

**BRIEFING NOTE**

A strategy for green skills?

A study on skill needs and training has wider lessons for successful transition to a green economy

Once upon a time only gardeners needed green skills. Now, it seems, we all do. A Eurobarometer survey in June 2011, found that 78% of Europeans believe that combating climate change can boost the economy and create jobs.

On the evidence available, Europeans appear to be correct. The European Commission estimates that between 2005 and 2009 the renewable energy sector generated an additional 220 000 jobs.

Given the importance of green skills to combating climate change and improving the economic climate, having some idea of the implications for skills and training policy would be useful.

A new Cedefop study ⁽¹⁾ looked at efforts to develop more resource-efficient economies, their impact on labour demand and how training is providing these skills. It investigated a sample of nine occupations closely connected to improving resource efficiency and the environment (Box 1).

Green policies for green skills

Green skills are becoming a part of almost every job, as IT skills have done previously, but the motivation for developing green skills is different. Demand for IT skills was driven by the private sector searching for competitive advantage. IT brought opportunities to cut costs through more efficient supply chains and better management of stocks and delivery.

Although using less energy and resources can reduce costs, Cedefop's study found that businesses and consumers want more convincing evidence of the financial benefits of investing in green technologies. High initial costs and long payback periods for some green energy sources, such as solar photovoltaic (SPV) energy, can be major disincentives especially in the current economic situation.

Rather than the market the dominant drivers for employer and consumer demand for energy efficient technologies and services and, consequently green skills, are environmental awareness, regulation, and policy.

In the European Union (EU), regulation and policy are influenced by the '20-20-20' targets in the Europe 2020 strategy. The EU is aiming to reduce greenhouse gas emissions by at least 20% compared to 1990 levels, increase the share of renewable energy sources in final energy consumption by 20% and reduce energy use relative to projected 2020 levels by 20%. These targets matter. Although exact figures are unknown, over a million new jobs could be created in the EU by pursuing them.

Box 1. Selected occupations, skills and countries

Nine occupations were selected for Cedefop's study from various sectors and with different skill levels:

- high-skilled: nanotechnologist engineering technologist and environmental engineer;
- intermediate-skilled: energy auditor, transport vehicle emissions inspector, insulation worker, electrician, solar photovoltaic installer and sheet metal worker;
- low-skilled: refuse/recycling collector

Eight EU Member States were analysed, reflecting different stages of developing sustainable, resource-efficient economies: Germany, Greece, Italy, Hungary, the Netherlands, Slovakia, Finland and the UK.

The EU is on track for cutting emissions and raising the share of renewable energy sources, but is behind in reducing energy consumption. EU targets and regulation have support from citizens. The June 2011 Eurobarometer survey also found that two in three Europeans see climate change as a more serious problem than the current economic difficulties. But for green products and services markets to mature and become self-sustaining, regulation must be consistent

⁽¹⁾ *Green Skills and Environmental Awareness in Vocational Education and Training*. The report will be available in spring 2012.

and support continued investment over the medium to long term.

Policies which also stimulate demand for renewable energy technologies include favourable taxation, subsidies or government investment in infrastructure. Awareness campaigns on the environmental impact and energy costs of business activity also influence behaviour and affect demand for green skills.

Trends for selected occupations

In looking at how the efforts to develop a green economy have affected the nine selected occupations, the study found winners and losers. The continuing effects of the economic slowdown, particularly in the construction sector, add to the uncertainty of the analysis, but the results show some longer-term trends.

Renewable energies and energy efficiency in construction have a high potential for green jobs. Countries with active policies to develop renewable energies have been successful in creating new jobs in these sectors. For example, in Germany, government policy to support environmental sustainability has encouraged positive attitudes and helped create demand for services to improve energy efficiency.

Germany, Finland and the UK predict future increase in job volumes across most of the nine occupations. Demand for environmental engineers in the eight countries is expected to rise, particularly in Slovakia, albeit from a small base. Growth in nanotechnologists is concentrated in the larger northern European economies, such as Germany and the UK, as applications for the technologies are developed and commercialised.

Demand for energy auditors, electricians, SPV installers, sheet metal workers and insulation workers is forecast to rise across most of the eight countries in the study, but the pattern is far from uniform. Subsidies in Greece and Italy have raised awareness of the advantages of the Mediterranean climate for using SPV power. However, changes to legislation in the Netherlands and the UK are expected to reduce demand for energy auditors, SPV installers and insulation workers.

Demand for refuse collectors is expected to be stable, while demand for high-skilled workers involved in waste management collection and recycling activities is expected to increase in some countries including Germany, Italy and Slovakia.

In contrast, the number of jobs for vehicle emissions inspectors may decline because of and less car use in Germany due to heightened environmental awareness, tax changes on CO₂ vehicle emissions in the Netherlands and plans for less frequent testing in the UK.

Training provision: meeting the needs?

Generally, training provision for the nine occupations is perceived as adequate. None of the eight countries appears to be suffering major skill shortages. Training provision seems strong in Germany, the Netherlands and Finland. Some Member States believe that what is already in place is sufficient. However, this may be too optimistic and short-sighted.

The current economic slump has reduced the pressure on energy demand and has hit the construction sector particularly hard, reducing demand for example for energy auditors, environmental engineers, insulation workers and electricians. Skill shortages may, for the time being, be hidden. It is not clear how training provision will cope when demand picks up.

Despite the downturn some skill shortages persist, particularly for sheet metal workers, electricians and insulation workers. According to the study, Germany has skill shortages across most of the nine occupations, closely followed by the Netherlands. The UK also has a shortage of higher-level skills.

Of particular concern is that these skill shortages are not due so much to growing market demand, but to people retiring and the lack of young people willing and able to replace them. It is difficult to attract young people to practical, manual work in what are wrongly seen as 'dirty' jobs with poor working conditions and low pay (Box 2). Shortages are also linked to the too few young people studying science, technology, engineering or mathematics (STEM).

Overall, practical and specific skill gaps appear to be more common than generic ones. However, some generic skills, such as sales and customer service, team-work, management and leadership and entrepreneurial skills are becoming critically important for many occupations. Employers express the need for initial training systems to provide a better and more solid foundation of basic competences.

Box 2: 'Dirty' green jobs

Skill shortages in green occupations sometimes reflect a lack of interest by young people to enter these professions, particularly as first career choices.

Difficulties in attracting young people into what is perceived to be 'dirty' manual work concerns many countries wanting to invest in the expansion of green jobs. Most of the occupations in the Cedefop study are typically male-dominated and wrongly seen as having unattractive work conditions with low pay.

Employers in Greece, the Netherlands, Finland and the UK reported fragmented, incoherent or limited training for insulation workers. Similar problems were found in training for SPV installers in Germany, Hungary, the Netherlands, Slovakia and the UK. The increasing diversity of specialist fields also makes it difficult to tailor training to enterprise needs. Some employers, for example in Italy, the Netherlands and the UK, would like to see changes in the curricula, namely a shift in the balance between theory and practice, with more emphasis on practical and contextual knowledge.

Solutions to tackle skill shortages and gaps vary depending on the job and employers' circumstances. Germany is making concerted efforts to attract more young people into these occupations as part of a broader effort to encourage them to study STEM subjects. Along with Italy, the UK reported that some workers were reluctant to attend and engage sufficiently with the training provided. In the UK, employers are more likely to recruit new, skilled employees and raise salaries than to train present staff. However, employers in most countries tend to prefer to train existing staff or 'muddle through', rather than to take on new recruits. Multiple entry routes, varied levels of qualification and insufficient recognition of skills acquired through non-formal or informal learning also limit mobility of workers into green occupations.

Learning providers, although willing to change curriculum content to meet new demands, tend to be discouraged by both unclear and diverse employer needs regarding green skills. Often employers do not base their training needs on proper analysis.

Demand for new qualifications is low, for example, in Finland as employers prefer 'add-on' modules of green skills. The slow evolution of new qualifications is a problem in countries such as Greece, Italy and the

UK. In such circumstances, learning providers adopt a 'wait and see' approach and are unwilling to take risks.

However, there are very encouraging examples of cooperation. For high-skilled occupations, such as nanotechnologists, employers cooperate with tertiary education institutions and recruit graduates.

Growing green skills

What lessons can be drawn from the study to achieve the objective of having and deploying the skills necessary to develop a greener economy (Box3)?

Policies to use less energy, reduce greenhouse gas emissions and increase the share of renewable energy sources are driving green job growth and the demand for green skills. It is important that policies are consistent to avoid uncertainty about benefits of investment in green activities. For example, financial incentives need to be phased out gradually to prevent dependency on state funding and to avoid 'shocks' that could lead to failing businesses and job losses.

Transformation to a green economy will not only generate new jobs, but will also change the scope and character of existing jobs. Providing green skills will require a revision of existing curricula, qualification standards and training programmes. It will also require retraining of teachers and trainers. Employers and training providers need to work in a long-term partnership to bring about these changes. Mainstream education will also be called upon to raise environmental awareness and influence behaviour from an early age.

One approach is that those responsible for standards in training provision in each country audit training providers (or require them to audit themselves) to assess the need for including 'green' skills across all of the training courses they provide. This would help meet employer needs within current learning provision for existing occupations.

Skill needs forecasting can support training provision and planning processes and help reduce uncertainty about investing in developing green skills. But data on new and emerging green occupations are not yet good enough. For example, in the study, southern and eastern European countries were less confident in predicting future skill needs, due in part to a lack of data, small numbers employed in some occupations and uncertainty over economic prospects.

Box 3: Summary of key findings and policy messages

Key findings	Policy messages
Limited evidence of skill shortages due to the economic recession reducing demand, but some occupations are experiencing skill gaps mainly in practical and technical skills.	Improved systems to anticipate and match skill needs. Imperfections in mapping green occupations to occupational classifications need to be tackled.
Uncertainty about environmental regulations and policies makes it difficult to anticipate skill needs.	Consistent and stable policy framework (regulation and incentives policies) and coordination of different policies (for example integrating a skill strategy into environment policy) are needed.
Multiple entry routes, varied levels of qualification and insufficient recognition of skills acquired through non-formal or informal learning are important inhibitors to mobility of workers into green jobs.	Much work to be done to improve recognition, transparency and portability of qualifications and competences.
Younger workers in particular often perceive green jobs as low-qualified or 'dirty'.	Misperceptions about green careers need to be addressed by improving the quality of information advice and guidance and information campaigns about green jobs.
Learning providers are not sufficiently proactive, and are discouraged by uncertain and diverse employer needs.	Social partners and training providers need to work closely to ensure provision of green skills.

Despite the role of policy and regulation in influencing demand for green skills, most Member States do not yet have explicit national skill strategies or programmes integrated with their environment policies to develop low-carbon economies. Doing so would put them in a better position to respond to changes in skill needs that result from those policies. Different policy domains remain separate hindering policy cooperation and coherence between environment and energy policies and skill and employment policies.

Some green occupations have a poor image and appear unattractive to many young people. Efforts need to be made to promote careers in some target occupations both to new labour market entrants and those already in the workforce through information campaigns, and guidance and counselling services.

Few enterprises or countries are trying to mitigate skill shortages in green occupations by broadening the labour supply, for example by attracting more women, older workers or workers with disabilities. This is, however, important to reach the Europe 2020 strategy target of raising the employment rate to 75%, which requires providing more job opportunities to all labour force groups.

Growing Europe's green economy and increasing its skill supply should be part of wider strategies to provide the skills needed to support more job-intensive sustainable development.

Like most gardens, Europe's green economy requires a lot of work.