European wind energy training needs and predicted skills shortage

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What is the European Wind Energy Association?

EWEA is the **voice of the wind industry** in Europe

Activities include:

- **Researching** the latest developments in the wind sector
- **Coordinating** EC-funded projects
- **Disseminating** high quality, up-to-date information
- **Raising awareness** of the benefits of wind power
- **Organising** Europe’s premier wind energy events
More than 600 members from almost 60 countries

- Manufacturers with a leading share of the global wind power market
- Component suppliers
- Research institutes
- National wind and renewable associations
- Developers
- Electricity providers
- Finance and insurance companies
- Consultants
- Contractors

This combined strength makes EWEA the world’s largest and powerful wind energy network
Members include the following leading players:
What is TPWind?

• A network of approximately 180 EU wind energy experts
• Created in 2005 and launched in 2006. Since 2007 it is funded by the EC
• Managed by an Executive and a Steering Committee. Supported by a Secretariat hosted and coordinated by EWEA (GL Garrad Hassan and DTU Wind are the current Secretariat’s partners)
• It advises EU Institutions and Member States on the R&D priorities of the EU wind energy sector, to ensure that public funds are allocated where needed
• TPWind members are individuals (not organisations) selected on the basis of their CV
• The Platform’s main deliverables / activities are:
  • The Strategic Research Agenda (published in 2008 – a new version will be published in 2014 and is the subject of the day’s meetings).
  • The European Wind Initiative (published in 2009 in the EC Communication on “Investing in the development of low carbon technologies” and launched in 2010).
  • A Training Report, measuring the skills gap faced by the EU wind energy sector and suggesting relevant policy actions.
The European wind energy sector

- High skill level required by roles in all sub-sectors
- Demographic changes and flat STEM graduation rates
- High rate of deployment (400GW by 2030)
- Changing emphasis within the wind sector towards O&M

Skills Gap?
## Wind energy – EWEA scenarios

<table>
<thead>
<tr>
<th></th>
<th>Onshore</th>
<th>Offshore</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed capacity 2020 (GW)</td>
<td>190</td>
<td>40</td>
<td>230</td>
</tr>
<tr>
<td>Annual installations (GW)</td>
<td>17.8</td>
<td>6.9</td>
<td>24.7</td>
</tr>
<tr>
<td>Installed capacity 2030 (GW)</td>
<td>250</td>
<td>150</td>
<td>400</td>
</tr>
<tr>
<td>Annual installations (GW)</td>
<td>10</td>
<td>13.7</td>
<td>23.7</td>
</tr>
</tbody>
</table>

Source: EWEA, Pure Power (2011)
Demographics

Source: EUROSTAT
Changing focus towards O&M jobs

Source: TPWind report
Methodology TP WIND training report

Supply
- Desk study of existing training opportunities

Demand
- Interviews, surveys and installation trends
Sources of information

1. Educational initiatives
2. Apprenticeships and technical courses
3. Dedicated training centres
4. University courses
5. Knowledge sharing networks and wind energy training support
Demand for trained personnel

**Interviews**
- Shorter ‘conversion’ courses attractive
- Vocational training standards may be beneficial
- Demand for industry input to academic offerings
- Changing needs as markets mature

**Surveys**
- 78% say difficult or very difficult to get the right staff
- Collaboration between academia and industry needed
- Problem solving aptitude preferred

**Installation Trends**
- 230GW by 2020
- Changing jobs mix driven by increased cumulative capacity
About 40,000 suitably qualified personnel to enter the sector each year
Current industry training provision trends

Source: Deloitte, TPWind
### Evolution of EU wind energy sector’s direct employment by sub-sector in jobs

<table>
<thead>
<tr>
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<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developers</td>
<td>10,302</td>
<td>11,233</td>
<td>13,482</td>
<td>14,159</td>
</tr>
<tr>
<td>Wind turbine manufacturers</td>
<td>35,349</td>
<td>41,106</td>
<td>44,026</td>
<td>45,449</td>
</tr>
<tr>
<td>Component manufacturers</td>
<td>27,581</td>
<td>30,793</td>
<td>32,001</td>
<td>32,115</td>
</tr>
<tr>
<td>Service providers</td>
<td>31,434</td>
<td>34,641</td>
<td>40,365</td>
<td>43,779</td>
</tr>
</tbody>
</table>

Source: EWEA, Green Growth (2012)
Evolution of total employment of the wind energy sector

- **2008**: Current analysis: 198,647, Pure Power (2011): 154,476
- **2010**: Current analysis: 238,154, Pure Power (2011): 189,096

Source: EWEA - Deloitte
Gap in 2020 and 2030

- Other Direct Employment
- Operations and Maintenance
- Installation
- Manufacturing (component)
- Manufacturing (OEM)
Gap in 2020 and 2030

- **2020**
  - Manufacturing (OEM): ~10,000
  - Manufacturing (component)
  - Installation
  - Operations and Maintenance
  - Other Direct Employment

- **2030**
  - ~15,000
Key findings of TP WIND training report

Two big trends:

- Increasing demand – *more roles to fill* – especially in O&M
- Constrained supply – *driven by demographics and a possible lag in training provision*

Recommendation: regular update and close monitoring of the skills situation
Recommendations

– Improve core STEM skills available to industry

– Get the benefits of industry experience into training and education institutions

– Expand the cohort of graduate-level wind energy generalists

– Harmonise Vocational Education and Training (VET) offerings at the EU level

– Increase the emphasis on O&M training
Thank you