European Industrial Initiative Wind

Norela Constantinescu
European Commission, DG ENER

TP Wind: Funding wind energy R&D
17 April 2012, Copenhagen

Energy

European Energy Policy – context update

- **Energy 2050 Roadmap**

  RES at centre

- **RES strategy**

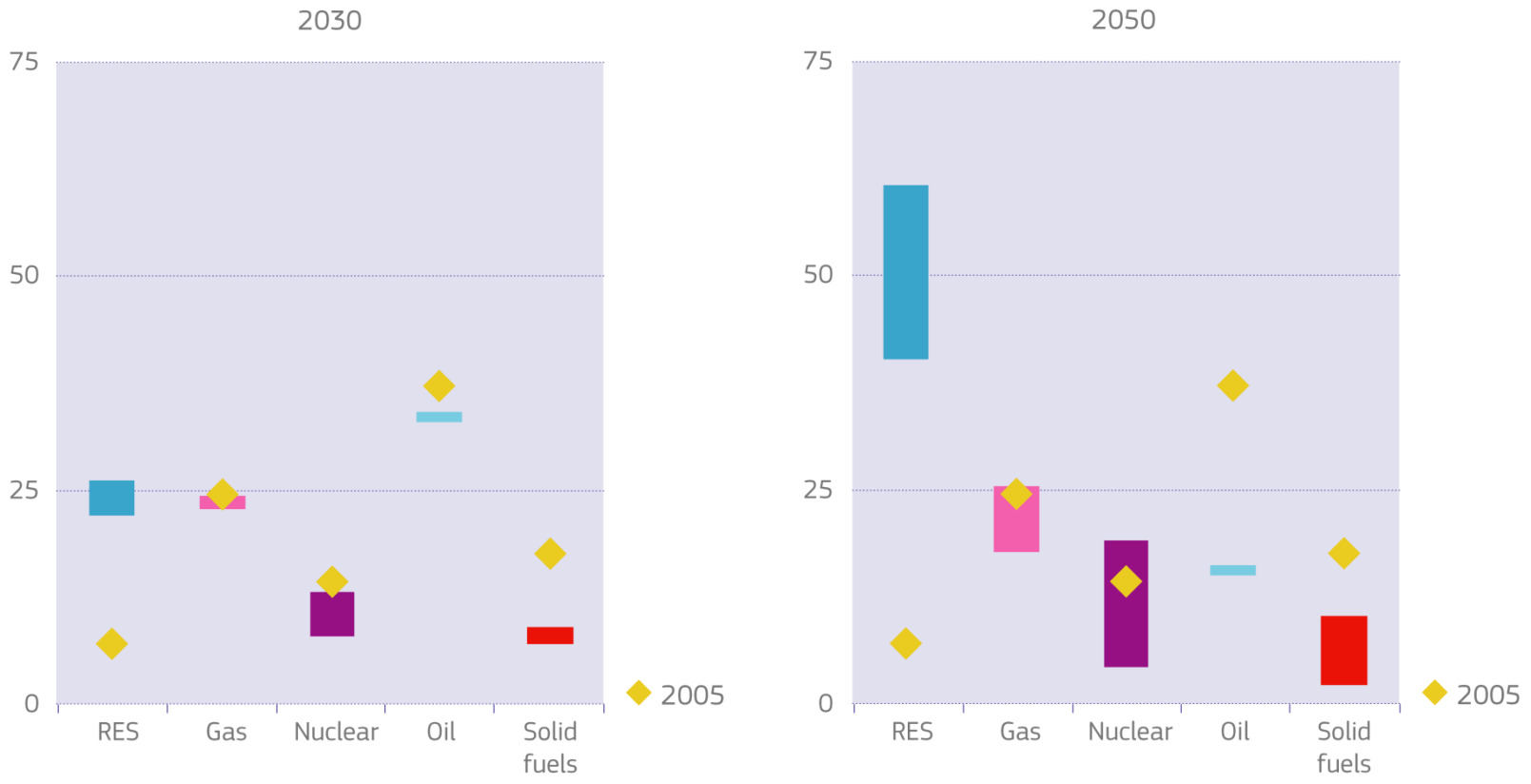
  Market pull framework after 2020

- **R&D and innovation**

  energy technologies

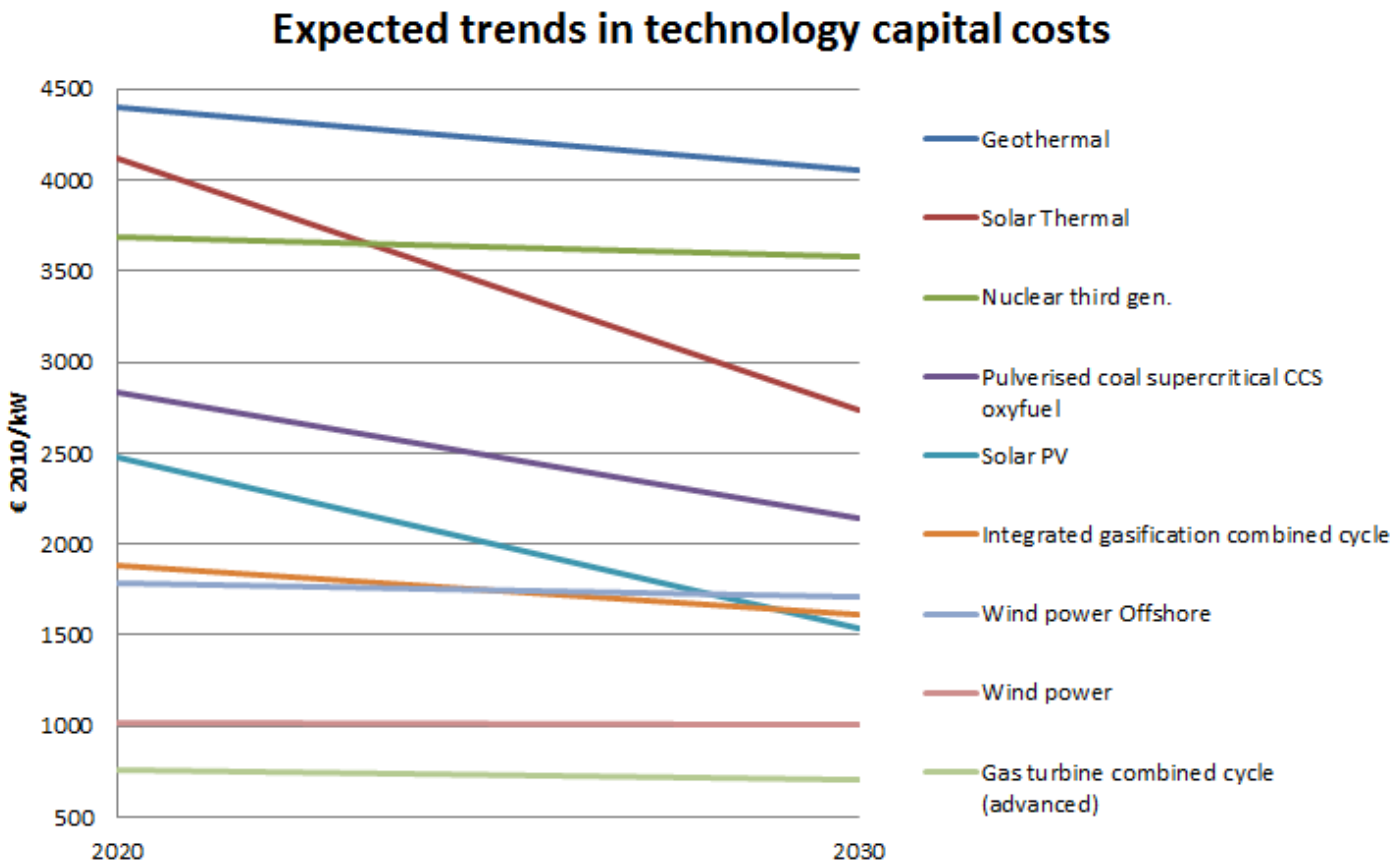
Renewables move centre stage – but all fuels can contribute in the long-run

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



Source: European Commission

Technologies – towards maturity



Source: Energy Roadmap 2050 Impact Assessment

2020/2050 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)

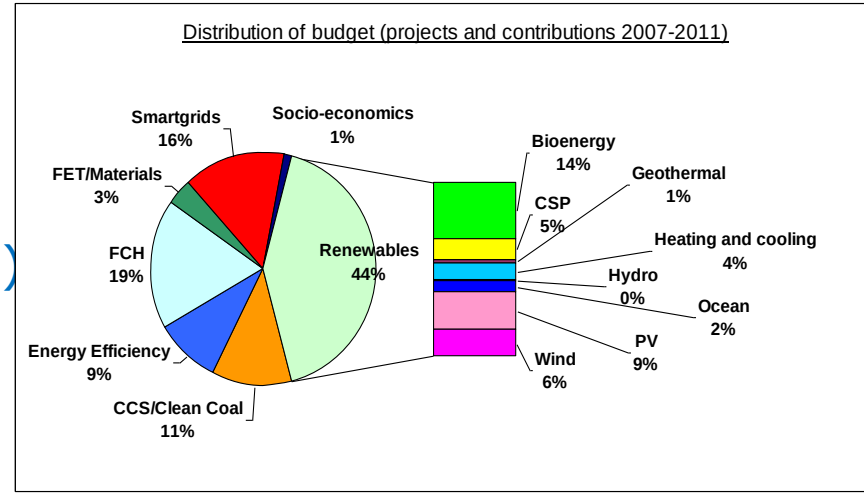
NER300 ~ € 2.3 billion (award decisions 2012)

CIP - IEE ~ € 0.7 billion (2007-2013)

European Wind Initiative: 2010-2013

EU Dimension

FP7: Wind ~= 130million€



- **7th Framework Programme**
  - -Large scale offshore wind turbines
  - -Off-shore RES conversion platforms
  - -Floating structures
  - -Reliability of existing turbines(2-6MW)
  - -Research for turbines > 10MW
  - -Grid integration

- **Intelligent Energy Europe**
  - -Offshore spatial planning standards
  - -Socio and economic value of EU Wind

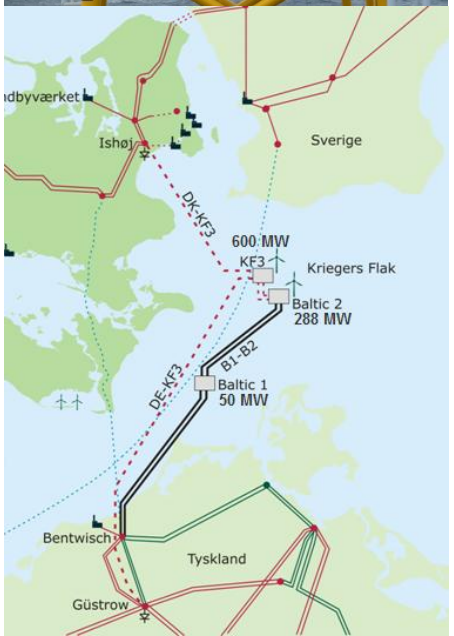
Wind ~565million€

EU Dimension II

EERP offshore Wind

- **Turbines and offshore structures**
  - -Testing and manufacturing,
  - -Innovative turbines and substractures

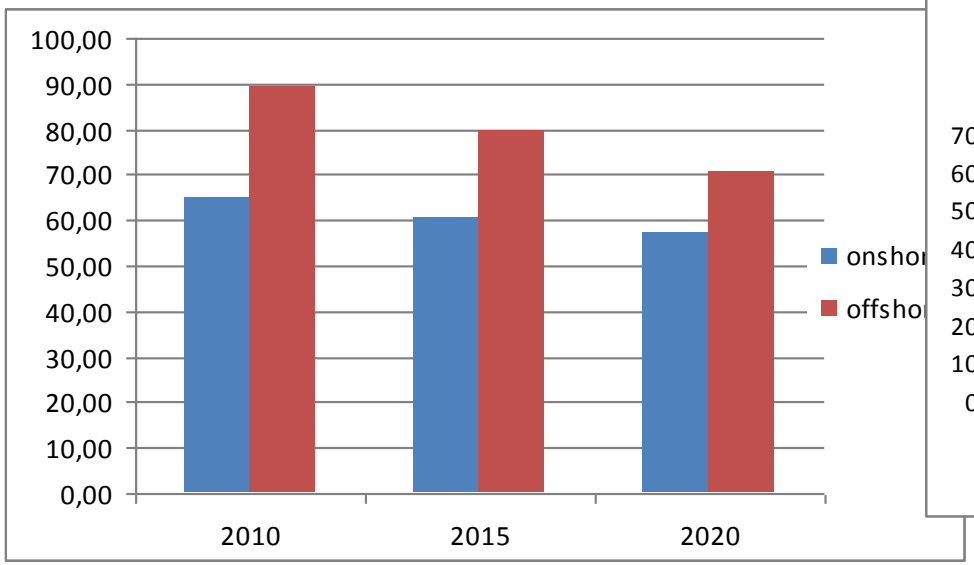
- **Offshore grid -start**
  - -HVDC VSC technology
  - -European offshore grid
  - -Module based solutions
  - -Regulatory innovation and business models

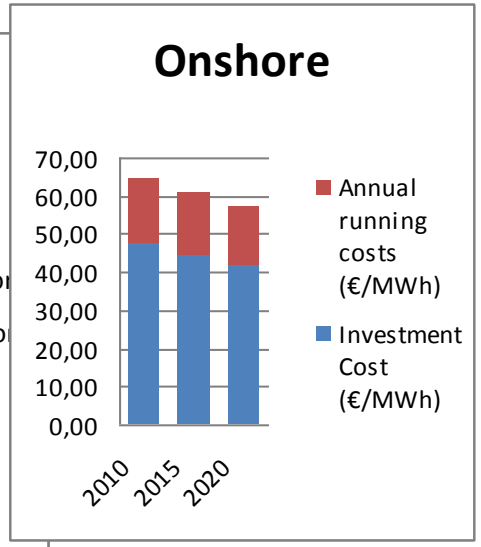


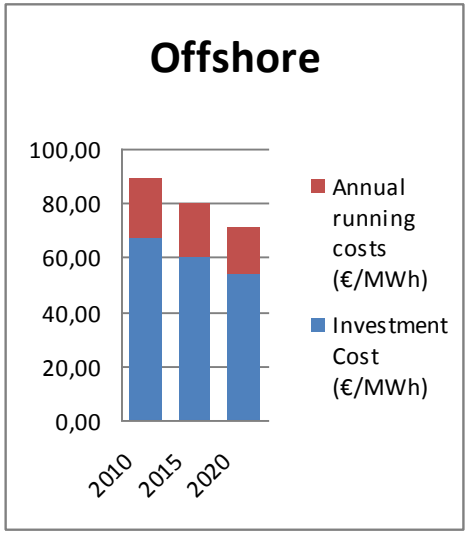
Mapping of SET Plan related wind projects in MS

EII activity	*BE*	*DE*	*DK*	*ES*	*FI*	*FR*	*IT*	*NO*	*PT*	*SE*	*SK*	*UK*	***Ttl***
1.1 ***New WT, materials, components***	*2*	*2*	*20*	*3*	*6*			*3*		*12*	*1*	*1*	***50***
1.2 ***Testing facilities***	*3*		*4*	*1*	*2*			*1*					***11***
1.3 Mass production		*1*	*2*		*1*								*4*
2.1 ***Offshore - new structures***		*1*	*2*	*3*				*2*	*1*				***9***
2.3 Tech from O&G				*1*				*1*					*2*
3.1 Grid – HVDC				*1*				*1*					*2*
3.2 System dynamics	*1*			*2*				*1*		*1*			*5*
3.3.1 Balancing			*2*	*1*									*3*
3.3.2 Market integration			*2*			*1*		*2*					*5*
4.1 ***Wind resources***	*1*		*12*	*1*	*1*		*1*	*1*					***17***
4.2 Spatial planning							*1*			*1*			*2*
4.3 Public acceptance			*1*				*1*						*2*
Total	*7*	*4*	*45*	*13*	*10*	*1*	*3*	*11*	*1*	*15*	*1*	*1*	*112*

KPIs: Learning curves







Learning rate	*to 2015*	*2016 - 2020*	*2021 - 2030*
Onshore	*12%*	*13%*	*10%*
Offshore	*4%*	*6%*	*7%*

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

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

- **Renewables: Wind, solar , bioenergy and CCS**

Alternative fuels and mobile energy sources

- **Bioenergy, fuel cells and hydrogen**

A single, smart European electricity grid

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

Market uptake of energy innovation

- **Ex-Intelligent Energy Europe programme**

Future actions

FP7 -2013 call

- **European Wind resource mapping based on ERANET Plus instrument**
  - Development of new models
  - Measurement campaigns
  - Atlas
  - Possible international cooperation aspects
- **Large-scale grid integration especially for offshore wind – possible options**
  - HVDC in combination with interconnection including power collection
  - DC technologies (including DC VSC , DC breakers, DC convertors)
  - Storage

Next steps

Implementing Horizon 2020 - *Discussion issues*

- More integration approach
- Competition versus cooperation projects
- EU projects and joint actions between EU and MS
- Use in complement to grants other financing instruments: loans and equity (RSFF)

Cohesion Policy

- Conditionalities for RES and Innovation

Further policy for energy technologies

- Looking after 2020: to 2030 and 2050
- Update of the Wind Technology Roadmap and new Implementation Plan

Conclusion

Commitment of EC

- Horizon 2020
- Energy technology policy

Commitment of wind industry

- *Leverage the public intervention*
- *Reducing costs of wind technology especially offshore*
- *EU competitiveness and world leadership*
- *Contribute to EU growth*

Member States

- Support and cooperation among MS (see Berlin model)

European Commission

Thank you for your attention