CONSEQUENCES OF CLIMATE POLICY FOR THE FLEMISH LABOUR MARKET

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1. Abstract

Climate policy and its impact on the economy and employment in Flanders were the starting point of this study. This is highly exploratory research, since very little information and data are available about the impact of climate policy on the Flemish economy and employment. It was expected that certain climate policy measures had an important impact on economic sectors, i.e., on traditional activities as well as on new (environment-friendly) activities. The study found that the economic effects of climate policy are rather varied:

(1) *Positive*: it creates economic opportunities and new market niches such as the development of new technologies;

(2) *Negative*: it generates additional costs, such as for resources to increase a process's energy efficiency or the purchase of CO^2 certificates.

Besides these mixed economic effects a limited neutral impact of climate policy on employment was identified based on various models and scenarios. For some sectors the overall impact is mainly positive, for others it is neutral or even negative. The transformation of sectors as a result of our climate's impact on policy and social debate has, however, increased the need for an active policy in this frame.

Key words:

Climate policy; employment; economy; impact

2. Study objectives

The general objective of this study was to map the potential quantitative and qualitative impact of climate policy on the economy and on employment in Flanders. More specifically, the study focused on:

(1) the opportunities, threats and challenges of climate policy for the Flemish economy;

(2) the quantitative and qualitative employment potential of climate policy for the Flemish labour market;

(3) the challenges and opportunities for Flemish policy (and the Flemish social dialogue), especially in terms of employment and social economy.

Clarification of key concepts

The Energy Performance of Buildings Directive (EPB) is a European Directive. The Directive imposes a number of well-defined objectives for the energy performance of buildings and also describes the measurement and certification thereof. The Directive covers four key elements for buildings: a methodology for calculating the integrated energy performance, minimum standards, an energy performance certificate, and a regular inspection of boilers and air conditioning systems.

The EU Emissions Trading Scheme (ETS) is an EU-wide system in which emission allowances are traded between companies and emissions are thus reduced where this can be achieved in the most cost-effective way. By internalising the environmental costs associated with greenhouse gas emissions, the economy is encouraged to reduce emissions, among others by using renewable energy and by making production processes more energy-efficient.

3. Methods and data

The research was divided into three parts, with a mix of quantitative and qualitative research methods, aimed at mapping the impact of climate policy on the economy and on employment in Flanders.

3.1 Exploring potential macroeconomic models for the impact of climate policy on the economy.

3.1.1 At Belgian level

PRIMES approach: The PRIMES model was developed by the National Technical University of Athens (NTUA) in the frame of a series of research projects funded by the European Commission's Joule Programme. The model, which the EC endorses and uses, was developed to establish energy projections, draw up scenarios and analyse the impact of policy measures relating to energy. The PRIMES model includes a national (Belgian) part that has been included since the early 1990s. During the successive 'updates' of the model the developers always took into account any amendments in terms of (climate) policy in order to fulfil the proposed climate control objectives.

Approach of the Federal Planning Bureau (FPB): The FPB's approach, which was adopted for this exercise, is based on an FPB study of November 2008: "Impact of the EU's Energy and Climate Package on the Belgian energy system and economy." The aim of this study is to calculate the effects of the targets set by Belgium in the frame of the European energy-climate package for 2020 on the Belgian energy system and on the economy. This study aims to simulate CO^2 reductions in Belgium by introducing a hypothetical CO^2 tax. The economic effects of such a tax are calculated and potential methods for calculating the effects on Belgian employment developed. By comparing the results in the FPB scenarios with the results of the basic scenario as used in the PRIMES model we can already formulate a conclusion about the effects of the existing and potential climate policy for Belgium. This is because the PRIMES basic scenario is based on an evolution of policy measures, as indicated in the PRIMES approach, whereas the FPB scenarios start from alternative hypotheses.

3.1.2 At Flemish level

Four scenarios were developed in the study, which give an indication of the potential effects of climate policy on the Flemish economy (based on the assumption that all the required data are available). These are the scenarios of the historical growth trend, of a lower growth, of a higher growth and of rising electricity prices. A potential Flemish calculation tool was developed with indicative results, in relation to these four scenarios. A series of learning effects were formulated as regards data supply, the model structure and the current fragmentation in terms of data and research in the study, as a result of these scenarios and tool development.

3.2 The evolution of employment in relevant sectors for climate policy

After having identified the number of relevant sectors covered by the ETS or EPB Directive, the evolution of employment was examined:

- at sectoral level based on data supplied by the National Social Security Office (NSSO). The figures indicated a growth of 1% compared with an average 5.8% for all sectors in Flanders;
- at company level based on Belfirst data. Generally speaking employment had decreased with 6% based on the available data.

The analysis of the evolution in employment based on the above sources in other words gives rise to conflicting results in terms of the potential impact of climate policy on employment.

3.3 Some case studies in relevant sectors

The following principles were observed for the selection of sectors for the case studies:

- sectors involved in ETS or EPB measures (mainly primary and secondary sectors);
- these sectors are very important for the Flemish economy in terms of employment.

Three sectors were selected for case studies: the chemical industry, the construction industry and renewable energy. The following methods were used for the elaboration of the cases: Interviews (with professional organisations, companies and sectoral training funds); quantitative data (NSSO data and employment estimates for the renewable energy sector, Agoria 2010) as well as survey data (the sustainable building survey (IDEA 2008) and the survey by the Flemish Confederation Building (2010).

4. Findings

4.1 Quantitative measurement of the impact of climate policy

4.1.1 Depending on the scenario defined the existing quantitative models for Belgium indicate shifts in employment effects as a result of climate policy

Based on the analysis carried out in line with the PRIMES and the FPB approaches respectively, the model's definition (i.e., what has been/has not been included) and the available information and data are quite relevant to the results obtained. However, most results of the scenarios indicate that there is only a limited, neutral impact of climate policy on employment. This is in line with the conclusions drawn in the policy evaluation of the *Schoon & Zuinig (*Clean & Efficient) program in the Netherlands.

4.1.2 The development of an own Flemish quantitative calculation tool to establish the impact of climate policy on employment to determine is (still) not feasible

The exercise to measure the impact of climate policy on employment in Flanders has shown that the development of a quantitative calculation tool as regards climate and employment is not that evident. The lack of available data (continues to) play an important role in this. There are sufficient data available for Flanders in terms of economic variables and in terms of climate. Data and qualitative information as regards the actual elaboration of climate policy, and more specifically of its economic impact, however, are very limited for Flanders and in some cases not even publicly available. Next to this, there is insufficient information available for Flanders to link economic and climate variables, whether mutually or crosswise, with one another (through relationships and correlations) and thus establish a model structure. The outcome is that it remains difficult to evaluate the full impact of climate policy, given the many policy lines involved as well as other factors.

4.1.3 Joining forces with the Federal Planning Bureau is the best option for the future

There are three proposals for measuring the impact on the Flemish labour market: (1) cooperate with the Federal Planning Bureau, (2) amend existing Flemish models, (3) develop an own Flemish model.

The fragmentation of data sources, information services and methods used by the different bodies means it is difficult to arrive at a consistent data set for Flanders. In this frame it is interesting to review the various (past, current and planned) studies as well as the research methods used and to summarise them in one overview. The result is a visualisation of interfaces, but above all of differences in terms of study design, method and outcomes. Based on such a review any possible 'gaps' can be identified and a coherent data typology drawn up. The next step requires the various (research) institutions (such as the Federal Planning Bureau, the DAR (Services for the General Government Policy) and the SERV (Flanders Social and Economic Council)) to join forces to develop and implement a shared database and research methodology to measure the impact of climate policy on the Flemish labour market.
From the perspective of efficiency, synergy and harmonization with international concepts a cooperation with the Federal Planning Bureau is recommended for the further elaboration of quantitative impact analyses.

4.2 Case studies of the chemical, construction and renewable energy sector

4.2.1 Climate policy results in additional costs but also creates (new) opportunities in the product market

In the chemical sector the additional costs play an important role in the impact of climate policy on the economy and on employment. In the building industry and in the renewable energy sector climate policy, in contrast, gives rise to new opportunities. The introduction of a European Emissions Trading Scheme (EU ETS) mainly resulted in an additional cost in energy and carbon-intensive sectors such as the chemical industry. In the first period (2005-2007) emission allowances were granted freely in function of past emissions (*grandfathering*). Depending on the industry, a proportion of the emission allowances will have to be purchased, meaning production costs will increase, from 2013 onwards.
The increased demand for sustainable products and services has created important market opportunities. In the building industry this demand has been heavily stimulated by the Energy Performance of Buildings Directive (EPBD). The Directive was rapidly implemented in regional legislation. Its objectives are relatively progressive in the European framework (e.g., E80 norm). In addition, financial incentives and campaigns by the (international) authorities ensure that consumers and businesses are encouraged to invest in energy efficiency and renewable energy.

4.2.2 Other aspects also play a role in the (international) competitiveness of sectors such as manufacturing costs, innovation, etc.

In those sectors which are heavily influenced by the ETS scheme, such as the chemical industry several factors have an effect on the industry's international competitiveness. Besides energy costs and CO_2 emissions other key costs such as raw material prices, labour and transport-related costs also come into play.

Decisions are often taken abroad in multinationals and the Flemish Government is not in any position to be able to exert any influence. Decisions as regards the location of production and R&D facilities are always made on a Europe-wide scale and in some cases even on a global scale.

4.2.3 The impact of climate policy on professions and competences is highly sector-specific; dynamics are mainly due to opportunities in the product market

The momentum in the labour market that have been created by climate policy are characterised by two dimensions. The first dimension is the volume of employment. Some professions have become more important because of climate policy, while new professions are also created, resulting in additional jobs. Other professions become more important or will become obsolete which results in job reduction (and job destruction). The second dimension of labour market dynamics is the content of professions and competences. The content of professions mainly changes under the influence of changing regulations, products, services, production methods, etc. The package of tasks may change, making some tasks more important than others, while other tasks become more complex, new tasks are added or tasks become obsolete. The required competences are also changing so employees can implement their tasks as required.

Every business sector is affected differently by climate policy and has its own internal momentum in terms of professions and competences. The sectoral analysis revealed that the momentum, as a result of climate policy, is especially high in the building industry, which is evolving towards sustainable building, and in the renewable energy sector, which is seeing strong growth. This transformation proved to be rather limited in the chemicals industry; the greater attention for energy and carbon efficiency has not influenced the tasks and competences of, say, an engineer who is working to optimise the production process. The segment of sustainable chemical products is growing, but it continues to be relatively small compared with the main activities.

4.2.4 Climate policy increases the demand for technical profiles at various levels

The increasing complexity of occupations in the building industry throughout the various phases of the building process, and the growing importance of the renewable energy sector, in which technical profiles are strongly represented, have contributed to a rise in the demand for technical job profiles.
Both sectors are experiencing a lack of inflow of technical profiles, i.e., engineers and technically skilled workers.

4.2.5 Climate policy increases the need for training at various levels

There is a significant need for training at various levels in those sectors which are affected by climate policy, such as in the building industry, which walls under the EPBD Directive. This includes architects, contractors but also subcontractors such as electricians, insulators and central heating fitters. There is also a shortage of technicians with, e.g., a specific knowledge of wind energy in the renewable energy sector.
The demand for training thus mainly is related to 1) regulation (e.g., EPBD), (2) new techniques and applications (e.g., wind energy, passive houses) and (3) new products (e.g., roof tiles with integrated photovoltaic cells).
The training demand is eagerly felt among jobseekers and young graduates as well as among employees. The needs are much stronger in the latter group, however, because they are most frequently deployed in the new segments while jobseekers and young graduates are first and foremost employed in traditional activities. Teachers also need to be retrained so they can convey the changes in a given industry. However it is not easy to find employees who are working in new segments (e.g., passive housing) who have the time to transfer this new knowledge.

5. Conclusions and policy implications

The recommendations formulated here are the result of the study's findings and aim to establish a link between the findings of the study and Flemish labour market policy. Generally speaking policy has to focus on an anticipatory Labour Market policy and a cross-sectoral approach to bottlenecks in order to respond to labour market dynamics.

5.1 Anticipatory labour market policy

In some sectors climate policy has contributed to a very strong momentum, both in volume (as is the case in the renewable energy sector) and in terms of content (as is the case in the building industry). An anticipatory Labour Market policy which is capable of closely monitoring developments, but which also has an insight in future trends is required to be able to proactively take measures to cope with (future) bottlenecks in the labour market.

5.1.1 Competence policy has to be able to be adjusted more quickly

Competence policy has to be able to be adjusted more quickly in line with changes in sectors in terms of regulations, activities and techniques. Thus, for example, many of the competence profiles are outdated as a result of the rapid evolution of occupations and competences in some sectors, among others as a result of climate policy. Until now a very time-intensive process was applied to draw up these profiles. A more dynamic instrument that is capable of

incorporating (future) changes in occupations and competences more quickly is required. At present such a tool is being developed: 'Competent' will cover the entire labour market and will be updated annually.
International studies are capable of indicating general trends at macro and/or meso level but all too often they are too generalistic. As a result it is not always possible to draw conclusions about the Flemish level and/or to map dynamic evolutions in occupations and competences. That is why knowledge about anticipatory competence policy must be further developed at Flemish level in close collaboration with the industry and with other stakeholders. This is a responsibility for companies, industries and the government, which relies on the right type of synergy. The information required by sectors and/or the government for forecasts will also have to be provided by companies. Companies and industries will thus be able to gain a better understanding of the challenges that lie ahead through cooperation and information exchange.

5.2 Cross-sectoral approach to bottlenecks
Each sector has its own dynamics but many bottlenecks continue to be of a cross-sectoral nature, such as the lack of an inflow in technical education.

5.2.1 Generic bottlenecks, particularly the lack of inflow in technical education continues to be a problem
The demand for technically skilled workers is continuously increasing, partly due to ever more complex production processes. Climate policy is consolidating this trend, because it has raised the requirements in terms of technical knowledge and because it stimulates those industries with a lot of technically skilled workers such as the renewable energy and the building industries. A shortage of candidates for technical education proves to be the biggest stumbling block to guarantee a sufficient inflow for these industries. The promotion and upgrade of these educational programs, both in secondary and higher education, as well as in vocational training for workers and job seekers, is essential in this frame. In additional specific technical education programs can be harmonised with one another by organising such programs at cross-sectoral level. This was previously done for 'process operators' who can be employed in the food industry and in the chemical industry.

5.2.2 The emphasis should be on good basic training, specific training can be provided by the industry or the company
When training young people or jobseekers, demand mainly is focused on good basic educational programs, which are capable of keeping up with general sectoral developments, which are among others related to climate policy. Thus Labour Market policy should be capable of responding proactively to change, but educational policy also needs to follow. Newly developed niches at times create specific training needs. These should be organised at sectoral or at company level, because these may be very company-specific and only apply to a smaller group of employees. The quality of a basic educational program also depends on the abilities of the instructors that teach it. They too should be trained in new developments in the sector.

5.2.3 There is a need for cooperation, on the one hand between sectors/companies and education, but also between the various training institutions
In order to ensure that educational programs remain up to date more cooperation is needed between industries and companies on the one hand and education on the other hand. The speed with which changes are implemented in educational programs is not always sufficient to keep up with the ever increasing momentum.
It is also worth involving the business world, even more intensely than is the case now, in the entire educational process, among others by incorporating relevant work experience in the program. In addition, greater coordination between the various educational bodies is required. There are many organizations involved in education and training and each of them has its own methods and approach. A series of initiatives is developed here and there, for example to respond to new needs, such as energy performance regulations, new building techniques, etc. However, (as yet) policy-makers or industries have not developed an integrated vision as regards the educational offer.

Full reference of study report(s) and or paper(s) and other key publications

Bilsen, V., Devisscher, S., Sanders, D., Van Dingenen, K., Rademaekers, K., Van der Laan, J., & Soete A. (2010). *Gevolgen van klimaatbeleid voor de Vlaamse arbeidsmarkt.* Brussels: Ideaconsult.