

## CHAPTER 10

### RISING TO THE CLIMATE CHANGE CHALLENGE

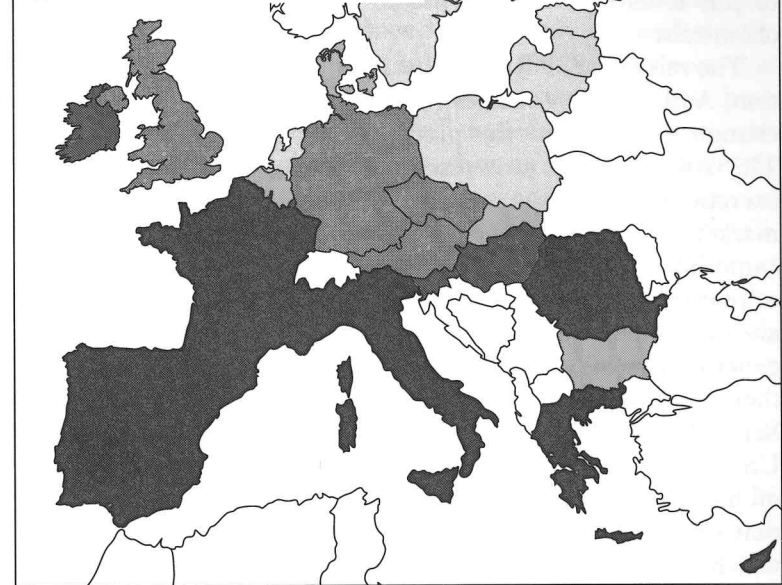
*The needs of the environment are coming together with the needs of the EU: one is a cause looking for a champion, the other a champion in search of a cause.*

David Miliband, UK environment secretary, November 2006.

Climate change was an obvious challenge for the EU to rise to. One essential reason is the consensus its member states share about the problem. This consensus is surely not unconnected with the projected geographical impact of unchecked climate change within Europe. This is expected to be harshest in terms of high temperatures and drought across southern Europe, and the map below (based on the Eurobarometer opinion poll) shows that concern is indeed greatest across the EU's southern belt. This region is also likely to receive even more economic refugees from the southern shore of the Mediterranean and sub-Saharan Africa both of which will be still worse afflicted by climate change. In the EU's continental heartland, in central and eastern Europe, summer rains are projected to decrease.

Yet northern Europe, the one area of the continent where global warming might bring some partial benefit with less need for winter heating and higher crop yields, also happens to be the EU's politically greenest region. Mainstream political parties in northern Europe are generally environmentally aware, and sometimes environmentalists hold the balance of political power, as the Greens have done in Germany. The Greens are also an important force in the European Parliament, where they are better represented, due to the EU-wide system of proportional representation for the Strasbourg assembly, than in those national legislatures operating on a first-past-the-post system that benefits incumbent mainstream parties. The UK Green party, for instance, has one MEP at Strasbourg but no MPs at Westminster.

This map is drawn from a Eurobarometer opinion poll of March 2007, which posed the question country-by-country: "Are climate change and global warming a concern for you?". Those countries with the largest proportion of people replying yes to this question are marked in the darkest shade of grey, with lighter shades indicating countries with lesser apparent concern about climate change



**Map 2:** Mapping Climate Change Concern

Source: Eurobarometer March 2007

EU action on climate change also fits into a tradition of pre-emptive environmental measures that had grown up not only in some important member states such as Germany and Nordic states, but also at the Union level. This tradition is encapsulated in the 'precautionary principle', the notion that sometimes you have to act early – even before you have conclusive proof of a problem – because the problem, left untended, could result in enormous and irreversible damage. EU states wrote this principle into their 1992 Maastricht treaty.

The treaty provision (Article 130R) said that: 'Community policy on the environment...shall be based on the precautionary

principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay.’

Subsequently, the Commission published a paper in 2000 arguing that the precautionary principle should apply beyond the environment to all aspects of public health, and went on to put it into practice in the so-called REACH directive on chemicals.

The relevance of REACH (standing for Registration, Evaluation, Authorization and restriction of Chemicals) to the climate change debate is in the precautionary philosophy behind it. The 2006 directive was essentially a vast regulatory catch-up exercise on the large number of chemicals put on the EU market before 1981, when a proper EU-wide approval system came into existence. It requires all these older chemicals to be re-registered, re-evaluated and re-authorized, not because they are individually suspected of being harmful but because as the general class of pre-1981 chemicals they might be, and if so, they could cause hard-to-reverse biological or environmental harm. But this process is not cheap. Many companies, not least US firms, protested that the EU should wait for specific proof of harm before re-testing their products. Their protest echoed that of global warming sceptics demanding irrefutable proof, which can sometimes only follow irreversible change. In sum, what the REACH controversy showed was that in more than climate change has the EU been ready to follow the precautionary principle, to take a lesser risk (of, say, requiring unnecessary chemical tests) to avoid a bigger risk (of chemical damage to the environment).

The same precautionary approach was directly applied by the UK economist Nicholas Stern and his team in their 2006 report on the economics of climate change. It powerfully argued the case that ‘the benefits of strong, early action considerably outweigh the costs’, which it estimated at around 1 percent of global GDP by 2050. The report called this level of cost ‘significant but manageable’, and far less than the possibility of 20 percent reduction in global consumption per head if climate change were allowed to run uncontrolled. In fact, by the time the report came out, the precautionary argument was widely

accepted in Europe. The report’s main political purpose lay in trying to calm fears of those outside Europe – Americans, Chinese, Indians – about the economic costs of mitigating climate change.

Yet another reason why Europe has embraced the climate challenge may be to do with capability, a feeling that mitigating global warming by using less energy is not an impossible task for Europeans to achieve. Europeans generally do not have the vast distances, harsh climate and poor public transport that make energy saving in the US genuinely hard. But nor have they become anything like as oil-efficient as the Japanese, who now find further savings really hard. European countries mostly have a sufficient foundation of public transport networks and energy taxation policies to build credible climate change policies on. So they have no reason to despair of doing better, as sometimes Americans and Japanese, for opposite reasons, do. European industry has also become less energy intensive. This is true of all mature economies. But the change may be sharper within the EU, with the collapse of heavy industry in eastern Germany and some Central European states, and Britain’s shift to a service economy.

But the reason for giving (in Chapter 2) climate change the highest potential rating of any energy-related EU policy is that the character of the EU creates an institutional match for the climate change challenge. Global warming is the ultimate cross-border problem. A task requiring an unprecedented degree of cross-border cooperation comes relatively naturally to an organization specializing in cross-border cooperation. If the EU had not existed, some kind of ad hoc ‘green federation’ might have had to be cobbled together to tackle the problem in Europe.

Yet it is because the EU is 50 years old, and has grown in numbers and ambition over that time, that it has been able to provide world leadership on this issue. This leadership role appears to have had public support. But there is nothing necessarily moral or lasting about this. In a Eurobarometer survey of March 2008, 64 percent of Europeans felt the environment was more important than competitiveness, compared to 18 percent who thought the opposite. This will not last as economic

recession follows the financial crash of autumn 2008. People are bound to be more wary of the extra cost of renewable energy. Climate change will surely recede as a priority for companies, except perhaps insurers who always have to calculate the odds of extreme weather events happening.

Despite this, EU governments can take political courage from the fact that there is a certain amount of economic safety in numbers. Being part of a 27-country regional bloc, with a combined market of 500m people, means many EU states do most of their trade with each other. So they are not at a competitive disadvantage, as they all have to bear the cost of EU environmental initiatives. In international climate change negotiations, the 27 countries, with the Commission as their mouthpiece, carry weight that can be hard to resist. A frequent EU tactic is to argue, with some truth, that the common position of the 27 countries is the result of such delicate internal compromise that it cannot sustain any concession in subsequent negotiations with third parties.

On a smaller canvas, the Commission's ambitious January 2008 package is also the result of a shift in the attitude of the EU executive's president, Jose Manuel Barroso. One Brussels insider dates it from early 2006. 'He had heard Tony Blair talk very well about climate change at the Hampton Court summit in autumn 2005, and heard this echoed by French and German leaders. As a former prime minister, Barroso sees himself very much as one of the boys at European summits, and found climate change went down well there and that it was something he could discuss on equal terms with leaders outside Europe.'<sup>1</sup> Moreover, after voters in the French and Dutch referendums had killed the European constitution in 2005, Brussels was looking desperately for something to give the Union a lift. 'Barroso realized climate change was a good message to sell, that it fit well with his "citizen's agenda" and "Europe of results" slogans', said the same official. It also attracts younger generations, for whom the EU's post-war rationale of bringing peace to a ravaged continent tends to be meaningless.

Other commissioners too have backed stronger climate

change policies – most essentially energy commissioner Andris Piebalgs, but also Jacques Barrot, who when he was transport commissioner consistently supported the inclusion of aviation in the emissions trading scheme (ETS). The exception has been Gunter Verheugen, the German commissioner responsible for 'enterprise and industry'. Because of his portfolio and his nationality, Mr Verheugen was bound to resist tougher vehicle emission standards; they bear hard on the heavier models made by German companies. So it proved. 'Getting the main climate change package through the Commission was a piece of cake compared to the car issue', said one official. In the end, it took a team effort, with Mr Barroso and the Commission's central secretariat knocking departmental heads together. 'Our challenge was to move beyond the environment, not to design something on the bright green extreme', said another official. The result was a complex package of proposals on the broadest environmental issue of our time, based on a lot of politics, economics and some lessons from recent mistakes.

### **Trial and error**

Many EU governments combine high rhetoric about controlling climate change in the global interest with low tactics to further their national self-interest inside the EU. Almost every aspect of climate change produces behaviour termed as 'the prisoners' dilemma'. Each arrested prisoner knows that, if the optimum outcome (release for all) cannot be achieved by everyone protesting their collective innocence, then the next best thing is to be the first to denounce fellow prisoners. So it is with climate change policy inside as well as outside the EU: the next best thing to collective action is to be the first one to cheat. (Many Opec members take the same approach, publicly protesting solidarity with any collective production restraint to raise prices while quietly exceeding their oil quota to increase their benefit from higher prices).

Low tactics played a part in the initial mess the EU made of its emissions trading scheme (ETS), the main mechanism it set up in 2003 for implementing the greenhouse gas reduction

<sup>1</sup> Author interview, 2007

targets laid down in the 1997 Kyoto Protocol. The EU had some cap-and-trade models to follow, chiefly the US sulphur dioxide and nitrogen oxide trading scheme, the carbon permit schemes started by Denmark and the UK, and some internal carbon trading schemes instituted inside BP and Shell. But the ETS was on a far bigger scale than these national or corporate efforts. And so were some of its mistakes, at least in the First phase of 2005–7.

The biggest mistake was to let national governments propose how many permits to allocate to their industries. As a result, the industries of some countries got more permits to emit more carbon than they were actually pumping into the atmosphere. This made nonsense of the cap-and-trade concept, which depends on the cap being a cut. There must be a shortage of permits in order for these permits to become worth paying for and trading. Once this over-allocation was revealed, in spring 2006, the price of CO<sub>2</sub> permits for the First phase of ETS crashed to virtually zero and never recovered.

The Commission was much tougher with governments about allocations for the Second ETS phase of 2008–12. Too tough, in fact, for five East European member states that went to the European Court of Justice with their complaint about stingy allocations from the Commission. Some carbon traders remain nervous about the Commission making another mistake, especially in the transition to the reforms to the Third phase of the ETS that Brussels proposes (see below). But the price of permits in the Second ETS phase has been fairly stable, though in decline with the recession.

Over-allocation has not been the only problem. Free allocation of permits has also caused distortions (auctioning has been allowed up to 10 percent of the total, but only about 1.5 percent of permits have actually been sold). Free allocation has given windfall profits to those companies – chiefly in the power sector – that have passed to customers the ‘cost’ (at the ETS market rate) of permits they received for free. There have been misallocations to new entrants. They have tended to be given permits to cover emissions for the entire production or generation of their new plants, thereby reducing their incentive to invest in low-carbon technology.

Nevertheless, the EU has made some progress towards its Kyoto targets. These targets are set at a collective eight percent reduction by 2012 (compared to 1990) for the fifteen countries that belonged to the EU at Kyoto’s signature in 1997. It is this collective eight percent reduction target that counts for legal compliance with Kyoto, but within the EU–15 it is broken down into differentiated national targets, ranging from a 28 percent cut for Luxembourg to an increase of 27 percent for Portugal. Ten of the twelve subsequent EU members have individual reduction targets of six to eight percent (relative to various base years), while Malta and Cyprus have none.

Newer EU member states will generally have an easier time meeting their Kyoto targets, because many of them have accommodating base years, such as Poland whose base year for calculating its emission target was the relatively heavy carbon-emitting year of 1988. Meeting individual targets will generally be tougher for longer-standing EU members, and quite impossible for Spain. That country’s economic boom lasted through the 1990s and beyond, 15 years in all. As a result, Spain’s emissions are projected to be nearly 30 percent above 1990s levels by 2010, or double its Kyoto-derived target of a 15 percent increase.

For all the EU–15, emissions were 2 percent lower in 2005 than in 1990. This represents a substantial decoupling of emissions from growth in gross domestic product, which for the EU–15 increased by 35 percent in the 1990–2005 period. In theory, the consequence of missing a Kyoto target is painful. The protocol requires the over-shoot, plus a further 30 percent as a penalty, to be made up in the so-called ‘Second commitment period’ after 2012. In practice, the threat may be moot. A ‘Second commitment period’ has not been negotiated, and may never be, if the US and others insist on making a successor regime very different from Kyoto.

At all events, the EU would only suffer the Kyoto penalty if the 8 percent reduction target for all EU–15 were missed. And, notwithstanding Spain, this looks unlikely. According to Commission estimates in November 2007, the EU–15 should have reduced emissions by 4 percent by 2010, the mid-point in the Kyoto compliance period of 2008–2012. Add a further estimated saving of 0.9 percent from EU states’ plans to plant

more carbon-absorbing trees, and another 2.5 percent from plans by 10 of the EU-15 states to buy emission credits from outside Europe, and the EU-15 should get to a reduction of 7.4 percent. In addition, the tightening of national allocation plans in the Second phase of the ETS, 2008–2012, should save a bit more CO<sub>2</sub>. In sum, the EU should end up near enough to the Kyoto target of an 8 percent cut to avoid being accused of not practising what it preaches.

### **The Redesign**

Nevertheless a redesign was clearly in order to deal with flaws in the current system and to produce a Third phase of the ETS to take Europe beyond Kyoto, with or without the rest of the world. The Commission had first hoped to unveil its blueprint on the eve of the United Nations climate change conference in Bali in December 2007. In the event, it produced the new design in January 2008. However, the EU did not miss a second UN milestone. On December 12 2008, coinciding with the last day of the UN climate change conference in Poznan in Poland, EU government leaders cobbled together in Brussels agreements on Europe's new climate programme, which the European Parliament endorsed by big majorities on December 17. Some details remained to be formalized in spring 2009, but the basic deals were done.

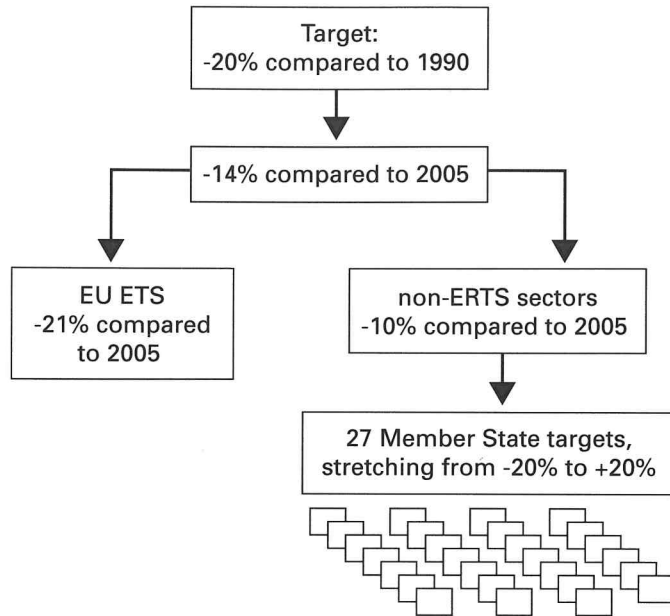
Passage in less than a year of a reform package – comprising overall emission and renewable energy targets, revision of the ETS, burden sharing between member states, carbon capture rules and subsidies, as well as related proposals on car and fuel emissions – was a remarkable legislative feat. It was also a tribute to President Nicolas Sarkozy's demonic style of chairing the EU during France's presidency of the EU in the second half of 2008. For aficionados of EU policy-making, it took the unusual form of 'first reading' agreements between the Council and Parliament. This required a great deal of preparatory negotiations between key Parliamentary committee MEPs and the French presidency so that the Council and Parliament could both adopt exactly the same amendments at their first plenary

votes on the legislation. The political significance of this was to show the unusual willingness of EU legislators – ministers and MEPs alike – to pull together on climate change. How coherent the package is in relation to its aims or how convincing it will be to the outside world is, however, another matter.

As regards emissions caps and allowances, the Commission's aim was to correct the two major flaws of the current system – letting national governments set allocation levels, and giving too many allowances away for free. The Commission succeeded in its first aim, but only partially in the second.

So, replacing the national allocations plans (Naps) that governments have used to 'game the system' to their advantage, after 2012 there will be just one EU-wide cap amounting to a 21 percent reduction in allowances over the 2005–20 period. This will cover all big industries currently coming under the ETS, to which will be added a few extra sectors such as aluminium and the gases of nitrous oxide and perfluorocarbons. In all sectors outside the ETS, such as services, transport, buildings, and agriculture, there will still be national emission ceilings where the Commission proposes differentiation according to the 27 EU states' relative wealth and development. The emission reduction for these non-ETS sectors will be 10 percent. Thus, starting from the new base year of 2005, the overall formula will be: minus 21 percent in the ETS + minus 10 percent in the non-ETS sectors = minus 14 percent in the whole EU economy (see chart below).

The Commission's other main aim was to increase auctioning of allowances to 100 percent by 2013 for the power sector (the biggest user and trader of allowances), and 100 percent for all sectors by 2020. In this the Commission failed, though failure was scarcely surprising given the gathering economic gloom surrounding the December 2008 summit. The general auctioning norm – for all companies outside the power sector and not at risk of carbon leakage (the jargon term for loss of market share or jobs due to carbon constraints) – was set at 20 percent in 2013, rising to 70 percent in 2020, and only hitting 100 percent by 2027. Industries, ranging from Polish generators of coal-fired electricity worried about carbon costs to German machine tool-makers concerned about keeping their number



**Figure 3:** The Commission's New Blueprint for Emission Reduction by 2020.

Source: European Commission 2008.

one spot in world export markets, won further concessions to retain free emission allowances (see later for detail). As a result, the Commission estimates that the rate of auctioning will rise from today's level of around five percent to nearly 50 percent by 2013, but will only rise to 60–70 percent by 2020.

This is a pity. Free allowances give rise to windfall profits for companies that pass on to customers the cost of something that they, the companies, never paid for in the first place. It was predictable that energy companies would charge customers, where they can, the price that given-away allowances fetch in the ETS; not to do so would incur an opportunity cost. But such windfall profits are not only politically unpopular at a time of rising bills for energy users; they can be environmentally counter-productive, because they delay changes in companies' behaviour. Such gains insulate managers from the financial

pressure of the ETS to move to low-carbon generation or industrial processes. Regular auctioning would help to ensure that carbon permits figure on companies' books as a real and inescapable production cost and pressure, rather than presenting company treasurers with a financial opportunity that they might or might not exploit. Some individuals in the electricity industry advance the argument that energy companies will perforce spend any windfall profit on new technology or capacity, but this is only a little more plausible than saying lottery winners will perforce spend their windfall on postgraduate courses.

Despite greater centralization of the ETS and the advent of auctioning, there must still be a system of putting national blocks of emission allowances into the hands of national governments. It is governments that will have the right to sell allowances. These blocks of allowances will be distributed among the member states mostly according to relative emissions in the past (though partly also, as detailed later, to give more to poorer states). So there will still be a kind of national allocation. But instead of it being one in which national governments choose the total amount of allowances and then distribute them factory-by-factory around their own companies, it will just be one that awards, on an objective industrial basis, governments their national totals of allowances.

As to the subsequent distribution of emission allowances to companies or factories, a beauty of auctioning is to let the market do the distribution. Under auctioning, bureaucrats no longer have to decide precisely which emissions allowances or cuts to apply to such and such a company, factory or plant. The bidding process – and all national auctions will be open to all EU companies – will do that automatically. But for allowances still given for free, there will still have to be administrative allocation. At the EU level, this means the Commission carrying out the administrative allocation using the technique of benchmarking. It is not clear which benchmarks will be chosen. Taking the historic emissions of a factory or plant as the benchmark for allowances would reward companies that have taken early action to reduce greenhouse gases and therefore have surplus allowances to sell, but would not much penalise dirty technology. More of a spur to action might be to take the best performing technology (in

emissions terms) in an industry or sector, and give just enough allowances to cover this benchmark level of industrial performance, but no more. Thus any company or plant falling below this best practice would be penalized by being left short of free allowances. Commission officials claim early phases of the ETS have given them the data, down to the individual factory level, to operate a benchmarking system. But it is not surprising that they would prefer to let the market mechanism of auctioning do the allocating instead.

The rate of auctioning will build up over time. So will the revenues generated by auctioning, even if their increase will be limited by steady annual shrinkage in the volume of ETS allowances. This is because of another proposed innovation. Instead of remaining a flat average as it has done in the First and Second ETS phases, the annual cap will decrease along a linear trend line through the 8-year Third phase (see table below).

**Table 11:** The Carbon Cap Gets Tighter

<i>Year</i>	<i>Millions tonnes of CO<sub>2</sub></i>
2013	1,974
2014	1,937
2015	1,901
2016	1,865
2017	1,829
2018	1,792
2019	1,756
2020	1,720

Source: European Commission 2008

If all sectors in the ETS had to pay for all of their allowances, at a rate of Euros 40 per allowances, auction revenue would rise by 2020 to Euros 75bn a year, or 0.5% of gdp, the Commission estimated in its impact assessment.<sup>2</sup> Partial auctioning, with full payment demanded initially only in the power sector, would produce around Euros 30–50bn a year by 2020, environment commissioner Stavros Dimas estimated when he unveiled the ETS

<sup>2</sup> Commission Impact Assessment, SEC (2008) 85/3, pages 10–11 on auctioning.

reforms in January 2008. After the exemptions from auctioning agreed in December 2008, Commission officials revised this revenue estimate downwards to Euros 30bn a year by 2020.

Somewhat surprising is the possible benefit of auctioning to the economy in general. The Commission's conclusion was that if the auction proceeds were fully recycled back into the economy, they would produce less of a drag on the economy than free allocation of allowances. 'Projections indicate that GDP growth, private consumption and employment all could be higher with auctioning than without auctioning for the EU as a whole.'<sup>3</sup>

The logic appears to be that if utilities pass the opportunity cost (at ETS rates) of freely-allocated allowances on to customers, the latter are out of pocket with no useful gain to anyone else. The assumption must be that the windfall gain would just sit idly on company balance sheets (though, equally, it might also be paid out as dividends to shareholders or be reinvested by companies). By contrast, governments can put the auction proceeds back to work in the economy, recycling them either as income tax cuts for households to boost consumer spending, or as reductions in payroll or corporation taxes to boost jobs or investment.

You might therefore have thought governments would have supported the Commission plan for much-increased auctioning. Instead, most governments seemed to prefer immediate relief from pressure by their industrial lobbies, gained by appeasing them with free allowances rather than the more distant promise of greater auction revenue. However, there could be a price to pay for this choice in the UN negotiations. Developing countries have made it clear they want money as well as technology transfer in any global climate arrangement. Politically the easiest way for EU governments to find this money would be to dip into a large pot of auction money. EU governments could commit their taxpayers to make up the shortfall in anticipated auction revenue. But they will not find this a popular promise to make during the recession of 2009, which unfortunately is when the key negotiations for a global accord will take place.

<sup>3</sup> Annexe to the Impact Assessment, page 62.

## The Burden of Burden-Sharing

One of the ways in which the European Commission claims to exercise leadership is in showing the world how richer countries can help poorer ones with the burden of tackling climate change. But there are also sound internal political motives for this, such as avoiding a revolt of the newer, poorer states from central Europe. The latter are regular beneficiaries of the cohesion and structural funds of the EU budget. But the problem was not just that EU climate change policies cost money that these states can afford less than the others. The difficulty was also that the most cost-efficient method of hitting EU-wide targets on policies like renewables would, *unless corrected*, demand a bigger sacrifice from poorer eastern EU states (by exploiting their greater natural potential for expensive alternative energy) than from the richer western ones.

So the Commission proposed three forms of correction:

- In emissions from non-ETS sectors, poorer states would be permitted to expand their emissions by up to 20% (by 20% for Bulgaria, 19% for Romania etc), while richer countries would have to cut their non-ETS emissions by up to 20% (20% for Denmark and Ireland etc). This would, according to the Commission's impact assessment, produce a small increased cost for the Union as a whole – up from 0.58% of gdp (on the least cost scenario) to 0.61% of gdp.
- A slight redistribution of the right to auction ETS allowances – amounting to 10% of the total – from richer to poorer states. Member state governments will hold, and have the right to the revenue from, these auctions which will be open to bidders from anywhere across the EU. So, for example, Latvia will be able to auction off, and keep the money from, slightly more allowances than companies in Latvia would normally use, while Germany would have slightly fewer allowances than companies in Germany would normally use. Such a shift would have no impact on overall cost to the Union, just on income distribution within it.
- National renewable targets (see next chapter for detail) were similarly differentiated. At the two extremes, this gives Romania only a 6.2 percentage point renewable increase in its energy mix, but the UK a 13.7 percentage point increase.

But these three 'corrections' did not satisfy the new member states from central and eastern Europe. They accepted the proposed differentiation in renewable energy targets and non-ETS emission targets; they did not object to a modification making it easier for some richer states to meet their non-ETS targets (see section on credits from third countries). But they insisted on a bigger distribution of auction rights, and demanded a fourth 'correction' in the form of slower phasing in of auctioning for their power sectors.

The emergence of this east-west tension over climate change was not a surprise. In less than 20 years, the East European states had already had to make the unusually sharp energy transition from command-and-control communism to market-based capitalism (even if, as we saw in earlier chapters, the EU energy sector is hardly the freest of markets). Moreover, most of them are at a stage in which they are still intrinsically more interested in economic development than the environment, as well as being more concerned about energy security than climate stability. So they balked at further costly climate change policies, and they had to be accommodated in a process that was really a microcosm for the wider UN negotiation.

Initially, seven states (Bulgaria, Estonia, Hungary, Latvia, Lithuania, Romania and Slovakia) refused to accept the Commission's way of calculating their national non-ETS emission targets. Even though, in their case, these targets allowed them to increase emissions, the seven states complained that choosing 2005 as the new base year ignored the big emission reduction that the new member states from the east had collectively before 2005. Effectively, they wanted some form of compensation for the post-communist commercial collapse of their polluting heavy industry. For its part, the Commission saw no justification to compensate countries for something that was, first, inevitable and, second, had occurred before they joined the EU in 2004. But the real reason why the Commission refused to budge on its 2005 base year was that this was the first year for which Brussels had solid, verified emission data. Choosing any earlier date would be to put the whole climate change programme on a foundation of sand.

Yet the East Europeans persisted throughout autumn 2008. The Czechs made little trouble, because they had no desire to



take over management of an unresolved negotiation during their EU presidency in the first half of 2009. But Poland, which had a very specific demand relating to its coal-dependent electricity, weighed in with characteristic forcefulness. Its prime minister, Donald Tusk, got President Sarkozy to concede at an October 2008 EU summit that any overall deal would be agreed by unanimity (even though, legally, EU environmental issues are settled by majority vote). In fact, it was obvious that a climate deal would be politically unworkable if Eastern Europe felt its views and interests had been overridden by a majority diktat.

In the end, the East Europeans won an increase in the special distribution of auction rights for themselves alone. The December 2008 deal provided for 88 percent of total auctionable allowances to be divided, according to past emissions, among all the 27 states, including the new states. But this last group will also get the remaining 12 percent of allowances to themselves, with the extra 2 percent going to East European states that had already achieved particularly big greenhouse gas reductions.

One final differentiation was agreed in favour of new member states' power sectors. Poland in particular insisted that, with its electricity supply 95 percent dependent on coal, it could not afford full carbon allowance auctioning from 2013. So it and other new member states won the right to phase in auctioning in their power industry, at the rate of 30 percent in 2013 and rising to 100 percent in 2020. This concession was tailored to new East and Central European states by stating that the phased auctioning option was open to states ill-connected to the continental European grid (such as the Baltics) or states at least 30 percent dependent on a single fossil fuel (coal in Poland, gas in Hungary) or states with income per head of only half the EU average (the Balkans).

Will these free allowances lead to windfall profits? Yes, because of the ease with which utilities can usually pass costs, notional as well as real, to customers. To guard against this or at least to find a constructive use for such windfall gains, it was agreed that those states allotting free permits to their electricity companies are to invest in modernising and diversifying their energy system 'for an amount to the extent possible equivalent to the market value of the free allocation'.<sup>4</sup> If it can be enforced, this could

be an effective way of narrowing the east-west energy system disparities in the EU. Less sensible was the other anti-windfall profit measure contained in the EU agreement. This gives the new member states the option of preventing the free allowances in their power sectors being traded on the ETS. Poland has indicated it intends to use this option of 'non-tradeability'. This could have the perverse effect of removing the incentive for efficiency for companies that would otherwise be able to sell any free allowances which they no longer need thanks to cleaner or more efficient technology.

### **Known Unknowns**

These imponderables largely arise out of uncertainty about whether there will be a successor regime to Kyoto to which major EU trading partners and rivals would subscribe. This will not be clear until the major United Nations conference in Copenhagen in December 2009 to renegotiate Kyoto.

For its part, the EU has made a unilateral commitment to reduce emissions by 20% by 2020 (from 1990 levels), but would raise this to a 30% cut if other countries take on comparable commitments. The economic slowdown makes any such increased ambition in emission reduction less likely. But if it happened, moving from a 20% to a 30% reduction target need cost the EU very little extra, because the world in which the 30% reduction would take place would be very different from today. It would be a world in which EU companies would have less reason to fear being undercut by non-EU rivals which would themselves be subject to some carbon constraints. It would probably be a world in which other countries would have a demand for carbon allowances and the EU would have less fear of its carbon market price crashing under the weight of carbon credits that could find no other home than Europe's ETS. But, until and unless there is such a wider agreement, the EU knows it will have to cope with several unknowns.

<sup>4</sup> Elements of the final compromise, Council of the European Union, 17215/08, page 14.

## Carbon leakage

The first is the ‘carbon leakage’ problem – the risk that, in order to be able to compete internationally, industries might decamp, or shift some production, from Europe and set up in countries with no greenhouse gas controls, thereby actually increasing carbon emissions overall. In fact, leakage could occur without EU firms moving facilities or production; it would be sufficient just for EU companies to lose market share and reduce capacity utilisation in Europe.

That EU electricity prices will rise is certain. Though politically inconvenient to say so, Brussels’ whole climate change programme depends on prices and carbon costs rising to levels that encourage conservation and reward the generation of low-carbon power that is usually more expensive to produce than electricity from fossil fuels.

How big the rise will be the Commission has found it hard to gauge. One model used by Brussels suggested that the cost increase in electricity generation – related to climate change measures and excluding other factors like gas price rises – could be as high as 33%, while the average cost of electricity (including costs other than generation) would be 19%–26% higher by 2020. But these percentages were probably too high because the starting point baseline was too low. This calculation assumed free allocation of allowances with *no* pass-through of costs, when in reality many companies are already passing on allowance values or costs to their customers. On the opposite assumption that *all* allowances were already being passed on – which did not reflect current reality either – the Commission produced an estimate of a 10%–15% increase by 2020.<sup>5</sup> A reasonable guesstimate might lie somewhere between these two ranges of figures.

The big question for all of Europe’s energy-using (or more precisely carbon-producing) industries is whether they can pass the higher power costs on to customers without losing market share to companies with no such costs to shoulder. The answer is clear-cut for Europe’s electricity generators. It is most unlikely they could be undercut by non-EU competition. Even if Russia

were joined up to the main EU grid, it would be uneconomic for Russia to export electricity (in contrast, of course, to gas) to the EU because of the power losses that occur in long-distance transmission. Hence the decision to make the power sector pay for all its allowances from 2013, and hence the power sector’s relative lack of complaint about this.

At the other end of the scale are industries that are heavy users of energy such as producers of primary aluminium or steel (as distinct from scrap re-smelting that requires less electricity) and some basic chemicals. They may find it impossible to pass on much of the extra increase in EU power prices, and impossible to stay in business unless they shift production out of Europe.

Judging which sectors are most at risk will be complex, involving a careful study of the international competition they face. There will, too, be a danger of companies exaggerating the risk in order to get help. Nonetheless, the problem has to be taken seriously. For it is not just a matter of jobs and exports, but also of undermining climate change controls. If the EU were to hit its 20% emission reduction target, and yet give no help to its energy-intensive companies, there would – according to a Commission estimate – be a rise in emissions in other parts of the world equal to 2.5% of total EU emissions.<sup>6</sup> This would be a big leak. Its scale is not, however, surprising. Carbon leakage could very well amount to more than 100% of any carbon reduction made inside the EU, if the market share lost by EU companies goes to companies with more carbon-intensive production processes.

However, counter-measures to deal with carbon leakage would only come into effect, if the December 2009 negotiations in Copenhagen fail to produce a new international accord. Yet, already a year before then, the EU seems to have let itself be panicked by industry lobbies into a drastic definition of the problem and a premature decision on the solution.

At the December 2008 summit, Germany led a successful push for industries at risk of carbon leakage to be given free allowances (albeit up to a benchmark level of the best technology in the sector). Opting for free allowances as a remedy may be premature. While free allowances would probably be a better

<sup>5</sup> Commission Impact Assessment, SEC (2008) 85/3, page 16

<sup>6</sup> Commission Impact Assessment, SEC (2008) 85/3, page 17.

way of dealing with carbon leakage than imposing EU allowance requirements on makers of imports coming into the EU, they would be worse than negotiating international sectoral agreements on carbon constraints. Such agreements might be feasible for homogenous products like steel and cement.

At the same time, the EU rushed into agreeing on very wide criteria for assessing carbon leakage risk. Sectors or subsectors were deemed to be at risk if the extra direct and indirect costs of auctioning added 5 percent or more to production and if non-EU trade amounted to more than 10 percent of the total size of the EU market. Just in case these two metrics together failed to embrace all candidates deemed worthy of help, a further either/or criterion for risk of carbon leakage was added to bring in sectors with carbon adding 30 percent to production costs or with exposure to non-EU trade of 30 percent. So widely have these criteria been drawn that the Commission estimates they embrace 90 percent of all emissions from EU manufacturing. This is surprising, given that in a regional trading bloc of 27 countries many smaller countries and most smaller companies do virtually all of their trade within the EU.

How many of these free offset allowances for carbon leakage will end up on the market? If a company truly faces a real risk of carbon leakage, there should be no problem about windfall profits, because the company in question would not dare pass on the allowances' cost for fear of losing custom to non-EU rivals. In these circumstances, there is no reason to make these offset allowances 'non-tradeable', because there is not much likelihood they will be offered for sale. But because the terms for offsetting carbon leakage – in the event that there is no global agreement – are potentially so generous, the odds of some abuse are high, with companies either passing the 'opportunity' costs of free allowances to customers or selling free allowances to the market.

### **Credits from third countries**

Another means exists of lowering the cost of the ETS scheme and so minimising the risk of carbon leakage. This is the use of emission credits earned in third countries, another variable or

known unknown in the post-2012 equation. These credits were introduced under Kyoto to make targets easier for industrialized countries to meet, and to extend the carbon trading principle of getting maximum emission reduction at minimum cost. But rather like a prescription drug, these are helpful, but need to be used in moderation.

Under Kyoto, the Clean Development Mechanism (CDM) and Joint Implementation (JI) allow industrialized countries to achieve part of their emission reduction targets by investing in emission-saving projects abroad and counting the reductions achieved toward their own targets. CDM covers projects in developing countries, and CDM credits are supposedly given for emission savings additional to those that would have taken place anyway. The JI mechanism covers projects in industrialized countries with a Kyoto target. There is already quite a backlog of unused CDM credits, known as Certified Emission Reductions (CERs), because it has been possible to get retroactive credit for CDM projects back to 2000. In contrast, generation of JI credits, termed Emission Reduction Units (ERUs) could only start in 2008, at the beginning of the Kyoto compliance period of 2008–2012.

These mechanisms were created with a wider carbon market in mind than just the ETS. But, for several reasons, including America's failure to ratify Kyoto, ETS buyers are virtually the only customers for these credits. Brussels is therefore fearful that, in the absence of a Kyoto-2 accord, all these CERs and ERUs will flood into the ETS, swamping the carbon price.

The Commission initially proposed that, in the absence of any further international agreement, after 2012 only those credits agreed to in 2008–2012 could be presented for sale in the ETS. The Commission argued that, because of the CER backlog, EU states could still use these third-country credits to meet around one-third of 2013–2020 emission reduction commitments. However, in the event of a 'satisfactory international agreement' – and therefore of the EU moving to a 30% reduction target – limits on JI/CDM credits would be raised so that these external credits could be used for half that extra EU reduction effort. But not surprisingly EU governments pushed for even greater recourse to outside credits. The eventual

agreement allows for external credits to be used for up to 50 percent of the EU-wide emission reductions in the ETS over the period of 2008–20.<sup>7</sup>

Another concession on offsetting, or the use of emission reduction credits earned outside the EU to offset emissions created inside the EU, was agreed at the December 2008 summit to help 11 EU states that might be richer than many of the rest, but also have higher or harder national emission and renewable energy targets than others. Sweden was a good example of the rationale for this extra help. It not only has a demanding national target to reduce emissions by 17 percent in sectors not covered by the ETS (agriculture, transport, services). It also starts from such a high level of renewable energy today (40 percent of total energy use), having almost fully exploited its huge hydro-power potential, that meeting its 2020 renewable energy targets of 49 percent will be extremely difficult. So Sweden – together with Austria, Finland, Denmark, Italy, Spain, Belgium, Luxembourg, Portugal, Ireland, Slovenia and Cyprus – will be allowed to use more outside credits than the other 16 EU states to cover emission reductions outside the ETS.

This last concession brought complaints from environmental groups that the EU was dodging the harder task of cutting emissions at home, and planning to make most reductions abroad. These groups have a point. External credits should be used sparingly. If their import into the ETS were unchecked, they would remove any incentive to make any carbon reductions in Europe. In addition, by lowering the ETS carbon price, they would vastly raise the effective cost of increasing renewables. But if there is an international agreement, these external credits could usefully cushion the impact on the EU of moving from a 20% to a 30% emission reduction target. The EU could meet the latter target with relatively little more emission reduction or impact on its energy system, though it would have to spend more money investing in JI/CDM projects and buying their credits. It might therefore be a mistake to overdose today on credits that would have more effect tomorrow – a similar mistake to

wearing an overcoat indoors, so that one does not feel the good of it outdoors.

## Transport

There is, finally, a third important unknown in the future of Europe's ETS: how will the US and the rest of the world react to the EU decision to put into the trading scheme emissions from all flights inside, and to and from, the EU?

The legislation the EU has finally decided on is less stringent than some, notably in the European Parliament, had wished for. Aviation's inclusion in the ETS will start in 2012. It will involve initially issuing enough allowances (85% of them free, the rest auctioned) to cover 97% of the 2004–2006 average emitted by aviation in and around Europe, with the amount of allowances decreasing in later years. Nonetheless, this is bound to lead to a confrontation with the US.

The US has promised to mount a legal challenge to what it believes is effectively a tax on fuel; under long-standing international agreements, countries are not allowed to tax aviation fuel. The International Civil Aviation Organization has endorsed the general idea of including aviation in emissions trading schemes, but only if all parties agree – which, in the case of the unilateral EU initiative, they do not. As the legislation was passed in July 2008, the Air Transport Association of America denounced it as 'a tax grab that is not only bad policy but illegal'. President Barack Obama, however generally inclined to participate in an international cap-and-trade scheme, is unlikely to be able to persuade the US airline industry to join in. The US airline sector has long been in poor financial shape, and has strong union and Congressional support for its demands for subsidy and protection.

The case for including aviation emissions in the ETS is that while they account for only 3 percent of total EU greenhouse gases, their dispersion in the higher atmosphere causes disproportionate damage and they have grown by 87% since 1990. Some of this growth is, ironically, the result of the EU's own policy of liberalizing aviation in Europe, a process that created the boom

<sup>7</sup> Questions and Answers on the revised ETS, Commission Memo/08/796, page 9.

in budget airlines. Congestion in Europe's skies is responsible for extra emissions as planes, stacked up over airports, circle endlessly waiting to land. Unnecessary emissions could be avoided if EU states could agree on a better pooling of their air traffic control systems in the proposed Single European Sky programme.

It is hard not to conclude that inclusion of aviation in the ETS has been driven by its high profile, when at the same time there has been less of a move to include in the ETS the far less visible sector of shipping, which is responsible for just as many emissions as aircraft. The European Commission evidently did not want to chance any disruption to the 90% of Europe's external trade that is carried by ship. But the European Parliament and the Council of Ministers did agree in December 2008 that if the International Maritime Organisation did not agree before the end of 2011 on ship emission targets, the European Commission should propose EU action.

Brussels has not proposed putting road transport emissions into the ETS. This is partly because it had started down a different route of trying to get voluntary improvements from the car industry, partly because there is a complexity of other environmental policies dealing with cars such as green taxation schemes, and partly because the ETS usually deals with 'direct emissions'. That is, the recipients of allowances are the ones directly emitting the CO<sub>2</sub>, in other words drivers, in other words millions of individuals. Putting millions of drivers into the ETS would be nonsense. Yet emissions allowances could have been allocated at the level of the car manufacturers' fleets, and these fleet allowances could have been incorporated into the ETS.

However, Europe has decided to deal with car emissions by direct regulation. The Commission initially proposed to oblige car makers to reduce their new car fleets' average emissions down to an average of 130grams of CO<sub>2</sub> per kilometre by 2012. This compares with current average emissions of new EU cars of 160g/km. Complementary action by tyre makers, fuel suppliers and others would contribute another 10g/km of emission savings to meet an overall objective of 120g/km for new cars by 2012.

This proposal provoked a political clash across the Rhine, with Germany rejecting constraints on its heavier or more powerful

Mercedes, BMWs, Porsches, and with France keen to exploit the focus of Renault and Peugeot on smaller cars. "It is hard to argue that heavier, powerful cars with more emissions should have the right to emit more than others", protested French environment minister Jean-Louis Borloo (sounding rather like a Chinese minister complaining about Americans and insisting on human equality in emission levels). Eventually a compromise between President Nicolas Sarkozy and Chancellor Angela Merkel paved the way for agreement at the end of 2008 on EU legislation phasing in the average 120g/km emission limit by 2015 and phasing in penalties on car makers for exceeding this limit. The longer term goal is to get the European car emission average down to 95g/km by 2020, by which time the Commission hopes that the car measures will have contributed one-third of all emission reductions outside the ETS.

The proposed EU standards are tough, particularly when compared to the US. Comparison is easy because emissions are determined by fuel consumption. In 2007, the US Corporate Average Fuel Economy (Café) standards were tightened – for the first time in many years – in order to reach an average of 35 miles per gallon by 2020. If US cars were to meet Europe's 120 g/km proposed standard, they would have to have petrol engines doing 47 mpg or diesel engines doing 52mpg, and not by 2020 but eight years earlier in 2012.

Yet if there were an international emissions scheme that covered the EU and US and their respective car sectors, might not an interesting pattern of allowance trading develop? EU car manufacturers could help pay financially-strapped Detroit to make relatively easy fuel/emission improvements in the US in return for credits that they, the EU car makers, could use to meet their much tighter EU targets. After all, the whole point about global warming is that it does not matter where the emission saving is made, just that it is made.

## Conclusion

The biggest single determinant of the success or failure of Europe's climate change programme will be the ETS. This one

mechanism covers 40 percent of EU emissions. For all its early trials and errors, the ETS looks to be a workable instrument. Let us hope so – for capping and trading allowances to emit carbon has some important inherent advantages over taxing carbon. It allows maximum emission reduction to be achieved at minimum cost within sectors, within countries, within the EU and internationally. It rewards developing countries' climate control efforts by offering a market for their emission reduction credits. This is a necessary transfer of funds to poor countries, which could one day be supplemented with ETS auction revenue and which would be politically easier for rich countries to carry out than transferring their taxpayers' money.

But the weakness of a cap and trade system is that it cannot provide the absolute carbon price and cost certainty of a straight carbon tax. None of the features of the December 2008 compromise – such as the profligate dispensing of free allowances or the import of more external credits – can confidently be said to impact the future carbon price one way or another. However, together, they are a reminder that Europe's carbon market is very much a political creation, and that the level and stability of the carbon price is vulnerable to politicians' intervention. Tinkering with the ETS should therefore be as infrequent and minimal as possible.

But other factors will have a powerful impact on the carbon price. They include the pace at which low-carbon energy – whether renewable or nuclear – can be developed, and the degree to which energy can be used more efficiently or even not used. Such issues are addressed in the remaining chapters of this book.

## CHAPTER 11

### MAKING GREEN POWER COMPULSORY

*If climate change and CO<sub>2</sub> emissions were the sole goal of energy policy, and the renewable energy sector were a mature and well functioning market, then a single CO<sub>2</sub>-based target would be appropriate – but this situation is a long way off.*

European Commission impact assessment, 2006.

*The renewable energy target serves more than just reducing greenhouses gases.*

European Renewable Energy Council, 2007.

The revival and development beyond all recognition of some of mankind's most ancient forms of energy, such as wind and water power, has provoked a very modern debate in Europe about policy goals and costs. The debate suddenly acquired a real edge to it after EU leaders surprised many, including perhaps themselves, by agreeing at their March 2007 summit that renewable energy must rise as a share of total energy consumption to 20 percent by 2020. Some leaders, it is said, misunderstood the '20 percent' just to be a share of electricity, a far lesser goal. At all events, they may all have rued this decision when ten months later the Commission handed them its proposals for the binding national renewable energy targets necessary to deliver the EU commitment.

Within a decade, renewable energy has gone from a nice-to-have to a must-have component of Europe's energy mix. It is the only sector (along with its sub-sector, biofuels, see next chapter) to be singled out for such special treatment by the politicians. This special treatment started in 1997, when the Commission proposed 'an indicative objective' for renewable energy to reach 12 percent of energy consumption.<sup>1</sup> At the time, the EU executive was of the view 'that an indicative target is a good policy