



BRIEFING NOTE

Skills for a low-carbon Europe

A blueprint for training for a high employment low-carbon economy is emerging

Global forecasts for the coming decades project a smaller population and slower GDP growth than was expected just a few years ago. However, even these lower rates of change are expected to cause environmental disruption.

High economic costs may potentially result from climate change. More intense and frequent storms, droughts and floods may cause extensive damage to physical capital, for example due to rising sea levels and storm surges in heavily-populated coastal areas.

This is why the current economic crisis has by no means weakened Europe's commitment to combatting climate change and promoting sustainable development. Climate and energy targets are at the heart of Europe 2020, the European Union's (EU's) main strategic policy document. By 2020, the EU aims to reduce greenhouse gas (GHG) 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 %.

Prominent among these challenges are growing concerns over resource scarcity and energy supply security. It is also true that Europe faces many long-term challenges to becoming a low-carbon economy with high levels of productivity and employment. With the sustainable development target, Europe 2020 strategy aims to increase the employment rate for the population aged 20-64 to 75 % in 2020, compared to 68 % in 2011.

The employment package, launched in 2012 ⁽¹⁾ sees transition to a greener economy as the area offering the greatest job potential. But there are

also concerns that costs of combatting climate change and Europe's transition to a low-carbon economy will in fact reduce job growth, and bring the EU's targets for reducing energy consumption into conflict with its target for increasing employment.

A new Cedefop study ⁽²⁾ *Skills for a low-carbon Europe* explored these scenarios and shows that a sustainable and energy-efficient economy can be achieved at the same time as employment growth.

However, the study also warns that to have both requires greater integration of climate and energy policies with measures to support employment and innovative and responsive vocational education and training (VET) policies that encourage development of the skills needed by a low-carbon economy.

A process of structural labour market change

Developing a low-carbon economy requires explicitly increasing resource efficiency and reducing carbon intensity of production and consumption along the whole supply chain.

Consequently, moving to a low-carbon economy is best seen as a special case of structural change that will inevitably alter sectoral and occupational structures. Some sectors and regions will see increased demand for specific goods and services. Others will be challenged by increased resource costs and lower demand.

As economic restructuring accelerates, it causes unemployment in declining sectors while prompting recruitment bottlenecks in others. Skill requirements

⁽¹⁾ EC (2012): *Towards a job-rich recovery*, communication of 18.4. 2012, COM (2012) 173.

⁽²⁾ Cedefop: *Skills for a low-carbon Europe: role of vocational education and training in a sustainable energy scenario*. (forthcoming June 2013).

in many jobs change. What can be done to adapt labour markets to these changes?

In addition to the effects on size of industries and number of jobs, we need to be aware of the qualitative effects on composition of the workforce and the skills and competences required.

Creating jobs while reducing energy use

The good news is that transition to a greener economy will create jobs. Various policy scenarios have been developed by Cedefop to explore what may plausibly happen under certain conditions. They do not indicate an inherent conflict between higher rates of employment and reduced energy use and GHG emissions. The issue is to find the best policy mix for the EU to reach both its energy and employment targets for 2020.

Figure 1 (below) presents possible outcomes for energy and employment targets under the three scenarios explored by Cedefop.

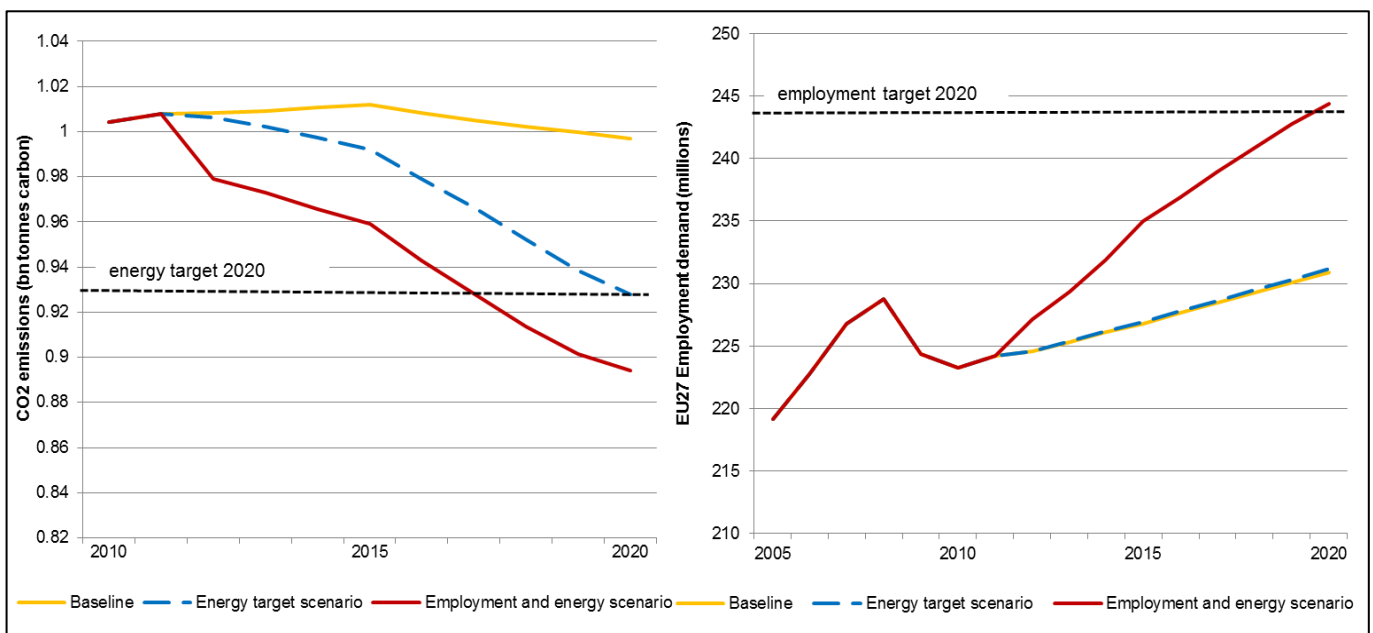
The economic crisis of 2008, and the recession that followed, dramatically affected job prospects in Europe. While the recession has in some sense contributed to meeting climate and energy targets, it has undoubtedly impeded progress towards the employment rate target.

The uneven and weak economic recovery from the crisis indicates that, under the first 'business-as-usual' scenario, shown by the yellow lines on the charts in Figure 1, Europe will fail either on its energy or its employment targets. The employment rate rises to 71 % in 2020 compared to 68 % in 2011, but falls short of the target.

Under the 'energy target' scenario, shown by the blue lines in Figure 1, energy-related measures will have the effect of achieving the EU energy goals. The scenario also shows an increase in employment levels similar to the baseline scenario. In both cases, failure to reach the employment target implies that additional measures are needed to increase labour demand.

The 'employment and energy' scenario, shown by the red lines in Figure 1, is based on assumption of measures likely to have significant employment effects integrated with those to reduce energy consumption and emissions. Employment measures would include incentives for employers to hire additional workers (such as lower labour taxes), work incentives for individuals (such as lower unemployment benefits) and greater investment in research and development and skills.

Figure 1 Europe's energy and employment targets: policy scenarios



Results indicate that under this scenario by 2020, the EU employment rate would be 75 % compared to the 71 % foreseen under the baseline scenario, equivalent to **an additional 13.5 million jobs**, meeting the EU employment target. As Figure 1 shows, the additional jobs generated in this scenario do not compromise EU climate and energy goals.

Underlying overall employment trends are accelerating significant shifts at sectoral and occupational levels due to business ‘churn’ (continual expansion, contracting, opening and closing of enterprises).

Workers in energy-supply and investment-intensive sectors such as construction are directly affected by transition to a low-carbon economy. However, as relative product prices adjust, effects of low-carbon policies spread throughout the value chain. Individuals across all sectors need the skills and competences required in new and changing jobs with their current or new employers.

Three main conditions must be met to match workers to demand for new skills and to achieve the required employment growth (Box 1).

Box 1 Key conditions for achieving 2020 energy and employment targets

To achieve energy and employment targets three key conditions are necessary:

- skills of the existing workforce are updated or realigned to adjust to changing tasks and technologies;
- young and unemployed people are successfully (re)integrated into the workforce; and
- employers and individuals are aware of skill needs and available job opportunities.

Skills needed for a low-carbon economy: slow progress but some green shoots

Developing VET to meet needs of a low-carbon economy presents significant challenges.

Several factors, including pace of change, blurring traditional industrial and occupational boundaries and policy uncertainty, combine to make it difficult

for governments and sectors to plan investment and provide the training required.

In addition, demand for and supply of skills will be conditioned by specific natures of low-carbon sectors and technologies. Consequently, VET needs to be increasingly innovative to respond to new demands.

European countries have, to date, made limited progress in identifying skill needs for a low-carbon economy and integrating this understanding into coherent education and training policies. Examples of national strategies for green skills are limited to a few Member States including France, Austria and the UK.

Such strategies highlight dependence of low-carbon policies on availability of a skilled workforce. Tools seeking to develop greater awareness and understanding of employers’ skill needs need to consider how these correspond to the skills already available in the workforce. Skill shortages will constrain development of low-carbon technologies and services and successful implementation of sustainable energy policies.

To succeed, strategies for transition to a low-carbon economy need to integrate skill strategies. Such strategies should include measures for more flexible and dynamic VET programmes at local, sector and regional levels.

Key messages for VET policies

Cedefop’s study on skills for a low-carbon Europe highlights the need to modernise European VET systems further and develop programmes capable of delivering the skills needed to foster a low-carbon future (Box 2).

The study draws on evidence from 16 case studies of how VET has responded to developments in skill needs in relation to solar thermal heating, wind power, and energy-efficient road freight transport and logistics, and public buildings.

It gives examples of how collaboration and dialogue between policy-makers, employers, workers and training providers, such as employer-led networks in Ireland and interministerial alliances in France have led to skill needs being identified and appropriate action taken to meet them.

Box 2 Key findings and policy messages

Key findings

It is feasible to achieve simultaneously employment, energy and climate goals, but the following conditions should be met

Greater coherence and coordination between education, training, employment and climate and energy policies is needed

Effects of the transition to a low-carbon economy cut across traditional industrial and occupational boundaries and different stages of the value chain

Low-carbon policy has an accelerating influence on the rate of structural change, so the future profile of jobs and skills is inevitably uncertain

Policy efforts to overcome possible skill barriers are at various stages of development, in different sectors, regions and countries

Policy messages

Policy-makers should explore options to promote employment through measures compatible with low-carbon goals

National strategies to develop a low-carbon economy should be integrated with national strategies for skills development

Existing systems for social dialogue need to adapt and new ones established to reflect changes in industrial composition

A mixture of methodologies is required to anticipate and identify skill needs and provide stakeholders with different scenarios and options

Monitoring and evaluation of new and existing programmes is needed along with systematic exchanges of experience.

In addition, other interesting findings have emerged. To achieve EU employment targets, VET policies may need to include incentives or requirements targeted at groups vulnerable to social exclusion such as young and unemployed people. Incentives may also have to come in support of small- and medium-sized enterprises that need to participate and invest in training.

Processes need to ensure that training delivered is of high quality and provides portable learning outcomes relevant to the labour market. Linked to them, mechanisms for renewing qualifications need to be in place to ensure emerging training provision and flexible delivery mechanisms are reflected and supported by national accreditation.

Taken together, a blueprint for VET to support transition to a low-carbon economy is emerging. It comprises common elements of innovation in governance, programme design and delivery, which include:

- social dialogue and collaboration between government and social partners to identify skill needs and design training programmes;

- advice and impetus to renew continually qualifications and accreditation systems;
- training provision tailored to meeting anticipated or identified skill needs;
- monitoring and evaluating VET programmes.

In summary, both a low-carbon economy and high employment are possible, provided innovative VET policies can help people acquire the skills needed.