Is European climate policy sustainable?

Introduction

There is a consensus in Europe that reversing climate change is the overall policy priority of the coming decades and that the gradual transformation towards a resource-efficient and low-carbon economy will be the decisive trend of the future. It is also clear that this process will entail a fundamental restructuring of the European economy.

The broader framework of climate policy is defined by the agreement reached among the group of G8 nations and signed in 2009. The purpose of the agreement is to avoid irreversible climate change and its goal, to this end, is to cut global greenhouse gas (ghg) emissions by half by 2050 and to implement a stricter target of 80% ghg emission cuts for industrialised countries, taking 1990 levels as the base. This 80% target thus represents the reference value for any climate policy for the industrialised countries, including the EU27.

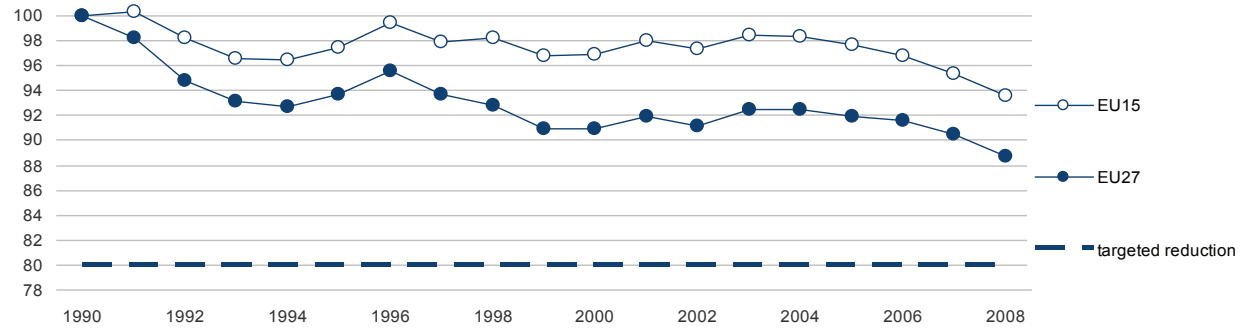
The EU 2020 strategy, with its triple priorities of 'smart, sustainable and inclusive growth', has formulated its headline targets for achievement by 2020 as a 20% reduction in ghg emissions (rising to 30% if the rest of the world promises significant cuts), an increase in the share of renewable energy to 20% of all energy generation, and a 20% improvement in energy efficiency. In addition, one of the strategy's 'flagship initiatives' focuses on a 'resource-efficient Europe' (European Commission 2010k).

This chapter will review progress towards the proportional fulfilment of the European climate headline targets as laid down in the EU 2020 strategy and examine whether these developments can be regarded as a sustainable process towards the broader goal of a resource-efficient Europe.

Topics

European performance in meeting climate policy targets since 1990

Figure 5.1 **Greenhouse gas emissions in % emissions in the base year 1990**



Data source: EEA (2010a).

Greenhouse gas emissions: more reduction due to crisis than to climate policy

Whereas global CO2 emissions in 2008 were 41% above 1990 levels and the emissions of developed countries (subject to the Kyoto Protocol) showed no decrease (Schepelmann *et al.* 2009), the EU did achieve a significant cut in its emissions during this period. However, it is still lagging behind the proportional fulfilment of the 2020 targets, as EU15 ghg emissions were down by only 6.5% in the period 1990-2008 and EU27 emissions by no more than 11.3%, as shown by Figure 5.1.

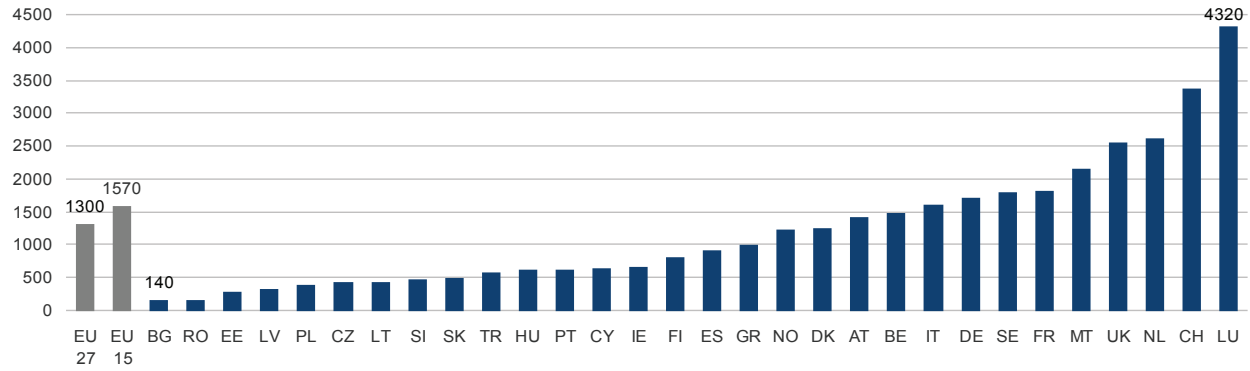
A breakdown shows that a very substantial proportion of the cut in emissions was achieved during the first decade of the observation period, as in 1999 ghg emissions were already 9.1% below the reference level of 1990 in the EU27 and 5.3% below this level in the EU15. The period 2000-2007 saw no more than a marginal additional decrease in emissions (0.4% in EU27 and 1.4% in EU15). What is more, the single crisis year of 2008 contributed a larger decrease than the whole preceding eight-year period, amounting to 1.8% in both EU27 and EU15. The good performance (in emission reduction) during the 1990s was mainly attributable to the collapse of the traditional industrial base of the Central Eastern European (CEE) countries and eastern Germany during the initial phase of the transformation (improving the German and thus EU15 performance too) and less the result of climate policies. Out of the EU27's total 11.3% emission reductions between 1990 and 2008, 7.3% had already been achieved in 1994 (at the lowest point of the transformation crisis in CEE), constituting a clear demonstration that the bulk of the emission cuts was attributable to output contraction due to crisis.

Even if Europe has been performing better than the rest of the world, it cannot be stated that it is well on track towards fulfilment of the ambitious 2050 targets. Achievement of the 80% emissions cut target for industrialised economies by 2050 would presuppose a cut in emissions to two tonnes of CO2 equivalent per capita per year. In 2008 emissions in the US were around 24 tonnes per capita and in Europe ten tonnes per capita (The Economist 2009). There is thus still a very long way to go to meet this long-term objective.

The fulfilment of the 2020 ghg reduction target (EEA 2010b) envisaged by the report from the European Environment Agency (EEA) will, even if achieved, be predominantly attributable to contingent events stemming from economic crisis and not the result of consistent implementation of policy targets. This is an important policy message about the sustainability of emission reductions in Europe, posing a major challenge as regards achievement of the longer-term objective.

European performance in meeting climate policy targets since 1990

Figure 5.2 **Resource productivity 2008 – Value added generated (EUR) by one tonne of resource input**



Data source: Eurostat (2010d).

Resource productivity – a divided Europe

Resource productivity, defined as the ratio between gross domestic product (GDP) and domestic material consumption (DMC), indicates how much value added is produced by the input of one tonne of material resources in a given economy. Figure 5.2 shows resource productivity levels in EU member states.

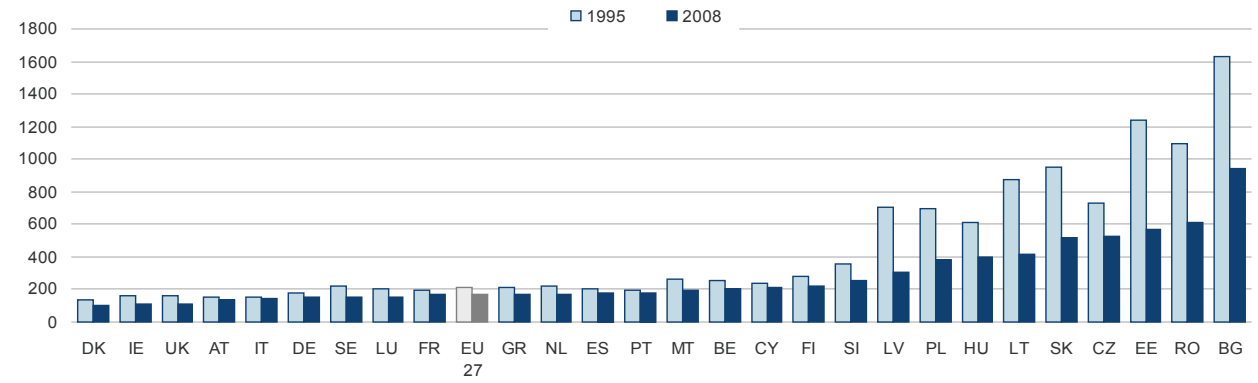
The difference among the resource productivity characteristics displayed by individual member states is a point that is frequently overlooked. The gaps are enormous as, for example, the level of resource productivity in Luxembourg is thirty-fold what it is in Bulgaria, this gap being far wider than corresponding gaps in GDP/capita or wages. Even if Europe as a whole is currently profiting from the huge 'emission drops' in CEE new member states caused by the collapse of their traditional industrial base in the early 1990s, these countries face huge challenges when it comes to the need to raise resource productivity in the future. This is also an important policy implication for the future and one that, unfortunately, is not explicitly addressed by the EU 2020 strategy.

It is important to note, however, that what matters is not production alone but also consumption. A country's resource productivity depends also on its economic specialisation. An economy that has a resource-intensive economic structure (e.g. with a large industrial base) would have lower resource productivity, even if it used material inputs efficiently. While other economies that have a stronger specialisation in services show higher resource productivity, these are countries that import resource-intensive products. While these effects are balancing themselves out within the EU, in the case of imports from outside the EU more attention needs to be paid to this phenomenon. Effective use of resources depends on final consumption. One study (Davis and Caldeira 2010) finds, using consumption-based CO_2 accounting, that Europe should add net imports of 4 tonnes CO_2 per person to its per capita production-based CO_2 emissions which amounted to 10 tonnes of CO_2 in 2008. This represents a 40% increase in actual emissions! This aspect of consumption-based CO_2 accounting is unfortunately not targeted by climate policy measures at all.

Moreover, when the development of labour productivity is compared with that of resource productivity in the EU, we see a ratio of 2:1 in the period of 1999-2007, when labour productivity in the EU27 grew by 14.2%, while resource productivity improved by a mere 7%. This also shows that efficient resource use was not, until recently, regarded as a driver of economic decisions.

European performance in meeting climate policy targets since 1990

Figure 5.3 **Energy intensity (kgoe energy use for 1000 EUR GDP)**



Data source: Eurostat (2010d).

Energy intensity: again a divided Europe, but with signs of convergence

Energy efficiency is another performance indicator that is subject to European climate policy targets under the EU 2020 strategy. Energy efficiency is measured by the energy intensity of an economy, showing how much energy (expressed in kilograms of oil equivalent, kgoe) is used for the production of one unit (1000 EUR) of GDP. Figure 5.3 shows the energy intensity of EU member states. Again we see huge differences between member states, as the energy intensity of the Bulgarian economy was 12 times the corresponding figure for Denmark in 1995 (the first year Eurostat provided data for all current EU member states). By 2008 the difference between the worst performer (Bulgaria) and the best performer (Denmark) had shrunk to 9:1, but the order of countries did not change (see Figure 5.4).

The EU 2020 strategy aims for a 20% increase – based on the performance of 1990 – in energy efficiency by 2020. This target has in fact been already achieved, as energy intensity in the EU27 shrunk by 20% between 1995 and 2008 (in a period for which Eurostat data were provided). Again, high energy intensity countries among the CEE new member states have shown the greatest decrease in energy intensity, with a corresponding increase in energy efficiency. In the case of Bulgaria, the increase in energy efficiency between 1995 and 2008 was 72%. Although this sign of convergence is a welcome phenomenon, the gap between old and new member states remains large. More importantly, the achieved decrease in energy intensity is attributable mostly to a loss of energy-intensive industrial capacities in the transformation process. There is a crucial difference between whether the energy intensity of a given economy decreases as a result of downscaling energy-intensive activities, or because of increased energy efficiency in activities that are maintained. It is important to make sure that this distinction is made within the policy framework, which at present is not the case.

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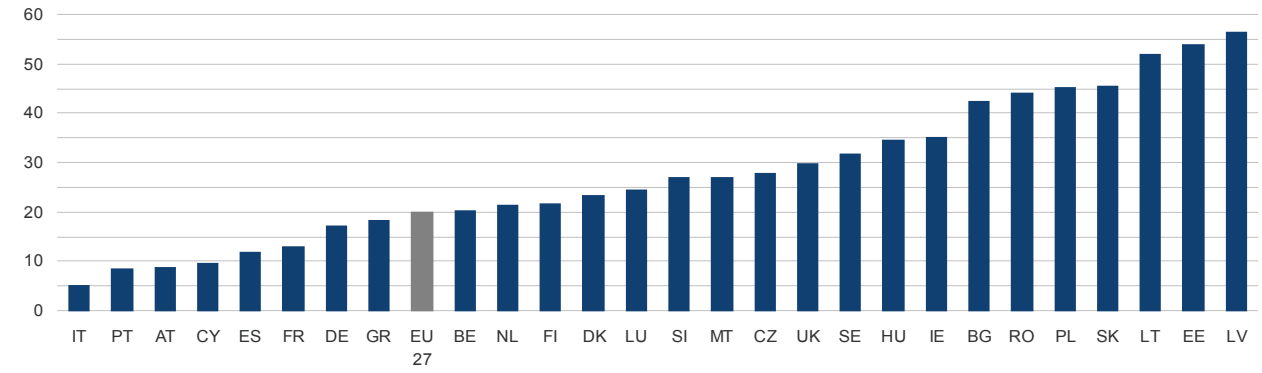
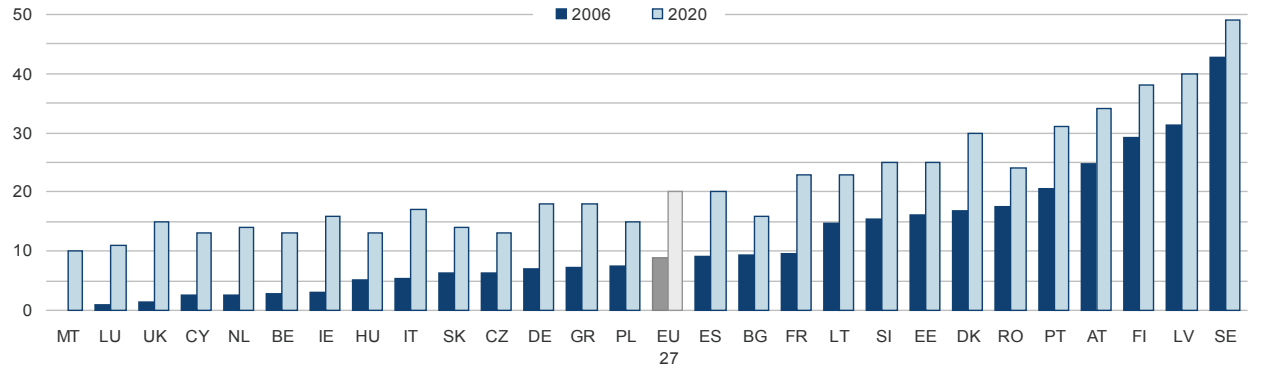
Figure 5.4 **Energy intensity reduction between 1995 and 2008 (%)**



Data source: Eurostat (2010d).

Figure 5.5 **Share of renewable energy in gross final energy consumption (2006:fact; 2020: target)**



Data source: Eurostat (2010d).

Implementation and economic instruments

The share of renewable energy in total energy generation

Under the EU 2020 strategy, EU member states have varying national targets for the share of renewable energy within their total energy generation adding up to the 20% overall target share of renewables on the EU27 level. On the one hand, Malta and Luxemburg have the lowest targets, with respectively a 10 and 11% share of renewable energy by 2020 (Figure 5.5). What is more, these countries' performance in 2006 (latest year available at Eurostat) was the poorest in Europe (0.1% and 0.9% respectively). Latvia and Sweden, on the other hand, which have ambitious targets of 40 and 49% by 2020, had already achieved the highest shares of renewables – 31.3% and 42.7% respectively – in 2006. The differences among member states in respect of the targets and current achievements in the spread of renewable energy reflect different geographical endowments, but depend also on the ambitions of their policy framework. Sweden, for instance, while having an ambitious policy framework, benefits also from the high share of hydro energy and biomass use in its energy generation. Latvia, on the other hand, benefits considerably from a high level of biomass use linked to its wood industry.

The EU27 as a whole had achieved a share of 8.9% in 2006, less than half way to the target of 20% by 2020. As such, further efforts and more policy co-ordination are required in order to upgrade the share of renewable energy in the EU as a whole. The green agenda must be prioritised especially in those member states with poor performance, whether this is due to lack of political commitment, unfavourable natural conditions, or both.

Even if the European Environment Agency's report on tracking the European performance of meeting the Kyoto targets (EEA 2010a) is optimistic about their fulfilment, it can be concluded, if all the above considerations are taken into account, that Europe is not on track to meet its 2020 targets, not to speak of the longer-term goal by 2050.

Our basic message here is that, taking the performance of the last 20 years into account, the fulfilment of the more ambitious long-term target seems to be illusory. This is why a fundamental revision of the climate policy framework will be required, as will be suggested in the section on policy recommendations.

Implementation and economic instruments

Coordinated policy mix needed

Implementation of effective policies is the cornerstone for achievement of climate policy targets. What we currently find on the European level is a predominance of declaratory objectives without any concrete roadmap or instruments of implementation.

The central issue relates to achievement of the right 'carbon price'. Economic policy instruments that determine the effective carbon price include 'cap and trade' policy (like emissions trading), a variety of carbon-related taxes, and the direct involvement of the state through redistribution mechanisms (e.g. levies on carbon-based energy generation and use, while providing subsidies for environmental innovation). These instruments would provide guidance for individual decisions on investment or consumption, but none of them, taken on their own, would be capable of translating policy targets into business reality. What is needed is a coordinated policy mix of these instruments with a clear implementation agenda on the European level, and this is largely missing.

Examples of the already existing economic instruments (like the EU ETS, see below) clearly show this to be the case, giving rise to a situation in which it remains impossible to calculate the effective carbon price in the future.

There are also fundamental gaps in the overall framework of climate policy, regarding, for example, the way in which it aims to achieve emission cuts, whether by reducing activities that are energy-intensive or by increasing the efficiency of energy-intensive activities. The current track record shows that achievements to date have been largely based on the former approach. We have, on the one hand, the ambitious targets and promises, but it remains uncertain, on the other, by what means and at what price these objectives could be achieved.

The European Emission Trading System is a clear illustration of the uncertainties and distortions of the policy instruments that have been partially implemented. The current form of the EU ETS is subject to criticism in several respects, as listed below, since it fails to give proper incentives to economic actors to reduce CO2 intensity. It has also been subject to wide-scale manipulation and fraud and has become a source of uncertainty for economic actors (cf. ETUC 2010c).

The Commission is currently finalising the design of the third trading phase of the ETS, which will begin in January 2013 and last until 2020. The Commission's stated objective is to increase the share of emission permits that are auctioned rather than allocated for free to installations covered by the ETS. A key concern will be the potentially negative impact of the next phase of the ETS on the competitiveness of the businesses affected. The potential exposure level of industries or sectors to EU ETS depends on the CO2 intensity of production, the opportunity to abate carbon within the sector, and the ability to pass on carbon cost increases through to output prices.

The literature presents a mixed picture as to the possible effects of the future ETS regime. One study, conducted by CEP, argues that most industry sectors entitled to free emission permits would not face an increased risk of closure if they had to pay for permits (Martin *et al.* 2010), while another study by the ZEW Institute points to the longer-term uncertainty about carbon leakage and the passing-on capacity of carbon costs by firms (Oberndorfer 2010).

A study carried out by the UK-based WWA consultancy group, commissioned by the Energy Intensive Users Group (EIUG) and the Trades Union Congress (TUC), points to the wide range of uncertainty faced by energy-intensive industries in respect of the forecast increase in their total energy bill. This increase is projected to be between 18% and 141% by 2020, in other words, an incredibly wide range (Waters Wye Associates 2010).

There is also another dimension of the policy framework that is broader than economic tools and instruments.

Preserving economic growth and the European industrial base, while decreasing emissions and resource use, requires a paradigm shift and fundamental restructuring process that would lead to a low-carbon-based European economy.

Since this transformation is a policy-driven process, 'anticipation' of change can be more straightforward and explicit, and responses to its challenges (above all related to employment) can be actually planned and integrated into the policy framework from the outset. This would include, above all, the design of targeted labour market policies to ease necessary transitions, together with matching education and training measures (see also Chapters 2 and 6). Industry policy measures are needed to promote innovation and address transformation problems experienced by specific sectors or sub-sectors (sectoral policies) with the involvement of social partners. Regional policies must address the specific problems experienced by regions where the effects of restructuring are cumulative (the resource efficiency gap between new and old EU member states is much larger than the income gap). Although the Committee of the Regions monitoring report on the EU 2020 strategy (CoR, 2010) mentions that revenue from the European emissions trading scheme should be made available to local and regional authorities for coping with climate change adaptation measures, it does not mention this specific context of regions that are particularly adversely affected. The most urgent step would be a proper assessment of the effects of concrete and planned climate mitigation policy measures for employment (cf. Galgoczi 2010).

Conclusions

In need of a comprehensive climate policy framework

A review of the mid-term performance in achieving the main climate policy targets of the EU 2020 strategy indicates that Europe seems to be on track for fulfilling them, in formal terms at least. This performance is not, however, based on a radical reorientation of economic activity but is mostly due to one-off effects of crisis and, as such, is not sustainable. While there is a consensus in Europe that reversing climate change is the overall policy priority and that the transformation towards a resource-efficient and low-carbon economy will be the decisive trend of the future, the concrete economic tools and foundations for this process are largely missing.

Up until now we have a fragmented policy framework on the European level with an ambiguous and incomplete Emissions Trading System, a number of sectoral initiatives, open questions about carbon taxes and a variety of uncoordinated national practices. Dedicated employment policies to promote and facilitate green transition on the labour market are entirely lacking.

This is what we mean by an undefined agenda and it is why we claim that a more comprehensive climate policy and better policy co-ordination, based also on impact analysis of the likely social and employment effects, are needed in the interests of long-term success. The paradigm shift is still to come and for it to take place requires a more comprehensive climate policy, as well as its implementation.

A further vital question is how to manage this process in a socially sustainable way. What would be the role of the trade unions and what strategies should they follow? One thing is, however, clear: progress in emissions reduction such as was seen in Central-Eastern Europe as a result of the collapse of industrial activity, or in the UK context of a financial-services-based bubble economy, cannot be the way forward for Europe.