



# SET-Plan Education and Training

## *Roadmap Development*



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# The Context



- **Europe 2020 strategy** - Seven Flagship Initiatives for smart, sustainable and inclusive growth
- **Energy Roadmap 2050** – towards a secure, competitive and decarbonised energy system in 2050
- **SET-Plan** – the technology pillar of the EU energy and climate policy



# Human Resources for the SET-Plan



The challenge to be addressed is to deliver the quantity and quality of human resources needed to support the required technological revolution for the energy sector and to grasp and benefit from the opportunities that the European energy policy creates.<sup>1</sup>

[1] SET-Plan Communications COM(2007)0723 and COM(2009)519



# Process & Actors



- **Assessment** via 13 assessment reports (in the course of 2012)
  - ✓ *covering the whole innovation chain*
  - ✓ *all levels: technicians, engineers, researchers*

*'bioenergy', 'carbon capture and storage', 'concentrated solar power', 'electricity grids', 'energy efficient buildings, thermal energy networks and smart cities integration aspects', 'energy storage', 'fuel cells and hydrogen', 'geothermal energy', 'nuclear energy', 'photovoltaics', 'wind and ocean energy', as well as horizontal aspects: 'system integration' and 'coordination of education and training systems'.*

- Together with **all relevant actors**: more than 130 experts coming from academia, research institutes and industry

*Participating organisations: EPUE, KIC InnoEnergy, eseia, SEEIT, EERA, ESFRI + EII teams and industrial association representatives.*

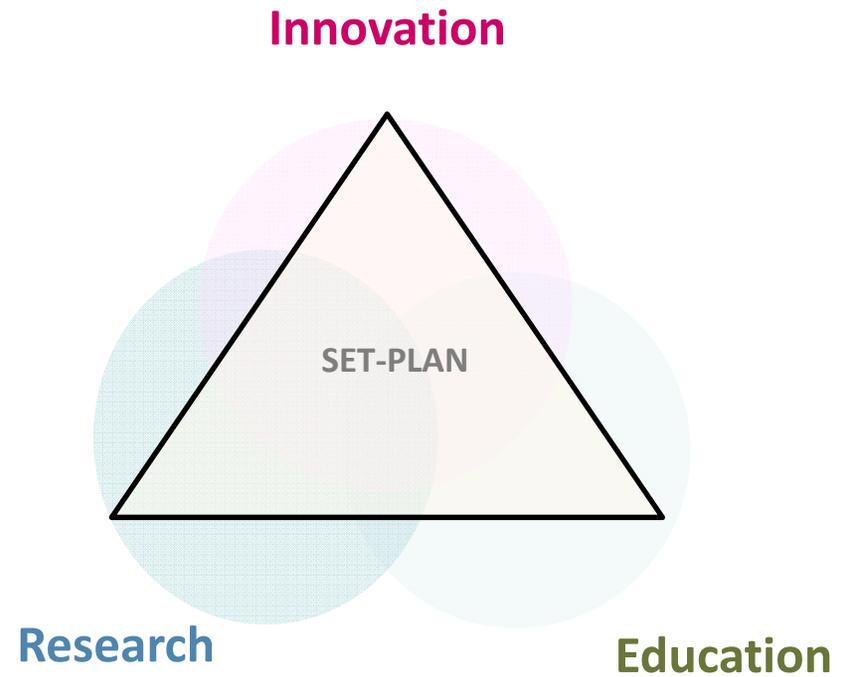


# The Challenge



The challenge of training a growing and skilled workforce for the low carbon energy sector

- A growing demand for human capital
- A complex and evolving energy sector
- Increasing the efficiency and adequacy of the system



# Roadmap Approach



- **To bring about a structural change in the European education and training landscape** – enhancing the coordination and integration of national capacities through dedicated networks and fostering industrial involvement through targeted instruments and partnerships at EU level.
- **To address the urgent needs first at a pilot scale** - developing innovative solutions for quality education and training and implementing new schemes.
- **To scale up and replicate successful activities to meet the full needs of the sector** - implementing effective solutions, taking advantage of the newly established and existing coordination structures and partnerships.



# Roadmap Structure



Three interlinked headings:

- I. Filling the **knowledge, skills and competences** gap
- II. Fostering public involvement, access and **up-take by the labour market**
- III. **Planning** and **enabling** skills development, transfer and recognition



# Heading 1



## I. Filling the knowledge, skills and competences gap

*Objective: To address knowledge, skills and competences needs and gaps via building networks, pooling capacities and allowing quick and wide replication.*

- **Networks of Universities** (with links to industry and/or research infrastructure)
- **Networks of Professional Training Centres**



## Heading 2



### **II. Fostering public involvement, access and up-take by the labour market**

*Objective: To reinforce the education and training system's link with the business and research environment.*

- **Mobility and Cooperation Partnerships among Academia, Research Institutes and Businesses**
  - European Collaborative Education Mobility Programmes for Low Carbon Technologies;
  - Mobility and Cooperation Programmes for Research and Technical Staff, Professors and Trainers;
  - Industrial Doctorate Programmes.
- **Infrastructure Support to Education**
  - Actions facilitating access for education and training purposes to large national research infrastructures, technology pilot and demonstration facilities, and research institutes' laboratories.



# Heading 3



## III. Planning and enabling skills development, transfer and recognition

*Objective: To plan and enable skill development and recognition, at the same time facilitating the dissemination of new knowledge, techniques and tools.*

- **Virtual Learning and Information Platform;**
- **Knowledge, Skills and Competences Recognition and Transfer Programmes;**
- **Human Resources and Skills Observatories.**



# Examples



## Bioenergy

**Need:** Lack of specialised “bioenergy supply chain managers”, who have knowledge about the actors and technologies involved along the whole supply chain but also competences in business modelling and sustainability subjects.

### **Response:**

Under the [Advanced Network\(s\) for Bioenergy Education and Training](#)

***Pilot Activity: Prototype Bachelor, Master and Doctoral Curriculum “Bio-resource Value Chain Manager”***

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## Smart Cities

**Need:** Lack of urban energy planning professionals at the management level, with interdisciplinary education covering engineering disciplines, urban planning, energy technologies and economics.

### **Response:**

Under the [European Smart Cities Education and Competence Network\(s\)](#)

***Pilot Activity 1: A European Joint Degree Master Programme in the field of Integrated Urban Energy Planning***



# Examples



## System Integration

**Need:** Lack of strategic planners and engineers with a good understanding of core technology themes, but also competent in engineering design and management of complex systems.

### **Response:**

Under the [Advanced Energy Systems Integration Education Network\(s\)](#)

*Pilot Activity: Master and Doctoral Curriculum "System Integration Management"*

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## Concentrated Solar Power

**Need:** Lack of CSP operation & maintenance personnel and a need for real-life vocational training for CSP plant operators, which acquaints them with all steps and potential failures in the operation process.

### **Response:**

Under the [Network of Professional Training Centres in the Field of Concentrated Solar Power](#)

*Pilot Activity: Simulator Training for Operational Personnel*



# Next Steps



Timeframe	Activity
May, 2013	Presentation of main findings at the SET-Plan Conference in Dublin, Ireland
June, 2013	Stakeholders consultation on the draft roadmap document
Summer, 2013	Online publication of the Roadmap



# Thank you for your attention!

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