

European Employment Observatory

EEO Review: The Employment Dimension of Economy Greening

France

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1. Introduction

During the 2007 presidential campaign, debate over climate change and energy policies took place, leading to what has been called the '*Grenelle de l'Environnement*', in reference to the round of negotiations in 1968 over the issue of wages. The '*Grenelle de l'Environnement*' aimed at making long term decisions on environmental and sustainable development issues, in particular with regard to restoring biodiversity through the implementation of tools such as ecological regional schemes, as well as through the reduction of greenhouse gases and the improvement of energy efficiency. The goals of the *Grenelle* are in line with the 20-20-20 targets set down in the Climate-Energy Directives.

This round of meetings has involved the national government, local authorities, NGOs, employers and employees. One workshop in particular dealt with the issue of "promoting ways of ecology development favorable to employment and competitive growth" and other workshops tackled 'fighting climate change', 'building an ecologic democracy' and 'preserving biodiversity and natural resources'. The main decisions made through the workshop on ecological development concern: the implementation of sustainable indicators; the assessment of the environmental impact of economic tools and the way in which externalities are taken into account in the socio-economic assessments of profitability; the creation of a "carbon tax" (climate-energy contribution); and the promotion of lifelong learning to support professional transitions linked to the greening of the economy.

To date, the debate in relation to the employment and labour market issues has been limited, despite existing rich statistics on the green economy. One of the main issues is the great variety of measures linked to the green economy. Another issue is that it is difficult to clearly assess the loss of jobs linked to the greening of the economy: green jobs are only presented by the government and by existing studies as positive gains for the economy. In times of economic crisis, green jobs are only shown as a potential solution for the unemployment problem; however, the greening of the economy is a technological revolution and so also presents risks and threats for certain sectors of activity and jobs. As such, a clear view and knowledge of the consequences of the greening of the economy must be provided for the short, medium and long term.

2. Green economy and employment: main figures

2.1 The impact of economy greening on the level of employment

A significant number of statistics and assessments exist to define the importance and the evolution of the green sector in the French economy.

However, there are two key problems. First, the definitions used are not similar. In some studies, green jobs cover both job linked directly and indirectly to the environment. Others only take into account the 15 programmes outlined in the *Grenelle de l'Environnement* (such as the study compiled by the Boston Consulting

Group¹). The annex to this report illustrates the differences in the content and findings of the four main assessments of the situation compiled to date.

In 2009, the green economy represented between 221 000 and 450 000 jobs; the former figure relates to data from the BCG study (analysis of the 15 sectors affected by the *Grenelle de l'Environnement*), while the later relates to data from government institutions (the number of environmental jobs in the usual sense of the term, representing 6% of 400 000 and the number of jobs directly linked to green issues representing 50% of 400 000; and the remaining 44% relates to all jobs contributing to sustainable development, including building jobs)². During the negotiations over the *Grenelle de l'Environnement*, the figure of 370 000 people working in environment sector was referred to.

With regard to forecasting, the BCG study suggests that an average of 600 000 jobs will be created and maintained between 2009 and 2020. *Pôle Emploi* forecasts the creation of 220 000 “green jobs” by 2012. These figures are mainly forecasts based on the investment foreseen in the green economy by the *Grenelle* agreement: EUR 440 billion by 2020 (including EUR 250 billion on construction, EUR 97 billion on transport and EUR 115 billion on renewal energies). It is expected that public and private investment in the green economy will have a Keynesian multiplier effect, which should lead to a positive gain of jobs. According to the BCG study, 392 000 jobs should be created in construction, 294 000 in transport and 134 000 in renewable energies. However, it should be noted that the level expected is not so high: an additional 600 000 jobs created or maintained in 11 years is not a real revolution in the level of employment. For instance, before the economic crisis, 50 000 jobs had been created in the French economy during the first quarter of 2008. Moreover, considering the number of sectors of activities involved, the result is not so high. It should also be noted that the BCG study does not take into consideration the number of jobs cut as its calculations have been done on the basis of past figures concerning euros spent/jobs created.

However, it is considered that the green economy is favorable to employment; indeed, it has been observed that the green economy is less capital intensive and more work force intensive than the conventional economy (for instance, renewable energies vs. conventional energies).

2.2 Impact on the composition of employment

The green economy is one of the paradigm changes and can be considered to be a technological revolution. Therefore, the issue of creative destruction (Schumpeter, 1942) needs to be considered in this process. Creative destruction is an economic concept which explains many of the dynamics of industrial change. It is a robust concept to explain the economic laying off of workers with obsolete working skills during a long period of innovation. Although an innovating economy generates new opportunities for workers (provided they can acquire the necessary skills), creative destruction can cause severe hardship in the short term, as well as in the long term

¹ June 2009 : réf. http://www.developpement-durable.gouv.fr/IMG/pdf/Etude_BCG_cle0f419a.pdf

for those who cannot acquire the skills. The studies currently commissioned by the Ministry in charge of sustainable development and green technologies should give some more information on bottlenecks and changes in the composition of employment.

The National Association for the Professional Training of Adults (*Association nationale pour la formation professionnelle des adultes*, AFPA) has provided data on some trends over the issue of the structure of employment through the greening of the economy. A distinction must be drawn between professional new skills for activities impacted by environmental dynamics (such technological developments in waste, wind energy etc.) and those for which the jobs have changed completely. Some functions (like quality control, maintenance, expertise) will be more complex and will be marked by the need for upgraded skills, which requires the implementation of high level training. It should be noted that there is a real risk of skill shortages in the future.

As far as the sectors and jobs affected are concerned, the forecasting of future developments is uncertain. Trends will depend on many factors: the greening of the economy, as explained by the Center for Strategic Analysis³, is a long process. Technological evolutions linked to a green economy have the capacity to renew traditional sectors of activity (such as construction, automobile...); but this will have to occur over the long-term due to financial constraints linked to consumer demand, such as the availability of disposable income.

In the short term, jobs should be created in construction, transports, energy, waste treatment, water, agriculture, electrical engineering, refinery, tourism and maritime industry. Over the medium term, the investments made available through the *Grenelle de l'Environnement* should lead to the development of new jobs in the fields of infrastructure, research and industry.

Without robust assessment and studies, it is difficult to provide figures and forecasts concerning the ratio of jobs created/jobs destroyed, either at a global or sector level. However, it can be noted that sectors such as road transport, fossil energy or non green construction should decline in the medium-term. The jobs threatened are the non-green equivalent of the green jobs created (for instance, for the energy sector jobs in fossil energies are likely to disappear, while jobs will be created in photovoltaic energies).

Currently, it appears to be easier to identify jobs that will be positively affected by the greening of the economy than to identify jobs that will be transformed or destroyed. Therefore, providing an assessment of the bottlenecks in economy and the real impacts on the composition of jobs is complicated. The current action plan led by the government seeks to rectify this shortage and results will be available at the beginning of 2010.

² Sources can be found in the final table.

³ Centre d'Analyse Stratégique, *Economic crisis and the raising of new growth models*, Cohen/ alii, October 2009

Table 1: Overview of the impact of the greening of the economy

SECTORS IMPACTED	points to watch/ threats	gains expected	trends
energy	Fossil energies	Jobs linked to renewal energy and energy efficiency: <i>Combustion and burner engineers; engineers in energy studies, fuel technicians etc.</i>	<ul style="list-style-type: none"> - gains for jobs of researchers and engineers specialised in increasing sectors - high qualified jobs (with exceptions: waste sector)
transport	Heavy driving, road transportation, conventional automotive industry	Rail and water transportation, geothermic, aeronautics; electric and hybrid automotive industry <i>Rail drivers; aeronautic engineers; electric and hybrid automotive industry...</i>	
construction: 2050 jobs created by 2020	Non green construction	Heating renewal and construction, energy diagnosis <i>Examples of jobs: construction Supervisor in climatic energy; environment, networks, energy, fluid engineers; heating specialists, septic-system installers...</i>	
industry	Chemistry industry, metals transformation	Disposal of intermediary goods	
health	Chemical industry, agro food industry	Research on links between health and environment (toxicology, epidemiology, agricultural economy...)	
agriculture	Intensive agriculture, agriculture based on genetically modified organisms	Organic agriculture, sustainable agriculture	
Bank finance		New investments, carbon market regulation, innovative funds	

Source: Authors own table based on literature review and own experience.

3. Green economy and labour market issues

The French labour market is characterised both by elements of flexibility and strong rigidities that prevent fast and efficient adaptations of the productive system.

Inflexibilities include the difficulty for the French society to accept the closure of non-competitive sectors of activity (e.g. textile industry) and preference for the protection of jobs exposed to international competition. For years, anticipation has not been really taken into account in economic and labour market strategy, but many

improvements, through instruments such as the GPEC⁴ (the forecasting management of skills and jobs) have been implemented. Technological revolutions such as economy greening could lead to structural unemployment if the developments and transitions are not fully anticipated in sufficient time and are not supported throughout the education system, from initial education to lifelong learning. Indeed, the main problems that will have to be faced will be economic restructuring, the risk of shortage of green professionals and skills and the effects of unequal distribution.

3.1 Review of labour market policy developments

To date, labour market policies that take into account green jobs are only in the initial stages of development and implementation. This part of the greening of the economy represents a second step in the global debate over the green economy in France following the implementation of the decisions made through the Grenelle.

Growth policies: public expenditure and green taxation

The investment of EUR 450 billion in the green economy and the implementation of a green taxation are two important positive signals of progress and have implications for the labour market: as explained below, public expenditure has a multiplier effect on jobs (cf. the assessment of the Boston Consulting Group on the ratio between euros invested/ jobs created, presented in the table at the end of the document). Green taxation will change the structure of consumption and investments, and consequently, links between activity and employment.

Carbon tax (energy-climate contribution) is an environmental tax on greenhouse gas. A continuous and progressive increase in the level of tax is supposed to guide long term investments and to modify consumer behaviour. The effects of unequal distribution must be compensated (the poorest members of the population often consume non green products, which are currently less expensive: health, cars etc.) and there is a risk of increasing the general level of prices. Carbon tax is currently under debate in France: although it is part of the activities of the *Grenelle de l'Environnement*, many criticisms have been raised –in particular with regards to its effects of unequal distribution.

Both public expenditure and green taxation should have long term effects by emphasizing green activity instead of conventional activity. Effects on employment should follow.

Knowledge and anticipation of jobs and skills

In September 2009, the State Secretary in charge of green technologies launched a mobilisation plan for the development of the green growth in sectors and territories.

⁴ GPEC is a method (consultation, actions, and agreements) that allows an enterprise to anticipate the consequences of developments linked to the external or internal environment and to its strategic choices. The main purpose of this project is to determine all the actions to implement, for three or five years to come, so as to face staff changes and enterprises needs in terms of jobs and skills. GPEC agreements are targeting a better anticipation and matching of skills/jobs, and therefore a better synthesis between competitiveness factors, organisation of the firm and the development of employees' skills.

In this framework, four priorities have been outlined:

- The identification of the jobs affected by the greening of the economy (new skills, new jobs, jobs in transformation, jobs threatened), with the aim of establishing a national forecasting observatory.
- The definition of the qualification and lifelong learning needs so as to accompany people through transitions and to recognise the skills and experience.
- The recruitment and the matching of job offers/job demands, which is particularly important in the construction sector and other sectors that are likely to face large-scale structural transformations in the face of the greening of the economy.
- The provision of information on and promotion of green jobs, as well as the organisation of a national conference on green jobs in January 2010.

Some concrete actions have already been implemented. The government has taken into account the issue of green jobs by launching a number of studies in 2009 concerning the issue of the forecasting of jobs and skills (through the GPEC) in industry, energy and other sectors which are impacted by the decisions made through the Grenelle agreement. At the same time, the government has signed contracts for developing the skills and jobs (via the EDEC⁵) with stakeholders in the chemical industry and energy sectors.

In addition, some tangible measures to develop green jobs have also been taken. For instance, some “green jobs” officials have been nominated in each office of the *Pôle Emploi* to gather information on jobs and job offers, as well as to develop specific programmes to support the jobs identified. In November 2009, a forum on green jobs has been organised by the French PES in order to match skills and job offers/job demands.

Lifelong learning

Lifelong learning will also be used as an important tool, either to support individuals in accessing new jobs and new skills or to support job transitions and transformations.

According to research by the AFPA (National Association for Adults’ Vocational Training) within the framework of the preparations for the national conference over green jobs, of the 180 000 people trained each year, 40 000 are undertaking training in the field of green jobs (either to facilitate a change in career or to adapt skills). It should be noted that there is a real awareness of the need to adapt the vocational training system to the needs of the greening of the economy. In 2008, the FFE-Bat programme was created to provide a training to managers and employees in the

⁵ The global purpose of the EDEC is to anticipate the consequences in terms of employment and skills of demographic, social and economic changes (preventing unemployment and mismatch risks for occupied actives). Concretely, concerted actions with a state funding are led in territories and/or professional sector/activity/branch to help employees and employers to face changes to come. Vocational training, life-long learning and human resources development are the main axes of action of EDEC.

construction sector in the field of sustainable development; with the objective of training 50 000 people in 2009.

3.2 Policies to develop, best practices and points to watch

The greening of the economy raises hopes and fears. The debate over Carbon Tax has proved that if, after the *Grenelle de l'Environnement* debate, people in France were willing to take steps to improve the environmental dimension of the economy, some choices to be made.

Firstly, in the short term, it is necessary to prevent any inequalities and effects of unequal distribution caused by the greening of the economy by maintaining the purchasing power of the poorest members of society in order to avoid a reduction in consumption and to ensure that households have the necessary purchasing power to sustain the green economy. Existing tax reductions (such as, the tax reduction on green heating systems) and direct subsidies to help people to consume green should also be developed.

Secondly, in the medium and long term, it is necessary to prepare the greening of the economy by anticipating jobs and skills so as to avoid either shortages or the need to large-scale restructuring. The green economy is a broad concept and it is necessary to define and focus on the perimeters of the jobs to be developed. In addition, training should be provided for employees active in sectors facing large-scale transformation; this is already the case for big companies (Eiffage, GDF Suez, etc). The involvement and the awareness of the major actors of the Public Employment Services (*Pôle Emploi*, AFPA) should lead to an increase in the tools and measures present.

Decisions are also needed at government level to prepare for the transformation of the structure of the economy and for possibility of the closure of certain elements. Support measures are needed, such as: the simplification of administrative processes; the implementation of disposals leading to workforce flexibility for employers; the use of the ESF or other funds to target vocational training; and reconversion projects of those who work in sectors threatened. It should be noted that social dialogue is necessary, both within and between different sectors. A key issue is the need promote the mobility of workers (for example, mobility in jobs, in activity sectors, and across different geographical regions). It is clear that social partners have an important role to play in this area, as they have decision-making powers over the use of the vocational training funds.

4. Conclusions

Although there are many industry statistics available, the understanding of and outcomes relating to green jobs are only in the initial phase in France. In January 2010, the Orientation Council for Employment is publishing its report, which gathers all the information currently not known about the green jobs. An important work has been undertaken throughout 2009; the state Secretary, Valérie Létard, has announced that a specific national conference over the green jobs issue is organised in January 2010.

The greening of the economy needs a real support and that even though climate change calls for important changes, several debates remain: on the one hand, over the reconciliation between environmental issues and the purchase power of money (through the debate concerning environmental taxes, such as the debate over the carbon tax); and, on the other hand, on the possible impact of the greening of the economy on the structure and level of employment in the country.

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Table 2: Synthesis of the main figures and forecast on green employment in France (Source: Authors own table, information based on literature review, 2009.)

SOURCE	DATE	CONTENT	LM ISSUES: FIGURES AND SCHEMES for GREEN JOBS	FORECASTS
"Grenelle de l'environnement"	October 2007	Making long term decisions over environmental and sustainable development issues, in particular restoring biodiversity through the implementation of tools such as regional schemes of ecologic coherence and through the reduction of greenhouse gas and the improvement of energy efficiency.	- 370 00 people working in environment sector, according to the French Institute for Environment	The <i>Grenelle</i> has postponed the assessment dimension of the decisions. SO the decisions made are not linked to impact study, and the LM effects are not contained in the results of the round of meetings.
Government/PES	From 2007 to 2009	Previsions based on reports and previsions made by DGEFP, Pôle Emploi, BCG and other sources not always mentioned.	24/11/09: the number of green jobs is 450 000 in France. A distinction is made between green jobs, with environment as « job heart » (biodiversity, nature protection etc.) which represent 6% of the jobs stock; and jobs linked to green issues (waste treatment, renewal energies...) which represent 50% of green jobs. The third category relates to jobs which are considered as green jobs because they contribute to sustainable development, by some means (such as building sector).	- in the framework of the <i>Grenelle de l'Environnement</i> , announce by the government of the creation of 124 000 jobs in all sectors concerned by the <i>Grenelle</i> (in April 2008, the ministry Jean Louis Borloo estimated to 500 000 the number of jobs created in the field of the Grenelle for the period 2009-2020) - the state secretary Valérie Létard has announced in July 009 that, above the 220 000 jobs forecast by the <i>Pôle Emploi</i> study, 700 000 or 750 000 jobs could be created if the EUR 450 billion of investments foreseen by the <i>Grenelle de l'Environnement</i> were realized.
Boston Consulting Group (for the Ministry of Sustainable Development)	01/12/2008 or June 2009	BCG has made projections based on ratios spending/jobs: the figures are calculated on the base of spending foreseen for each sector concerned by the Grenelle de l'environnement. The BCG has compared the number of jobs created for each billion of euros invested, and has then calculated the new amounts of jobs created with the new spending.	in 2009: 221 000 jobs in the sectors of activity concerned by the Grenelle de l'Environnement (agriculture, biodiversity and waste, research, ecological security, development of renewal energies, transports, building)	An average of 600 000 jobs created or maintained for the 2009-2020 period, principally in the building, infrastructure and renewable energies sectors - on the basis of EUR 450 billion of new economic activity (EUR 170 billion of public expenditure)
ADEME (Agency for Sustainable Development)	November 2009		90 000 jobs created in the field of energy efficiency and renewable energies. The ADEME also estimates that the number of direct jobs, linked to these activities is 294 000 in 2009 (vs. 204 000 in 2006), which is a comparable level to chemical industry.	ADEME estimates that these sectors will represent more than 500 000 jobs by 012 (200 000 more than for 2009)