

Importance of including Flexible and Efficient Conventional Power Generation in the H2020 Framework Programme

Outline

- EPPSA
- Today's Situation in the Power Generation sector
- Conventional Power Generation
- SET-Plan
- Horizon 2020
- Conclusions

The European Power Plant Suppliers Association (EPPSA)

is **the voice**, at European level, of companies supplying power plants, components and services.

EPPSA members, located throughout Europe, represent a **leading sector of technology** with more than 100.000 employees and annual revenue of over 30 billion euro.

Virtually, all existing Power Plants in the EU have either components from or were built by EPPSA Members

OUR MEMBERS

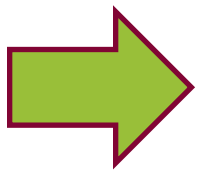
Today's Situation

Variable Renewable Energy Sources (PV & Wind) to provide up to 35% of the electricity produced in the EU by 2020

However:

“The size and inherent flexibility of the power system are crucial aspects in determining the system’s ability to accommodate a high share of wind power”

- EWEA



Need of conventional power plants to step in **flexibly, reliably and efficiently** to support the integration of v-RES in the grid



Conventional Power Generation

Conventional Power Generation and some RES technologies are reliable, dispatchable, meet demand and are always available to stabilise the grid.

↳ RES integration will lead to existing capacities to be used only a quarter to a half of the annual availability, operating at part load, resulting in:

- Reduction of efficiency
- Suboptimal use of valuable resources
- Higher emissions
- Etc...



- In 2011, the EC's Joint Research Center published the technology map of the European Strategic Energy Technology Plan (SET-Plan, 2008) dedicated to the swift deployment on a large scale of technologies with a low-carbon footprint stating that:

“A necessary condition for the timely market roll-out of these low-carbon energy technologies is an acceleration of their development and demonstration”

Chapter 9 of the 2011 Technology Map of the SET-Plan is focused on the topic:

→ Advanced Fossil Fuel Power Generation

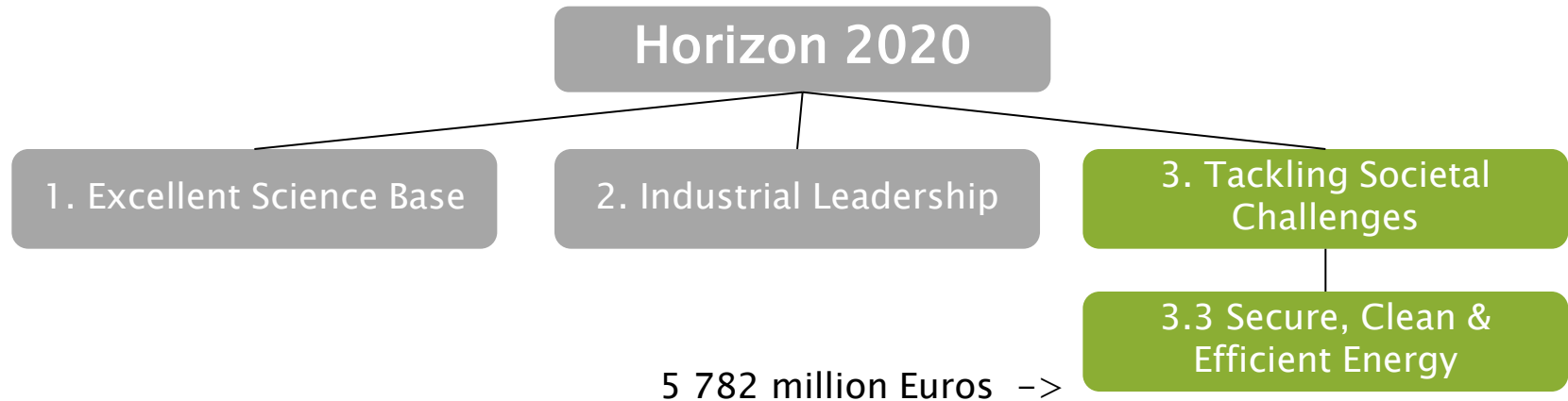
2011 Technology Map
of the European Strategic Energy Technology Plan
(SET-Plan)



EUR 24979 EN - 2011

HORIZON 2020: 2014–2020

- ❖ Fully supports Europe 2020 strategy – research & innovation as central to achieving the objectives of smart, sustainable and inclusive growth.
- ❖ Bring together and strengthen activities currently funded under the FP7, the innovation parts of the Competitiveness and Innovation Framework Programme, and the European Institute of Innovation and Technology.
- ❖ Aims at a substantial simplification of the EU programmes.
- ❖ Proposed budget: ~ 80 billion Euros



SECURE, CLEAN AND EFFICIENT ENERGY

- ❖ **Objective:** make the transition to a reliable, sustainable and competitive energy system, in the face of increasingly scarce resources, increasing energy needs and climate change.
- ❖ **Implementation aim:** support implementation of the research and innovation agenda of the Strategic Energy Technology Plan (SET Plan)
- ❖ **Actions:**
 1. Reducing energy consumption and carbon footprint through smart and sustainable usage
 2. Low-cost, low-carbon electricity supply
 - 2.1. Develop full potential of wind energy
 - 2.2. Develop efficient, reliable and cost-competitive solar energy systems
 - 2.3. Develop competitive and environmentally safe technologies for CO₂ CCS
 - 2.4. Develop geothermal, hydro, marine and other renewable energy options
 3. Alternative fuels and mobile energy sources
 4. A single, smart European electricity grid
 5. New knowledge and technologies
 6. Robust decision making and public engagement
 7. Market uptake of energy innovation, empowering market

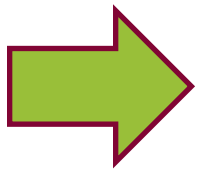
Fossil Fuel Technology in SET-Plan vs. H2020

Advanced Fossil Fuel Power Generation is in the SET Plan

BUT

There is no research for Fossil Fuel Technology foreseen in H2020!

R&TD needed for technologies enabling higher flexibility and efficiency (also part load) of thermal power plants



EP should address this inconsistency of the two strategic documents

Conclusions



The major European energy industry associations call to include **Advanced Fossil Fuel Power Generation** in Horizon 2020:

1. Adding a new point (3.2.5) on “flexible and efficient fossil fuel power generation” to the envisaged Activity 3.2 “Low-cost, low-carbon electricity supply” pursuing the specific Objective of “Security, Clean and Efficient Energy” within Horizon 2020.

2. Rephrasing the title of Activity 3.2 “Low-cost, low-carbon electricity supply” to “Low-cost, low-carbon and flexible electricity supply”.

3. Rephrasing the title of Activity 3.4 “A single, smart European electricity grid” to “A single, smart, efficient and flexible European electricity grid”.

Proposed Amendment

(c) Flexible and efficient fossil fuel power plants – enabling intermittent renewables

Activities shall focus on the research, development and full scale demonstration of technologies and/or materials enabling higher flexibility and efficiency of thermal power plants having to cope with the necessity to step in when intermittent renewables are not able to deliver to the system and to ensure grid stability.

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Thank you for your attention!

Any Questions?

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