Energy Policies in Europe and legislation reformation

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Energy

Contents

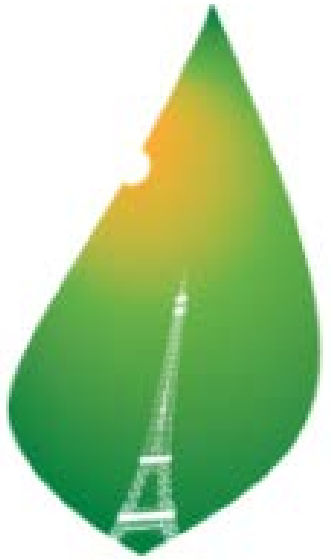
- *EU Climate and Energy objectives*
- **Key policy initiatives 2016**
- **Energy Union & SET Plan**

The Paris agreement – 12 Dec. 2015

- **Global objective "well below +2°C",**

-> special IPCC report in 2018 on emissions pathways to keep **below +1.5°C**

Intended Nationally Determined Contributions (INDC)



PARIS2015
CONFÉRENCE DES NATIONS UNIES SUR LES CHANGEMENTS CLIMATIQUES
COP21·CMP11

http://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf

The 2015 Paris agreement

- **Intended Nationally Determined Contributions** (INDC), submitted by most (160) parties to the UNFCCC (187 countries, 97% of global emissions, as of 07/01/2016)

- with 5-year **strengthening**:
  - stock taking 2018 / new INDC 2020
  - stock taking 2023 / new INDC 2025
  - …
- Biennial **reporting** & peer review

- **Financial support** for adaptation & mitigation (100 bn$/year)

- Needs **ratification** of 55 Parties representing at least 55% of emissions

EU Climate and Energy Objectives

2020

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

5

EU Climate and Energy Objectives

2020	2030 (=EU28 INDC)
• **20%** less greenhouse gases	• **40%** less greenhouse gases
• **20%** renewable Energy	• **27%** renewable Energy
• **20%** Energy savings	• at least **27%** Energy savings

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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

7

The Energy Union's 5 dimensions

5 GUIDING 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.

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- **EU Climate and Energy objectives**
- ***Key policy initiatives 2016***
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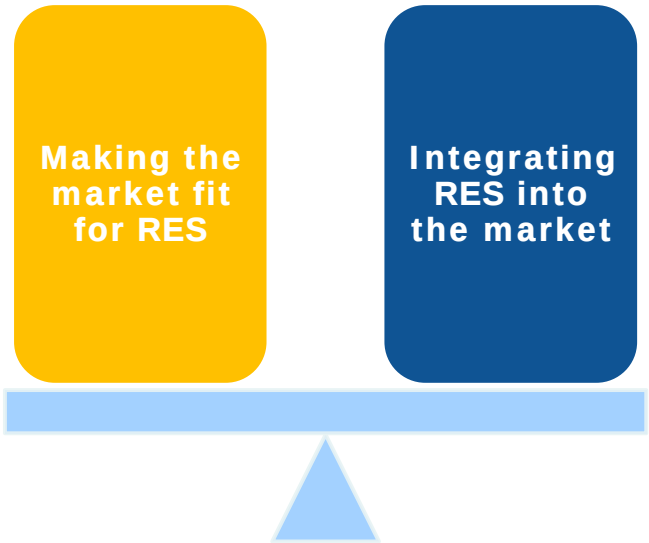
Key policy initiatives

- New ,electricity market design
- New, Renewable energy directive
- Review of Energy efficiency directive

2016, A year of delivery !

Making the market fit for facilitating the integration of renewables



The new market design needs to be the foundation of the 2030 framework

For 2030 we will move from today's 15% (25% of its electricity requirements coming from RES) to at least 27% renewables share (around 50% of RES produced electricity)

New electricity market design
Possible response to challenges

- Making the market work effectively – wholesale & retail
- A coordinated approach to Capacity Remuneration
- Stepping up regional cooperation
- Ensuring co-ordination and co-operation in times of crisis
- Adapting the institutional framework

Key Steps for electricity market design

- **Public consultation COM (2015) 340**
- **Replies from stakeholders**
- **Evaluation report (summary of stakeholder replies)**
- **Impact assessment**
- **Proposal on new market design (end 2016)**

Renewable energy policy framework for 2030

The new Renewables Directive post-2020 (I)

European Commission

Create a market-based environment in which renewables can attract the required investments cost-efficiently

Foster regional cooperation and regional projects

Empower consumers to deploy cost-optimal renewable energy solutions

Incentivise the roll-out of new and innovative technologies

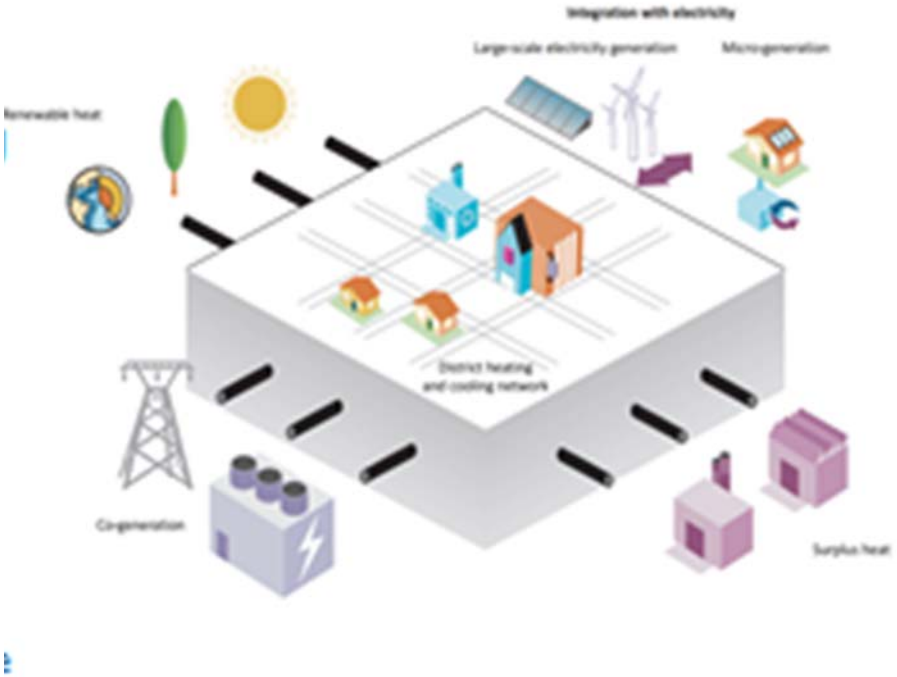
Make sure that the EU can collectively reach the 27 % renewable energy target even in case MS commitments do not add up

Further promote the decarbonisation of the transport and heating & cooling sectors

Ensuring a timely and cost effective achievement of the at least 27 % EU-level binding RES target

Review of Directive 2012/27/EU on energy efficiency

European Commission



Objective of the EED Review 2016:

1. To respond to the agreement of the European Council of October 2014 on an EU-level energy efficiency target of at least 27% by 2030 **to be reviewed by 2020 having in mind an EU level of 30%**.

2. To respond to the **legal obligations** of the EED to assess the effectiveness of Article 6 and the implementation of Article 7 in line with Article 24 (8) and (9).

Specific objectives of the EED Review 2016:

1. Assessing the optimal energy efficiency target for 2030 (starting from 27%, 30%, 33%, 35 and 40%)

2. Reviewing **specific aspects** of the EED to reflect the **2030 perspective:**

   - **Art. 1** and **3** (2030 target)
   - **Art. 7** (energy savings obligations)
   - **Art. 20** (EE financing)
   - **Art. 9-11** (metering and billing) and **15(8)** (demand response) are being analysed in the context of Market Design Initiative
   - **Art. 24** (Reporting) is being analysed in the context of the Governance Initiative

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The Energy Union's 5th dimension

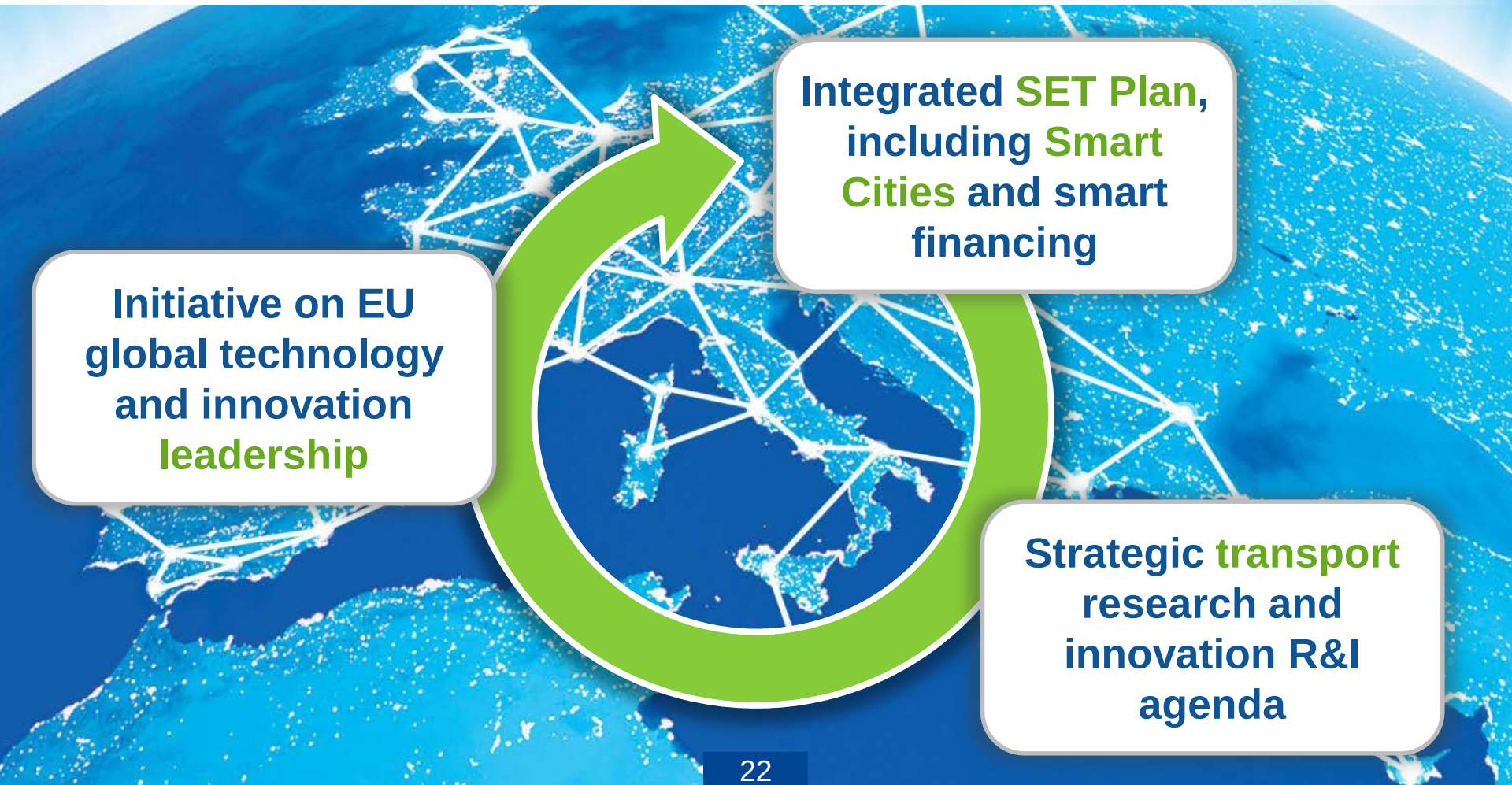
5 GUIDING DIMENSIONS

Research & Innovation

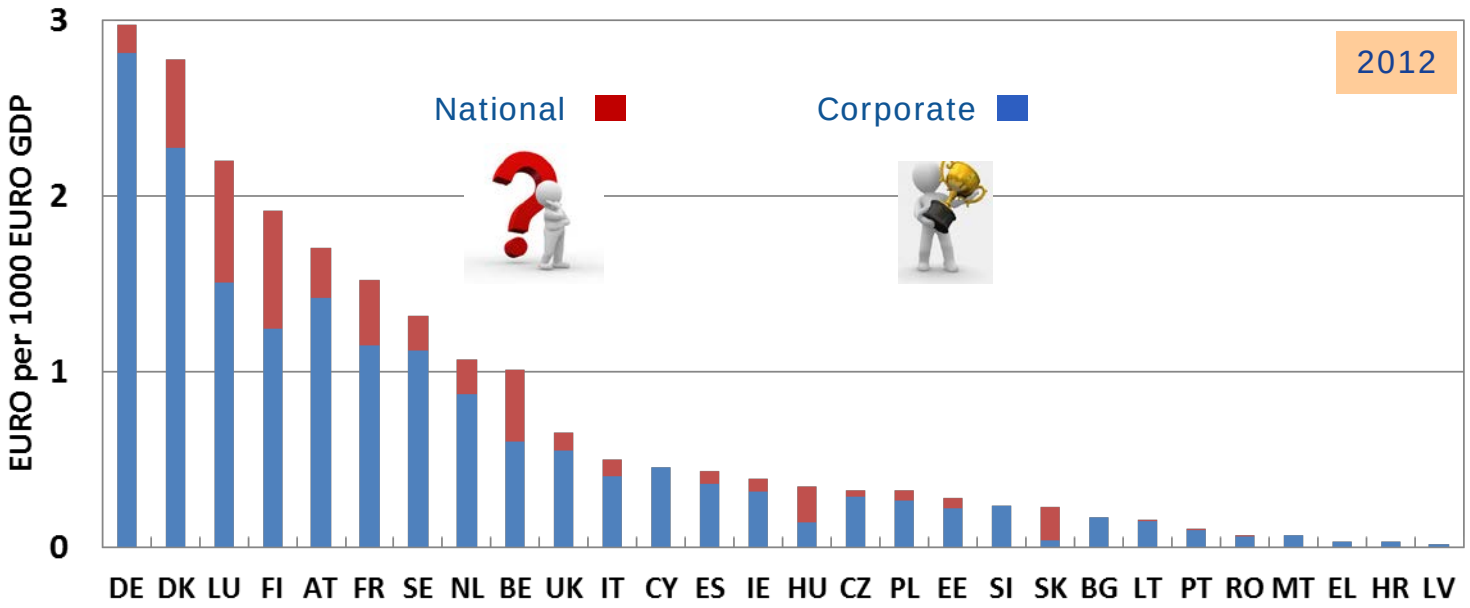
Developing EU technological leadership in low carbon technologies by

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

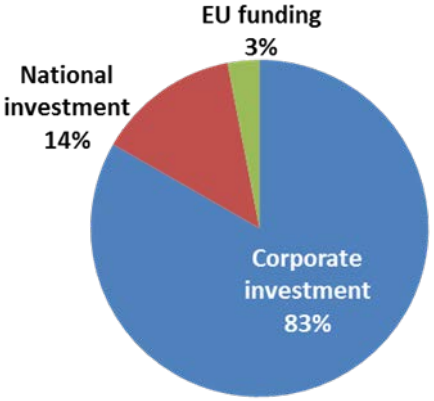
The Energy Union's 5th dimension in practise



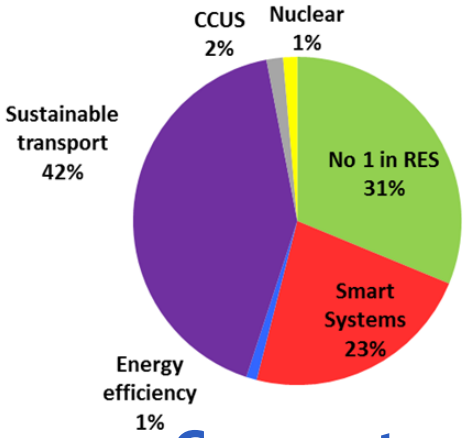
Assessing European innovation: Investments



R&I Investment breakdown



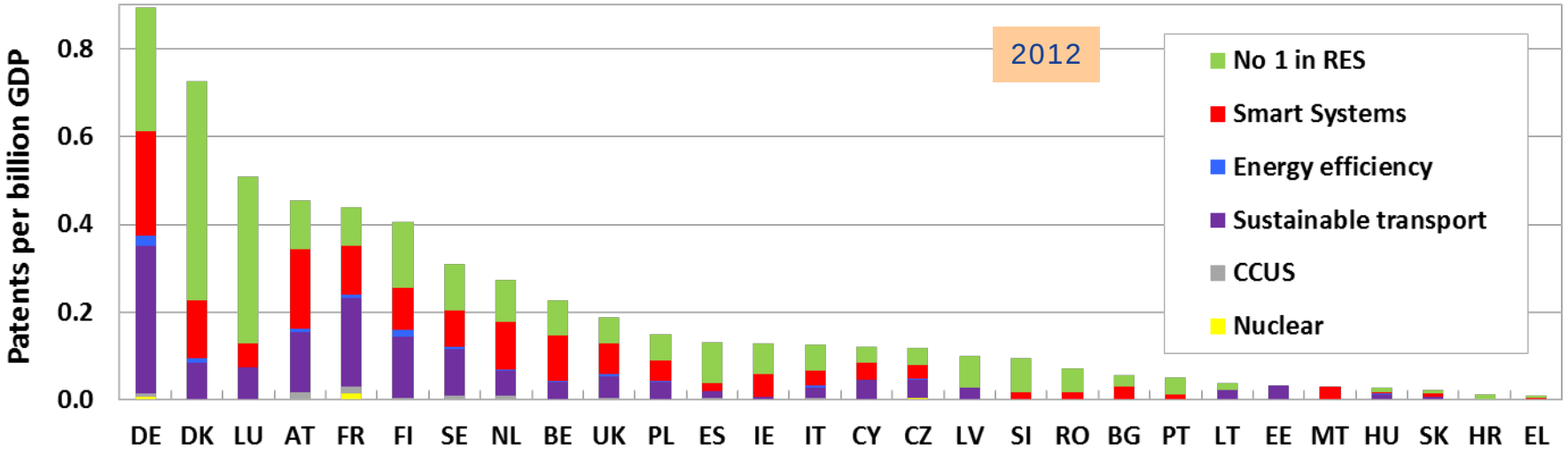
Total

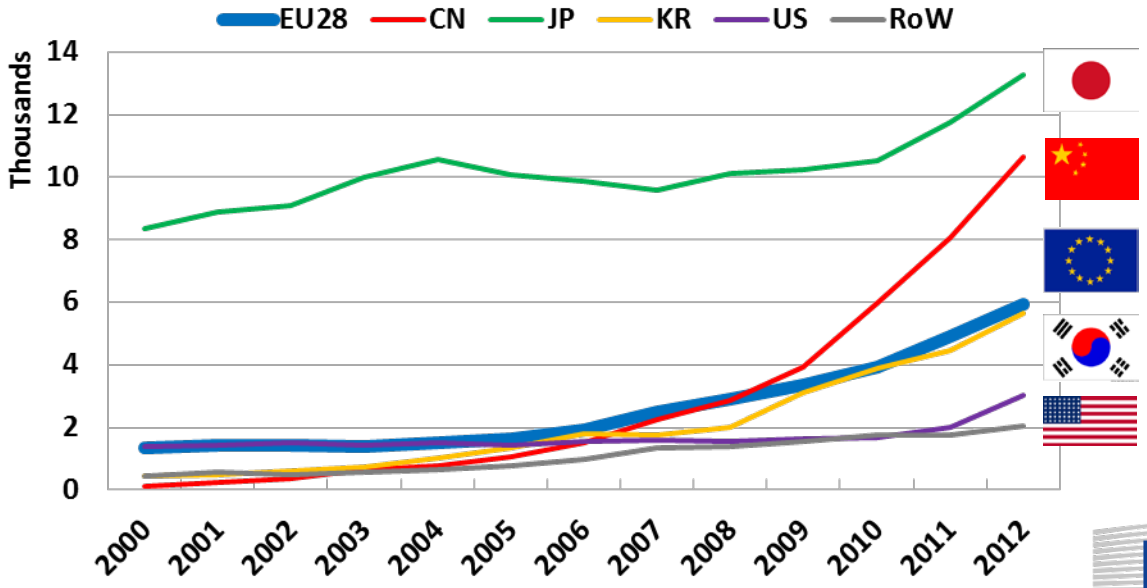


Corporate

European Commission

Assessing European innovation: Trends in patents





European Commission

Towards an Integrated Set-Plan: 10 Key Actions

European Commission

Number one in RES

1) Technology leadership by developing highly performant renewables technologies and their integration in the system

2) Cost efficient key technologies

Consumer at the centre of the future energy system

3) Create technologies and services for smart homes that provide smart solutions to energy consumers

4) Resilience, security and smartness of the energy system

Efficient energy systems

5) New materials and technologies for energy efficiency solutions for buildings

6) Continue efforts to make EU industry less energy intensive and more competitive

Sustainable transport

7) Become competitive in the global battery sector

8) Renewable fuels needed for sustainable transport solutions

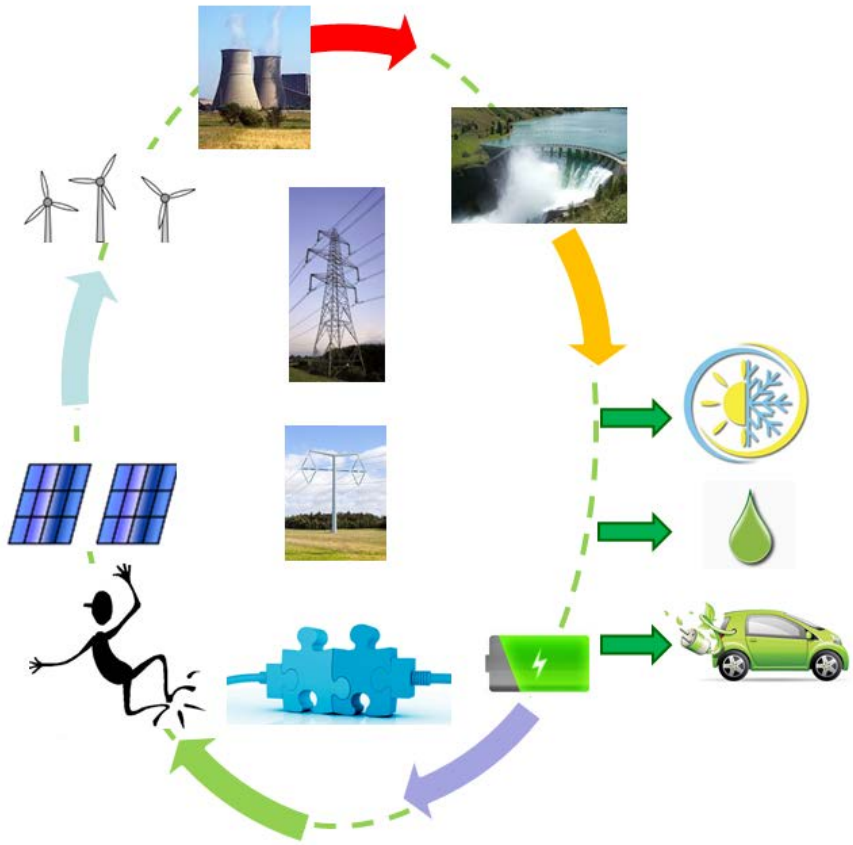
9) A forward-looking approach to carbon capture and storage (CCS) and carbon capture and use (CCU)

10) Increase safety in the use of nuclear energy

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.

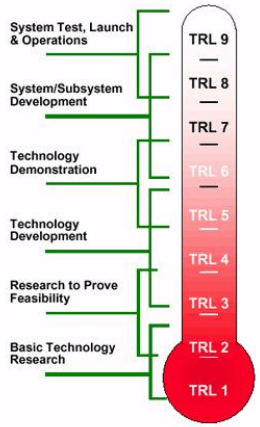
Overarching Target

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



Flexibility

- 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 plants by 2030
  - Doubling of average ramping-rates
  - Halving efficiency losses for part-load
  - Reducing minimum load by 30%

Economic Efficiency

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

Monitoring of the Targets

- Indicators assessing progress of technologies
- EU 28 modelling (share of vRes, demand response, storage, variable generation , interconnection)
- Percentage of substation with monitoring / control
- Studies on demand-response

Next Steps

- Last Meeting of SET-Plan Steering Group was held on 14/09

- MS requested more time for comments and AT is taking the lead to develop a stream on integrated energy systems

- The implementation roadmap will be developed as a collaboration between MS and ETIP SNET – Some countries have expressed their interest in being part of the effort and some to be in the lead but not all countries have responded yet.

Set-up of temporary Working Groups

Composition (max. 30 members)

- **SET Plan countries**
  - Committed in principle to use their energy R&I national programmes and policies to implement some of the R&I activities
  - Preferably interested in developing and pursuing joint research with other SET Plan country(ies)
  - Country representatives in the WG shall be nominated by their governments and cannot represent a stakeholder
- **Stakeholders**
  - Experts from ETIPs (where they exist), EERA, public-private partnerships, etc. Preference to stakeholders that provided inputs to the Issues Papers or during the Integrated Roadmap
- **EC to support the work (e.g. SETIS as a knowledge sharing instrument)**

Selection of R&I activities

R&I activities to be carried out

- Max. 10 per Implementation Plan

Ongoing R&I activities

- When clearly contributing to the targets, ongoing activities (national / EU / industry) need to be identified
- If a target is well covered this way, no additional R&I activities will be proposed

Precise non-technological barriers/enablers

Funding sources

Funding

- Main source: National level [e.g. from government, and/or from stakeholders (industry alone in some cases)]
- In selected cases: EU sources, provided that R&I activities are commensurate with relevant policies endorsed by the EU legislative bodies and with the mandate of the EC, and a strong EU added value is justified
- Joint R&I activities between SET Plan countries (with or without EU funds) should be an important dimension of the Implementation Plans

Additional information required

- To decide who will implement what, with which resources, and when (according to template provided)

Thank you for your attention!

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