Skills for sustainable economies: Unlocking the employment potential of green investments

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Introduction

• Copenhagen (2009), global temp. increase <2 °C above pre-industrial levels to avoid dangerous climate change.
• World needs to halve 1990 GHG emission levels by 2050, with developed countries requiring a 80-95% reduction;
• Transition to a greener economy will influence certain sectors; changing occupations & creating a demand for new skills;
• Identification of the skills required for new occupations and sectors, which will emerge from the low carbon economy;
• Skill shortages & bottlenecks act as obstacles to transition, increasing costs of climate change mitigation and adaptation;
• Influences the training and educational material of curricula, aiming to provide the right skills for the future professionals;
• Socio partners can play a key role, raising awareness of skill needs, learning opportunities including lifelong learning.
European policy context

• Economic crisis burst in 2011; European Commission *Europe 2020 Strategy* for smart, sustainable and inclusive growth;

• Entails substantial change, but feasible, if 5 sets of targets reached: employment, research & development, climate change & energy, education, poverty & social exclusion;

• *European Energy and Climate Change Package* influential policy target-indicator: 20% reduction of greenhouse gas emissions, 20% increase in the use of renewable resources, 20% improvement in energy efficiency by 2020 (versus 1990);

• Supported by: mix of regulation and legislation, market-based instruments, and networks for cooperation at national level;

• Expected to have an indirect effect on occupations in sectors of power, industry, transport, construction and agriculture;

• EC now proposed binding targets for 2030: 40%, 27%, 30%.

Figure 1: EU GHG emissions towards an 80% domestic reduction (100% =1990)

Source: EC Roadmap for moving to a low-carbon economy in 2050

Brussels 2014
Cedefop’s research on skills for a green economy

• Definition of green skills:
  knowledge, abilities, values and attitudes needed to live in, develop and support a society, which reduces the impact of human activity on the environment;

• A wider concept of greening occupations across the economy than specific skill sets for particular green occupations;

• Follows four main approaches: forecasting, sectoral studies, employer/employee surveys and studies of mismatch;

• Provide information on i) labour supply side, focusing mainly on VET and education; ii) insight into labour demand, concentrating on the types of skills or occupations;

Identifying skills for growth: sectoral studies

Skills Mismatch

- Skill needs in Sectors and Occupations
- Employer/employee surveys
- Skills Forecast

Greening the economy

- Agri-food and forestry-wood
- Nanotechnologies
- Tourism
- Health-care

Implication for skills demand and VET policies
The study *Skills for Green Jobs*

• In 2010 Cedefop with the International Labour Organization looked at national policies targeting green skills identification and acquisition, contributing to the greening of economies;
• Importance of government at all levels, including regional level, in skills acquisition and the cooperation between the public and private sectors.

Emphasises that:
• Upskilling has to be cost-effective and cost-efficient and could work as a tool for upgrading existing skills;
• Improvement of existing generic skills should be continuous and STEM subjects must be more attractive to students;
• Quality training provision is required – “training the trainers” in particular in the sectors of construction and agriculture.
### Examples of upskilling to new occupations

<table>
<thead>
<tr>
<th>Member State</th>
<th>Occupation (s)</th>
<th>Core training</th>
<th>Upskilling</th>
<th>New occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Industrial operator/industry</td>
<td>VET qualifications/upper secondary qualifications</td>
<td>Assembly, installation of parts, use of tools</td>
<td>Wind turbine operator</td>
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<td></td>
<td>electrician</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Estonia</td>
<td>Construction worker</td>
<td>No professional standard</td>
<td>Knowledge of energy systems, data analysis, project management</td>
<td>Energy auditor</td>
</tr>
<tr>
<td>France</td>
<td>Product design and services</td>
<td>22 initial training courses with varying specialisation</td>
<td>Integrating environmental criteria in design process, integrated assessment and life cycle analysis</td>
<td>Eco-designer</td>
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<tr>
<td>Germany</td>
<td>Plumber / electric and heating</td>
<td>Initial vocational training</td>
<td>Technical training, knowledge of administrative procedures, entrepreneurial skills</td>
<td>Solar energy entrepreneur / installations project designer</td>
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<td></td>
<td>Installer</td>
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<tr>
<td>United Kingdom</td>
<td>Commodity trader / broker</td>
<td>Tertiary qualification</td>
<td>Practical skills on functioning of carbon market, understanding of trading tools</td>
<td>Carbon trader / broker</td>
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Green skills and environmental awareness in VET

• 2012 study on green labour supply in 8 MS presenting in detail 9 occupations from various sectors and skill levels;
• High-skilled occupations: nanotechnologists, engineering technologists and environmental engineers;
• Medium-skilled occupations: energy auditors, transport vehicle emissions inspectors, insulation workers, electricians, solar photovoltaic installers and sheet-metal workers;
• Low-skilled example is the refuse/recycling collector;
• Forecast of rising demand for energy auditors, electricians, SPV installers, sheet-metal workers and insulation workers in most countries; whereas demand for refuse collectors stable;
• Some occupations have difficulty in attracting young people to replace retirees, because of lack of interest in studying STEM or getting practical manual jobs with low wages.
Potential impact of green economy on skills
Classification derived from O*Net, now used for occupational skill profiles:

Green **Increased Demand** Occupations (GIDO)
- little change in content
- improving existing skills

Green **Enhanced Skills** Occupations (GESO)
- significant change in content
- enhanced training (mostly external)

Green **New and Emerging** Occupations (GNEO)
- new occupations from new technologies and/or processes
- new skills/qualification and external training
Skills for a Low Carbon Europe

• 2013 policy-driven scenario analysis for the EU 27, consistent with the Europe 2020 targets;

Environment-energy-economy model for Europe (E3ME):
  – **Baseline**, keep existing policies for “business-as-usual”;
  – **Energy target**, based on a sustainable energy policy mix;
  – **Energy and employment target**, focuses on the achievement of the EU employment targets (75%);

• With suitable policy coordination, substantial improvements in meeting energy reduction & employment growth targets are possible. Otherwise one of the targets is missed;

Key conditions:
  – Skills of the existing workforce are updated or realigned to adjust to changing tasks and technologies;
  – Young and unemployed people successfully (re)integrated into workforce;
  – Employers and individuals aware of skill needs and job opportunities.
Future work

• *Occupational Skills Profiles*: requirements of an individual concerning education and training, qualification and personal qualities of prospective job holders. Complementary to ESCO;
• Research report: expert validation of skill profiles for green jobs and data visualisations for *EU Skills Panorama* (EUSP);
• EUSP has the potential to play a useful role in the Labour Market Information and Intelligence (LMI) at a local and regional level (e.g., EN RLMM *Achieving Regional and Local Impact* project, 2013). Pilot system on real time LMI;
• Enabling regional stakeholders across the European Union, including social partners, to develop their own contextualised local interpretations of comparative findings;
• Supporting citizens in making informed decisions for careers skills development;
• Impact of 2030 targets 40:27:30 on occupations, skills, policy.