Industry

Source : SAP (2009)

ENERGY POLICY

September 2007 - The third legislative energy and gas package
http://ec.europa.eu/energy/gas_electricity/third_legislative_package_en.htm

a truly competitive energy market: consumer choice, fairer prices, cleaner energy and security of supply

October 2009: Task Force Smart Grids
http://ec.europa.eu/energy/gas_electricity/smartgrids/taskforce_en.htm

- **to advice the Commission on policy and regulatory directions at European level and to coordinate the first steps towards the implementation of Smart Grids under the provision of the Third Energy Package;**
- **3 expert groups: Functionalities, Data and Roles/responsibilities**
- **initial duration of the Task Force is 20 months, till May 2011;**

April 2011: Smart Grids Communication

RESEARCH POLICY

The Strategic Energy Technology Plan (SET Plan)

2007: launched by DG Research and DG Energy,

October 2009: communication on "investing on low-carbon technologies“

http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm

- **Global Governance: the SET Plan Steering Group of representatives of member states and the European Commission;**
- **Industrial initiatives are public-private partnerships based on agreed roadmaps and implementation plans, where activities are implemented through joint programming between member states and the Commission**
- **The governance of each industrial initiative is implemented by a European industrial initiative team.**
- **The European Electricity Grids Initiative (EEGI) was agreed and launched on 3 June 2010 in Madrid, together with the initiatives on wind, solar and carbon capture and storage (www.smartgrids.eu).**

RESEARCH POLICY (3)

- **The Research Alliance, an alliance of major national energy research laboratories that have agreed to join forces to propose joint programming of their activities in key areas of interest for the SET Plan;**
  http://www.eera-set.eu/

- **The KIC InnoEnergy is composed by 6 "Collocation Centres" where Sweden is the centre for electricity grids;**
  http://eit.europa.eu/kics1/kic-innoenergy.html

Enterprise and Industry Policy

- CEN, CENELEC and ETSI have set up a joint group to coordinate activities on the mandates in the field of Energy:

- M/441: Smart metering (ongoing)
- M/468: Electrical vehicles chargers (ongoing)
- M/490: Smart grid- Launched 1st March 2011

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ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/ict-wp-2011-12_en.pdf

- **Targeted Outcome: Intelligent systems and integrated communication infrastructure that can assist in the management of the electricity distribution grids in an optimized, controlled and secure manner.**

- **Key research challenges to be addressed:**

a) Strengthening the distribution grid by providing control systems, management and decision support tools that enable the integration of renewable energy sources, both large scale production (e.g. wind and solar farms) and massively distributed production (e.g. residential and tertiary buildings).

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- **Key research challenges to be addressed (continuation):**

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

c) Data management infrastructures to allow electricity production and consumption to be measured, reported and controlled (and eventually credited or billed).

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.

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- **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.**

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- **Expected Impact:**

- **Connection and operation of distributed and intermittent generators of diverse technologies enabled by ICT.**

- **Demand side and demand response management enabled by innovative decision support systems.**

- **Producers and consumers allowed to play a novel role in the management of their energy consumption.**

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- **Expected Impact (continuation):**

- **Quantifiable and significant reductions of energy consumption in the electricity distribution grid, leading to reduction of the overall environmental impact of electricity grids.**

- **Enhanced levels of reliability and security of electricity supply.**

- **For e), reinforced collaboration between the European electricity suppliers and distributors, energy equipment manufacturers of all sizes, and the ICT sector.**

Proposals should address the previous points only if applicable

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- **Funding schemes: STREP & CSA**
- **Indicative budget distribution:**

  - STREP: EUR 29 million
  - CSA: EUR 1 million

- **Call: FP7-ICT-2011-8**
- **Date of publication: 26/07/2011**
- **Call deadline: 17/01/2012**

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