



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

SET-Nav Stakeholder Dialogue  
Kick-Off Event  
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Unit C2 – New energy technologies,  
innovation, clean coal

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





## 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 5<sup>th</sup> 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.



### 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



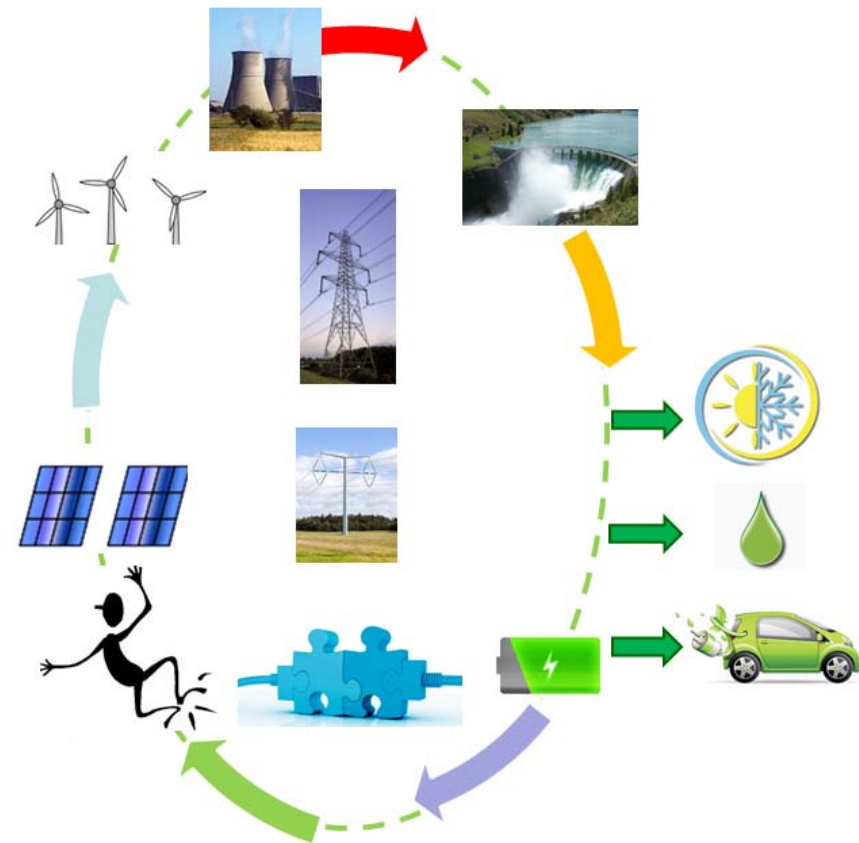
## Electricity has a central role to play in the energy system

- 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

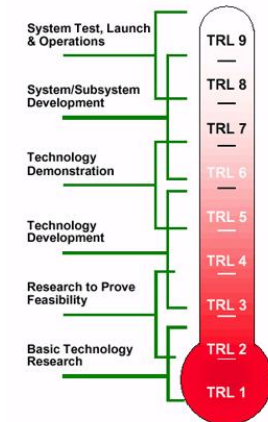


R&I activities aim at developing, maturing and demonstrating technologies, systems and services up to a Technology Readiness Level 7-9 (demonstration-pre-commercial)

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

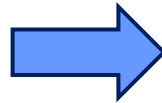




# DoI: Flexibility Targets

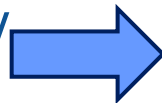


•Grid Observability and controllability



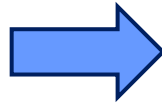
•Technologies enable to remotely monitor/control 80% or more of HV–MV substations – 25% LV

•Tools for managing the variability and uncertainty of operational conditions



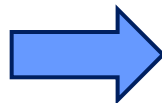
•Should enable peak load to be reduced by 25% due to demand response by 2030.

•Increased grid hosting capacity



•Monitoring only

•Flexibilisation of centralised and decentralised thermal power generation



•50% of all thermal power 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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