Introduction to the SET-Plan and the EU Horizon 2020 programme .

SET-Nav Stakeholder Dialogue Kick-Off Event

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Energy

EU Climate and Energy Objectives

2020

- **20%** less greenhouse gases
- **20%** renewable Energy
- **20%** Energy savings

2030 (=EU28 INDC)

- **40%** less greenhouse gases
- **27%** renewable Energy
- at least **27%** Energy savings

Energy Union

5 GUIDING DIMENSIONS

The Energy Union's 5 dimensions

1. Energy security, solidarity and trust,
2. A fully integrated internal energy market,
3. Energy Efficiency first,
4. Transition to a long-lasting low-carbon society,
5. An Energy Union for Research, Innovation and Competiveness.

The Energy Union's 5th dimension

Research & Innovation

Developing EU technological leadership in low carbon technologies by

- **reducing energy consumption,**
- **developing renewable sources,**
- **empowering consumers and**
- **boosting growth and jobs.**

SET Plan Communication (2015)

10 Actions, each to develop "declaration of intent"

- **EU # 1 RES: (1) Develop highly performant renewables technologies and their integration and (2) Cost reduction through regional cooperation**
- **Consumer in a smart system: (3) Smart homes and (4) Resilience, security and smartness of the energy system**
- **Efficient energy systems:** (5) in buildings and (6) in industry
- **Sustainable transport:** (7) **Become competitive in the global battery sector to drive e-mobility forward** (8) Renewable fuels for sustainable transport solutions
- ***Carbon Capture (Use) Storage*** *(9)*
- ***Safety in nuclear*** *(10)*

Example: extract goals and targets "Declaration of intent", DoI, *Action 4: Resilience, security and smartness of the energy system*

- **Input from stakeholder community**
- **Adoption by Member States in SET Plan Steering group**

DoI: Introduction

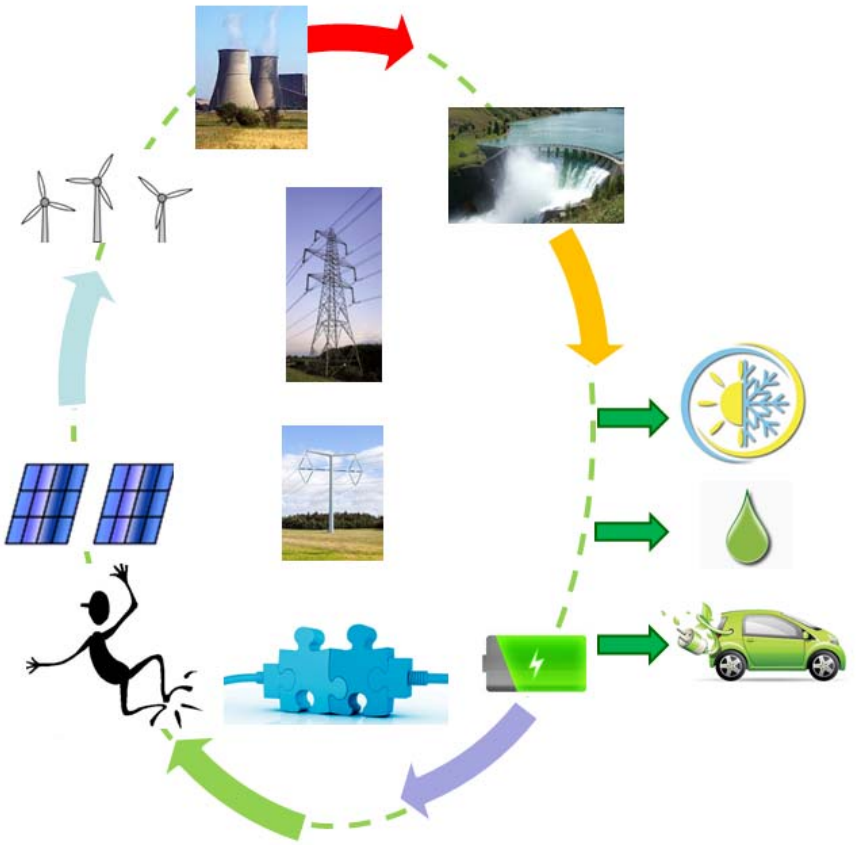
Electricity has a central role to play in the energy system

- Integrates already a high share of renewables (26% of renewables in 2013, 10% being variable renewables)
- Greater flexibility for an ever-increasing share of variable renewables (wind and solar) is needed
- Need to cope with new consumption profiles
- A system approach is therefore needed to guide research and innovation

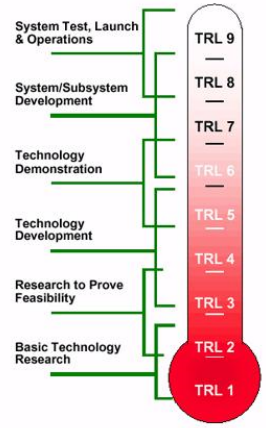
Technologies, systems and services for more flexibility are needed for:

- Energy grids and systems (including interconnections),
- Storage, connections with other energy networks
- Demand response, integration of prosumers
- Flexible and sustainable backup and generation.

Not only the flexibility of the system should be enhanced but also its economic efficiency.



DoI: overarching Target



R&I activities aim at developing, maturing and demonstrating tchnologies, systems and services up to a Technology Readiness Level 7-9 (demonstration-pre-commercial)

Enable developing and operating the power system with the appropriate level of reliability and **economic efficiency**, while integrating variable renewables, such as wind and solar

Flexibility will be provided thanks to innovative technologies in:

- customer participation
- integrating better storage
- making the best use of connections with other networks
- optimizing the use of flexible sustainable combined power and heat

DoI: Flexibility Targets

European Commission

- Grid Observability and controllability → Technologies enable to remotely monitor/control 80% or more of HV–MV substations – 25% LV
- Tools for managing the variability and uncertainty of operational conditions → Should enable peak load to be reduced by 25% due to demand response by 2030.
- Increased grid hosting capacity → Monitoring only
- Flexibilisation of centralised and decentralised thermal power generation → 50% of all thermal pow by 2030
  - Doubling of average ramping-rates
  - Halving efficiency losses for part-load
  - Reducing minimum load by 30%

DoI: Economic efficiency Targets

Cost reduction by 2030 of energy storage ranging from 50% to 70% depending on the specific technologies for the same storage function.

Next steps SET Plan

- ***All "Declaration of Intent", to be adopted by autumn 2016***
- ***Member States to develop implementation of SET Plan "Declaration of Intent" supported by EC to spring 2017***

An Energy Union research, innovation and competitiveness strategy for a low carbon Economy - Aims

- **Promotion of R&I for accelerating cost-efficient deployment of low carbon (mainly energy and transport) solutions for the European economy**
- **contribution to increase public and private investment in R&I;**
- **remove barriers for R & I investments and increase R&I cooperation and synergies.**
- **To be presented before the end of 2016/ primo 2017**

Process towards Workprogramme 2018-20

- **Input from SET Plan and EURICS**
- **Directions from H2020 Mid term evaluation**
- **Consultation with Member States until Summer 2017**
- **Publication of WP and calls end of 2017.**

Thank you very much for your attention!

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