A roadmap for education and training in relation to the SET-Plan (Wind & Ocean Energy Working Group)

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SET Plan 2020 technology goals:

- 2\textsuperscript{nd} generation \textit{biofuels}
- Commercial \textit{CO}_2 \textit{capture}, transport and storage
- Double the largest \textit{wind} turbine capacity – focus off shore
- Demonstrate commercial readiness large scale \textit{PV} and \textit{CSP}
- Enable single, smart \textit{electricity grid} to integrate RE
- Market of \textit{efficient conversion}, system and end-use devices
- Maintain competitiveness in \textit{fission} and waste solutions
SET Plan: common strategies and tools

- Road maps and milestones for key technologies
- European Industrial initiatives – new strategic partnerships
- European Energy Research Alliance
- Education and Training Road Map
  - to meet the needs for new skills and replacements in the EU work force of 9 million people in energy;
    1.2 million in low carbon energy technology supply chain;
    0.9 million in electricity and thermal networks value chains;
Expected growth scenarios for Wind and Ocean Energy

The graph illustrates the projected recruitment needs for the wind power industry from 2013 to 2030. It shows the projected number of jobs needed in manufacturing (OEM) and manufacturing (component) sectors. The chart also breaks down the skills shortage (FTE) for different years, indicating the shortfall in skilled labor for various roles such as other direct employment, operations and maintenance, manufacturing (component), and manufacturing (OEM). The data is sourced from the TPWind survey.
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
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.

3 lines of actions
1. Filling the knowledge, skills and competences gap

**How:**

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

**Why:**

- address jointly knowledge, skills and competences needs and gaps
- building networks,
- pooling capacities
- allowing quick and wide replication
2. Fostering private involvement, access and up-take by the labour market

**How:**

- **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.

**Why:**

- reinforce the education and training system’s link with the business
- reinforce the education and training system’s link research environment.
3. Planning and enabling skills development, transfer and international recognition

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

**Why:**
- Plan and enable EU wide skill development and recognition,
- Facilitating the dissemination of new knowledge, techniques and tools.
How to facilitate the transition to a new renewable energy system?

- Drive the renewables down the learning curve
- Global regulation or price on carbon emissions
- Clear technology goals: 2020 and 2050
- Increase infrastructure investments
- Improve R&D organization
- Increase education and training efforts
Sustainable
Secure
Competitive

AN ENERGY POLICY FOR EUROPE

Thank you for your attention

SET Plan
Education
Training

energy for a changing world
Extra slides
Wind Industry Proposed Actions

- Wind industry funded PhDs where industrial partner is able to direct the area of research: 12%
- The introduction of a formal set of European wind energy training standards: 17%
- More European or state level investment in specialist training centres: 17%
- Industry-based placements/internships for students studying relevant disciplines: 21%
- Forming of alliances between the wind industry and technical training institutions: 33%

Source: TPWind survey
Recruitment barriers

**Figure 8: Obstacles to a suitably skilled workforce**

- Education system under-resourced to keep pace with new technologies and industries (35%)
- Too few suitably qualified technical institutions (30%)
- Lack of R&D/research funding (26%)
- Recruits obtaining skills not applicable to the wind industry (9%)

**Figure 7: Ease of finding suitably trained staff**

- Very difficult: 13%
- Easy: 22%
- Difficult: 65%

Source: TPWind survey
Figure 1.1: eduGAIN concept