



Echanges relatifs au programme Horizon 2020, à son volet énergie et à l'EERA

**ANCRE - Réunion du comité de coordination
Paris - 5 Décembre 2012**

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European Commission**

Vision (1)



Society

SET- Plan

Fossil Fuels

Renewables

Energy supply
(Systemic Approach)

Nuclear

**Energy Efficiency,
Safety,
Security of supply**

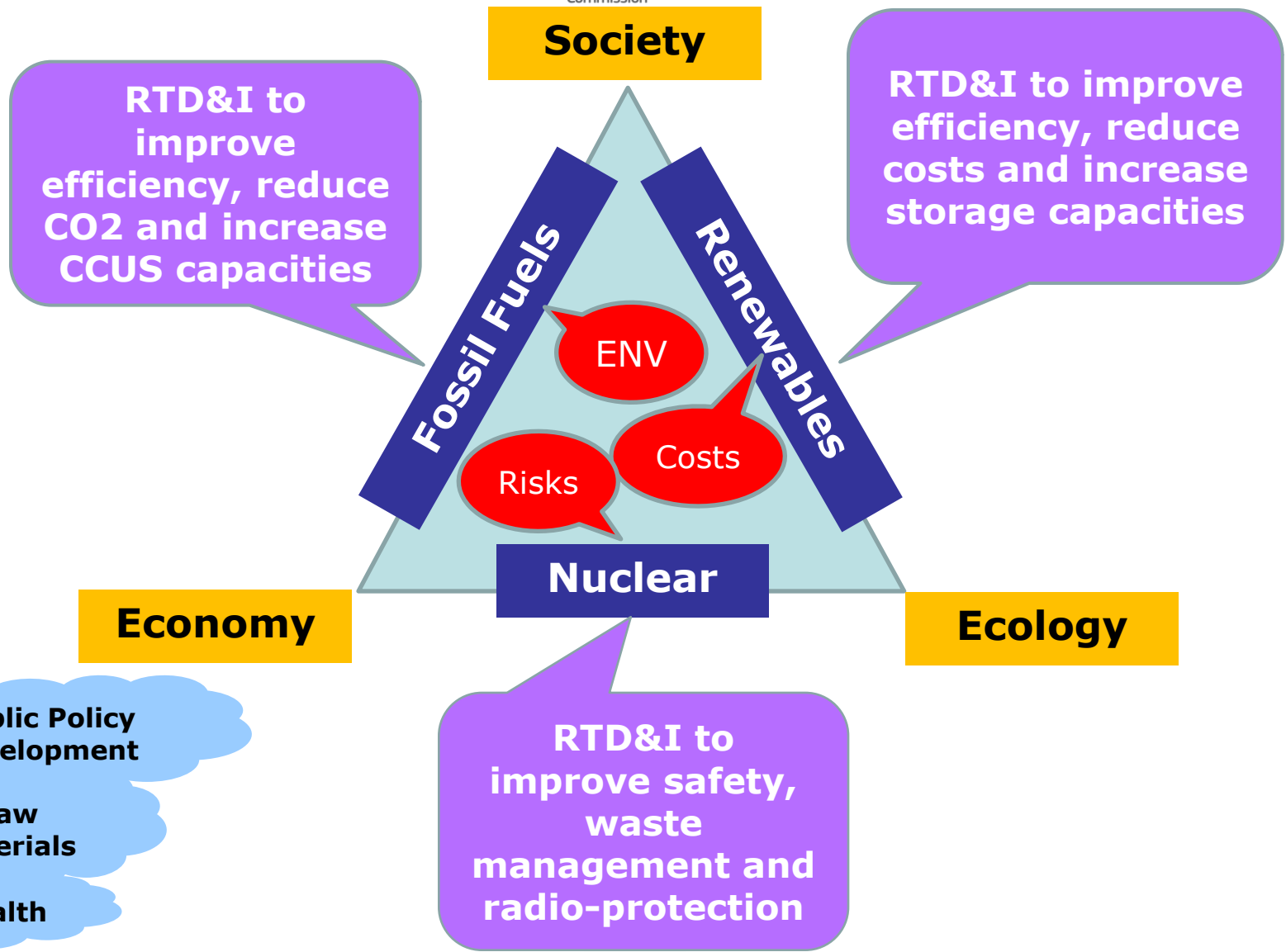
Energy demand
(Multi-sectoral and systemic approach)

Human resources,
Supply chains
(materials, Manuf.)

Competitive Energy

Environment

Vision (2)



SET Plan (1)



- **The SET-Plan** adopted in November 2007 is the technology pillar of the EU's energy and climate change policy
- **Objective:** lower the cost and improve performances of low carbon technologies and accelerate their market uptake to meet the 2020 and 2050 energy policy objectives
- **Strategy:** a research and innovation and supply chain approach focused on industrial applications; increased cooperation of all stakeholders (industry, research, MS, COM)

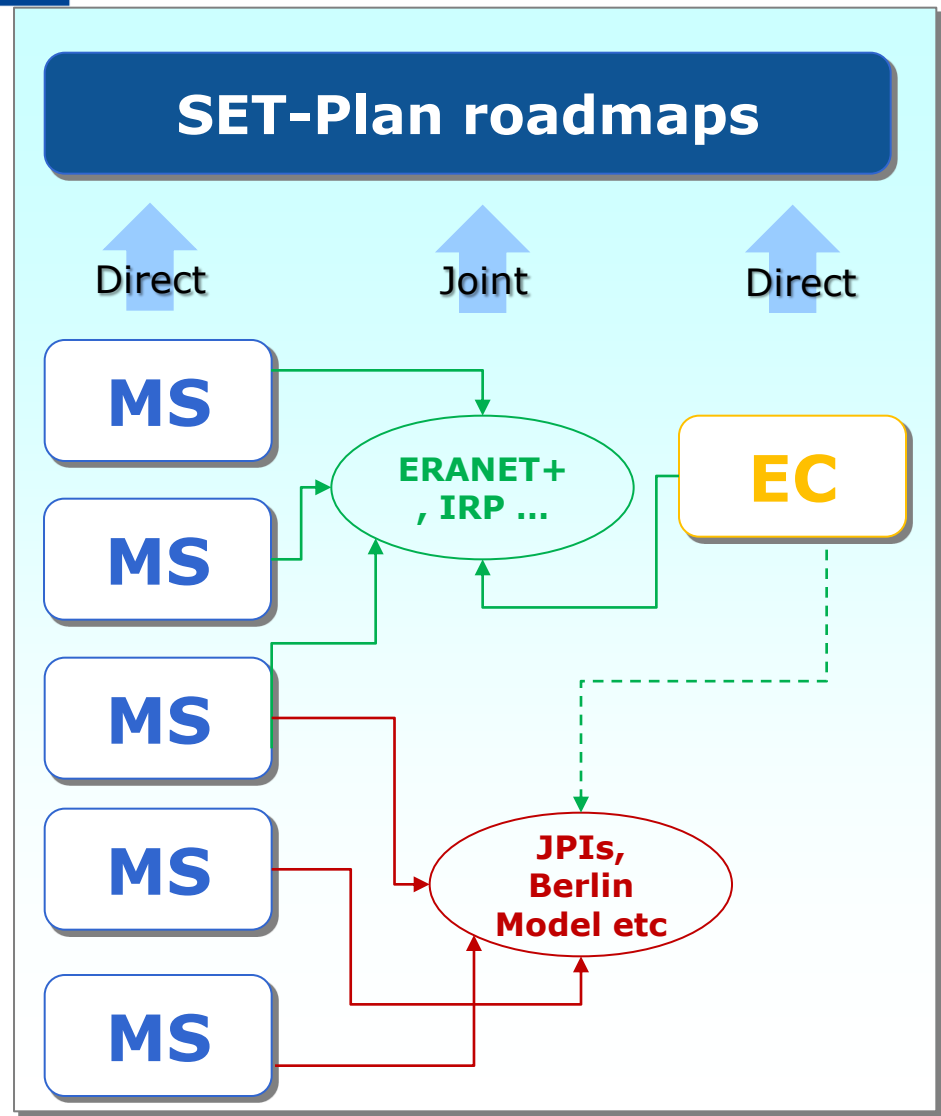


- **European Industrial Initiatives operational on** Wind, Solar, CCS, Electricity Grids, Sustainable Nuclear and Bio-energy
- **Joint Technology Initiative on** Fuel Cells and Hydrogen
- **Joint Programmes of the EERA on** Wind, PV, CSP, Storage, Grids, CCS, Geothermal, Ocean, bio-energy, materials for nuclear, Advanced materials and processing, Fuel cells and Hydrogen, Smart cities
- **Smart Cities and Communities EIP**

SET Plan – Implementation (1)



- **EC:** Contribution to R&D and innovation projects through FP7, EERP
- **EC** supports also **Joint Actions** with MS: ERA-NET+ on bioenergy, on wind, ERA-NET on solar and proposal for IRP under FP7 WP 2013
- **MSs:** General **alignment** of National Energy Research Strategies
- **MSs:** taking **leadership** through JPIs and the synchronisation of their calls e.g. 'Berlin model'
- **Industry** involvement in priority setting and co-investment

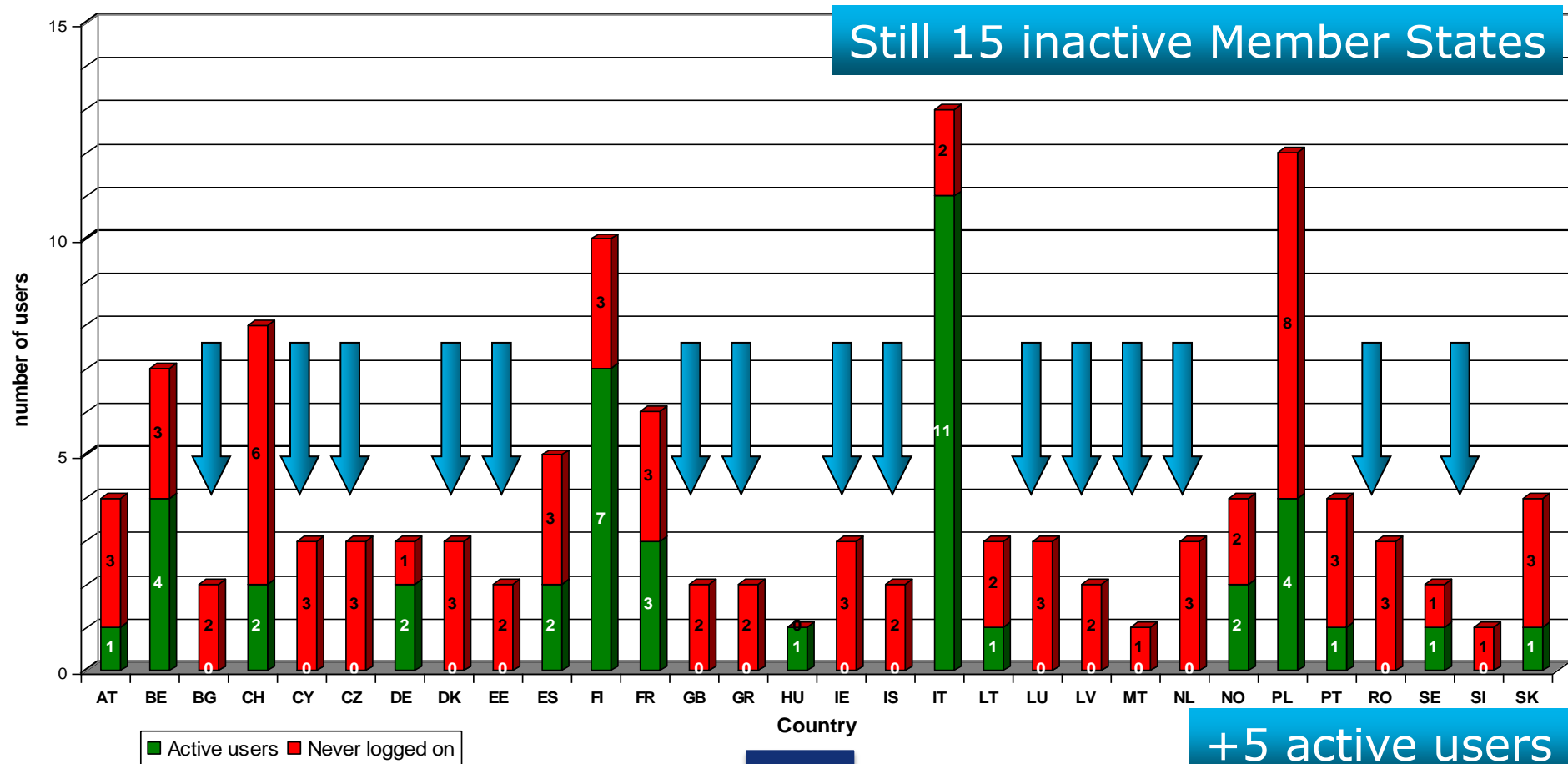


SET Plan – Implementation (2)



- SETIS on-line questionnaire for mapping projects, resources and investments

Active and inactive users 2012-11-06

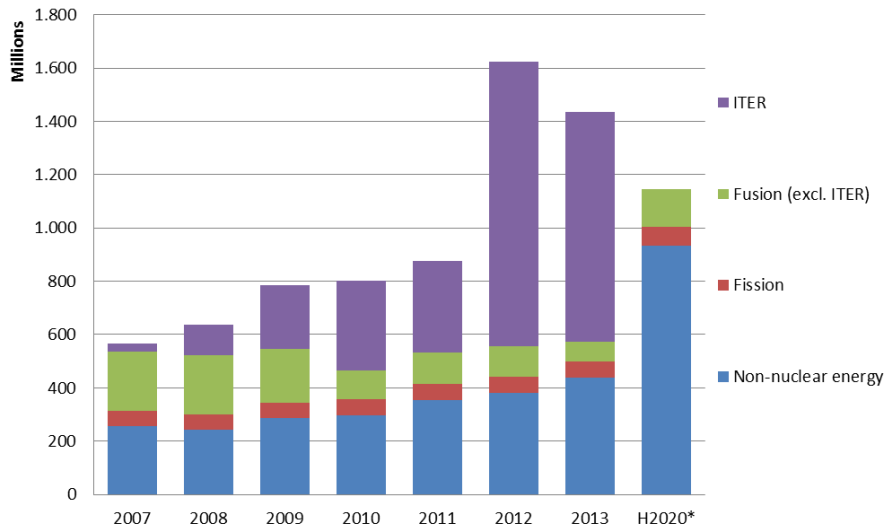


SET Plan – Implementation (3)

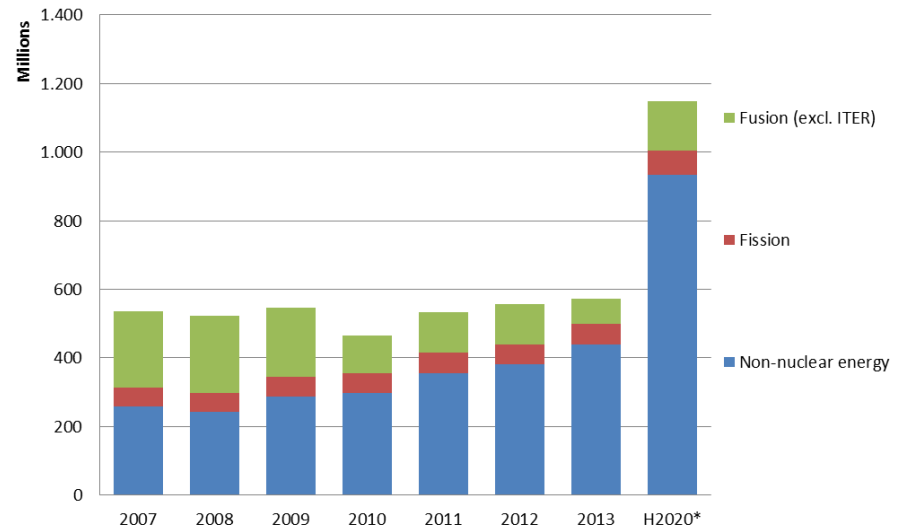


- **Increased EU support to Energy research in support of the SET Plan:**

Annual budget for EU energy research



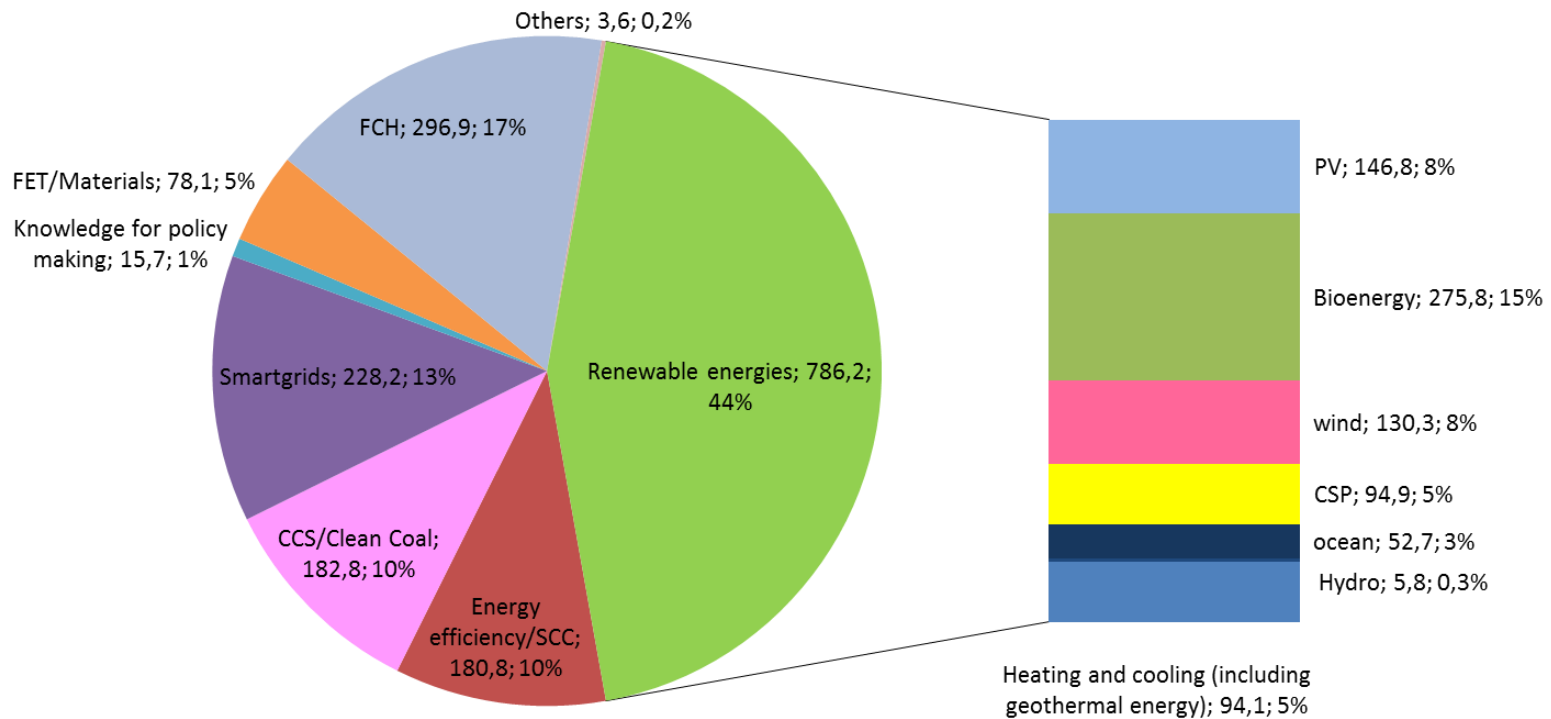
Annual budget for EU energy research



* H2020: annual average budget based on the budget of the Commission proposal

- Supported EU activities (non-nuclear energy)

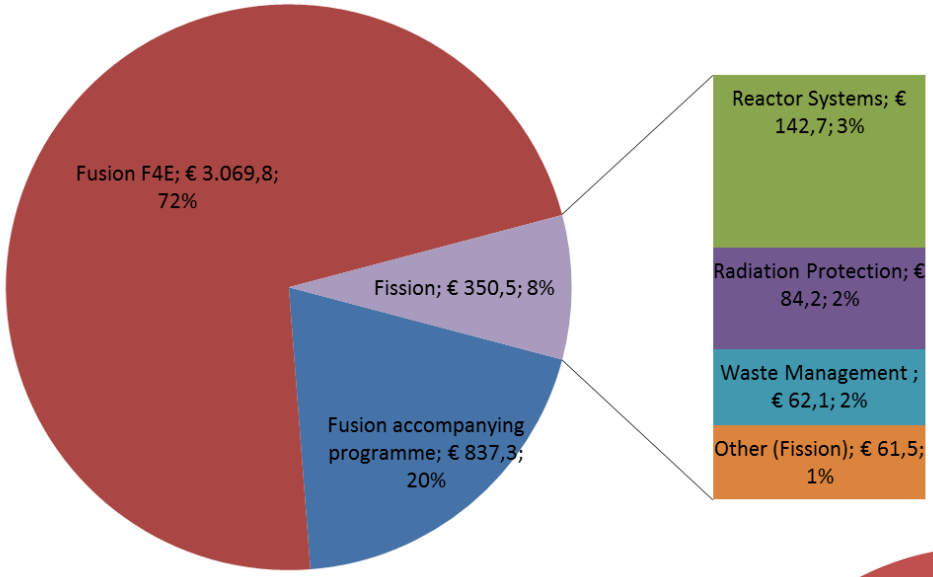
EU contribution per activity (FP7 Energy, 2007-2012; Mio €; share of total)



SET Plan – Implementation (5)

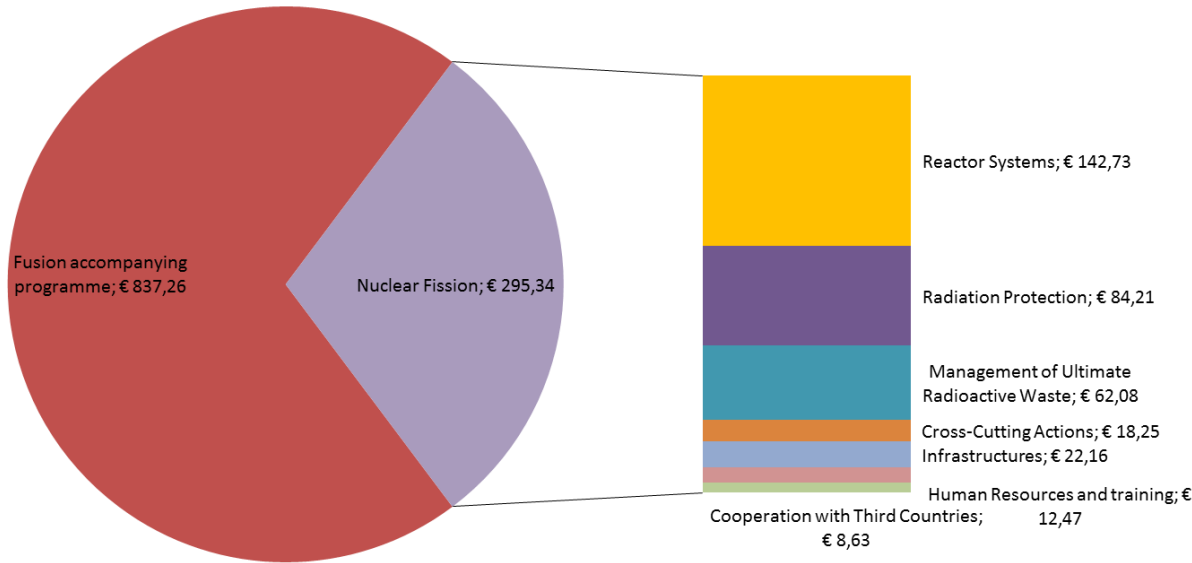


EU funding per activity (Euratom 2007-2013)



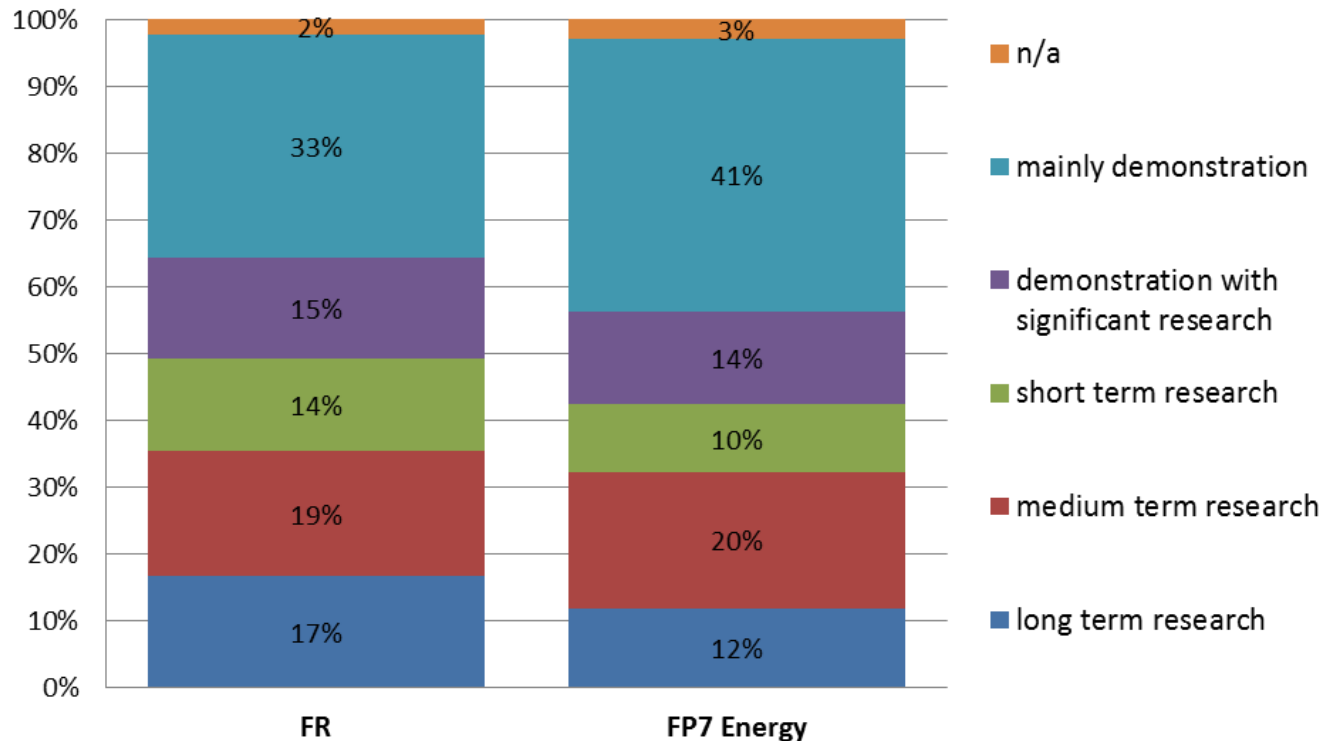
➔ **Supported Activities (Euratom)**

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- **Type of supported activities**

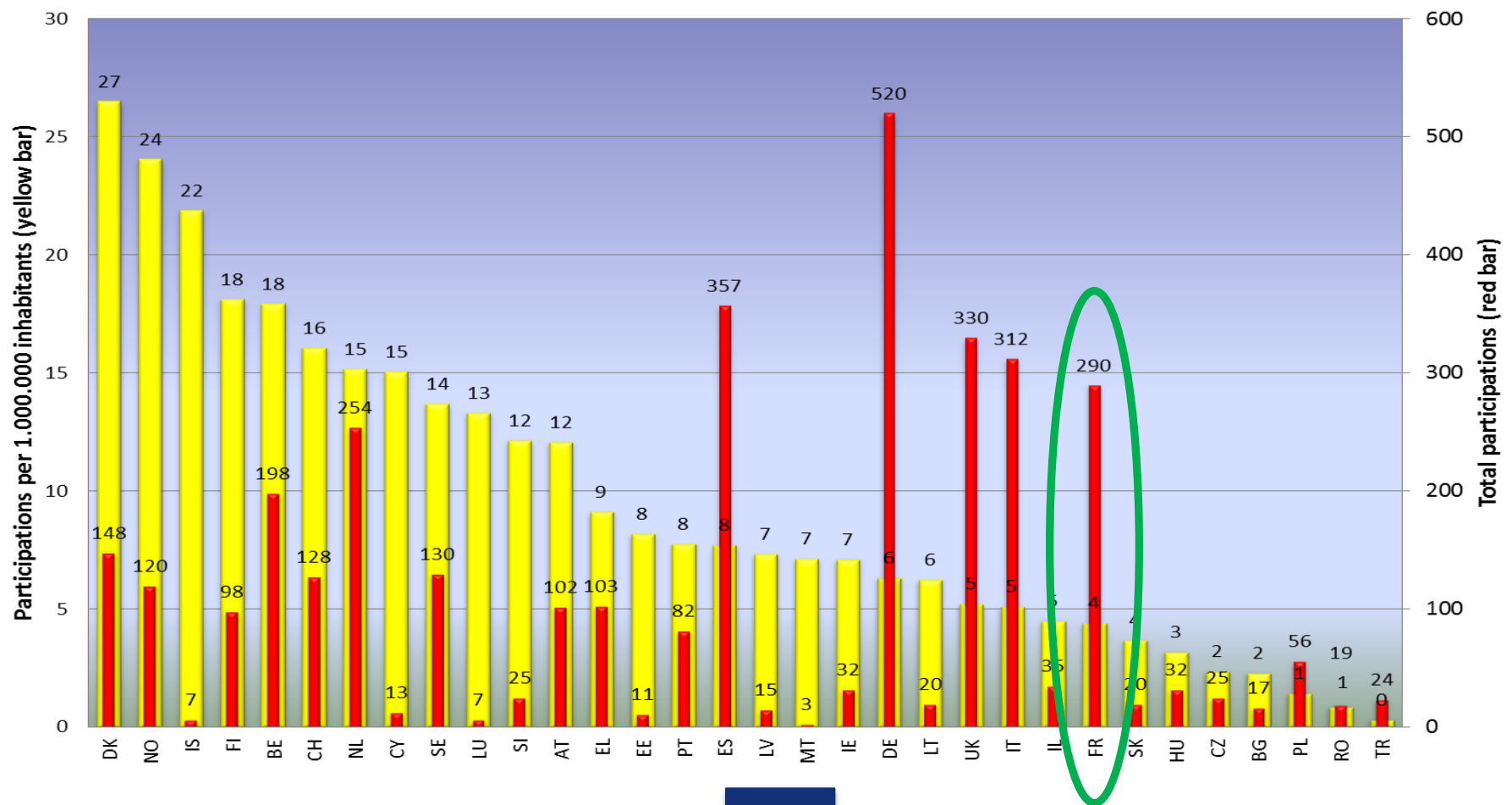
**Time horizon of FP7 Energy projects
(share of EU contribution, 2007-2012)**





● Participations (Non-nuclear energy)

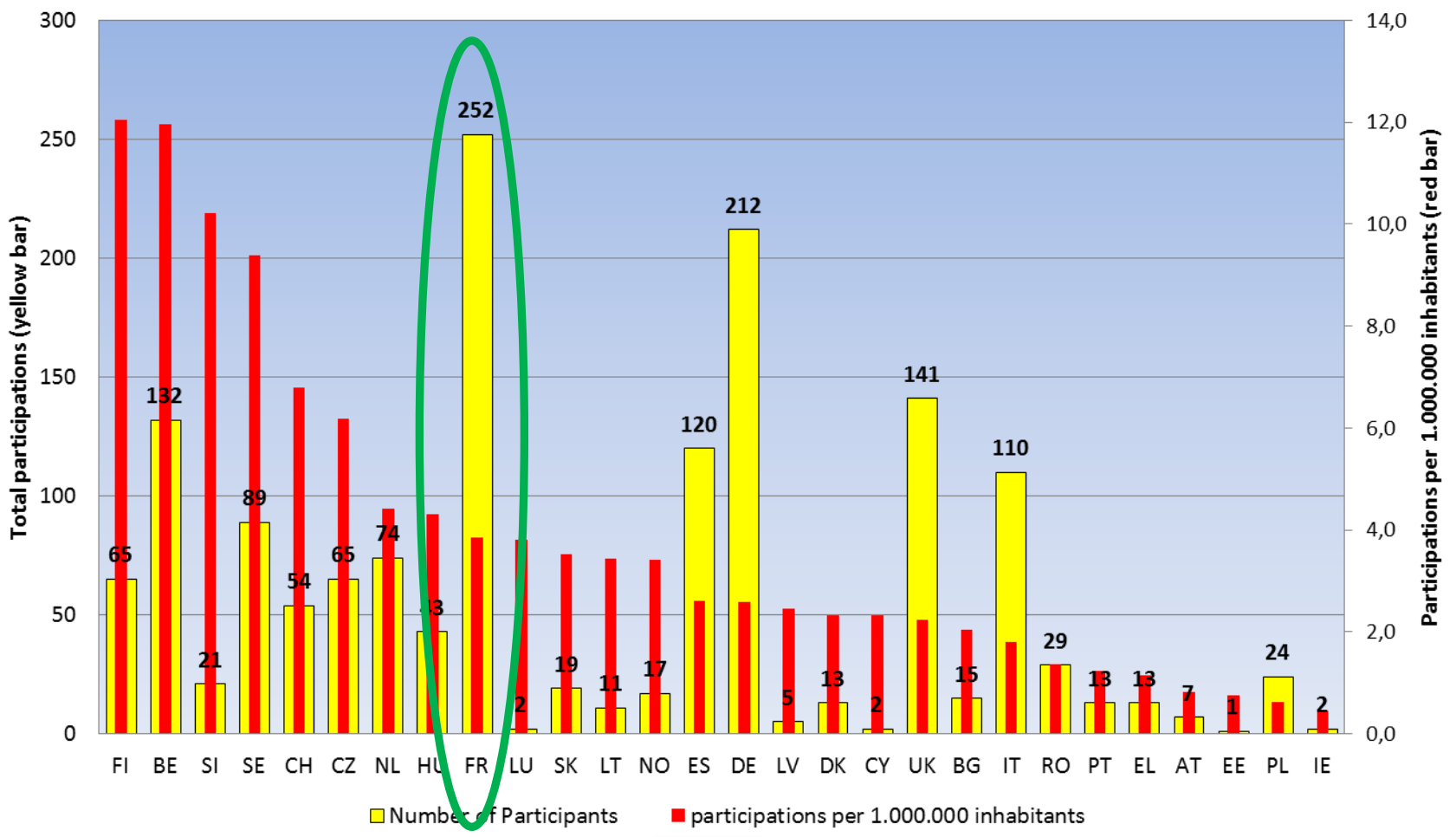
Geographical origin of participants (FP7 Energy, 2007-2012)





● Participations (Fission)

Participations per country (Euratom Fission, 2007-2012)



Where are we?



- Fragmentation - Resources continue to be allocated mostly independently
- Leverage of private investments and industrial commitment remains limited
- Lack of coherence of funding e.g. Cohesion funds, Horizon 2020, MSs, ETS etc
- No suitable financing instruments for the SET Plan large scale first-of-a-kind commercial demonstration projects? (breakthrough technologies)
- Integration of research capacities at the very beginning

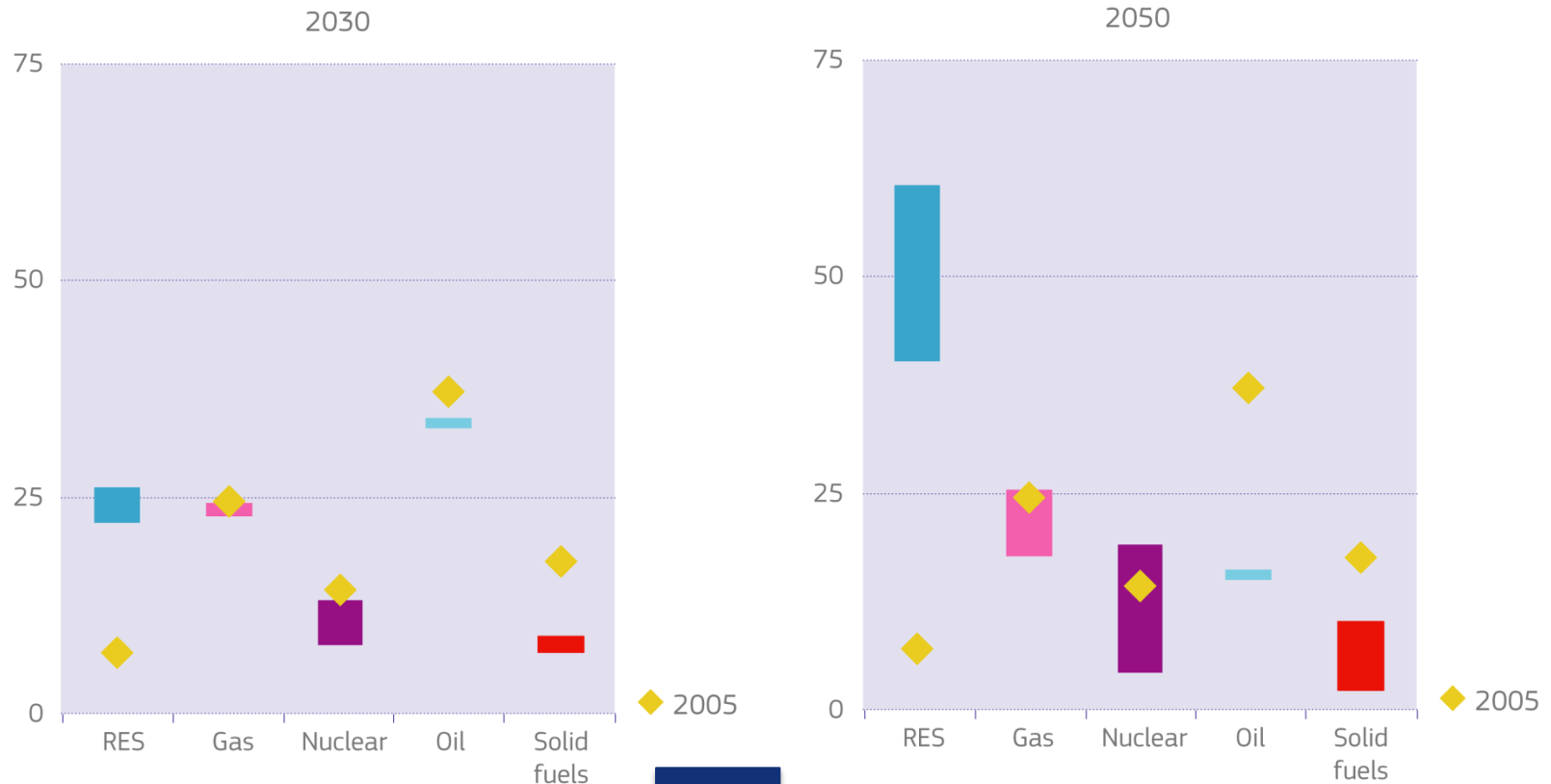
➔ **Prevents reaching a critical mass of public resources and lacks the leverage of significant industrial investments** matching the efforts made by Europe's major competitors; Negative effect on visibility and attractiveness of European Actions.

Energy Roadmap 2050



- **Next years, critical to develop the main options that will constitute the backbone of the energy system by 2050**

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



Source: European Commission

MFF 2014 - 2020: an opportunity (1)



- **Horizon 2020 key instrument to accompany this transition at EU level:**
 - Included as a key challenge 'Secure, clean and efficient energy' under the societal challenges' block of Horizon 2020
 - Access to Risk Financing
 - Separate but complementary programme for nuclear energy activities adopted under the Euratom Treaty
 - Important elements in the other pillars of H2020 (ICT, materials, bio-energy, FET etc)
 - Leveraging industrial participation and MS efforts
- **Structural funds to invest in research and innovation and Energy**



- **Support the implementation of the SET Plan, but how?**
 - From technology to system integration - Which priorities?
 - From fragmentation to partnerships - Which instruments?
 - From disparate funding to coherence - Which resources?

Which Priorities?



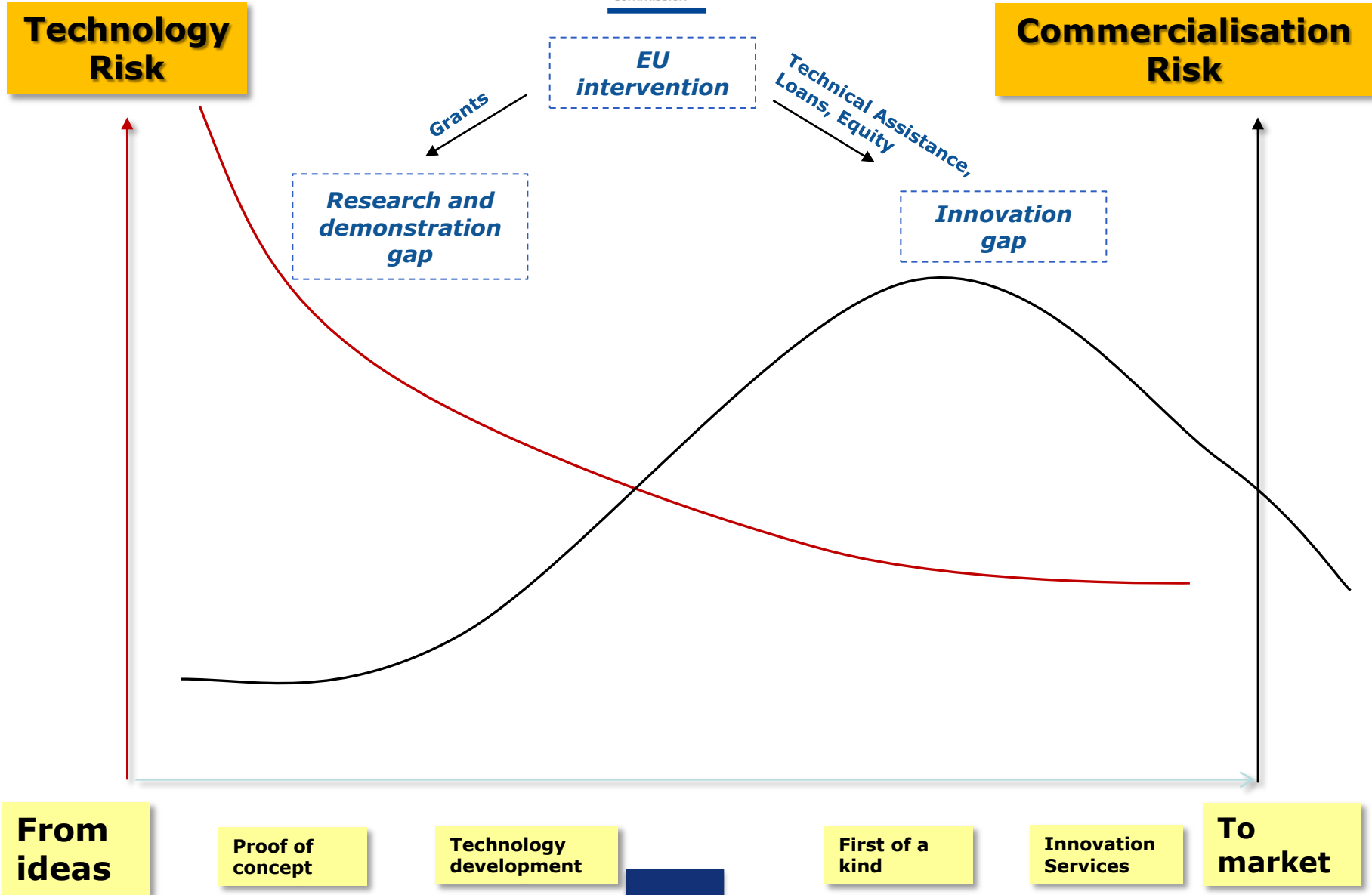
Current SET Plan portfolio:

- Materials & Manufacturing
- Technologies: Bioenergy, CCS, Geothermal, Marine, Nuclear, Solar, Wind
- Systems: Electricity grids, Storage, FCH, Smart Cities and Communities

Socio-economic dimension:

- need for robust and transparent studies to assess the main economic and social issues related to energy
- Need for actions to engage citizens (active player and acceptance)
 - ➔ Information System of the SET-Plan (SETIS)

Which Mechanisms (1)?



Which Mechanisms (2)?



Materials

energy systems

From ideas

Proof of concept

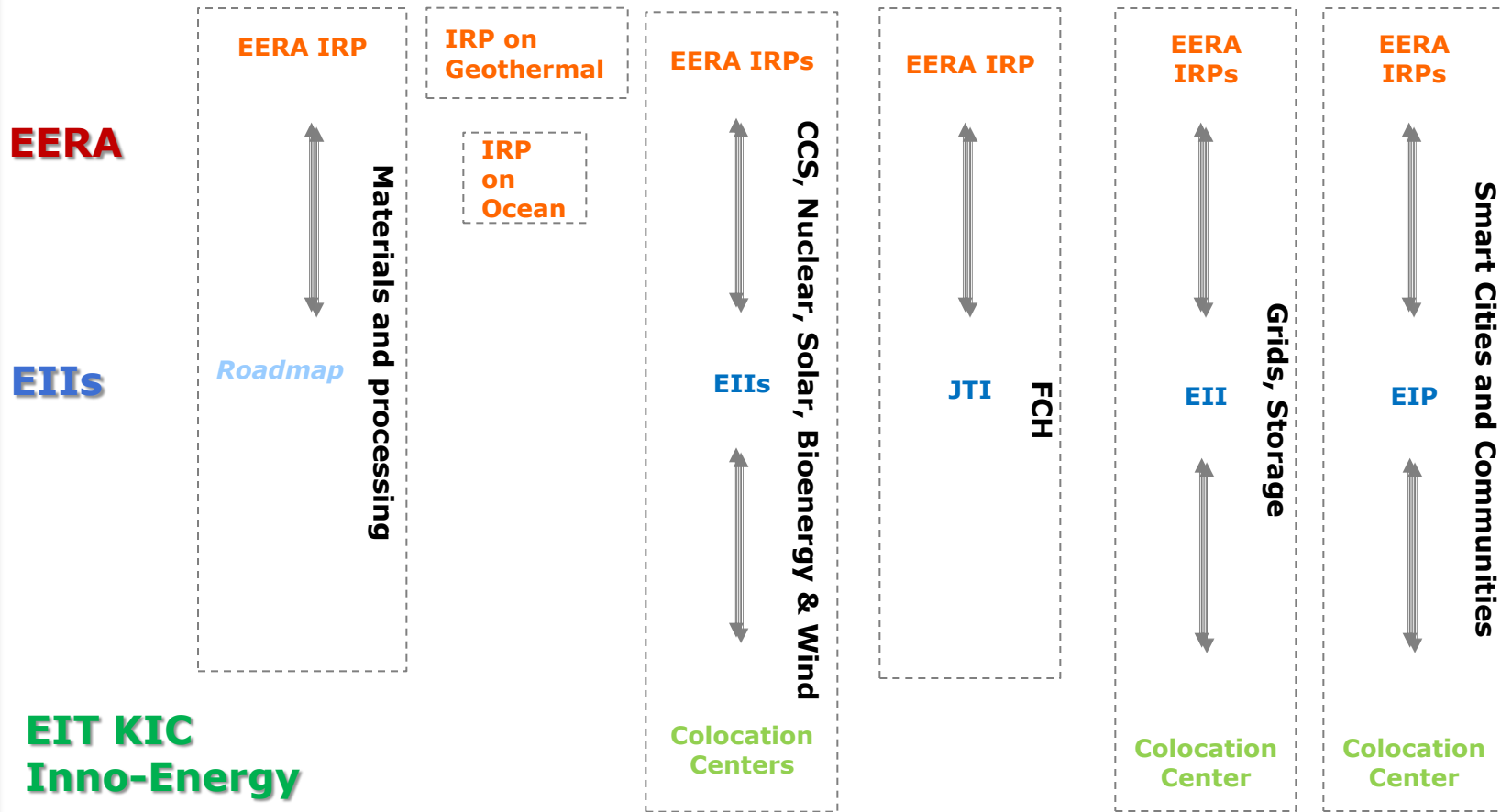
Pilots

First of a kind

Innovation Services

To market

Excellence science (Blue sky research, FET, Infrastructures...)

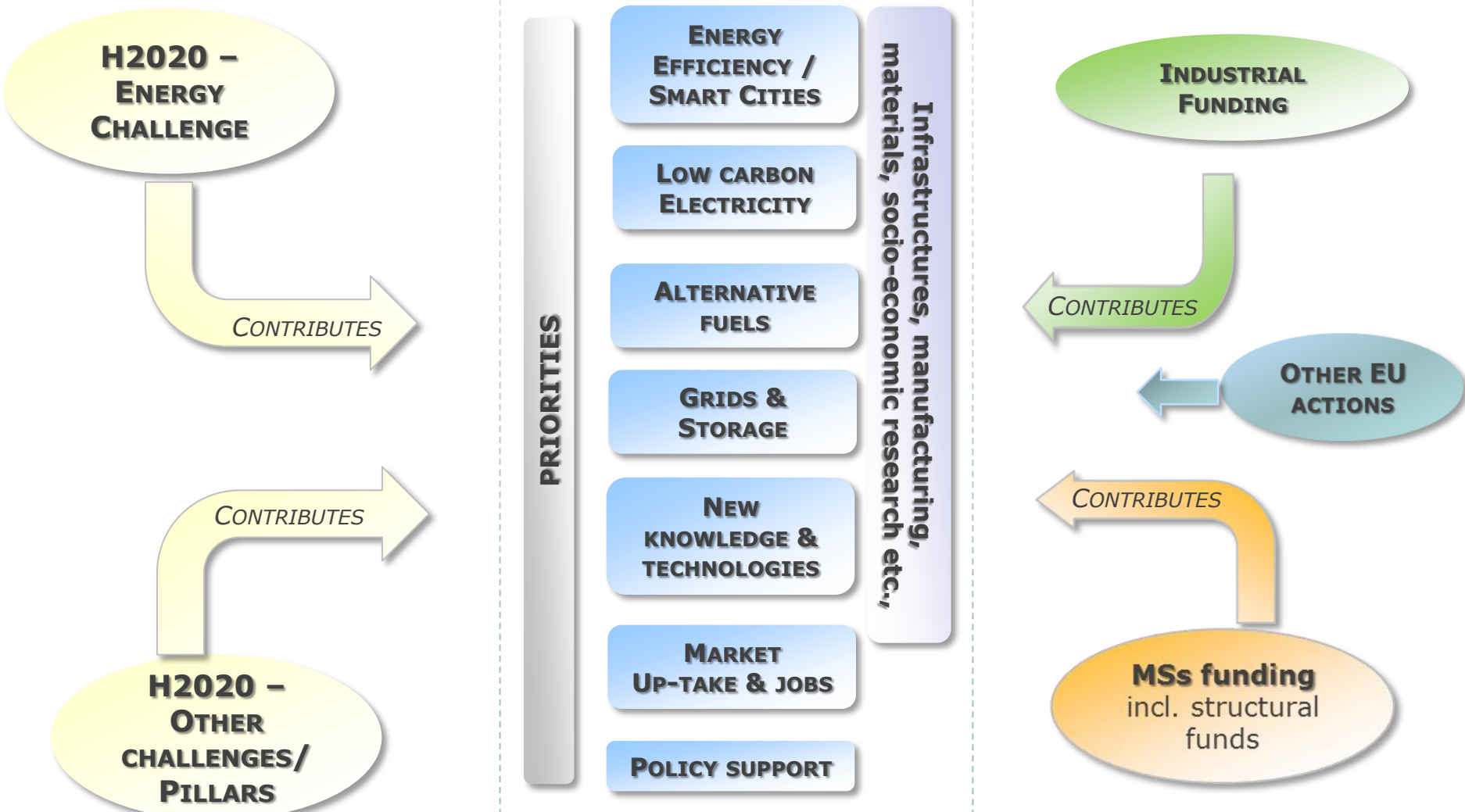


Market uptake measures, Policies, Human resources

Which Resources?



- SET Plan needs = 8 b€/yr over 10 years



Which Instruments?



Projects

Joint Actions/Programmes

Partnerships

From ideas

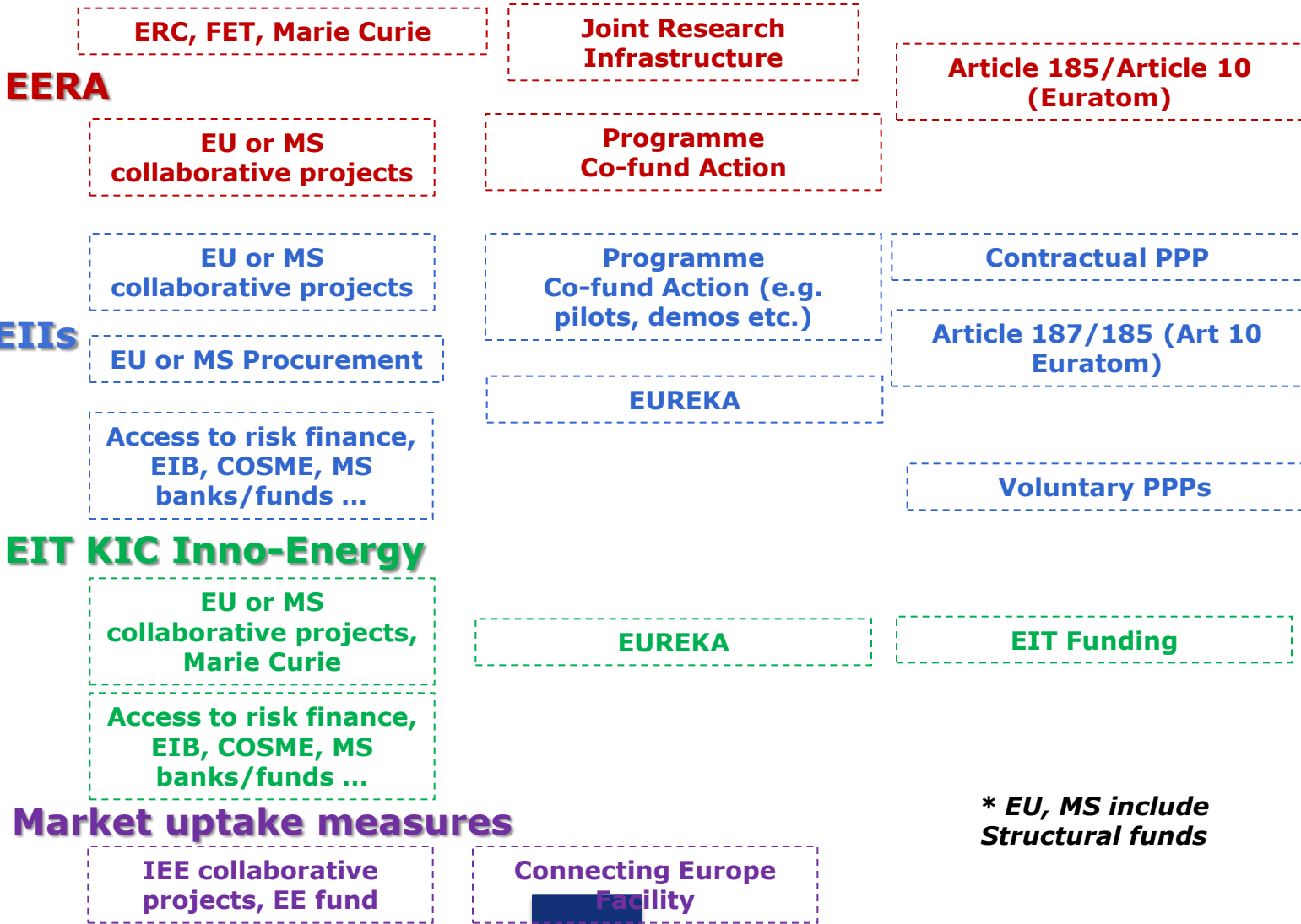
Proof of concept

Pilots

First of a kind

Innovation Services

To market



Article 185 / Article 10 (Euratom) EIP

* EU, MS include Structural funds

Reviewed Energy strategic priorities (1)



- **Three first strategic priorities identified**, in line with the Energy Policy objectives, to help targeting the EU actions:
 - 1. Competitive low carbon energy**
 - Smart grids and storage
 - Low carbon, low cost electricity supply
 - Alternative fuels
 - 2. Energy efficiency**
 - Industry
 - Buildings
 - Market uptake
 - 3. Smart cities**
 - Industry led consortia (energy, ICT and transport).

Reviewed Energy strategic priorities (2)



- A **cross-challenge and cross-pillar approach** for the implementation of these actions
- **Support the implementation of the SET Plan** - catalyse a further integration of national research and innovation capacities and Joint actions between MS, including cohesion funds and the EC to leverage significant industrial investments for large research and innovation programmes matching the efforts made by Europe's major competitors.
- **Pilot action for the next 3 years:** launch of a set of Programme Cofund covering several fields (e.g. research on RES and their integration into the grids) at programme level and involving EC and MSs (variable geometry)

- **EERA - a key mechanism for the SET Plan**
 - **Strong mobilisation** of Energy Research Organisations:
 - More than 150 participating organisations
 - About 2700 professionals full time equivalent (in kind contribution of roughly ~ 400M €)
 - Key principle of **Horizon 2020** → Partnering with European stakeholders to share resources and implement jointly:
 - **Recognition of the EERA** : *"Consideration will be given to provide support, including with Member States, to alliances of public research performers, in particular, the EERA established under the SET Plan to pool public research resources and infrastructures to address critical research areas of European interest"*
 - **Next steps**: to reinforce the role of the EERA in the emerging Research and Innovation landscape in the field of energy (on-going discussion between EERA/EC/MSs)



Key messages

- Long term vision (strategy 20-20-20, Energy Roadmap 2050, etc.)
- Need for an energy mix encompassing a wide range of low carbon energy technologies
- Importance of research at EU level (new technologies, system integration, large-scale demos)
- Importance of an efficient organisation at EU level = Horizon 2020 an opportunity (SET Plan, partnerships, international cooperation)

**Thank you for
your attention!**

