



European Level Activities on Smart Grids: A European Commission Perspective

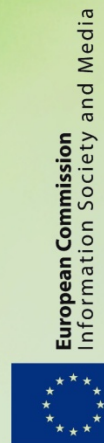
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ICT for Sustainable Growth

European Commission

Information Society and Media Directorate-General

IEEE PES Conference on Innovative Smart Grid Technologies Europe - October 11-13, 2010, Gothenburg, Sweden



European SmartGrids will be the Intelligent Value Chain that will optimize, control, secure and sustain the procurement and supply of Cleaner Distributed Energy anticipating increased demand till 2050

Generation



Transmission



Distribution



Metering



Customer



Distributed Energy Supply Chain Optimization

European SmartGrids is the missing piece to making the European 20/20/20 Energy goals a reality

Source : SAP (2009)



EUROPEAN COMMISSION

Policies

External relations

General services

Internal services



POLICIES

....

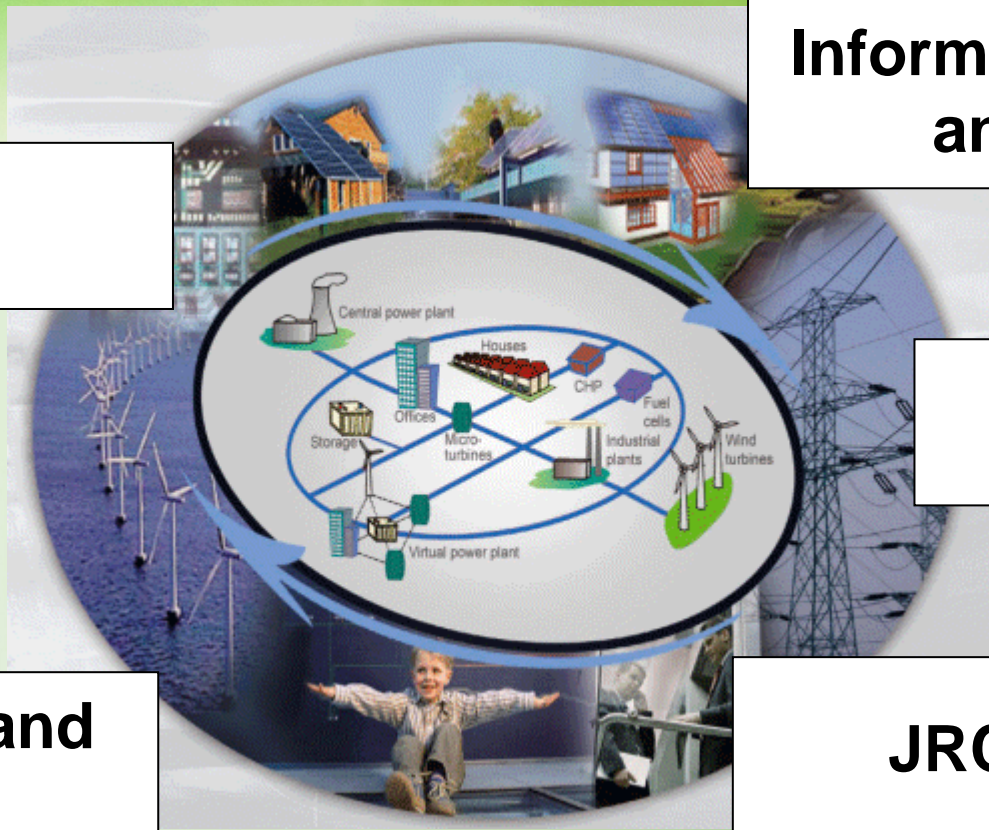
Energy

**Information Society
and Media**

Research

**Enterprise and
Industry**

JRC



Source : SAP (2009)



Directorate – General for Energy

http://ec.europa.eu/dgs/energy/index_en.htm

- **Task Force Smart Grids**
 - 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;
 - initial duration of the Task Force is 20 months, till May 2011;
 - **TASK 1. Produce a common vision in conjunction with institutional actors and key stakeholders for the implementation of Smart Grids;**
 - **TASK 2. Identify the strategic decisions and regulatory recommendations for the EU-wide implementation of Smart Grids;**
 - **TASK 3. Produce a strategic roadmap for the implementation of Smart Grids and Smart Meters into the European internal market.**



Directorate – General for Energy

http://ec.europa.eu/dgs/energy/index_en.htm

- **Trans-European networks (TEN)- area of energy infrastructures (TEN-E)**

« Secure energy supply and good interconnections will be crucial to power future growth. One of the next great European projects is to give Europe a new European supergrid for electricity and gas... »

(From President Barroso's political guidelines for the 2010-2015 Commission)



Directorate – General for Energy

http://ec.europa.eu/dgs/energy/index_en.htm

(Trans-European networks (TEN)- area of energy infrastructures (TEN-E))

- **The 2010 annual programme for grants in the field of trans-European networks (TEN) - area of energy infrastructures (TEN-E) - will encourage the effective operation and development of the internal market, reinforce the security of supplies and the diversification of energy suppliers and routes, facilitate the development and reduce the isolation of less-favoured regions, contribute to sustainable development and protection of the environment, inter alia by involving renewable energies;**
- **Will promote the interconnection, interoperability and development of trans-European energy networks and access to such networks in accordance with current EU law;**



Directorate – General for Energy

http://ec.europa.eu/dgs/energy/index_en.htm

(Trans-European networks (TEN)- area of energy infrastructures (TEN-E))

- Particular attention shall be given to projects of European interest that contribute to:
 - a) the development of the network to strengthen economic and social cohesion by reducing the isolation of the less-favoured and island regions of the Union;
 - b) the optimisation of the capacity of the network and the integration of the internal energy market, in particular concerning cross-border section;
 - c) the security of energy supply, diversification of sources of energy supplies and, in particular, interconnections with third countries;



Directorate – General for Energy

http://ec.europa.eu/dgs/energy/index_en.htm

(Trans-European networks (TEN)- area of energy infrastructures (TEN-E))

- d) the connection of renewable energy resources; and
- e) the safety, reliability and interoperability of interconnected networks.

EU budget allocation available in 2010: EUR 20,760,000

http://ec.europa.eu/energy/infrastructure/grants/doc/2010/2010_ten_e_call_comm_decision_en.pdf



Directorate – General for Energy

http://ec.europa.eu/dgs/energy/index_en.htm

- **Baltic Energy Market Interconnection Plan**
 - **Will encompass gas, electricity and storage, identifying the key infrastructures necessary for the interconnection of the Baltic region with the rest of the EU and a secure and diverse energy supply for the region.**
 - **BEMIP Action Plan endorsed by the MS concerned (SE, FI, EE, LV, LT, PL, DE, DK and as an observer, NO) in a Memorandum of Understanding signed on 17 June 2009.**
 - **Several of the proposed BEMIP infrastructure projects are part of the European Economic Recovery Programme (EERP).**

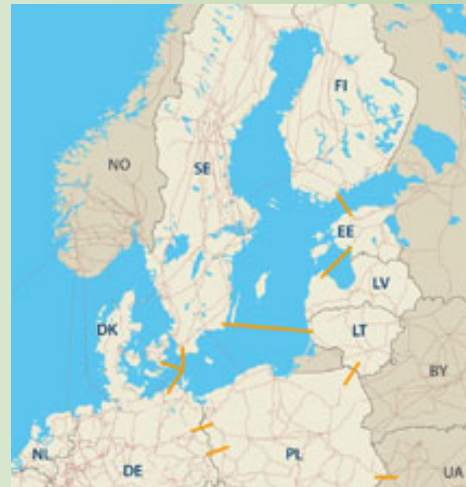


Directorate – General for Energy

http://ec.europa.eu/dgs/energy/index_en.htm

(Baltic Energy Market Interconnection Plan)

- **This potentially means more than half a billion euros as additional support for the energy infrastructure projects in this region. This should be seen in complement to other existing financial support sources, such as cohesion fund, TEN-E programme etc.**



http://ec.europa.eu/energy/infrastructure/bemip_en.htm



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http://ec.europa.eu/dgs/energy/index_en.htm

Other funding sources for TEN – “Marguerite” Fund a 2020 European equity fund for energy, climate change and infrastructure – EIB

- is a pan-European equity fund which aims to act as a catalyst for infrastructure investments implementing key EU policies in the areas of climate change, energy security, and trans-European networks;
- initial capital of EUR 600 million; the Fund volume is targeted at EUR 1.5 billion for final closing in 2011.



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http://ec.europa.eu/dgs/energy/index_en.htm

(Other funding sources for TEN – “Marguerite” Fund – EIB)

- The Fund will therefore focus on greenfield investments within its target sectors, namely:
 - (i) Transport, in particular trans-European transport networks (TEN-T),
 - (ii) Energy, in particular trans-European energy networks (TEN-E), and
 - (iii) Renewable Energies, including sustainable energy production, clean transport infrastructure, energy distribution and systems for hybrid transport (e.g. wind, solar (CSP and PV), geothermal, biomass, biogas, hydro, waste-to-energy projects).



Research Directorate-General

http://ec.europa.eu/dgs/research/index_en.html

- **The Strategic Energy Technology Plan (SET Plan) was jointly launched by DG Research and DG Energy in 2007, and later complemented by the communication on "investing on low-carbon technologies" in October 2009;**
- **SET-Plan is the technology pillar of the EU's energy and climate policies;**
- **The governance of the SET Plan is assured by a 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 (jointly managed by DG Research and DG Energy).**
- **The governance of each industrial initiative is implemented by a European industrial initiative team. Teams for the first 4 initiatives have been nominated.**
- **The European Electricity Grids Initiative (EEGI) - lead is with DG Research - 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 Directorate-General

http://ec.europa.eu/dgs/research/index_en.html

- **Joint Programmes** were also launched in Madrid in June 2010 on Wind, Photovoltaics, Smart Grids, and Geothermal energy;
- **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;
- DG Research recently organised a meeting between the EEGI, the EERA Smart Grids, the smartgrids platform and the newly launched European Institute of Technology KIC Innoenergy to exchange plans and to promote alignment of plans;
- The KIC Innoenergy is composed by 6 "Colocation Centres" where Sweden is the centre for electricity grids;
- The next SET Plan conference is organised by the Belgian presidency in Brussels on 15-16 November 2010.



Information Society and Media Directorate-General

http://ec.europa.eu/dgs/information_society/index_en.htm

- **The role of the ICT sector in smart grids has been summarised in a report issued by the Commission in July 2009 entitled "[ICT for a Low Carbon Economy. Smart Electricity Distribution Networks](http://ec.europa.eu/information_society/activities/sustainable_growth/docs/sb_publications/pub_smart_edn_web.pdf)".** (http://ec.europa.eu/information_society/activities/sustainable_growth/docs/sb_publications/pub_smart_edn_web.pdf);
- **DG INFSO is just on the way to convene a new group of experts in the area of ICT resilience of smart grids;**
- **Task Force on Interdisciplinary Research Activities applicable to the Future Internet - draft report under consultation.**



Information Society and Media Directorate-General

http://ec.europa.eu/dgs/information_society/index_en.htm

- **Future Internet PPP:**
 - A Future Internet Public Private Partnership (FI-PPP) focuses on the development of innovative open network and service platforms with generic common enablers serving a multiplicity of demand-driven use cases in "smart applications".
 - The PPP includes a strong experimentation and validation dimension and targets early results with a medium-term outlook before 2015, i.e. a ~5 years horizon.



Information Society and Media Directorate-General

http://ec.europa.eu/dgs/information_society/index_en.htm

The aims of the FI-PPP are:

- to increase the effectiveness of business processes and of the operation of infrastructures supporting applications in sectors such as transport, health, or energy;
- to derive possible innovative business models in these sectors, strengthening the competitive position of European industry in domains like telecommunication, mobile devices, software and service industries, content providers and media.



Directorate General Enterprise and Industry

http://ec.europa.eu/enterprise/index_en.htm

- **Responsible for two of the seven Europe 2020 flagship initiatives:**
 - **"An industrial policy for the globalisation era" to improve the business environment, notably for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally;**
 - **"Innovation Union" to improve framework conditions and access to finance for research;**
- **Management of standardisation mandates: mechanism by which the Commission requests the European Standards Organisations (ESOs) to develop standards in support of European policies and legislation**



Directorate General Enterprise and Industry

http://ec.europa.eu/enterprise/index_en.htm

- **CEN, CENELEC and ETSI have set up a joint group to prepare activities in view of a mandate planned by the end of the year on Smart Grids, in line with the Commission Smart Grids Task Force.**

- **Other relevant mandates in the field of Energy:**
 - **M/462: Efficient energy use in ICT networks (just launched)**
 - **M/441: Smart metering (ongoing)**

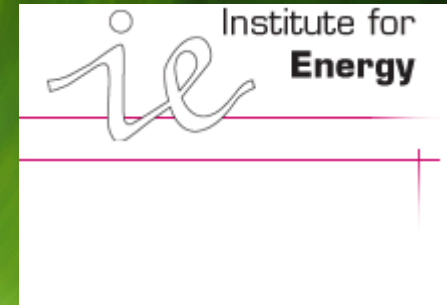
- **As such, this group is designed to initiate a European collective view of the general strategy for improvement of energy efficiency standardisation and to set an agreement between all CEN/CENELEC members on the objectives to achieve.**





Joint Research Centre

<http://ie.jrc.ec.europa.eu/>



Energy Systems Evaluation

- provides scientific and technical support to customer DGs for the conception, development, implementation and monitoring of EC policies related to energy and energy research;
- implementation and coordination of the Information System of the Strategic Energy Technology Plan (SETIS);
- contributes to the implementation of the SET-Plan through its participation in the formulation of detailed implementation plans and monitoring framework of European Industrial Initiatives and its close collaboration with the European Energy Research Alliance (EERA) and international organisations, thereby maximising synergies with the European energy research establishments.





EC Funding opportunities

- **On the research side**, the European Commission funds a whole series of projects dealing with different angles of the deployment of smart grid technologies under the 7th research and technological development framework programme (FP7).
- **FP7 future calls:**
 - I. **WORK PROGRAMME 2011 COOPERATION - THEME 3 - ICT – INFORMATION AND COMMUNICATIONS TECHNOLOGIES**
(ftp://ftp.cordis.europa.eu/pub/fp7/docs/wp/cooperation/ict/c-wp-201101_en.pdf)
 - II. **WORK PROGRAMME 2011 COOPERATION - THEME 5 - ENERGY**
(ftp://ftp.cordis.europa.eu/pub/fp7/docs/wp/cooperation/energy/e-wp-201101_en.pdf)



EC Funding opportunities

I. ICT

Objective ICT-2011.6.1 Smart Energy Grids

- **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.**
- **Funding schemes: STREP & CSA**
- **Indicative budget distribution:**
 - **STREP: EUR 29 million**
 - **CSA: EUR 1 million**
- **Call: FP7-ICT-2011-8**



Objective FI.ICT- 011.1.7

Objective FI.ICT- 011.1.8

Objective FI.ICT- 011.1.9

Objective FI.ICT- 011.1.10

EC Funding opportunities

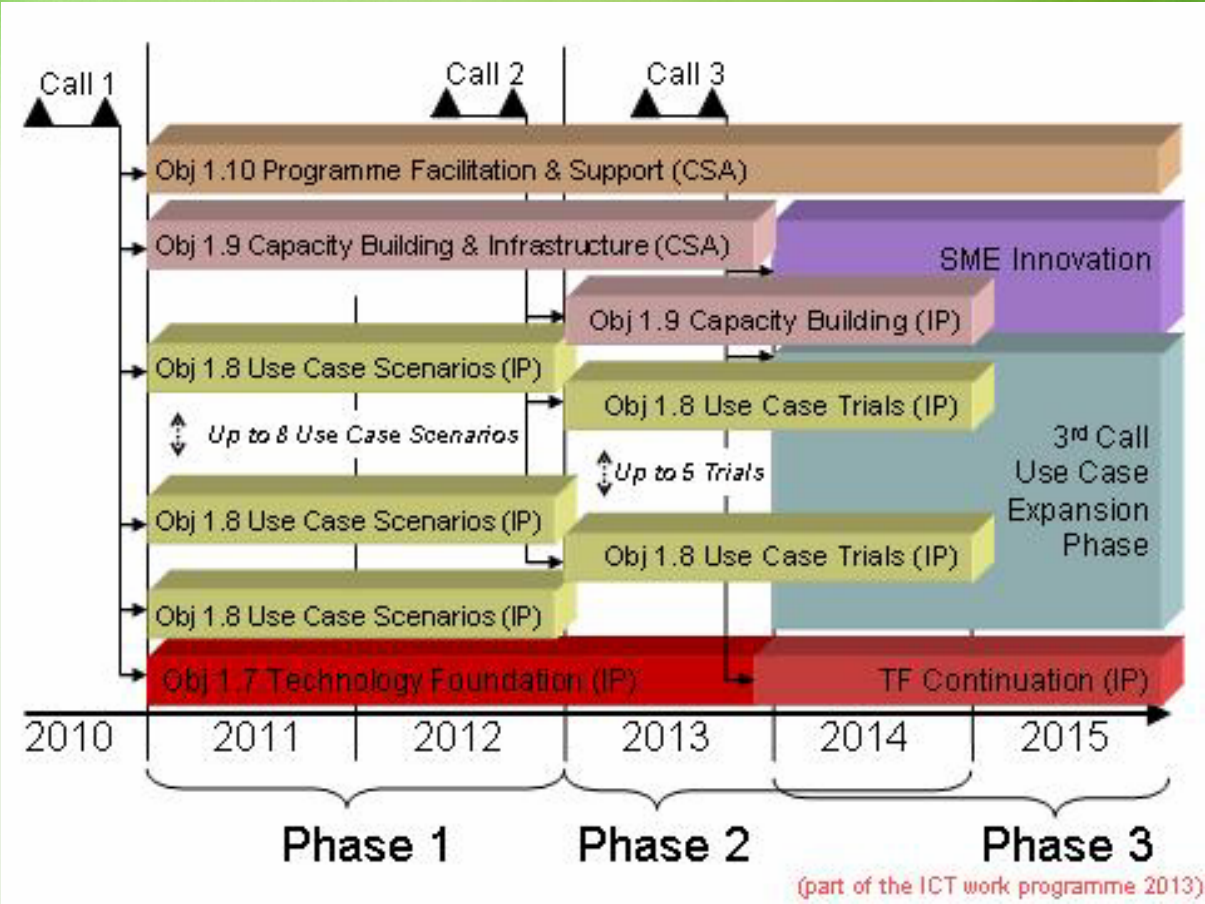
Future Internet PPP

	GC, EEB, FoF PPP 2011	Future Internet PPP 2011	EU-Russia coord. Call	EU-Brazil coord. Call	FET Flags. Initiat.	Call 7	SME Initiat.	FET Open
Date of publication	20/7/10	20/7/10	20/7/10	28/9/10	20/7/10	28/9/10	1/2/11	20/7/10
Call deadline	2/12/10	2/12/10	14/9/10	18/1/11	2/12/10	18/1/11	28/4/11 (short) 28/9/11 (full)	Cont. to 31/12/12
1. Pervasive and Trusted Network and Service Infrastructure								
1.1 Future Networks								
1.2 Cloud Computing, Internet of Services and Advanced Software Engineering								
1.3 Internet-connected Objects						30		
1.4 Trustworthy ICT								
1.5 Networked Media & Search Systems						70		
1.6 Future Internet Research and Experimentation (FIRE)						20		
1.7 PPP FI: Technology foundation - Future Internet Core Platform		41						
1.8 PPP FI: Use Case scenarios and early trials		40						
1.9 PPP FI: Capacity Building and Infrastructure Support		3						
1.10 PPP FI: Programme Facilitation and Support		6						
2. Cognitive Systems and Robotics								
2.1 Cognitive Systems and Robotics						73		
3. Alternative Paths to Components and Systems								
3.1 Very advanced nanoelectronic components: design, engineering, technology and manufacturability								



EC Funding opportunities

FI-PPP



EC Funding opportunities

II. Energy

Call title: Energy Call Part 1

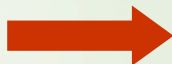
- **Call identifier:** FP7-ENERGY-2011-1
- **Date of publication:** 20th July 2010 ¹⁴
- **Deadline:** 16 November 2010 at 17.00.00, (Brussels local time)¹⁵
- **Indicative budget ¹⁶:** EUR 74 million from the 2011 budget¹⁷

All budgetary figures given in this work programme are indicative. Following the evaluation of proposals the final budget awarded to actions implemented through calls for proposals may vary:

- by up to 10% of the total value of the indicated budget for this call; and
- the repartition of the sub-budgets awarded within this call, following the evaluation of projects, may also vary by up to 10% of the total value of the indicated budget.

- **Indicative Budget**

	Indicative budget
ENERGY.2.5: CONCENTRATED SOLAR POWER	EUR 18 million
ENERGY 4.: RENEWABLES FOR HEATING	
ENERGY 2.3: WIND	EUR 5 million
ENERGY.3: RENEWABLE FUEL PRODUCTION	EUR 15 million
ENERGY.5: CO ₂ CAPTURE AND STORAGE TECHNOLOGIES FOR ZERO EMISSION POWER GENERATION	EUR 16 million
ENERGY.6: CLEAN COAL TECHNOLOGIES	
ENERGY.7: SMART ENERGY NETWORKS	EUR 20 million



EC Funding opportunities

II. Energy

Call title: Energy Call part 2

- Call identifier: FP7-ENERGY-2011-2
- Date of publication: 20th July 2010¹⁹
- Deadline: 07 April 2011 at 17.00.00, Brussels local time²⁰
- Indicative budget: EUR 137 million ²¹

Activity	Indicative Amount (EUR million)
ACTIVITY ENERGY.2: RENEWABLE ELECTRICITY GENERATION	52
ACTIVITY ENERGY.4: RENEWABLES FOR HEATING AND COOLING	20
CROSS-CUTTING ACTIONS BETWEEN ACTIVITY 5 and 6.	20
ACTIVITY ENERGY.7: SMART ENERGY NETWORKS	30
ACTIVITY ENERGY.8 ENERGY EFFICIENCY	15



ICT Proposers' Day 2011 19 - 20 May, Budapest Networking for European ICT R&D



- Aim of the event:
to prepare for Calls 8 and 9 (together >1 billion €)
 - by networking and partnerships building
 - by first-hand information from >100 EC officials

- Structure:

- thematic sessions with presentations of proposal ideas
- information stands & meeting points

- Registration:

free of charge, open from January 2011

<http://ec.europa.eu/ictproposersday>



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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