

# EU-level actions Active Distribution Networks

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# Future Electricity Grids

- **Recent European Energy Policies**
- **Investing in the SET Plan; Industrial Initiatives**
- **EU RTD Activities in the Framework Programme**

“One of the next great European projects is to give Europe a new **European supergrid for electricity and gas.**”

This will help to meet our growing needs for energy in smarter ways, so that we have secure and stable supplies of energy which meet our climate change goals.”

*Political guidelines for the next Commission,  
3 September 2009*



# Recent EU Energy Policies

- **Energy Efficiency Directive (2006)**
- **An Energy Policy for Europe (Spring 2007 European Council)**
  - -20% Greenhouse Gases, 20% Efficiency, 20% Renewables
  - 2050 objectives
- **European Strategic Energy Technologies Plan – SET Plan (November 2007)**
- **Climate and Energy Package (2008-2009)**
  - Promotion of Energy from Renewable Sources
  - Greenhouse Gases Emission Allowances Trading System
  - Emission Performance Standards for New Passenger Cars
- **Recovery Package (2008-2009)**
- **3rd Internal Energy Market Package (2009)**
- **Investing in the SET Plan (October 2009)**

# EU Actions in support of innovation in Electricity Grids

- **Legislative actions**
- **SET Plan**
  - **Industrial Initiatives**
  - **Research Alliance**
- **RTD Under Framework Programme 7**
  - **Cooperation programme – Theme 5: Energy**
  - **Cooperation programme – Theme 4: ICT  
ICT for Energy Efficiency**
  - **Other programmes: Ideas, People, Capacities**
- **Further actions**
  - **Standardisation**
  - **European Institute of Technology**
  - **International cooperation**

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# SET Plan

## European Electricity Grids Initiative

- Grids central: connecting low-C sources and uses
- Industry-led, public-public-private partnership
- Proposal from 7 DSO + 7 TSO
- R&D and Demonstration Plan to prepare rollout
- Focus on system and use aspects, no new technology
- Not a closed club!
- Workshops with regulators – Florence
- Interactions with other stakeholders – Platform



# European Electricity Grids Initiative

## Scope

**SMART GRIDS**  
Functional level

### **Level 5: Smart Customers**

Customers aware and actively participating

### **Level 4: Smart Energy Management**

Management of end-use energy efficiency, aggregation, retail

### **Level 3: Smart Integration**

Renewable energy, DG, electric vehicles, electricity storage and aggregation

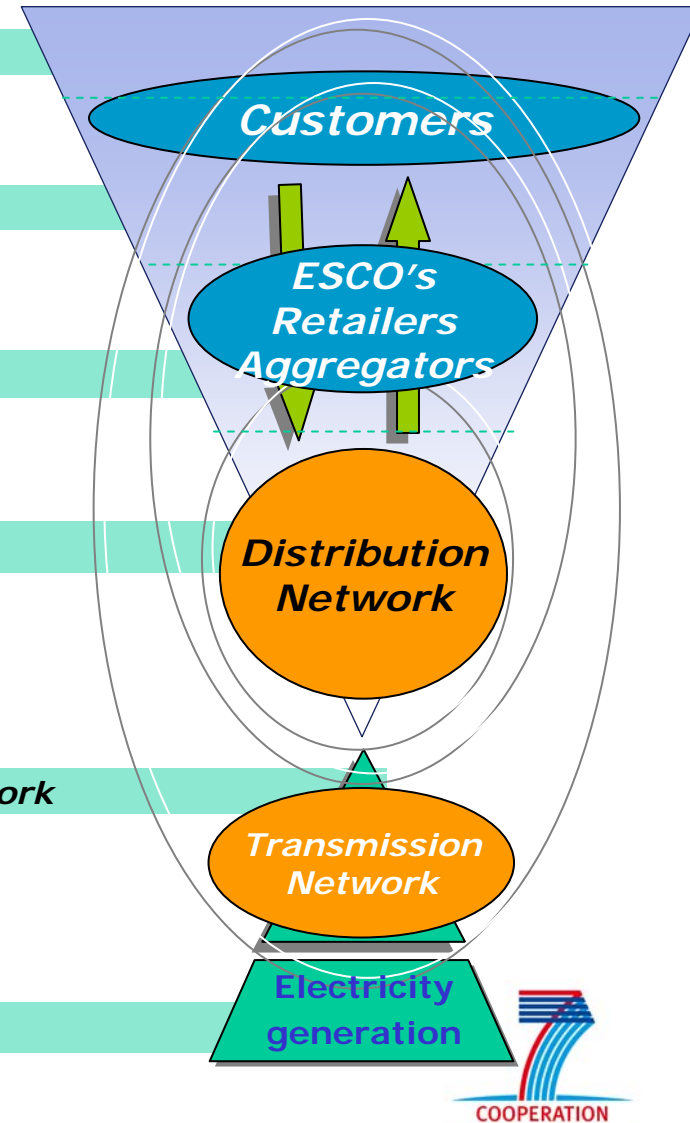
### **Level 2: Smart network and processes**

More automated MV distribution networks with self healing capabilities.  
Monitored and controlled LV networks  
IT supported monitoring process

### **Level 1: Smart Pan-European Transmission network**

Innovative transmission grid architectures  
State-of-the-art transmission/power technologies  
Novel monitoring, control and storage methodologies  
Shared electricity market simulators

### **Level 0: New generation technologies**





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# Electricity RTD in EU's 6<sup>th</sup> Framework Programme

- **Projects in Sustainable Energy Systems  
(total EC funding 53M€)**
  - EU-DEEP, FENIX, MORE MICROGRIDS,
  - DER-LAB, NIGHT WIND, EWIS, GROW-DERS, INTEGRAL
  - ...
- **Launch of SmartGrids European Technology Platform**

# Electricity RTD in EU's 6<sup>th</sup> Framework Programme

## ➤ Results:

- Wide agreement of the benefits of deploying Smart Grids
- Elements of solutions to integrate distributed generation
- Next step: larger demonstrations to validate system integration

# Electricity RTD in EU's 7<sup>th</sup> Framework Programme

- **FP 7 RTD Projects started or to be started in 2008/2009:**
  - **Active distribution networks: ADDRESS, WINDGRID**
  - **Pan European networks: PEGASE, REALISEGRID, ICOEUR, TWENTIES, OPTIMATE**
  - **Cross-cutting issues: OPENMETER (meter standardisation), SMARTHOUSE/SMARTGRID,... (home automation), impact of electric vehicles, storage, ...**
  - **Joint initiative ICT/ENERGY: ICT infrastructure for smart grids**
- **In total: more than 100 M€ EC contribution (2007-2009)  
DG Research – DG TREN – DG INFSO**

### **Large Scale Demonstration of smart electricity distribution networks with distributed generation and active customer participation**

- Call joining resources from DG Research and DG TREN: 35M €
- Part of ENERGY-2010-2 Call
- “Collaborative Project with a predominant demonstration component”
- Guide for Applicants. See particularly Section “Activities”
- Closing date 4 March 2010 at 17:00 (Electronic submission)

# ENERGY-2010-2 Topic 7.1.1

## Expected Impact

- Integration of large share of RES and DG in distribution networks
- Promote active participation of all end users in energy markets
- Contribution to standardisation of architectures and interfaces
- Unlock large scale replication
- Show how the results will contribute to the EU energy & climate objectives

# Thank you for your attention

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# ENERGY-2010-2 Topic 7.1.1

## Sources of information

- [cordis.europa.eu](http://cordis.europa.eu)
- Call text
- Work Programme
- Guide for applicants
- Information day Brussels 25/09/09
  - [http://ec.europa.eu/research/conferences/2009/smart\\_networks/smart\\_networks\\_en.html](http://ec.europa.eu/research/conferences/2009/smart_networks/smart_networks_en.html)
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