



European
Commission

R&D activities in wind energy supported by the EC. Towards Horizon 2020

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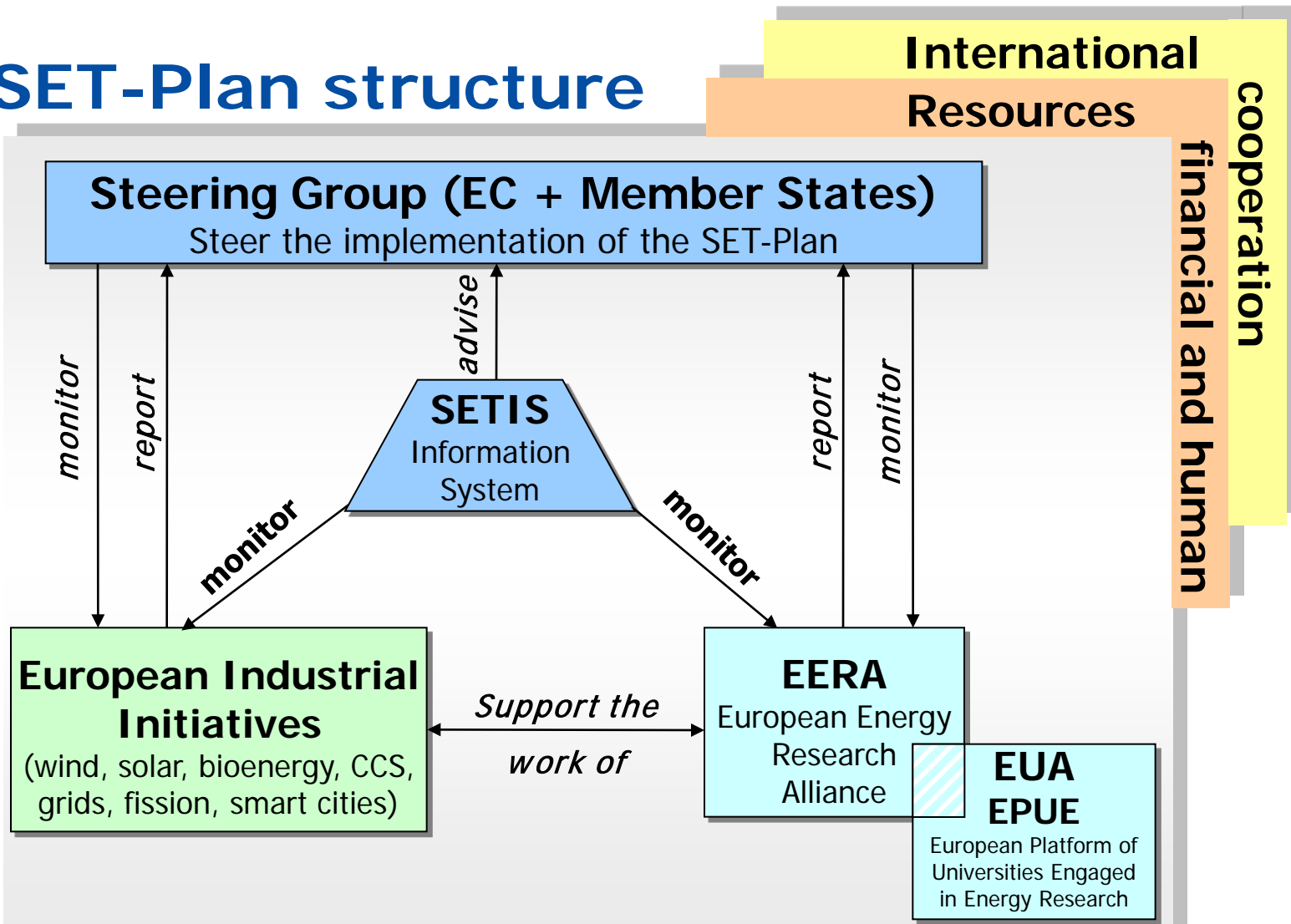
Policy context

- **Challenges:** Competitiveness, Sustainability, Security of Supply
- **2007 – Energy for a Changing World** - “Energy and Climate Change Package”
(roadmaps, policy guidance documents, market initiatives,...)
- **Key targets:** 3 x 20% by 2020 (Energy Efficiency, Renewables, Green House Gasses)
- **Key actors:** Power sector, Industry and Manufacturing sector, Building sector, Mobility sector



The Strategic Energy Technology (SET) Plan
“Technology Pillar of the Energy and Climate Change Package”
“A step towards Horizon 2020” - successor of FP7

SET-Plan structure



European Technology Platforms (ETPs)

- *European Photovoltaic Technology Platform (EUPV)*
- *European Biofuels Technology Platform (Biofuels)*
- *European Wind Energy Technology Platform (TPWind)*
- *Zero Emission Fossil Fuel Power Plants (ZEP)*
- *SmartGrids (Electricity Networks of the Future)*
- *Sustainable Nuclear Technology Platform*
- *Renewable Heating & Cooling - RHC*

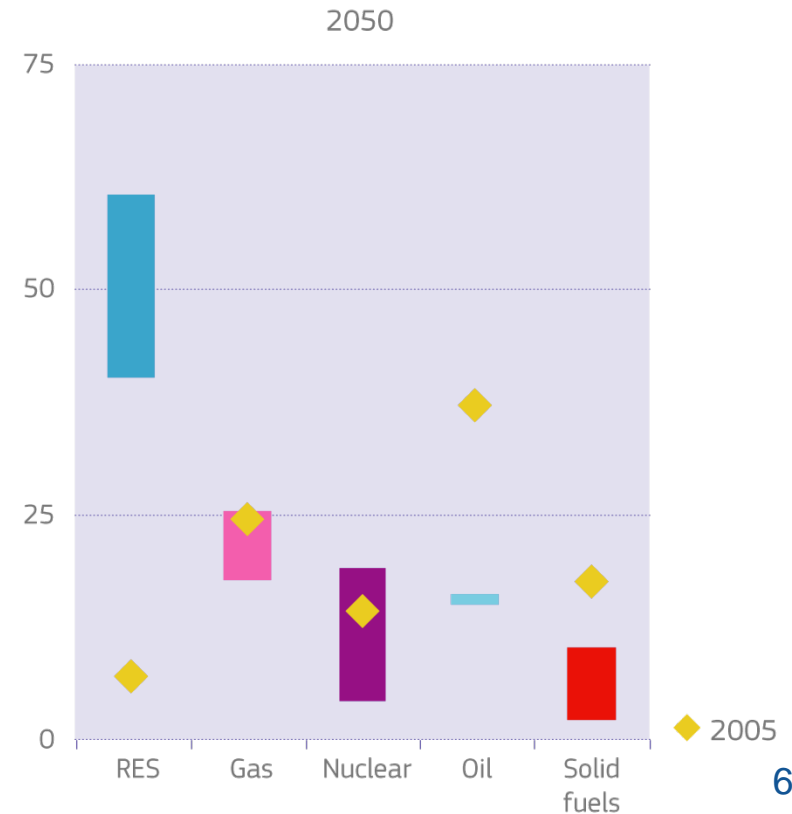
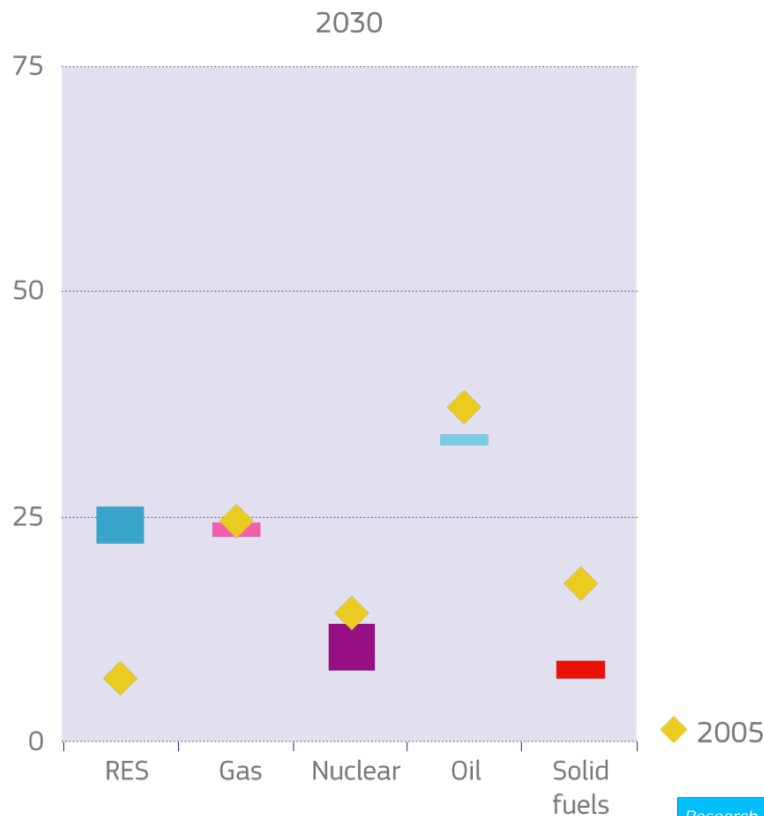
- *European Hydrogen and Fuel Cell Technology Platform (HFP) → JTI*

European Energy Policy – context update

- **Energy 2050 Roadmap COM(2011)885/2**
 - Reduction GHG 80-95%
 - Energy system transformation
 - Develop a long-term European technology neutral framework
 - Energy efficiency, renewables at centre
- **RES strategy**
 - Market pull framework after 2020
- **R&D and innovation**
 - Energy technologies

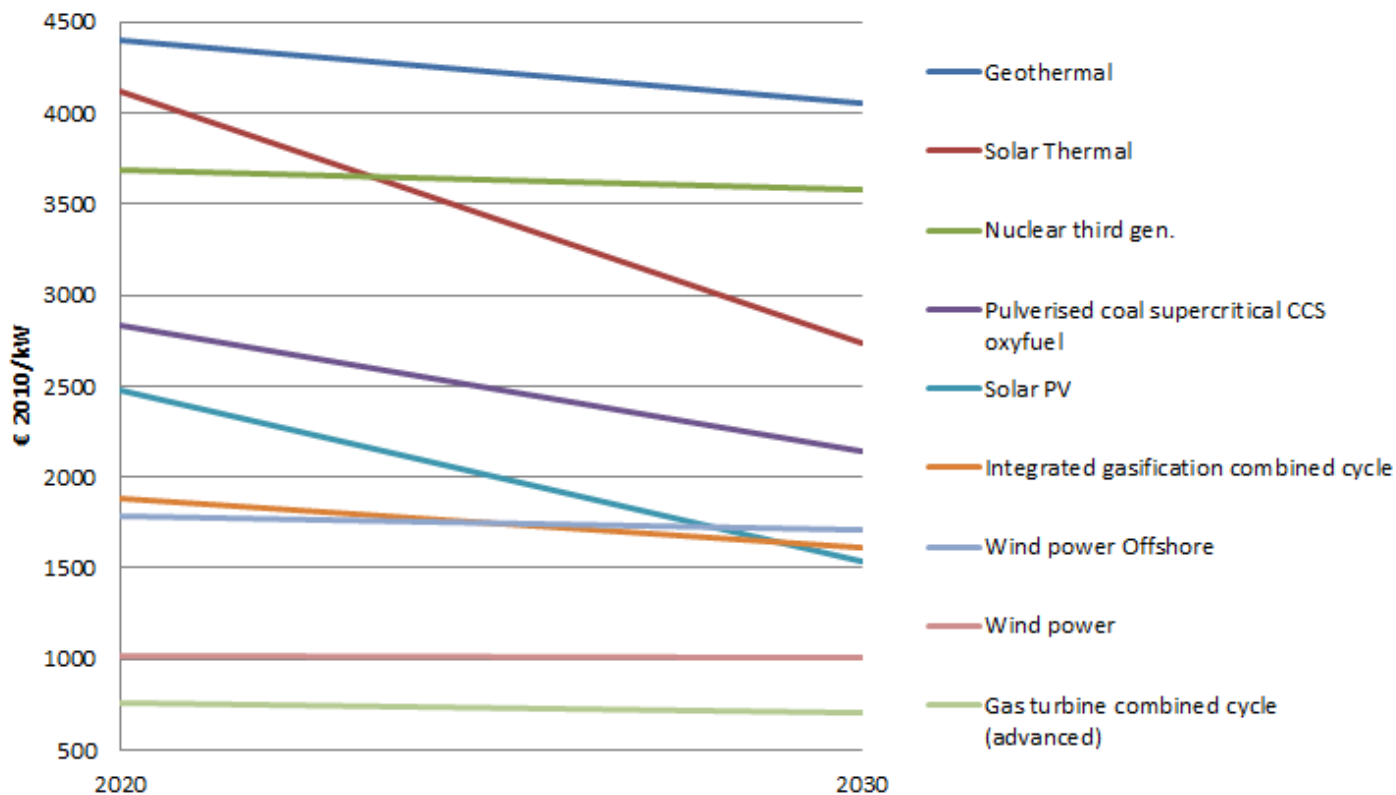
Renewables move centre stage – but all fuels can contribute in the long-run

Decarbonisation scenarios - fuel ranges (primary energy consumption in %)



Technologies – towards maturity

Expected trends in technology capital costs



Source: Energy Roadmap 2050 Impact Assessment

Challenges

*Increasing importance of RES-requirements
on capacity and flexibility*

- of electricity grids
- of power plants
- of energy storage
- of demand side management (~smart)

System integration approach



EU financing for energy R&D and innovation (2007-2013)

- *FP7 ~ € 2.3 billion (2007-2013) – non nuclear*
- *EEPR ~ € 1.6 billion (offshore wind and CCS in 2008)*
- *NER300 ~ € 2.3 billion (award decisions 2012)*
 - New Entrants Reserve (NER) focuses on environmentally safe capture and geological storage of CO₂ (CCS) and innovative renewable energy technologies
- *CIP - IEE ~ € 0.7 billion (2007-2013)*

FP7 -2013 Calls Energy

- Budget ~ 382 Million Euro
- Opening call ~ 10 July 2012

Call/ activity	DG RTD EUR million	DG ENER EUR million	Closing date
FP7-ENERGY-2013-1	105.5		<i>28/11/2012</i>
FP7-ENERGY-2013-2		83	<i>24/1/2013</i>
FP7-SMARTCITIES-2013	24	90	<i>4/12/2012</i>
FP7-ENERGY-2013-IRP	37.5		<i>8/1/2013</i>
FP7-ERANET-2013	22	5	
FP7-2013-OCEAN	4		

FP7 – Energy 2013

Energy.2013.2.3.1 Advanced aerodynamic modelling, design and testing for large rotor blades

- definition of large scale blades and aerotools for turbines to be developed and tested
- advanced aerodynamic modelling
- design and demonstration of new large-scale rotor blades and aero-tools

Energy.2013.2.3.2 Small to medium size wind turbines

- innovative design materials and aesthetic solutions
- new control systems and methods for optimization of operation and maintenance
- innovative solutions for transport, assembly and installation thereby minimizing impact in the construction phase

FP7 – Energy 2013

Energy.2013.10.1.2: ERA-NET Plus – European wind resources assessment

Creation of a new wind atlas based on the development of improved models for wind energy physics

Single joint call addressing;

- the development of new/more advanced models for assessing wind resources for wind farm development, wind turbine design, spatial planning, policy promotion, and other uses. This should involve the development of dynamical downscaling methodologies and open-sources models, to enable the provision of accurate wind resource and external wind load climatology and short term prediction at high spatial resolution....
- validation of the models through measurement

Horizon 2020 - Energy: ambitious budget allocation

Secure, clean and efficient energy: 6 327 M€

- In average 900 million€/year
- Covering: research, demonstration , innovation (previously FP7 and IEE)

Access to risk-finance: 1 131 M€ for SET-Plan projects

- Debt and equity
- Cooperation with the EIB, inspired from FP7 risk-sharing finance facility

Horizon 2020: SET-Plan as the basis (1/2)

Reducing energy consumption and carbon footprint by smart and sustainable use

- **Energy efficiency, ICT instruments, Smart Cities and Communities**

Low-cost, low-carbon electricity supply

- **Innovative renewables and CCS**

Alternative fuels and mobile energy sources

- **Bioenergy, fuel cells and hydrogen**

A single, smart European electricity grid

- **Transmission (electricity highways), storage**

Horizon 2020: SET-Plan as the basis (2/2)

New knowledge and technologies

- ***multi-disciplinary, visionary actions, pan-European research programmes and world-class facilities***

Market uptake of energy innovation

- **Ex-Intelligent Energy Europe programme**

Robust decision making and public engagement

- **policy support, including activities on public acceptance and engagement**

Next steps

- ***Implementing Horizon 2020***
 - Rules for participation, cross cutting issues, European Research Area, Innovation Union
- ***Cohesion Policy***
 - Conditionalities for RES and Innovation
- ***Further policy for energy technologies***
 - Looking after 2020: to 2030 and 2050

Next steps

- Ongoing:** Parliament and Council negotiations on the basis of the Commission proposals
- Ongoing:** Parliament and Council negotiations on EU budget 2014-2020 (including overall budget for Horizon 2020)
- Mid 2012:** Final calls under 7th Framework Programme for research to bridge gap towards Horizon 2020
- Mid 2013:** Adoption of legislative acts by Parliament and Council on Horizon 2020
- 1/1/2014:** **Horizon 2020 starts, launch of first calls**

Thank you for your attention

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