Thechnology strategy and energy efficiency

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Asking the right questions

Guiding questions :

Please consider the following questions, citing any available evidence such as foresight and other assessments of research and innovation trends and market opportunities:

1. What are the **challenges** in the field concerned that requires action under the Work Programme 2018-2020? And would they require an integrated approach across the societal challenges and leadership in enabling and industrial technologies?
2. What is the **output / impact** that could be foreseen? Which innovation aspects could reach market deployment within 5-7 years?
3. Which **gaps** (science and technology, innovation, markets, policy) and potential **game changers**, including the role of the public sector in accelerating changes, need to be taken into account?
4. Which areas could benefit from **integration of horizontal aspects** such as social sciences and humanities, responsible research and innovation, gender aspects, and climate and sustainable development?

2007: The SET Plan

Strategic Energy Technology Plan (SET Plan)

⇔ **Technology pillar of the EU energy and climate policy**

Objectives for 2020

- 20% reduction of CO2 emissions (ref. 1990)
- 20% share of renewable energy [of EU energy consumption]
- 20% improvement in Energy Efficiency

➢ **Focus on all technologies for energy supply**

➢ **<u>Key objectives</u>: to better align European and national programmes & to trigger investment in energy R&D on common priorities**

2013: Communication on Energy Technologies and Innovation

New Developments

- New policy challenges

Objectives for 2030

- ➔ 40% reduction of CO2 emissions (Ref. 1990)
- ➔ 27% share of renewable energy [of EU energy consumption]
- ➔ 27% improvement in Energy Efficiency

- From technology sectors to energy system
- Keep technology options open
- Reinforce the implementation of actions beyond EU-funded projects

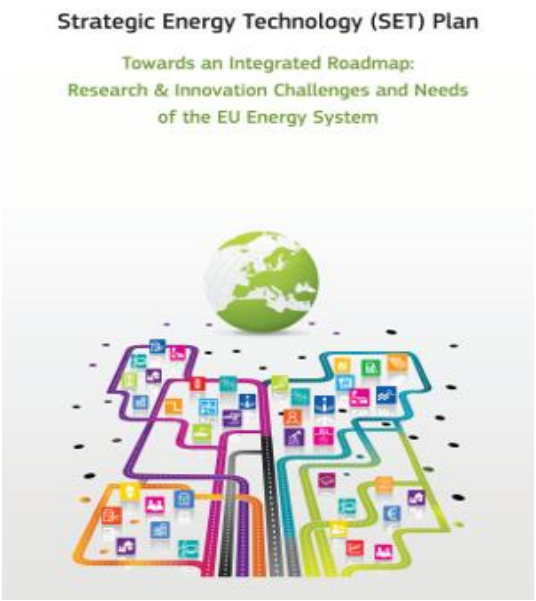
2014: Integration

'Towards an Integrated Roadmap', Dec. 2014

Developed by more than 150 stakeholders

4 blocs:

- Active consumer
- Demand focus (energy efficiency)
- System optimisation
- Supply



➔ New integrated approach – going beyond technology silos

➔ 1st time in Europe – a comprehensive energy R&I agenda for solutions to accelerate the energy transition

https://setis.ec.europa.eu/set-plan-process/integrated-roadmap-and-action-plan

Feb 2015: Energy Union

Energy Union: 5 Pillars

1. Energy security, solidarity and trust

2. A fully integrated European energy market

3. Energy efficiency contributing to moderation of demand

4. Decarbonising the economy

5. Research, Innovation and Competitiveness

⇒ the Strategic Energy Technology Plan (SET Plan) as a key implementing pillar

Sept 2015: a new impetus given to the SET Plan

➔ **A key innovation pillar of Energy Union**

➔ **To accelerate the European energy system transformation**

- **A more targeted focus**
- **A more integrated approach**
- **Towards prioritisation**
- **A new SET Plan management:**
  - **results-oriented**
  - **wider range of stakeholders involved**
  - **increased transparency, accountability, monitoring progress and knowledge sharing**
    (via SETIS Strategic Energy Technology Information System).

https://setis.ec.europa.eu/

More focused & integrated priorities

Energy Union Priorities

SET Plan Ten Key Actions

4 Core priorities

No1 in Renewables	1. Performant renewable technologies integrated in the system 2. Reduce costs of technologies
Smart EU energy system, with consumer at the centre	3. New technologies & services for consumers 4. Resilience & security of energy system
Efficient energy systems	5. New materials & technologies for buildings 6. Energy efficiency for industry
Sustainable transport	7. Competitive in global battery sector (e-mobility) 8. Renewable fuels

More focused & integrated priorities

Energy Union Priorities

SET Plan Ten Key Actions

2 Priorities for interested Member States

9 Driving ambition in carbon capture storage and use deployment

10 Increase safety in the use of nuclear energy

The SET Plan Actors

European Commission & Countries

[EU28 + CH, IS, NO, TR]

- Steering Group / Bureau
- Joint Actions Working Group

Stakeholder platforms

- **European Technology and Innovation Platforms** (ETIPs)
- **The European Energy Research Alliance** (EERA)
- **Others** e.g. European Public-Private partnerships Fuel Cells & Hydrogen, Bio-based Industry, Energy Efficient Buildings, Sustainable process Industry)

SET Plan Prioritisation

For each of the 10 Key Actions

1. A few R&I targets proposed by the EC from the Integrated Roadmap
2. Large consultation (Stakeholders/Member States)
3. Agreement on a limited set of targets ('Declarations of Intent')

➔ **Next step – Implementation**

via EU & national programmes, industry, European Investment Bank – private investors

Example of R&I targets

Solar Thermal Electricity (CSP/STE) 'Declaration of Intent'

1. **Short-term**: > 40% cost reduction by 2020 (from 2013) translating into

➔ Supply price* < 10 c€/kWh for a radiation of 2050 kWh/m²/year (conditions in Southern Europe)

2. **Longer-term**: develop the next generation of CSP/STE technology

➔ New cycles (including supercritical ones) with a first demonstrator by 2020, with the aim to achieve additional cost reductions and opening new business opportunities.

** The supply price is meant to be the targeted price within Power Purchase Agreements (PPA) with a duration of 25 years*

Thank you for your attention