



# Highlights of EU efforts for Smart Grids deployment and the way forward

Directorate-General  
for Energy

Manuel Sánchez Jiménez, PhD  
Policy Officer  
European Commission  
DG ENERGY

[manuel.sanchez-jimenez@ec.europa.eu](mailto:manuel.sanchez-jimenez@ec.europa.eu)



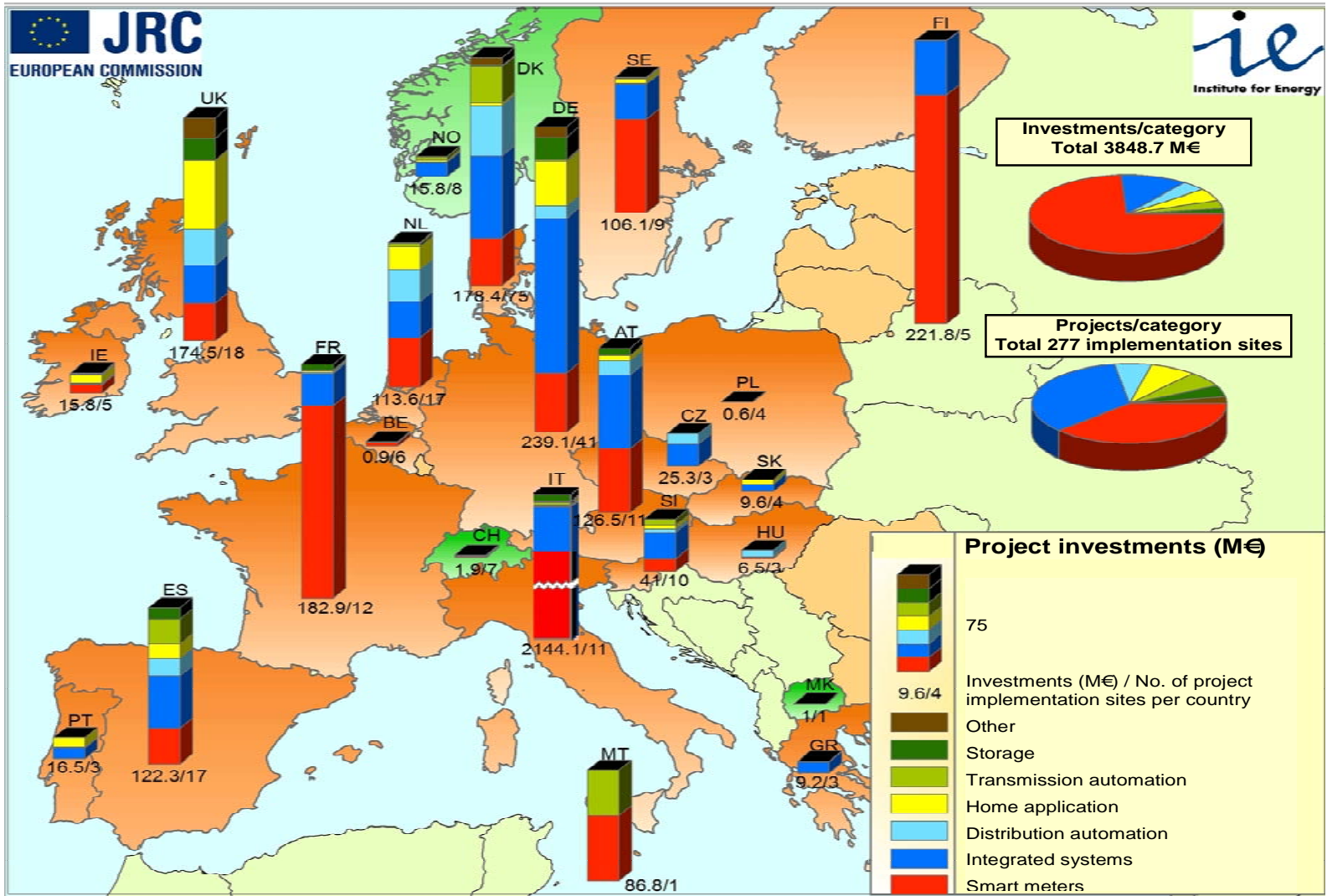
[http://ec.europa.eu/energy/gas\\_electricity/smartgrids/smartgrids\\_en.htm](http://ec.europa.eu/energy/gas_electricity/smartgrids/smartgrids_en.htm)

# Smart Grids

A Smart Grid is an electricity network that can cost efficiently integrate the behaviour and actions of **all users** connected to it - generators, consumers and those that do both – in order to ensure efficient, sustainable power system with low losses and high levels of quality and security of supply and safety.

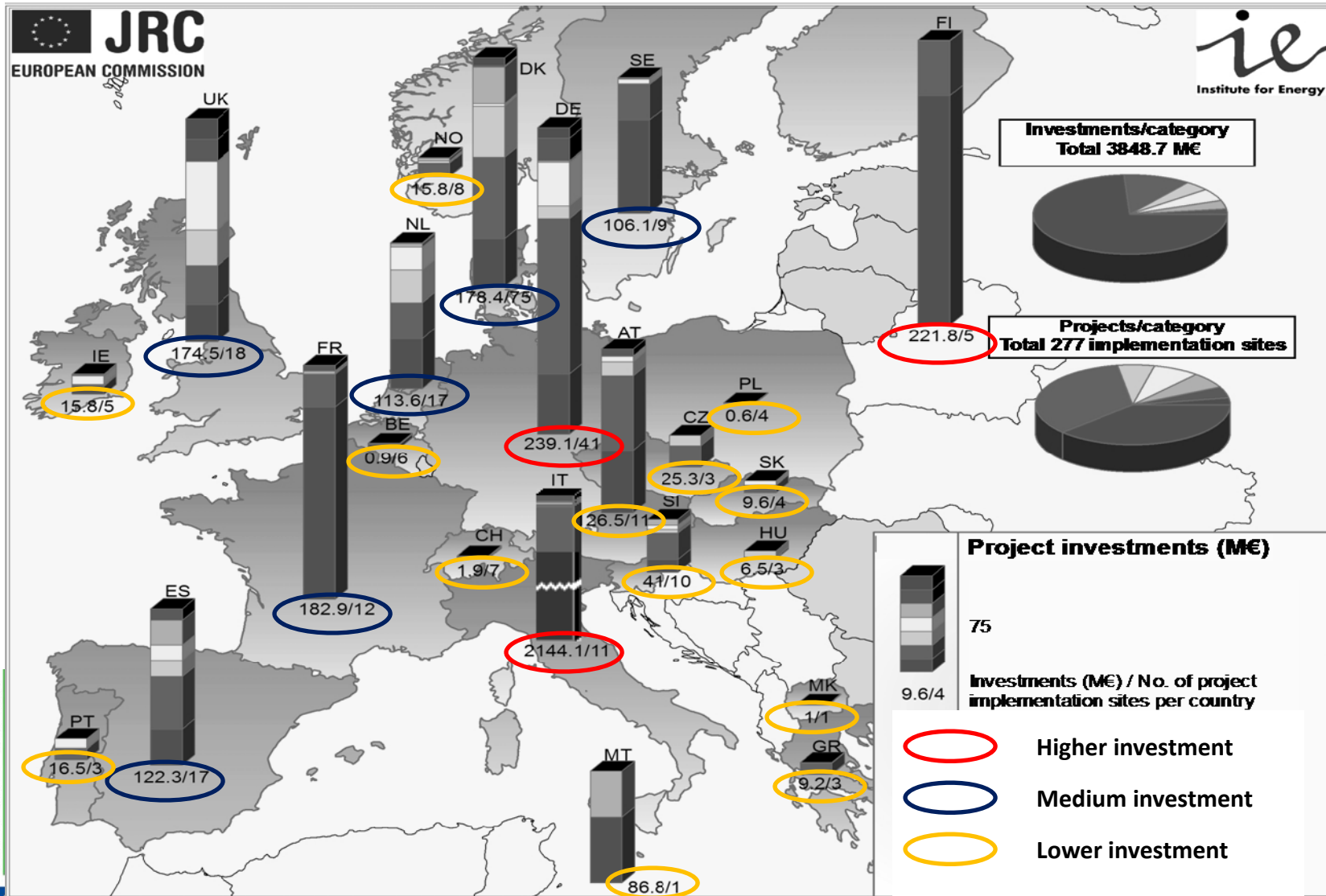


# Smart grid investment in Europe



Projects represented can span over more than one country and can include more than one category. Three projects are not represented in this Picture: Kriegers Flak project, a Super Grid between Germany and Denmark, total investment of 507 M€; Smart Meter Roll-out and AMI in UK, estimated investment of 11897 M€; and Smart Meter Roll-out in Sweden, spanning in approx. 150 projects and amounting a total investment of approx. 1500 M€.

# Smart grid investment in Europe

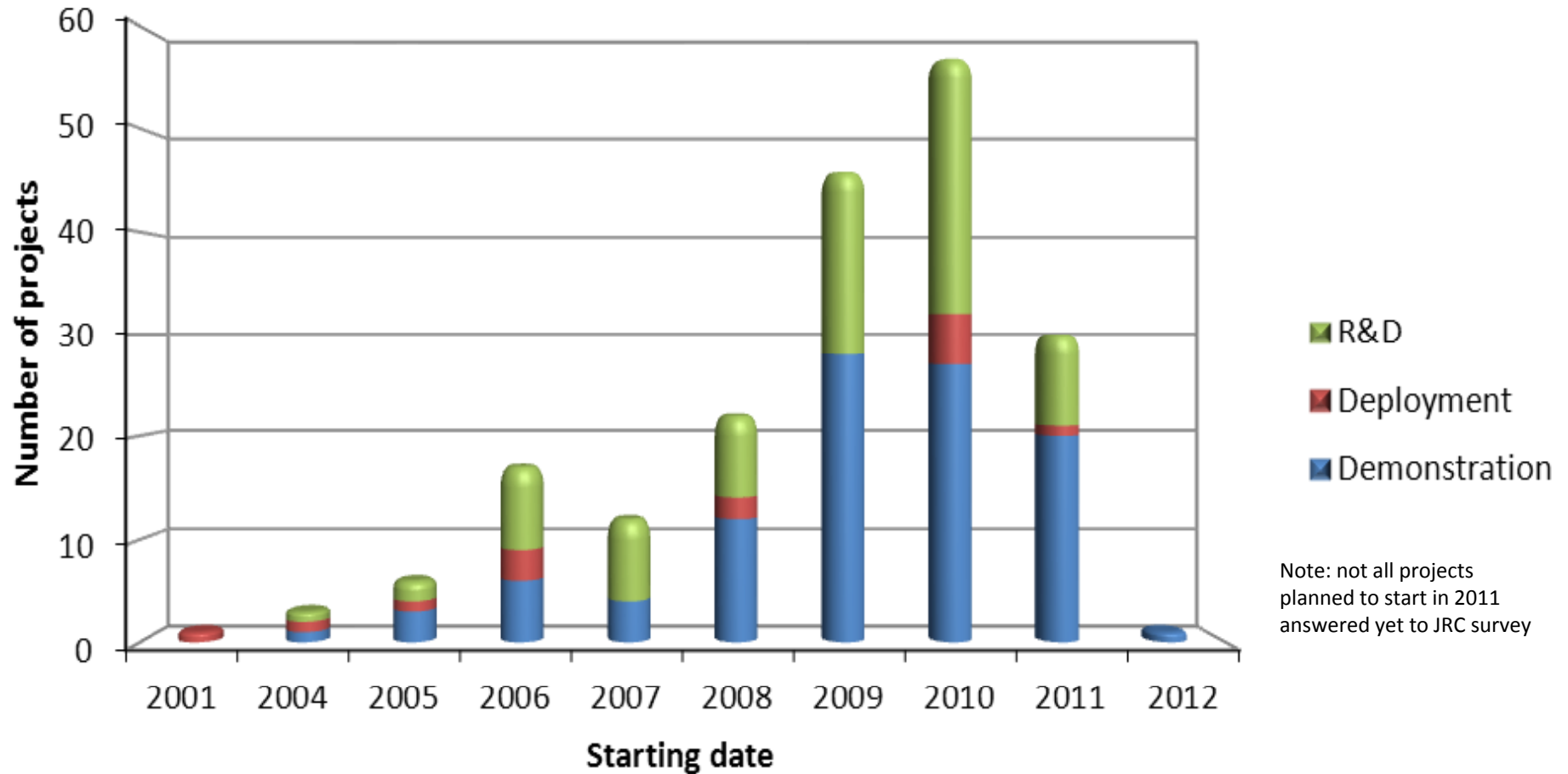


Directorate-General





# Investment vs. development stage

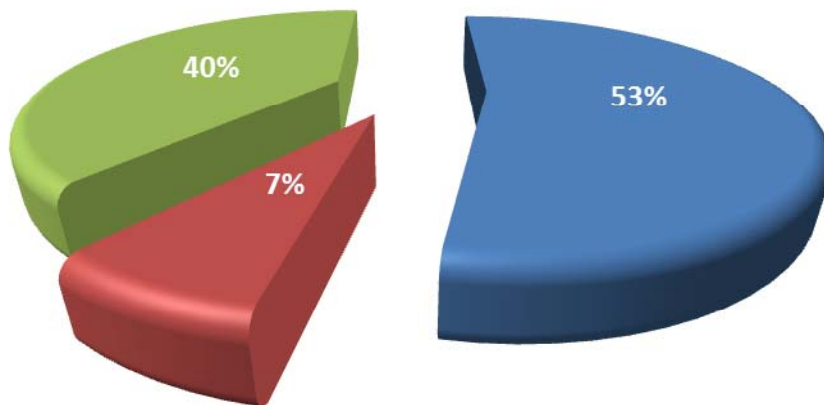


Note: not all projects planned to start in 2011 answered yet to JRC survey

Waiting for answers from new projects after February 2011

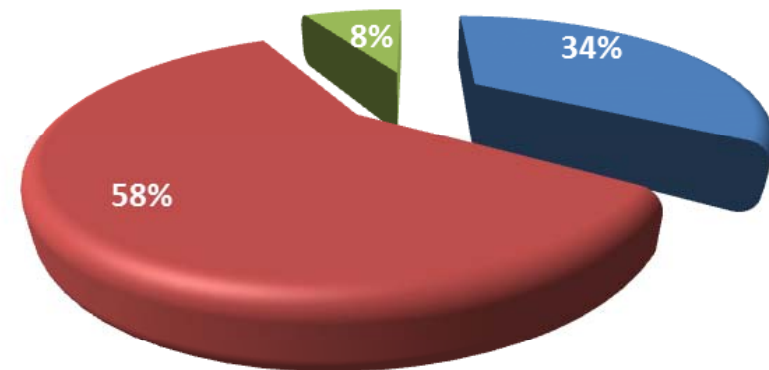
**The data collection and analysis continue – contact us!**

# ● Share of R&D, demo and deployment



■ Demonstration ■ Deployment ■ R&D

**Number of projects**



■ Demonstration ■ Deployment ■ R&D

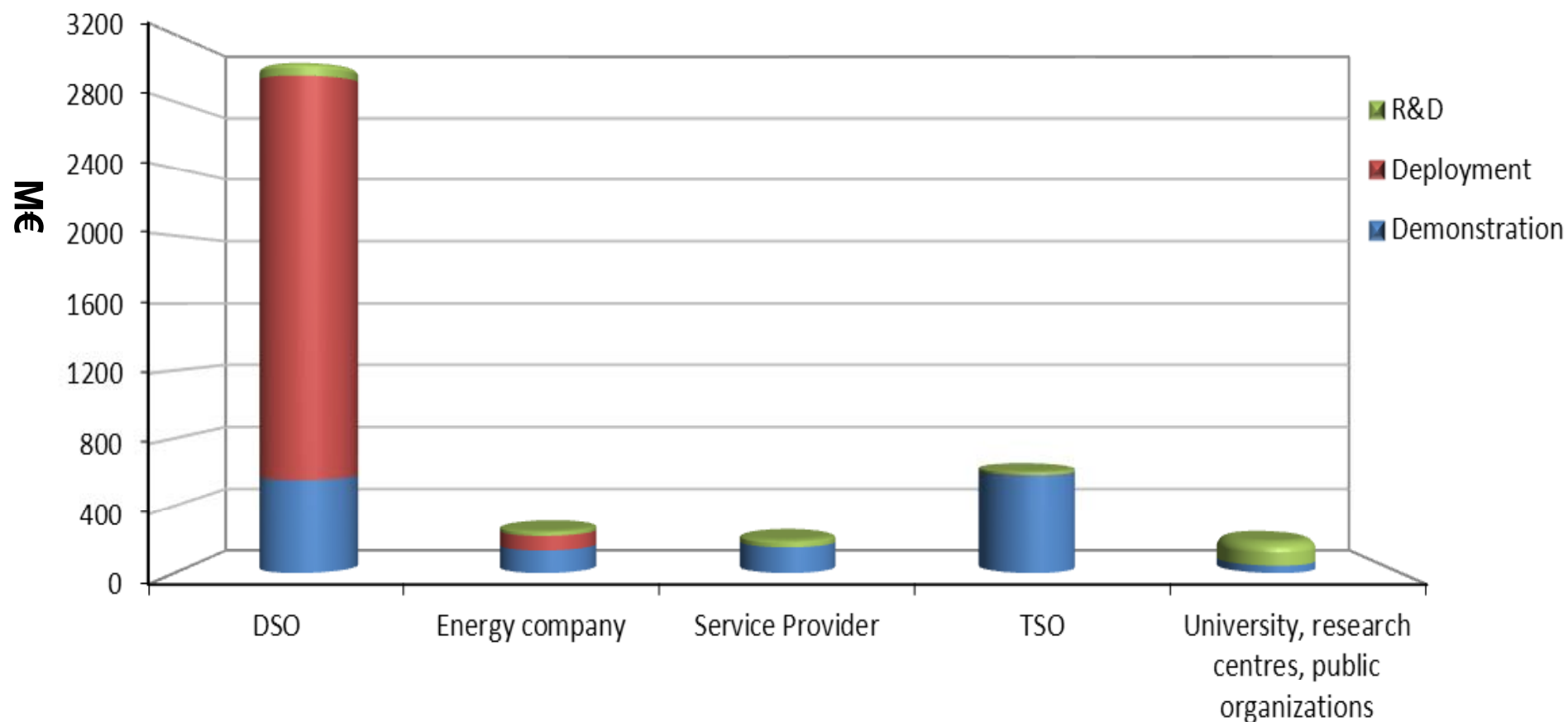
**Budget (M€)**

Deployment projects: greatest part of investment, main focus: **Smart Meters** roll-out

R&D and Demo projects: mostly small-medium scale (< 10M €), wider portfolio of technologies and applications

# Budget vs. actors and development

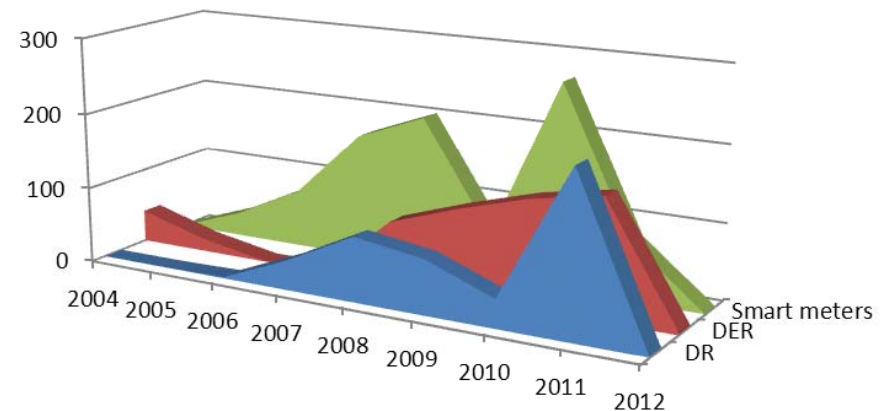
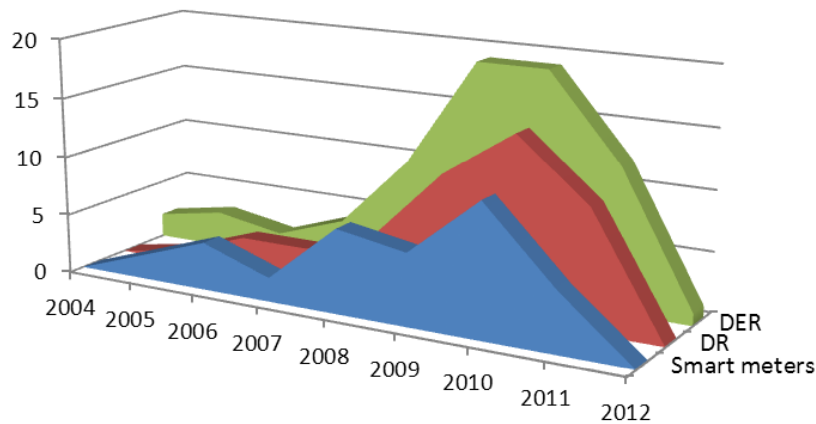
## Distribution system operators execute the main investment



# ● Number of projects starting each year in key Smart Grid areas

Integration of **Distributed Energy Resources (DER)** steadily growing

**Demand Response (DR)** projects, testing dynamic pricing and consumer participation, are growing in numbers (**smart meters** as key enabler)



Number of projects per year

Budget allocated per year



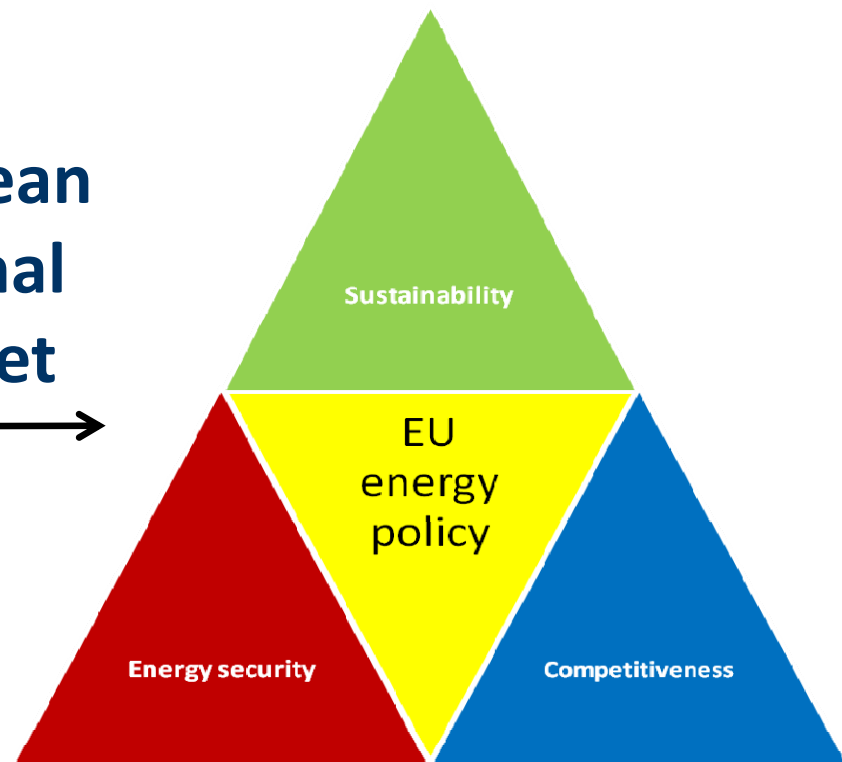
# Motivation at EU level

- Rising political attention on Smart Grids as a means to achieve EU energy policy objectives.
- Need to unlock market investment potential and provide expected customer benefits.

Storage  
Renewables  
Aggregators  
Demand Response

Prosumers  
Electric Vehicles  
Distributed Generation  
Smart Meters

European  
Internal  
Market



# ● Expected policy impacts

## ● Sustainability: 20-20-20 targets

- Integration of renewables into the grid
- Increase grid and consumption efficiency

## ● Energy security of supply

- Increase grid robustness and resilience
- Integration of large centralised and small distributed generation

## ● Competitiveness: market development

- Empowerment of consumers and those who produce
- Better management of supply (generation, load) and demand
- New market opportunities for consumer services

**The output : SG will restructure the grids, e.g. the structure of generation, market and the use of electricity**

# ? Energy policy development



**Third Internal Energy Market Package**

**RES directive**



**Task Force for Smart Grids**

**Energy Strategy 2020**

**SET Plan - EEGI**



**Energy Infrastructure Package**

**COM on Smart Grids**

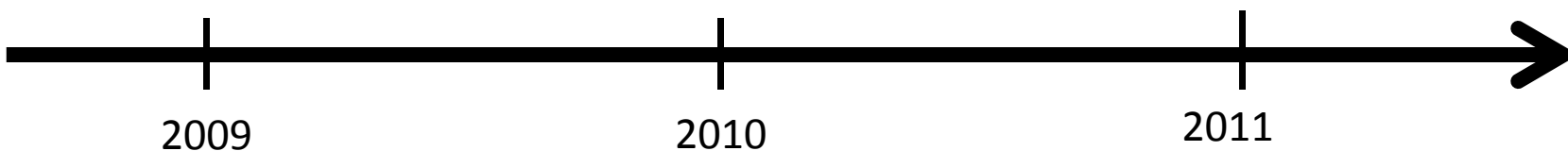
**Energy Efficiency Plan**

**Energy Infrastructure Legislative Proposal**

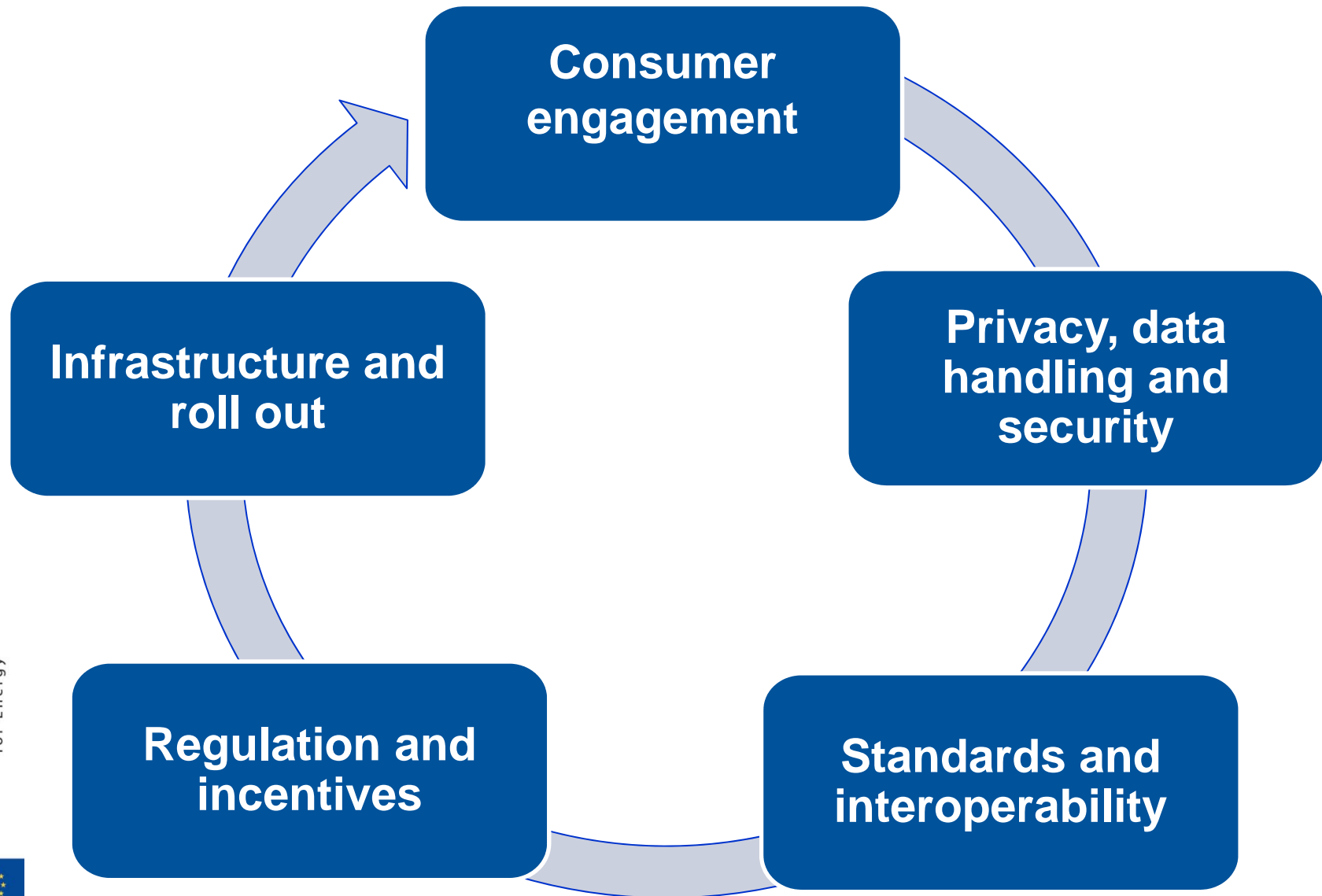
**External Energy Policy Communication**

**Smart Cities and Communities**

**Energy 2050 Roadmap**

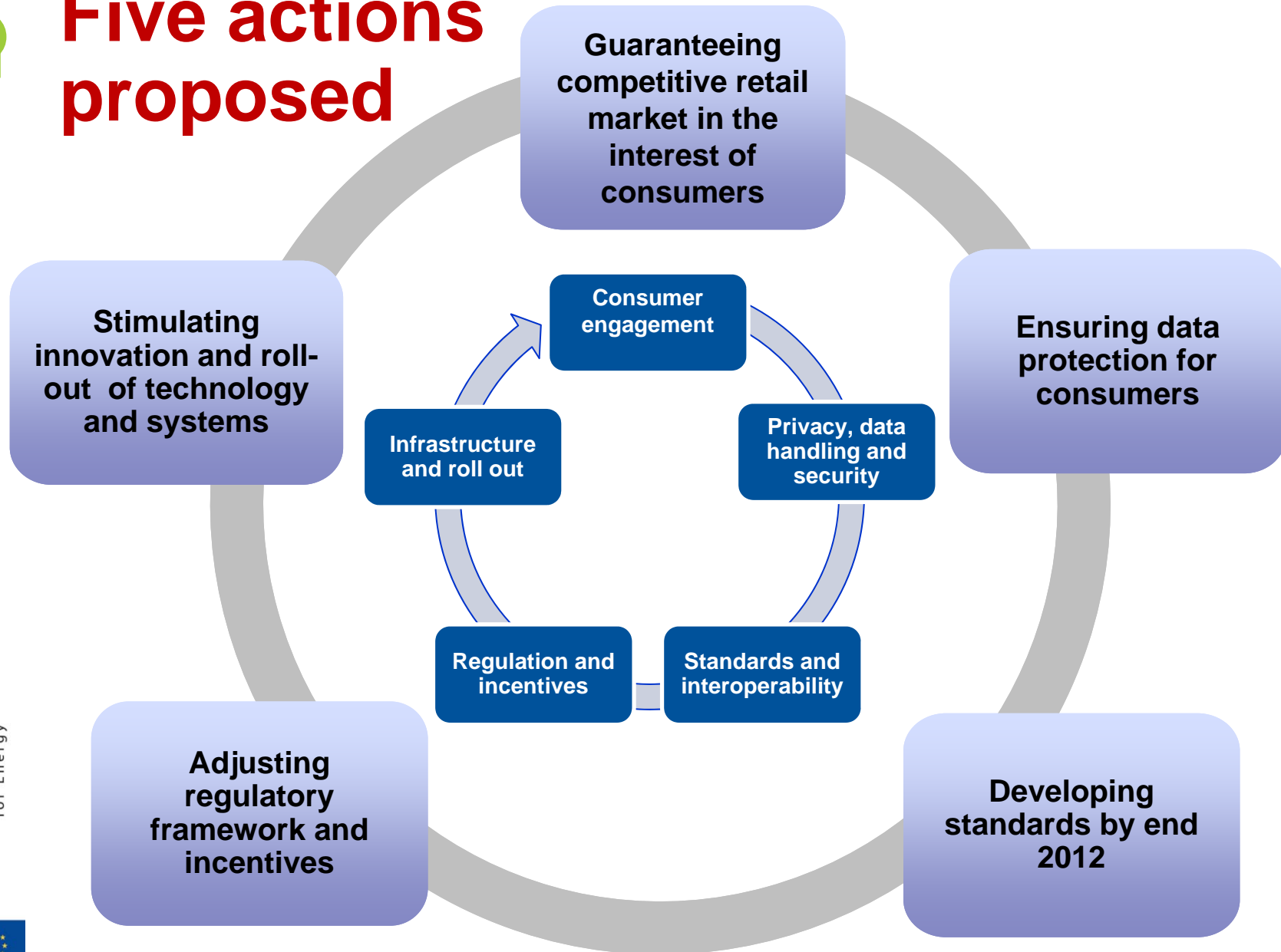


# ● Challenges for SG deployment



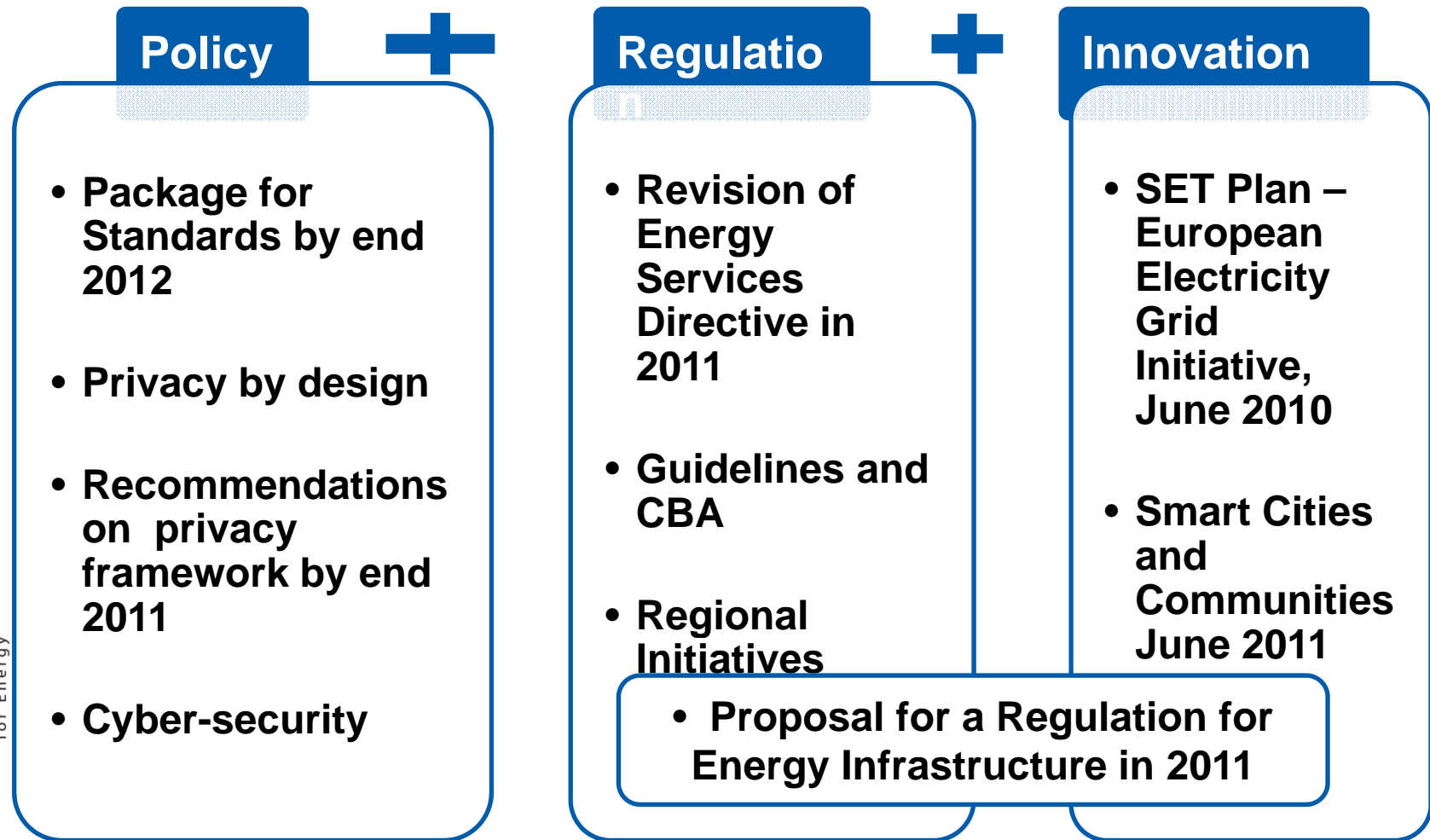


# Five actions proposed





# COM (2011)202 – the way forward





**[manuel.sanchez-jimenez@ec.europa.eu](mailto:manuel.sanchez-jimenez@ec.europa.eu)**

**[http://ec.europa.eu/energy/gas\\_electricity/smartgrids/taskforce\\_en.htm](http://ec.europa.eu/energy/gas_electricity/smartgrids/taskforce_en.htm)**