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How effective are European climate policies?

A meta-analysis of recent policy evaluations

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Executive summary

The political saliency of climate change as an issue and the long standing pledge to pursue evidence-based policy making has heightened the expectation that future climate policy will be based on the best available evidence. One way to achieve this is to try to learn policy-relevant lessons about the performance of existing or past climate policies. This paper contributes to this analytical effort by reporting on the findings of a meta-analysis of 262 policy evaluations conducted by the EU and six of its Member States, carried out in fulfillment of ADAM task P2.3 (wrongly labelled in the original description of work as deliverable P2.2). The paper has two principal concerns. Firstly, how has the ‘evaluation community’ in our chosen jurisdictions attempted to evaluate climate policy? Secondly, what light can the evaluations that have been performed shed on the factors underlying policy effectiveness (taken to mean the capacity to reduce greenhouse gas emissions)? It is also designed to provide the basis for a policy-maker workshop on evaluation of policy effectiveness, the results from which will form an integral part of our ‘appraisal of current EU climate policies’ deliverable (wrongly labelled as in the description of work as P2.3). Due to an unforeseen delay in our planning, over which we had no control, this document is being submitted in partial fulfillment of the task, pending the submission of a more comprehensive document after the delayed workshop.

Having set out (in Section 1) the broader context of the study, Section 2 describes the methodology used and justifies the choice of jurisdictions and evaluations analysed. Sections 3-8 consider what lessons can be drawn from the evaluations regarding a series of key policy choices that underlie climate policy, relating to: problem framing; the distribution of costs and benefits; the level or scale at which to act; the mix of governance modes or instruments; timing and temporality; and implementation issues. Finally, Section 9 draws the different strands of the study together, and provides an assessment of what the evaluations have said about climate policy effectiveness.

Our research reveals interesting variations in evaluation practice, both between and within Member States, which makes comparing policy effectiveness across countries somewhat problematic. Even within a single member state, evaluations tend to vary widely in their

coverage, methods, level of detail and transparency. These differences spring from a range of factors. Partly they are a product of the policies subject to evaluation, some of which are better monitored than others because they contain more explicit reporting requirements. They also arise because some member states take monitoring more seriously than others. There is also the problem that it is too early to evaluate the success of certain kinds of instruments, particularly those adopted as key ‘common and coordinated policies and measures’ (CCPMs) under the European Climate Change Programme (ECCP). Methodologically, precise cause-effect relationships may be particularly difficult to discern, and assumptions about the counter-factual or reference case (i.e. what would have happened without the policy in question) and the effect of other policies introduce important uncertainties. Timing is also important – all too often, evaluators are given insufficient time and resources to carry out their work. Finally, there is often a strongly political aspect to evaluation, whereby those commissioning or undertaking evaluations may have a vested interest in producing weak, selective or ambiguous work. While the UK evaluation system is probably the most sophisticated among our cases, all have plenty of room for improvement.

Despite these difficulties, it is nevertheless possible to identify the implications of some key policy choices, and conditions that are conducive to policy effectiveness, in a number of key respects. We seek to highlight these for each of our six key policy choices. In terms of problem framing, we suggest that the climate policies that have been adopted to date have proved politically feasible because of their capacity to address a range of other policy problems simultaneously (delivering so-called ‘co-benefits’). Whilst they have been successful to some extent in at least limiting the growth of greenhouse gas emissions, policies which actually reduce emissions significantly in absolute terms will most likely require a more radical problem framing in future. In terms of the distribution of costs and benefits, we conclude that the polluter pays principle is not consistently applied, and that although this may serve the interests of political feasibility, policy effectiveness as well as fairness are likely to suffer as a result. Regarding levels and scales of action, the EU’s Common and Coordinated Policies and Measures (CCPMs) often work as essential drivers for national mitigation action, especially in cases where Member States have not been active in the field before. In general, there appears to be little evidence that more ambitious Member State policies are diluted when action is taken at EU level. Regarding modes and instruments, the analysis concentrates on the role of voluntary agreements. It concludes that while voluntary programmes appear able to overcome non-technical barriers and to stimulate incremental improvements, for the most part they have had limited effect on emissions, tending to be most effective when complemented by other measures in an integrated package. On the question of timing and temporality, predictability in renewable energy policy is found to be a core

condition for enabling successful expansion. This concerns not only continuous political support, but also predictability built into the relevant instrument. Finally, on implementation, the most striking theme to emerge is the generally poor provision made for monitoring that characterizes many policy instruments. Beyond this basic monitoring requirement, successful implementation is facilitated by stakeholder participation in design and implementation; continuous improvement of instruments during the implementation phase; a flexible, non-bureaucratic and legitimate implementing agency; and integration of policy instruments into effective policy packages.

1. Introduction

Climate change is now recognised as being the most challenging environmental problem confronting humanity. A number of high profile reports (Stern, 2007, IPCC, 2007) have demonstrated the urgency of taking effective action globally as well as the likely costs of inaction, placing the issue firmly on the agenda of policy-makers, business and other major stakeholders. This current high profile is translating into heightened policy making activity in many jurisdictions, but particularly in the European Union, which has proclaimed itself a global leader.¹ The political saliency of climate change as an issue and the long standing political pledge to base policy making on the best available evidence suggests that lessons should be learnt from past and current climate policies, in particular the underlying reasons for their success or failure. This paper contributes to this analytical effort by reporting some of the results of a meta-analysis of 262 evaluations of climate policies conducted by the EU and six of its twenty seven Member States (MSs). The principal concern is with the lessons that can be drawn from these evaluations with respect to the effectiveness of climate policies - by which we mean essentially the capacity to reduce emissions of greenhouse gases. Specifically, we are concerned with what the evaluations from our seven jurisdictions tell us about the relationship between the most important policy choices that arise when addressing the climate challenge and ultimate policy effectiveness. Hopefully, this analysis should enable us to distil lessons that will inform the development of the kinds of future policy paths that will be necessary to deliver on the EU's new and emerging climate policy objectives. It will directly inform a proposed workshop, envisaged as an integral part of task P2.4 (appraisal of the current trajectory of EU climate policy), and subsequent work occurring later on in P2 (i.e. Tasks 2.6 and 2.7).

¹ "We can say to the rest of the world - Europe is taking the lead. You should join us in fighting climate change". European Commission President José Manuel Barroso at the Spring Council 8-9 March 2007. On EU leadership in international climate change policy, see Gupta and Grubb (2001).

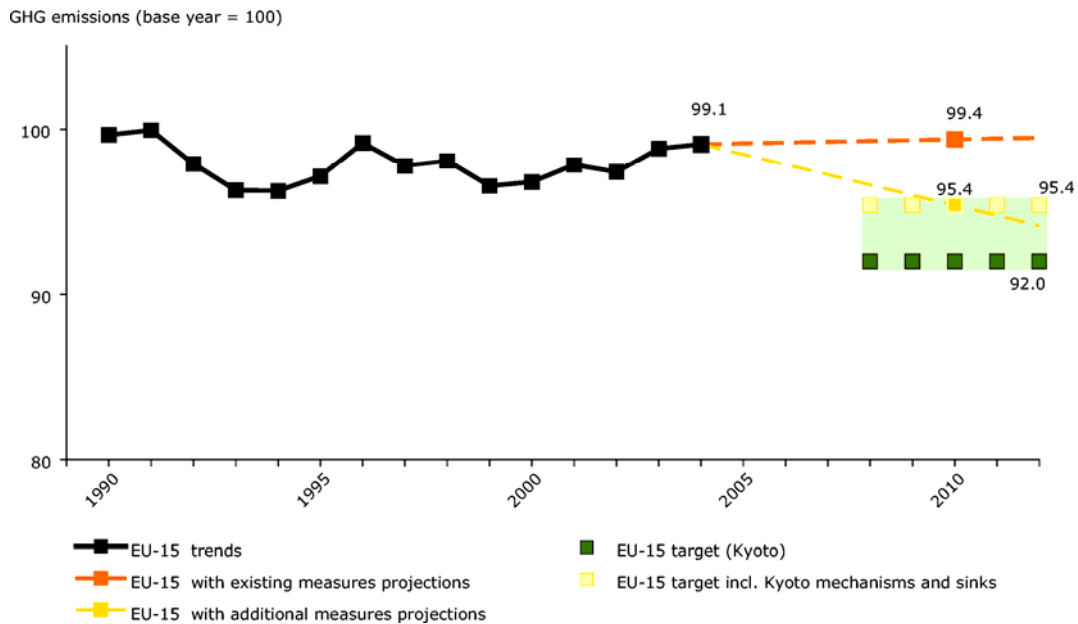


Figure 1. Actual and projected EU-15 greenhouse gas emissions compared with the Kyoto target for 2008-2012, including Kyoto mechanisms and carbon sinks (EEA, 2007).

Current emission trends (Figure 1) suggest that without an array of new and/or more stringent policy measures, the recently declared unconditional 20% greenhouse gas emissions reduction goal (Council of the European Union, 2007) will not be reached. Indeed, if the EU as a whole is even to meet its Kyoto target of 8% reduction on 1990 levels by 2008-12, this will only be possible if certain Member States over-achieve relative to their targets under the burden sharing agreement (to compensate for the under-performance of others), and by the purchase of external emission reduction credits through the Kyoto Protocol's flexible mechanisms (EEA 2006a).

We frame our analysis around the notion of *policy choices*. This notion – and the related idea of governance dilemmas - informs all of the work in P2 (see Rayner *et al.* 2007). Those seeking to govern are often required to address a number of choices, which commonly arise in the course of public policy-making (e.g. Arts *et al.*, 2000; Huitema and Bressers, forthcoming). We have elaborated on what these generic choices entail in the context of EU climate policy (Rayner *et al.* 2007).² Based on our

² To speak of a policy choice is not to say that there is necessarily a single moment of decision, however. Decisions, as Weiss (1980) has pointed out, tend to accrete over time in multiple venues. For

dataset of policy evaluations, we have been interested to analyse how the EU and its Member States have dealt with these choices, and what the implications have been for the effectiveness of European climate policies. For each of the policy choices, a number of issues may come into play:

- *Problem perception and policy objectives*: Which aspect of the policy problem should policy-makers tackle and in which order? Should solutions be promoted that simultaneously address a range of problems, not just climate change? How important is it to obtain widespread consensus on the nature of the problem before acting?
- *The costs and benefits of governing*: Who should bear the costs and who should collect the benefits of (in)action (states/regions/sectors/individuals)? What priority should be accorded to the goals of economic efficiency and equity, respectively? And how should potentially incommensurate values be handled in policy evaluation processes?
- *Different levels and scales of governance*: Which level (or scale) of governance should policy-makers act at (international/EU/national/subnational)? To what extent should EU policy-makers seek to harmonise the type and degree of effort made to deal with policy problems, or allow national differences to persist?
- *Different modes and instruments of governance*: Which modes and/or specific instruments of governance should policy-makers adopt? To what extent should they constrain individual action (as in hierarchical modes), seek to incentivise actors (as in market modes) or build trust between them (as in network modes?) (Thompson, 2003).
- *The timing and temporality of governance*: How should the merits of a predictable, long-term policy framework be weighed against the flexibility to adapt to changing circumstances?
- *Implementation and enforcement issues*: How should policy-makers ensure that there are compliance/accountability mechanisms in place to ensure that policy goals are achieved? How should positive interactions between policies from different domains be encouraged, and negative ones discouraged?

a similar list to the one presented here, see Bennett (1991) and, for an examination of dilemmas specific to the politics of climate change, Kok et al. (2002).

In investigating what makes climate policies effective, we attempted to identify conducive factors relating to each of the choices outlined above.³ Unfortunately, not all of the issues highlighted here are well covered in the evaluations we reviewed. This is particularly the case concerning the question of problem perception. Thus, the discussion that follows focuses on a number of key policy areas, chosen because they highlight particularly well the choices and trade-offs that have been made, and are most amenable to judgments regarding effectiveness. Where clear conclusions do not emerge from our review, we turn to other literature, and suggest agendas for future research.

The remainder of this paper is structured as follows. Section 2 describes the methodology of our meta-analysis, the rationale behind the choice of case countries and highlights some of the main characteristics of the evaluations reviewed. It relates the evaluation ‘landscape’ to the current climate policy ‘landscape’. Sections 3-8 then look more specifically into the various policy choices. For each policy choice, one or two relevant questions are analysed on the basis of our meta-analysis. How the handling of these policy choices may have influenced ultimate effectiveness of the policies in question is explored. Finally, Section 9 draws the different strands of the paper together, and provides an assessment of what the evaluations have said about climate policy effectiveness.

³ Defining ‘effectiveness’ as capacity to reduce emissions excludes a consideration of adaptation policy. However, given that adaptation policy is such a new phenomenon, associated evaluations are very hard to find.

2. An overview of the methodology and evaluation and policy ‘landscapes’.

Methodology

The basis for this paper is a meta-analysis of climate policy evaluations. The evaluations themselves were collected through open sources, journal database searches, the Internet, contacts with policy makers and others in the policy community, and by cross-checking with colleagues. All are effectively in the public domain. Our search resulted in an extensive (although not exhaustive) list of evaluations conducted since 1998. From this list, we identified studies that offered a systematic assessment of policies already in place (ex-post evaluations), and excluded those that were either not sufficiently systematic (such as position papers by lobby groups) or that were wholly ex-ante. Policies were classified as ‘climate change’ policies if they were reported as such in respective National Communications to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC). This selection process resulted in a dataset of 262 evaluations (see Appendix 2).

Each evaluation was then recorded according to a template in which it was categorized along a series of 10 main criteria and 50 sub-criteria. The main criteria ranged from the affiliation of the author(s) and main sector(s) addressed, to whether the evaluation was technical-analytical (accepting official policy goals as a given) or discursive (prepared to question official policy goals) (see Appendix 1 for details). In this way, we were able to draw a relatively clear picture of the overall practice of climate policy evaluation in the EU and the six Member States, allowing particular patterns to be identified.

The six Member States included for our meta-analysis reflect the social, political, economic, and geographical diversity in Europe. We have thus included two large northern European countries, the United Kingdom and Germany, both of which have tended to be drivers of the European climate change policy agenda (Jordan and Liefferink, 2004), are robust economies, and display a relatively high degree of public

involvement in policy-making. Our two southern European countries, Portugal and Italy, while differing in size and economic conditions, have similar geographic characteristics; furthermore, both can be characterized as ‘followers’ in the sphere of environmental policy agenda-setting. Finland, a small, rich and socially progressive country represents the Scandinavian perspective, while Poland can be viewed as representing the block of newly acceded EU Member States from the east. Finally, given the obvious importance of EU-level action, we included evaluations that examine the operation of policies covering the Union as a whole.

The policy landscape

Before surveying the evaluation landscape that emerged from the meta-analysis, we provide a short *tour d’horizon* of the existing climate change policies in our sample countries and the EU. This is based on an analysis of their National Communications to the United Nations Framework Convention on Climate Change (UNFCCC).⁴ It is important to note, therefore, that the following graphs are based on information as *self-reported* by national governments, which may explain certain biases and surprising results. It is worth pointing out, for example, that much of what is now presented as climate policy was introduced in response to a different set of perceived problems, not always even environmental, related to, *inter alia*, waste (where huge emission reductions have been achieved by better landfilling practice), transport, energy, housing, agriculture etc. Such policies are reported in National Communications to the UNFCCC because they have a significant mitigative effect on greenhouse gas emissions of various kinds.

Figure 2 highlights the number of self-reported climate change (mitigation and adaptation) policies and measures across our chosen countries and the EU. Local and regional level policies are only included if they have been reported in the National Communications. A quick glance shows that in terms of climate policy currently in force, mitigation measures still largely define the scope of action in all our countries, or are at least reported to a greater extent. Given that adaptation policies tend to be more fragmented and/or localized, and have only begun to be developed relatively recently, the emphasis on mitigation in the framing of the current policy response is not surprising. This leads to a relative lack of evaluation of

⁴ For further reference, see Massey et al. 2007, and the ADAM website. For all countries except Germany and Italy (for whom we have used the 3rd national communications), the fourth national communication forms the basis of analysis.

adaptation policy. It is essentially for these reasons that we define effectiveness in this paper in terms of emission reductions obtained.

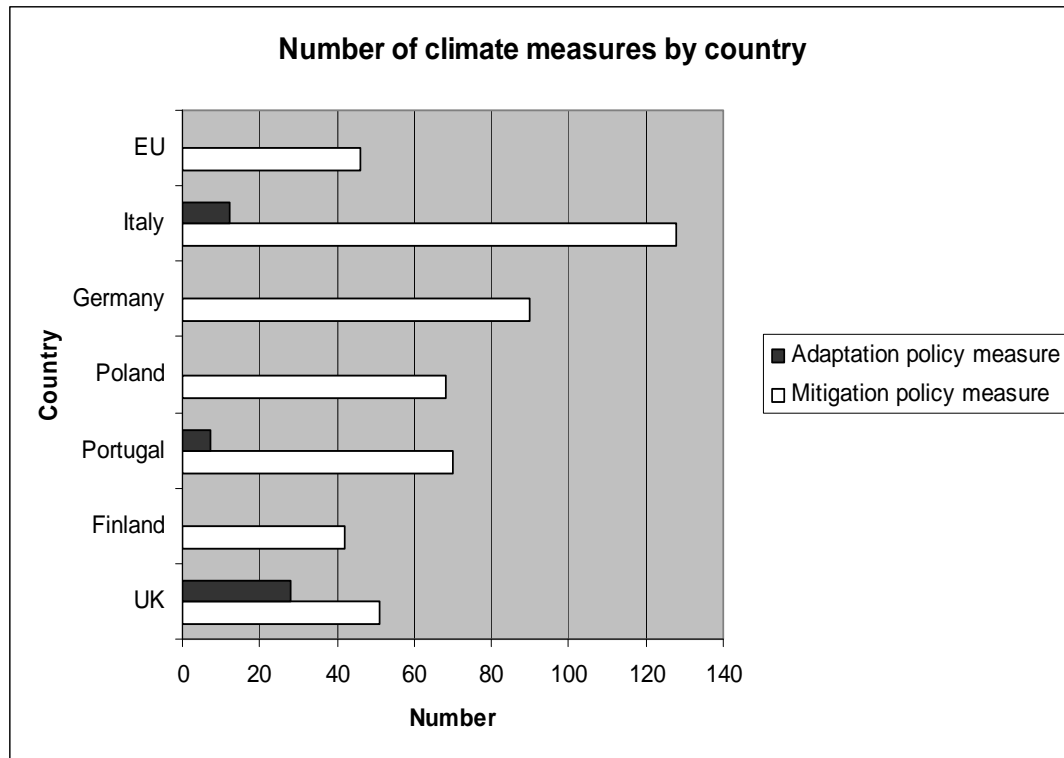


Figure 2. Number of climate measures by country.

Figure 3 depicts the type of instruments currently in place. In all countries, regulations, subsidies and taxes figure prominently in national policy portfolios. Of course, these observations by no means reflect the instruments' relative importance in delivering emission reductions. With almost 45 percent of CO₂ emissions in Europe covered by the EU emissions trading scheme (EU-ETS) (CEC, 2005b), it is this market-based instrument that in fact constitutes the centre-piece of the EU's and Member States' efforts to tackle climate change.

Finally, Figure 4 provides an overview of the main sectors that the policy measures address. On the face of it, the focus seems appropriate – the major sectors targeted are energy and transport, which are also identified in many evaluation studies as two priority areas for action. Yet the same caveat regarding actual emission reductions applies: our statistics do not allow for conclusions regarding the adequacy or effectiveness of the specific measures in place.

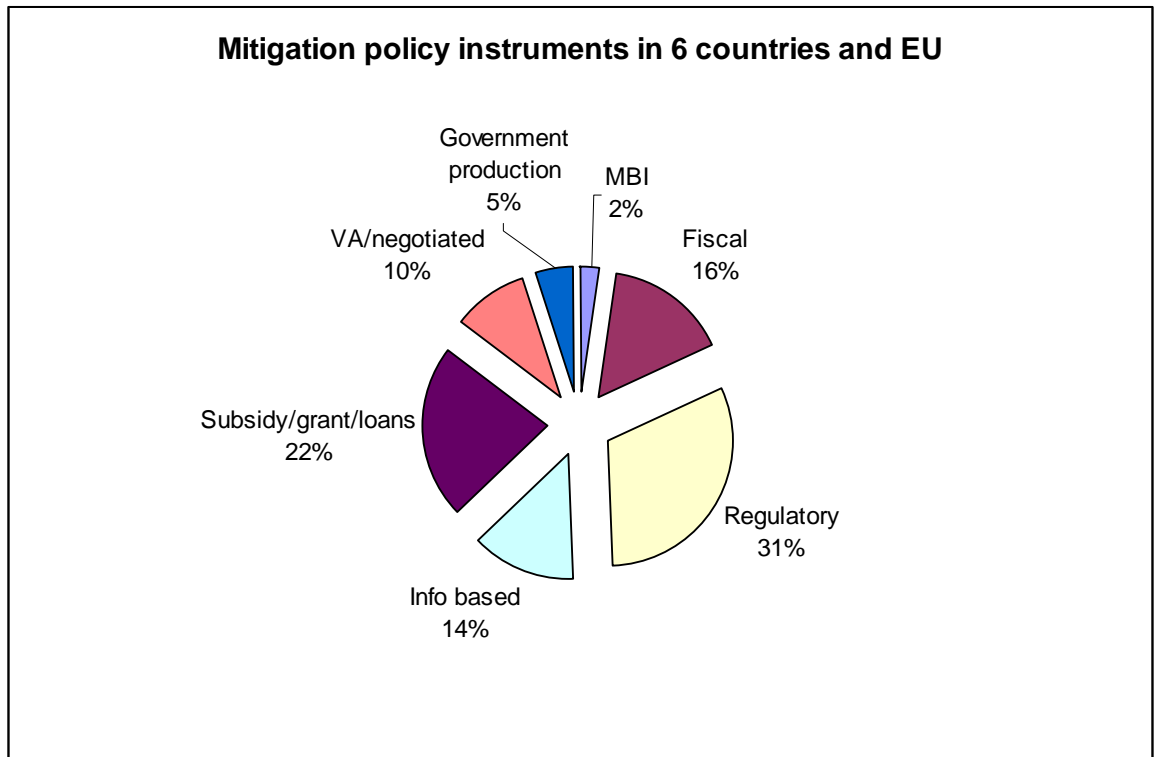


Figure 3. Instrument types in EU and 6 MS.

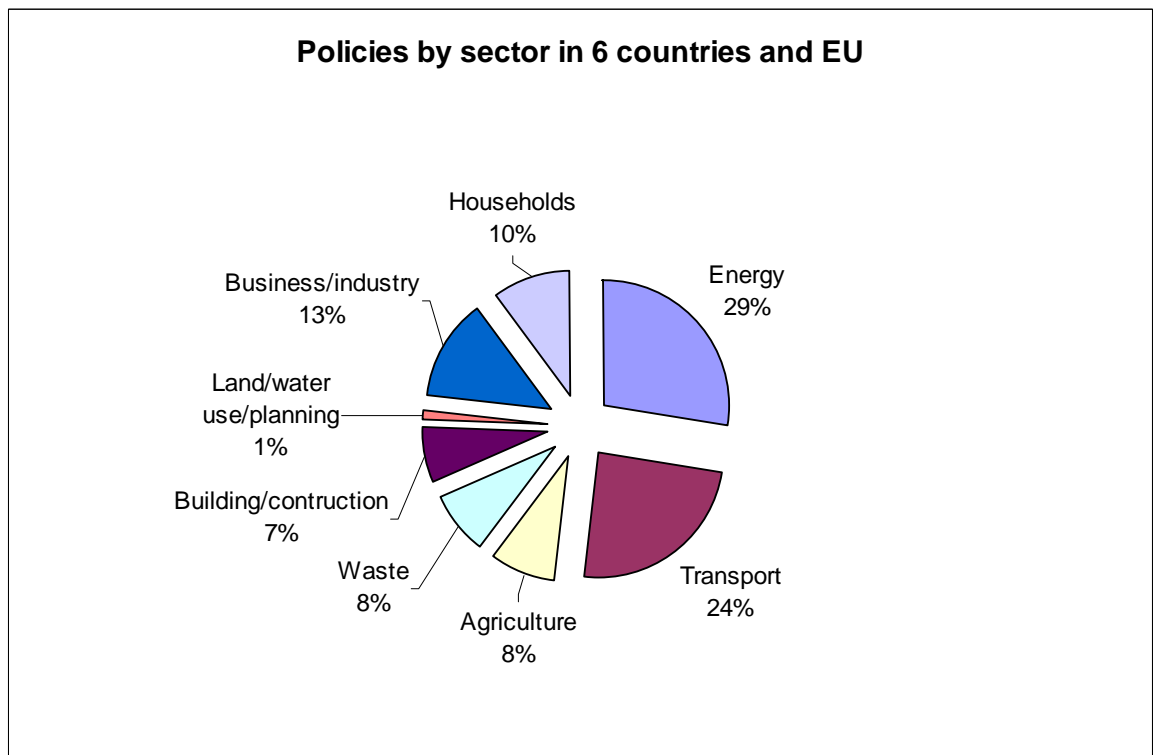


Figure 4. Percentage of policy instruments by sector.

2. The evaluation landscape

Turning now towards the evaluation ‘landscape’ as it emerges from our meta-analysis, we present four key figures representing the distribution of authors of reports, the main sectors addressed, the instruments assessed and the criteria used for evaluation.⁵ We preface this by again noting the relative lack of evaluation of adaptation policy.

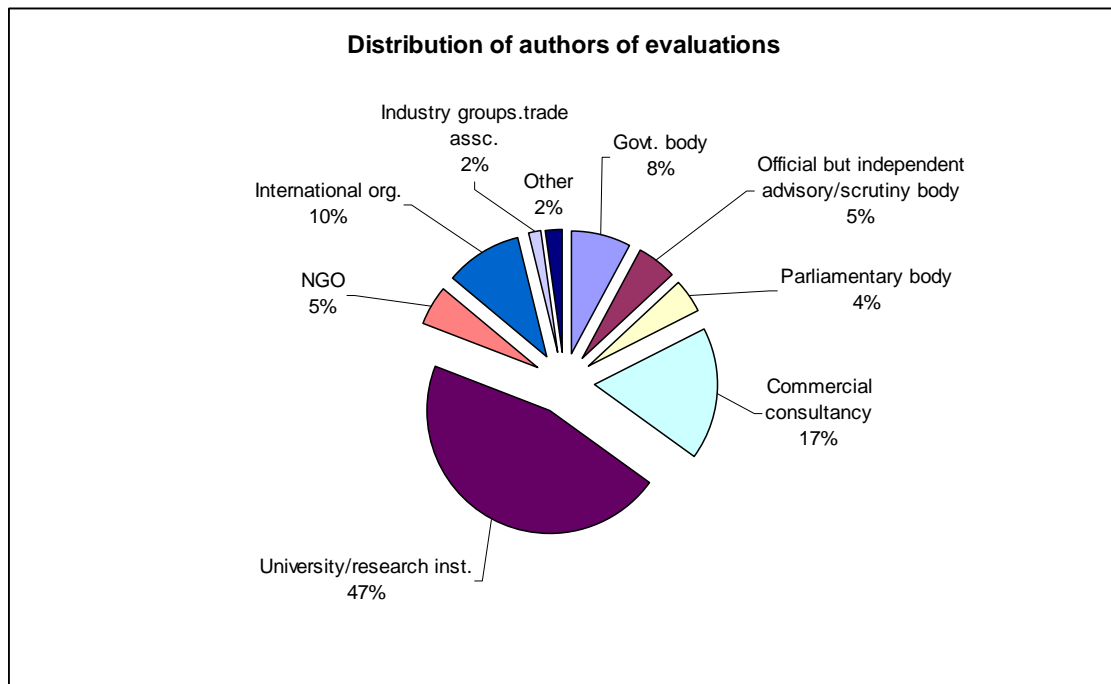


Figure 5. Distribution of authors of climate evaluations

What we might call the ‘evaluation community’ at large consists of a broad range of actors from industry associations and environmental NGOs to international organizations and research institutes. As figure 5 shows, the most prolific evaluators are universities/research institutes and commercial consultancies.⁶ Although this figure might suggest that Governmental and parliamentary bodies do relatively little evaluatory work (despite being the promulgators of climate policies), such a conclusion would be misleading. This is because they are in fact the principal commissioners of evaluations; 59 percent of commissioned reports. Of these, 46 percent are authored by university/ research institutes, and 45 percent by

⁵ For a full discussion on our statistical findings from the meta-analysis see Huitema & Rayner et.al, forthcoming.

⁶ Although this finding is influenced by our decision to include academic journal papers as evaluations in many cases.

commercial consultancy studies are commissioned by governments or the European Commission.

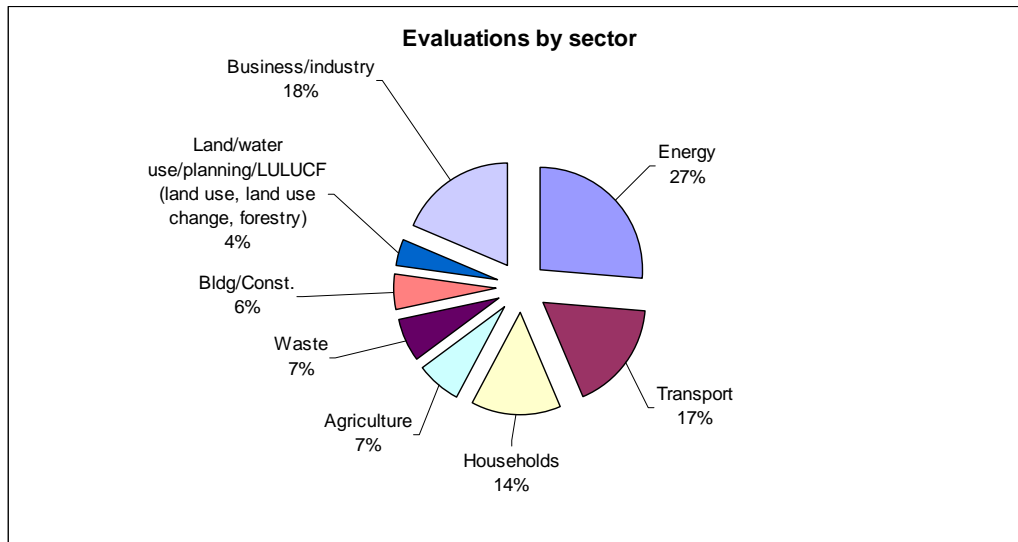


Figure 6. Sectors addressed in climate evaluations

Figure 6 offers an overview of the sectors covered by evaluation studies. Comparing figure 6 with figure 4, it is interesting to note that the distribution of sectors assessed in the evaluations corresponds quite closely with the distribution of policy activity, and might be considered as indicative of a fairly rational deployment of evaluation effort.

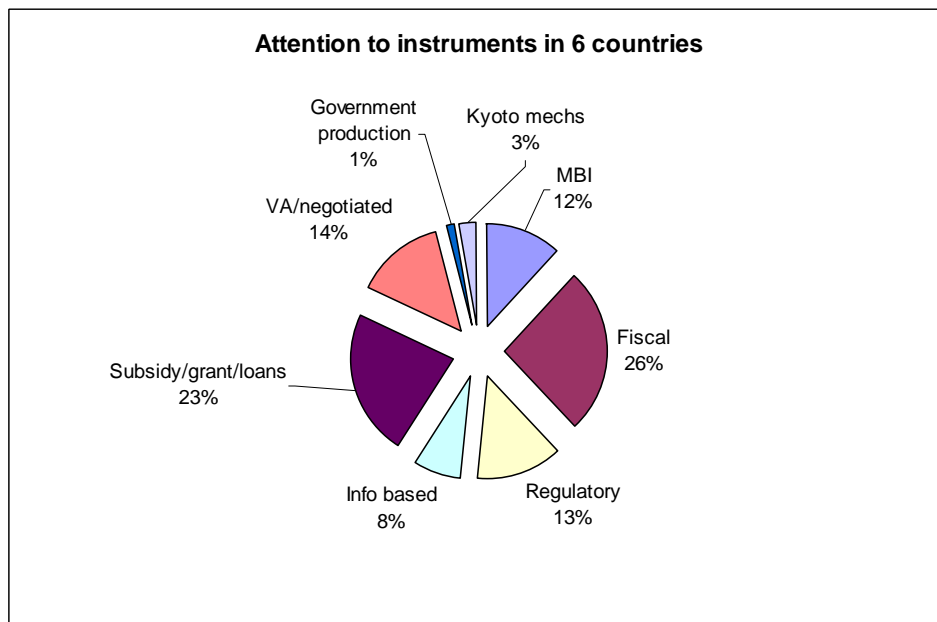


Figure 7. Instruments discussed in evaluations (EU-level studies excluded)

Figure 7 gives a broad overview of the policy instruments evaluated in the reports of our six case countries. While evaluations tend to cover more than one instrument (individual instruments often forming part of wider packages of measures to address particular issues), this figure nevertheless allows us to highlight more clearly the types of policies that are being assessed. Interestingly it is taxes and financial support mechanisms that receive the greatest amount of attention from the evaluation community, this despite the fact that the majority of policies in place are regulatory and that the EU-ETS is, as mentioned above, the centre piece of EU climate policy. The fact that a greater share of evaluation effort is not devoted to the EU-ETS might be attributed to its recent implementation (given the time span of our evaluations from 1998-2007). The disproportionate attention given to financial instruments (26% of evaluation effort compared to 16% of policies) could be explained by the high political visibility of taxation, relative to alternative policy instruments.

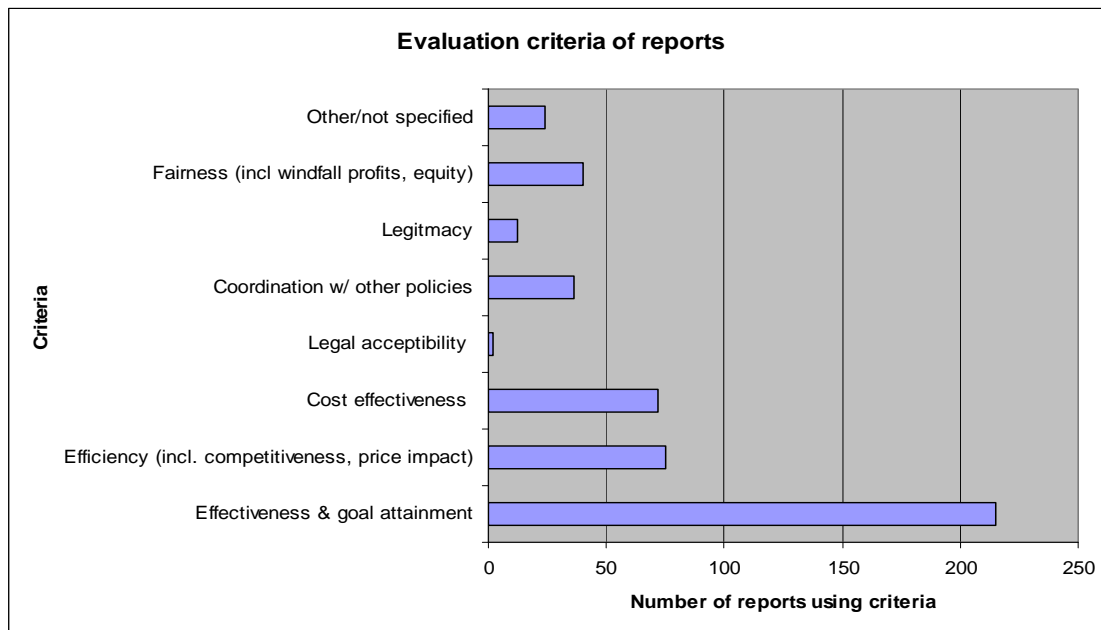


Figure 8. Criteria evaluated in reports

Figure 8 outlines what the evaluations in our dataset are attempting to assess about the policies they focus on; the extent to which criteria such as fairness and equity play a part, as well as the effectiveness of a policy in achieving emission reductions, or closely related outcomes (such as increasing the market penetration of certain technologies). While many climate evaluations focus on more than one criterion, we attempted to isolate the criteria that

are most commonly used. Overall, the majority of evaluations are concerned with assessing the effectiveness of policies in terms of cost effectiveness and goal attainment.

Given that policies tend to be based on a range of goals apart from emission reduction, such as increasing the market penetration of various technologies, or reducing the numbers of people living in ‘fuel poverty’, they are not necessarily evaluated explicitly in terms of the emission reductions they achieve. For our purposes, however, effectiveness is defined in terms of the emission reductions ultimately achieved. It is therefore interesting to note the relatively low proportion of evaluations that actually present quantified estimates, based on original investigations, of the tons of CO₂ equivalent saved by policies, either individually or in combination with others. For the UK, in many ways the most sophisticated ‘evaluation community’ of our sample, 24 out of the total of 78 studies included in the ‘meta-analysis’ included such a quantification. Of these, more than half are government-commissioned – the UK Department of Environment, Food and Rural Affairs required such quantification to inform its Climate Change Programme Review of 2006. In the case of Germany, 10 studies (out of a total of 56 reviewed) present such quantification; for Finland, only 3 (out of 27) evaluations estimate ‘tons per policy’.⁷ In the case of Portugal, the only study that quantifies emission reductions obtained was an evaluation required by the EU Commission under the landfill directive. For Poland, we found none. To what extent estimates of ‘tons per policy’ are based on sound evidence is a question to which we return in the conclusion.

Having sketched this overview of the policy and evaluation landscape, we will now address the core concern of this paper, the lessons learned from the meta-analysis of evaluation studies, structured around the six key policy choices identified in section 1.

⁷ Note that this figure does not include multi-national evaluations which include Finland alongside other countries.

3. Problem perception and policy objectives

This section reflects on how the problem of climate change is constructed in EU policy-making discourse – what its fundamental drivers are said to be, how they relate to other policy questions, what policy responses are thereby implicated - and draws some inferences for effectiveness. In doing so, we have to move somewhat beyond the empirical content to be found in the evaluations, which typically do not investigate the consequences for ultimate effectiveness of framing the climate problem in different ways. If they do so, as the more discursive evaluations sometimes do, arguments could be regarded as more speculative than evidence-based (though still logical). This section also addresses the question of how important for policy effectiveness it is to obtain widespread societal consensus on the nature of the problem. On this latter point, as well as evidence from the 262 evaluations, it draws from public opinion data.

Problem perception can be characterized as the lynchpin that binds and frames all of the other policy choices. How a problem is perceived by governments and the public at large drives what instruments will be employed to address it, when action should be taken, at what level or scale that action should be focused, and how much financial and human resources will be devoted. In short, the nature and extent of the solutions adopted are heavily influenced by how the problem is framed.

In the evaluation literature reviewed, the underlying diagnosis of the climate change problem, whether explicitly stated or implicitly underpinning the analysis, is that it derives from a combination of market failure - the inadequate allocation of property rights and/or prevalence of unpriced external costs - and what might be labelled state failure – essentially, the lack of effort made to integrate environmental considerations into the day-to-day working of key government departments. While the emphasis of reports reviewed varies, the strong implication of the bulk of evaluations is that the climate change problem can in principle be dealt with, even in the context of a continually growing economy, provided appropriate measures are taken to correct such failures.⁸

⁸ The clearest statement of this view can be found in Stern (2006), a report commissioned by the UK government with a view to galvanizing international action – though this is not a policy evaluation in our terms.

Framing the problem in terms of ‘getting the prices right’ is arguably the dominant storyline, and leads to promotion of market-based instruments to reflect more accurately the ‘social cost of carbon’. The removal of perverse incentives in the form of subsidies to polluting activities is also prominent in official rhetoric (CEC 2002), but is less evident in practice. The dominant discourse also highlights that apart from reduced greenhouse gas emissions, climate mitigation policies deliver important co-benefits such as greater competitiveness, enhanced energy security, lower local air pollution and sustainable development (CEC 2005b). As already noted, several long-standing measures reported as climate policies were initially designed as responses to other problems. Evaluation studies vary in the extent to which they seek to quantify these benefits, but it is clear that their existence has greatly helped policy-makers in securing backing for key policies.

Framing the problem in terms of state failure highlights the inadequacy of efforts to integrate environmental concerns across key policy sectors. This is potentially a more problematic framing, as it may bring into question fundamental goals underpinning these sectors, such as market liberalisation and economic growth. Nowhere is this more sensitive an issue than in the transport field. While the transport sector’s status as Europe’s worst Kyoto performer is not in doubt,⁹ and the limits of ‘technical fixes’ increasingly evident (see the discussion below on voluntary instruments), the EU’s *raison d’être* as a project to reduce barriers to trade and encourage mobility means that more radical framings of the problem - as one of too much traffic rather than inadequate technology - are difficult to accept. That such difficulties were prominently acknowledged during the Commission’s review of the first European Climate Change Programme (ECCP I) makes this document rather striking among our evaluations (ECCP Working Group 2006).

Having sketched out some elements of the climate change discourse in EU policy documents and evaluation studies, we now turn to a related, yet distinct issue: the possible interrelation between public perception of the problem and policy effectiveness. Again, it is necessary to move beyond the content of our dataset of evaluation reports, to consider public opinion data. Unfortunately, available analysis of public opinion data over time and by country does not allow for firm conclusions as to whether greater societal consensus translates into more, and more effective, climate policies across our sample countries. In addition, questions on climate change in the Eurobarometer survey have been amended over the years, making longitudinal tracking of trends in public opinion difficult.

⁹ While non-transport sectors managed to reduce their GHG emissions by 8% between 1990 and 2003, CO₂ emissions from the transport sector increased by 27% (EEA 2004).

At a general level, increasing public awareness in the 1990s coincided with proliferating climate policy activity, with the total number of measures in our sample countries expanding more than tenfold since 1990 (see Figure 5).¹⁰ The most recent years have apparently witnessed some consolidation with regard to both public attention and policy activity; concern about the issue remained largely constant in Europe (Lorenzoni and Pidgeon, 2006) and countries condensed their at times eclectic instrument mix to a number of core measures (Albrecht and Arts, 2005). The latest wave of public attention to climate change is likely to lead to a renewed surge in policy activity. To what extent this possible correlation between public awareness and policy activity also leads to increased effectiveness in terms of emission reductions is much harder to establish.

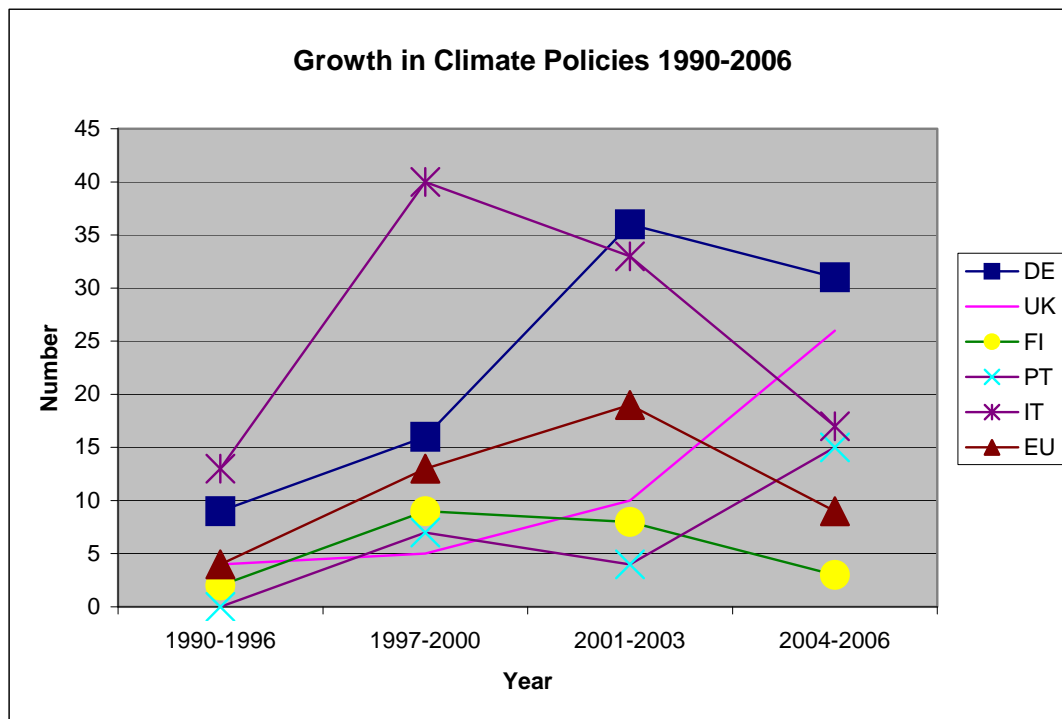


Figure 5. Growth in Climate Policies 1990-2006

Investigating the most recent Eurobarometer data (Figure 6) with a view to comparing the countries in our evaluations sample, concern about climate change is, surprisingly, stronger in Portugal and Italy than in the Northern environmental policy 'leaders'. The assumption of an interrelation between the perceived seriousness of global warming among the public and the maturity of the country's climate policy, does, however, hold for Poland, an economy in transition with little developed mitigation and adaptation policy. Here, the low political

¹⁰ Here we repeat the earlier caveat, to the effect that an increase in the number of policies says nothing of their strength.

priority attached to climate change is matched by relatively limited public concern; only 32 % of Poles are ‘very worried’ about climate change, compared to an EU15 average of 52 %.

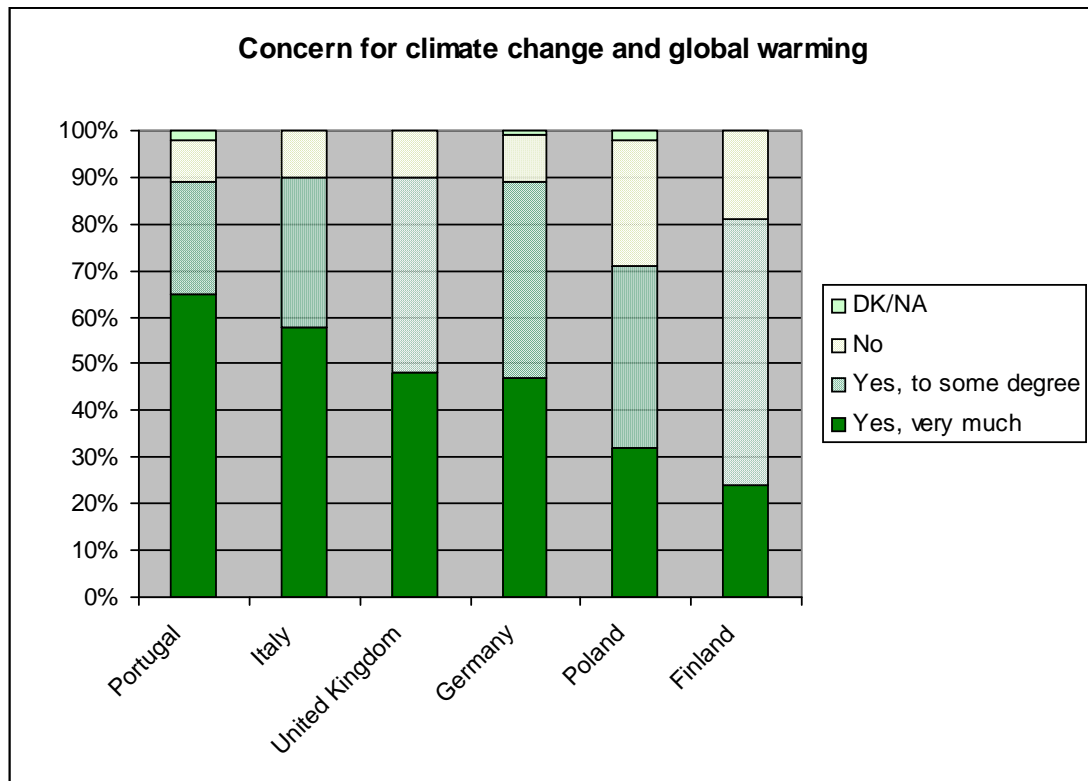


Figure 6. Concern for change and global warming (source: The Gallup Organization, 2007).

In conclusion, the principal lesson that can be drawn is that whilst the policies that have been adopted, based on the existence of significant co-benefits, and an acceptance of dominant discourses in key policy sectors, have been successful to some extent in at least limiting the growth of greenhouse gas emissions, policies which actually reduce these significantly in absolute terms will tend to require a more radical approach. The pursuit of ‘technical fixes’ and attractive co-benefits will in many cases need to give way to a greater degree of demand management and willingness to confront established sectoral priorities. Secondly, although the available data does not point to a clear-cut link between societal consensus and the maturity and effectiveness of climate policies (suggesting an avenue for future research), one implication is more easily established. If more ambitious future policy is to confront more radically the discourses underpinning the status quo, policy-makers will need to seek more distance from powerful lobbies that have heavily influenced the climate policy process and its outcomes so far (an issue we elaborate upon in the next section). For this, broad public support in favour of stringent, at times costly, and loophole-proof climate policies is a *conditio sine qua non*.

4. Costs and benefits

In this section, we focus on the issue of distributive equity and climate policy. The trade-off or choice that policy-makers may be faced with is between equity and cost-effectiveness: should carbon savings be made at least cost to the economy as a whole, even if that means leaving certain groups in a state of relative poverty, or even making them worse off? A clear example is provided by UK domestic energy efficiency policy. In this case, while the requirement that half of the energy savings should come from low income households is acknowledged to serve equity goals, the reduction of the overall cost-effectiveness of policy it entails - because attractive possibilities in higher income homes are neglected - is widely noted (e.g. IEA, 2002).¹¹ However, more generally it proved hard to draw firm conclusions regarding the relationship between equity and policy effectiveness from the evaluations reviewed. This is partly because the criterion of equity is often not explicitly covered, and partly because the concept can be constructed in multiple ways (Bürgeinmeier, 2003). The lack of attention to equity may, if Weidner (2005) is correct, reflect a degree of political expediency, whereby governments prefer not to highlight the regressive nature of some policies.

Of our sample countries, official UK evaluations perhaps come closest to incorporating an equity dimension, by routinely recording the distribution of costs and benefits across three groups: the Treasury (which effectively means the taxpayer), firms and consumers. However, a clear relationship between distribution of costs and benefits and effectiveness - for example 'policies which are paid for by central government are most effective in delivering emission reductions' - does not emerge. In addition, judgments about where the burden ultimately falls are complicated by uncertainty over the extent to which additional costs incurred by firms are in fact passed on to consumers, with economic models suggesting that businesses are likely to pass on between 50% and 100% of any cost increases to consumers, depending on the competitiveness constraints they face (DEFRA, 2006).¹² What is easier to establish from available evaluations is that a failure to fully implement the polluter pays principle, i.e. to fully internalise external costs, frequently compromises effectiveness. Significant exemptions have been granted in order to win support from key constituencies and enhance political feasibility.

¹¹ A recent OECD recommendation states that in general it is 'advisable to address social concerns primarily with non-environmental policy instruments (e.g. the social security system or the tax system), rather than to modify environmental policy instruments' (OECD, 2007, p. 4).

¹² If firms compete in foreign markets, especially outside the EU, they are likely to have less scope to pass through costs in the form of higher prices to consumers without losing market share.

Where distributional and equity concerns *are* prominently discussed is in the growing number of evaluations of the consequences, particularly for households, of carbon-energy taxation, and investigations of who wins and who loses in the EU emissions trading system. The reason for this greater attention appears to be that while the costs associated with more regulatory instruments tend to remain hidden from the general public, price changes following the imposition of carbon taxation or even emissions trading make these instruments highly visible. That being the case, we concentrate our attention on these policies.

Along with competitiveness concerns, the distributional implications of carbon taxes are a major issue in determining their political acceptability. Evidence suggests that carbon taxes may be mildly regressive (i.e. lower income groups pay proportionately more in taxation than wealthier groups), but this often depends on the modelling framework used. Significantly, however, this regressive effect can be greatly attenuated, or even reversed, where the tax is applied in a revenue-neutral context. This context varies across Member States, with Symons et al. (2002) finding that while energy or CO₂ taxation is regressive in Germany, France and slightly in Spain, it is progressive in the UK (except for the highest income group) and neutral in Italy. In Finland, energy and CO₂ tax systems are regressive, with the heaviest burden on low-income households and also the regional distribution is uneven, households in rural areas having the heaviest burden (Mustonen and Sinko, 2000). Barker and Kohler (1998) find that while taxation of transport fuels is weakly progressive (because the poorest do not own cars), taxation of domestic energy has a weakly regressive impact. Tiezzi (2005) finds that in the case of the Italian carbon tax, the burden is progressively distributed across households at different welfare levels. Moreover, she finds it to be an *effective* instrument, because the availability of alternatives to the car in Italy makes the demand for transport fuels more elastic than in other countries.

In handling the revenues from carbon taxation, however, a key trade-off emerges between efficiency and equity, which is treated differently in different Member States. Where a part of the revenues is used to compensate poorer households suffering from the tax, by means of lump-sum redistribution, tax reductions, or increases in social security benefits and pensions, the scope for the revenues to be used to maximise the efficiency gains from reductions in other existing distortionary taxes, for example, Value Added Tax (VAT) will be lost. In Germany, for example, the ecological tax reform split the revenue recycling equally between

a reduction of employers' and employees' social security contributions, showing less concern with fiscal orthodoxy than political appeal.¹³

Debates over efficiency (the functioning of the market and its ability to achieve environmental benefits) and equity (redistribution of wealth) within and between Member States have been prominent in the context of the EU's flagship policy response to climate change: the emissions trading scheme (EU ETS). Emissions trading holds a number of significant potential benefits, including greater cost-effectiveness than traditional regulatory instruments¹⁴, better compliance, greater incentives for innovation, and lower administrative costs. Cost minimisation occurs when the marginal abatement costs incurred by all polluting sources are equal to each other, a situation that pertains where generators of greenhouse gas emissions are able to demand and supply allocations irrespective of what kind of greenhouse gas they emit, what kind of installation they operate, in which part of the world they are located and what sector they belong to (Endres and Ohl, 2005). The manner in which the ETS has been designed and implemented has diluted this and other potential benefits (by covering only CO₂, for example), and has given rise to concern about whether the particular sectors and states are contributing on a fair basis.

Typically, in emissions trading systems, a centralized government body sets an emissions cap for all polluters, balancing economic interests and ensuring that appropriate cuts in emissions are made. However, in the EU ETS each Member State sets its own cap. Member States have further discretion to divide allowances between industries and firms within the state. This intra-state discretion, together with the discretion to set overall caps, leads to concerns regarding the equity of the initial distribution of emissions allowances. If state regulators are susceptible to the influence of large, rent-seeking industries, the initial distribution may reflect narrow interests rather than overall fairness. Another significant compromise was the decision to 'grandfather' permits rather than auction them, which would eventually feed through into 'windfall' profits for the power industry.

In the absence of adequate coordination, Member States have not set ambitious caps (e.g. Betz et al., 2006). Instead they have sought to provide their firms and key industries a competitive advantage by limiting their regulatory burdens and providing the potential for

¹³ Andersen (2007) therefore labels Germany a political pragmatist, whereas the UK (and Denmark) are more fiscally conventional. For its part, Finland is classed as a fiscal pragmatist. The pragmatists are labelled as such because reforms were designed so as to accommodate the pressing concerns regarding tax systems and the electorate, contrary to fiscal theory (ibid.).

¹⁴ According to Commission's own estimate, EU annual cost of climate policy with the trading system will be Euro 2.9-3.7 billion; without it, achievement of same environmental goals would cost Euro 6.8 billion (document MEMO 04/44 on Commission website).

surplus allowances, which in-state polluters could sell to out-of-state firms (e.g. Sachverständigenrat für Umweltfragen, 2006; Ellerman and Buchner, 2007). Although individually rational, such gaming ultimately undermines the effectiveness of the ETS. It also entails a redistribution of wealth, the precise effects of which are unclear, but which have attracted the interest of modellers (e.g. Harrison and Radov, 2002). The fact that this redistribution is occurring is not contested (Kurkowski, 2006).

More specifically, the distribution of benefits and costs by states between so-called trading and non-trading sectors has been criticised in recent evaluations of the national allocation plans (NAPs; e.g. Betz et al., 2006; Rogge et al., 2006). The non-trading sectors (e.g. households, transport) have to bear a disproportionately high share of the reduction efforts in all EU 15 Member States - with the possible exception of the UK (Rogge et al., 2006). Thus, while the ETS represents a cost-effective way for the trading sector to achieve its targets, the economy as a whole effectively pays a premium for granting the more generous share of the Kyoto emissions budget to the trading sector, instead of sectors where it is more costly to achieve emissions reductions.¹⁵

In sum, our key proposition is that the polluter pays principle is not consistently applied, and that although this can serve the interests of political feasibility, policy effectiveness as well as fairness are likely to suffer as a result. Moreover, certain powerful sectors of industry appear able to pass the burden of emission reductions to less politically influential groups, regardless of where these reductions can most cost-effectively be made. In the case of the ETS, this problem could be addressed by greater harmonisation of policy making at the EU level, the theme addressed in the next section.

¹⁵ With some variation, all NAPs also include persistent inefficient rules for closures and new installations which distort dynamic innovation incentives and tend to preserve existing production structures (Rogge et al., 2006).

5. Levels and scales

The appropriate balance between the collective need for high-level intervention and the maintenance of lower level autonomy in policy-making is an inherent problem for all multi-level systems of governance. For the EU, where the multi-level nature of governance is especially pronounced, and questions of “subsidiarity” much debated, the question of which level policy-makers should act at to reach the best policy outcome is especially salient. The essential governance dilemma here is that left to their own devices, Member States may not make sufficient headway to ensure that the EU meets its collective commitments, but that too much central steering would entail unacceptably high regulatory costs and would in any case meet strong political resistance. This dilemma is far from being resolved. As Andersen (2005, p. 146-147) put it, “[h]ow it is possible to combine trustworthy domestic and pioneering climate policies with Union level regulation in a reliable and cost-effective way remains to be seen”.

In this section, we examine the most prominent environmental policy measures adopted by the EU as a collective – the so-called Common and Co-ordinated Policies and Measures (CCPMs) – in more detail. In particular, we wish to investigate the effects that moves to ‘Europeanise’ climate policy have on policy effectiveness: are efforts to bring up the level of the ‘laggards’ successful, and if so, does this occur at the expense of limiting the ambitiousness of the more advanced? An important caveat here is that evaluations are complicated by the relative newness of these policies; not enough time has elapsed to make properly considered judgments about effectiveness (EEA, 2006a).

CCPMs, initiated for the first time in 2001, aim at demonstrating the collective responsibility of the EU to take action on climate change. They are designed to assist member states in meeting their targets under the burden sharing agreement of 1998, and thereby ensure that the EU as a whole meets its 8% reduction goal. At the same time, they are designed to minimise market distortions and assuage competitiveness concerns (EEA, 2006a). In more specific terms, a common measure is fully supranational while a co-ordinated measure is carried out by an individual member state. In the Commission’s own words:

Common policies and measures refer to actions at the Community level that are adopted by all Member States usually in the form of a Directive or other legal measure. Co-ordinated policies and measures are actions which produce value added to national measures when these are co-ordinated at EC level (CEC 1999).

Of the 14 most central CCPMs in place, six are in the field of energy supply and use, three in road transport and one each in industry, agriculture and waste sectors. Two are cross-sectoral (EEA, 2007c). The key CCPMs in terms of the emission reductions they are expected to deliver are the Directives on promotion of electricity from renewable energy sources, emissions trading, energy performance of buildings, co-generation and biofuels (EEA 2007c).

According to the climate policy inventory (Massey et al., 2007), typically 25-35% of national climate policies in our sample countries are EU law derivatives (Table 1).¹⁶ It is interesting to note that of the EU-15 sample countries, Italy has the lowest share of EU-driven policies, 17% (17 out of 99 reported policies), even though the OECD Environmental Performance Review of Italy states that the progress on environmental legislation in Italy has mainly been prompted by EU Directives – whose transposition encountered delays (OECD, 2002). Of the sample countries, Poland has the smallest share of EU policies (11%), presumably because of the shorter time as a Member State and longer transition periods. It is important to note, of course, that such an analysis of numbers of policies says about which policies bring the greatest emission reductions.

Number of policies	Finland	Germany	Italy	Poland	Portugal	UK
EU law derivatives	13	30	17	6	17	14
Others	24	59	82	51	51	33

Table 1. Number of mitigation policies in place in sample countries which are EU law derivatives.

The overall effectiveness of CCPMs is not easy to assess, for a number of reasons. Apart from the relative newness of these policies, already mentioned above, the effect of national measures and CCPMs is often difficult to differentiate. There is a tendency among member states not to provide quantified estimates of emissions savings and, interestingly, despite national policy often being the result of European legislation, member state evaluation studies do not necessarily refer to them directly. However, what is evident is that CCPMs stimulate most legislative action and potentially also most additional emission reduction in Member States with little or no mitigation effort in the field before their introduction. It is striking that in Italy and Poland, for example, the most important CCPMs necessitated the introduction of a new national policy, whereas in Germany, only the emissions trading Directive was reported to have introduced new policies (Table 2, below).

¹⁶ The inventory is available on the official project website: www.adamproject.eu

Table 2. Linkage between the most important CCPMs and national policies and measures in sample of Member States (EEA, 2007c).

	Finland	Germany	Italy	Poland	Portugal	UK
Renewables Directive (2001/77/EC)	National policy reinforced	National policy continued	New policy	New policy	National policy reinforced	New policy
Energy performance of buildings (2002/91/EC)	National policy continued	National policy reinforced	New policy	New policy	National policy reinforced	New policy
Co-generation Directive (2004/8/EC)	National policy reinforced	National policy continued	New policy	[not reported]	National policy continued	New policy
Landfill Directive (1999/31/EC)	National policy reinforced	National policy continued	New policy	New policy	New policy	New policy
Biofuels Directive (2003/30/EC)	New policy	National policy reinforced	New policy	New policy	New policy	New policy
ETS Directive (2003/87/EC)	New policy	New policy	New policy	New policy	New policy	National policy reinforced

To judge the effect that CCPMs have on actual policy outcomes, we need to know the status of national performance in relevant areas before their implementation. In the case of the biofuels Directive of 2003, Germany was the only Member State in which a policy for promotion of such fuels for transport was already in place before the advent of the relevant CCPM. Currently, it is the Member State with highest share of transportation biofuels, and one of only two Member States to have actually achieved the reference target of 2% by 2005 (CEC, 2007a). By contrast, as Table 3 below shows, there has been practically no progress in Finland, Italy, Poland and Portugal between 2003 and 2005, and that UK has made only limited progress. The UK had no policy in place prior to the introduction of the biofuels Directive, and it is likely that the national market for these fuels has grown more than it would otherwise have done (House of Lords European Union Committee 2006). In Germany, the level of tax exemption for biofuels was the highest, whereas the member states with lowest shares, Finland and Portugal, had no tax exemption in place in 2005.

Even in cases where CCPMs have been in place for a longer period, giving all states a chance to develop effective policies, early action correlates to some extent with the outcome of the

policy. For example, the landfill Directive came into force in 1999, requiring Member States to implement laws, regulations and administrative provisions necessary to comply at the latest by July 2001. Germany had already initiated relevant policies in the mid-1990s (Golder Europe EEIG, 2005), and had met its 2009 target already by 2003. In Finland, where the 2006 target was met by 2003, national policy was also in place before the CCPM. On the other hand, Italy, Portugal, Poland and the UK reported that a new national policy had been implemented after the CCPM. In these Member States, the situation of the policies varies: Italy has already met the 2006 target (CEC, 2006b), whereas the UK has used the option to derogate from the reduction targets for four years, and the strategy for Portugal does not give information on the concrete measures taken to achieve the objectives (CEC, 2005c). Table 4 below shows that there has been considerable progress since 1990 in reducing both emissions and landfilling of municipal waste in Finland, Germany and the UK. Progress has been slower in Poland and Portugal, and in Italy emissions have actually grown.

Table 3. Shares of biofuels of all transportation fuels (CEC, 2007a).

	Finland	Germany	Italy	Poland	Portugal	UK
2003	0.11	1.21	0.50	0.49	0.00	0.026
2004	0.11	1.72	0.50	0.30	0.00	0.04
2005	No data	3.75	0.51	0.48	0.00	0.18

Table 4. Reduction of municipal solid waste disposal on land (MSWD) and GHG emissions (GHG) between 1990-2005 (EEA, 2007c).

	Finland	Germany	Italy	Poland	Portugal	UK
MSWD	~40%	~90%	-	-	-	~30%
GHG	~40%	~70%	~-10%	~-5%	~-10%	~-60%

Renewable energy has been relatively high on the agenda of several Member States before the implementation of the CCPM. Therefore, member states have different instruments, such as green certificates, feed-in tariffs and tax incentives in place, and also the mix of renewable energy sources varies (CEC, 2005a). Also in this case, the effect of this Directive on Member States' performance varies; no additional requirements were flowing from it for Germany (BMU, 2002), whereas in Portugal new measures had to be implemented, and installed

capacity of renewables is estimated to have increase 70% between 1997 and 2006 taking into account plants under construction (Portugal, 2005).

Table 5 below shows that Germany is the only member state with a clearly increasing trend in the share of renewables since 2001. As will be explained in our discussion of ‘timing and temporality’ below, feed-in tariffs in Germany have been especially successful for promotion of solar and wind energy (EEA, 2007d). Finland, where government policies have been in place to encourage the growth of biomass, has the largest share of renewable electricity. However the trend is fluctuating both in Finland and Portugal due to variations in hydroelectric production caused by annual variations in precipitation (EEA, 2007c; EEA 2007d). Thus it seems that Germany is the only member state that has managed to increase the share of renewable energies since the launching of the CCPM. On the other hand it was also the member state reporting that national policy was in place already before the CCPM and thus it can be assumed that similar development would have occurred even without the CCPM. However, a caveat should be offered regarding the use of annual share of renewables as the indicator of effectiveness here; in the EU as a whole, although this number has grown only slightly between 1990 and 2004 (from 12.2% 13.7%), total renewable electricity production grew by 49% over the same period (EEA, 2007d). The annual share indicator is also very sensitive to rainfall rates and changes in demand. One argument in their favour, however, is that annual share targets are easier to achieve if energy use decreases, and in this respect such targets provide a dual incentive.

Table 5. Share of renewable energy in electricity consumption and the indicative 2010 targets (EEA, 2007c, d).

	Finland	Germany	Italy	Poland	Portugal	UK
1995	27.6	4.7	14.9	1.6	27.5	2.0
2001	25.7	6.5	16.8	2.0	34.2	2.5
2002	23.7	8.1	14.3	2.0	20.5	2.9
2003	21.8	8.2	13.7	1.6	36.4	2.8
2004	28.3	9.7	15.9	2.1	24.4	3.7
2005	26.9	10.5	14.1	2.9	16	4.3
2010 target	31.5	12.5	25.0	7.5	39.0	10.0

Interestingly, none of the evaluations analyzed in our sample complained of negative interactions between CCPMs and previously existing national policies.¹⁷ Several evaluations called for further harmonization of EU policies, particularly with regard to energy policies, i.e. taxation or promotion of renewables (Golini, 2005; Prime Minister's Office and Economic Council, 2000; Ericsson et al., 2004) and in allocation rules for the EU ETS (IEEP and Green Alliance, 2005; Carbon Trust, 2005; Environmental Audit Committee, 2007).

In sum, it is evident that CCPMs are an effective means to support national climate policies. They often work as essential drivers for national mitigation action, especially in cases where the Member State has not been active in the field before. The quantitative targets of many CCPMs as well as the reporting obligation support their effectiveness – even though not all Member States comply with the targets set. The effect of CCPMs in Member States outside the EU-15 cannot yet be assessed, as these countries have, in most cases, extended transition periods, and also reporting remains incomplete. If implementation of CCPMs will be successful in these Member States, it can be supposed that CCPMs have a positive influence on emissions trends in countries where national climate policy is still at an early stage. With regard to the European 'leaders', there is little sign that 'Europeanising' these particular policies has compromised their national efforts.

At the level of target setting, however, we find at least one, rather significant, incident where original ambitions have been reduced as a consequence of EU concerted action. In the early 1990s, the German government had adopted a national emission reduction target of 25 percent by 2005. However, its commitment under the 1998 EU burden sharing agreement (BSA) amounted to only 21 percent by 2012. Using evidence from interviews with German policy makers, Karlseng (2006) suggests that the silent abandonment of the 25 percent national target was justified by the legally binding character of the BSA and the relatively high ambition of the 21 percent target compared to other Member states. Thus, the reduced ambitiousness of the climate policy 'leader' Germany can at least to some degree be traced back to the impact of the EU 'bubble'.

¹⁷ The ETS has given rise to concerns that it would effectively make redundant significant parts of national climate change programmes (Sorrell et al., 2003). It is possible that the reason such clashes are not being identified is that evaluators are choosing not to address this issue. Interestingly, however, where one potential clash was identified – between the ETS and the Declaration by German Industry on Global Warming Prevention – the incompatibility was resolved by partly basing the first National Allocation Plan on the targets adopted in the declaration.

6. Instruments and modes of governance

A recurrent feature in European climate policy has been the tension between traditional regulation and other modes of governance. While policies based on hierarchical modes of governance (e.g. regulation or taxation) have proved controversial, there has been a clear preference for flexible instruments, particularly in the context of the Lisbon agenda and its concern with ‘simplification’ and ‘better regulation’ (IEEP, 2006). A case in point is the increasing reliance on voluntary measures. In this section, we examine the experience gained with voluntary agreements (VAs) across our sample countries. While VAs have been conceived as efficient alternatives to more regulatory approaches, our review of climate policy evaluations suggests that their effectiveness is contested.

Börkey and Lévèque (1998) developed a typology that distinguishes between three different kinds of voluntary programmes: ‘unilateral agreements by industrial firms’, ‘public voluntary programs’ (sic) and ‘negotiated agreements’. Voluntary approaches are, at least to some extent, applied in all six countries covered by our review.¹⁸ The evaluation community has paid special attention to four climate-related VAs (see table), on which we will elaborate further in the next section.¹⁹

<i>Type of VA</i>	<i>Example of VAs assessed</i>
Unilateral agreements by industrial firms (i.e. self-commitment)	Declaration of German Industry on Global Warming (DGWP)
Public voluntary programs	Finnish Energy Conservation Agreement Scheme (incl. Energy Audit Programme)
Negotiated agreements	UK Climate Change Agreements (CCAs); ACEA-JAMA-KAMA covenants ²⁰

¹⁸ The climate policy inventory (Massey et al., 2007) has identified approximately 40 climate related VAs in the six Member States assessed and at the EU level. Half of these are in place in Germany, which is no surprise; in the EU voluntary approaches are by far most common in Germany and the Netherlands (Jordan et al., 2003, p. 128).

¹⁹ Among the reviewed evaluations approximately 60 pay attention to voluntary approaches in European climate policy.

²⁰ The voluntary commitments of European, Japanese and Korean automobile industries on fuel efficiency of new cars are not based on formal agreements with the European Commission in any legal sense (since the EC is prevented from making civil law contracts). However, the declarations of the three business associations and the subsequent agreements are a result of deliberative negotiations between the involved parties in order to anticipate mandatory legislation.

The Declaration of German Industry on Global Warming Prevention, at least in its initial versions (1995/1996), is an example of a unilateral industrial commitment.²¹ Although more ambitious targets were adopted during the revisions in 1996 and 2000, the DGWP is commonly regarded as insufficient to stimulate abatement beyond business-as-usual (e.g. Krarup and Ramesohl, 2000; SRU, 2002; Böhringer and Frondel, 2007). Many of its targets were set close to business-as-usual projections. Thus, it can be assumed that most reductions would have taken place irrespective of the declaration. Hence, a key issue in evaluating effectiveness is that the VA's quantitative impacts need to be judged against a well-defined baseline. Otherwise there is an obvious risk that voluntary targets simply distract from taking mandatory action and reflect nothing more than the business-as-usual trajectory (Morgenstern and Pizer, 2007: 3).

The UK Climate Change Agreements (CCAs) from 2001 are part of an innovative 'voluntary package', including an 80% rebate of the Climate Change Levy and the voluntary UK emissions trading scheme. Despite showing a high degree of participation, the effectiveness of the CCAs is contested (Environmental Audit Committee, 2004; Glachant and de Muizon, 2007). Most sectors have already exceeded their quantitative targets for 2010, well in advance of the official deadline (FES, 2005). These targets, projected to reduce greenhouse gas emissions by nine percent, were initially perceived as ambitious. However, it is now questioned whether this ex-ante evaluation actually holds ex-post (FES, 2005; Glachant and de Muizon, 2007).

More positive conclusions on the effectiveness of voluntary agreements can be drawn from the Finnish experience. The Finnish Energy Conservation Agreement schemes (ECAs) demonstrate that (public) voluntary programmes may be successful in stimulating participation and energy saving measures if the agreements are accompanied by proper incentives. The schemes do not set specific quantitative targets, but merely aim at promoting energy saving measures. Since they were introduced in 1998, they have been closely linked to the established public Energy Audit Programme.²² Both programmes are associated with government subsidies for energy auditing to identify energy saving potentials and for the implementation of energy saving measures under the voluntary agreements.

²¹ In 2000, the unilateral declarations of 1995/1996 were confirmed and updated by the 'agreement on climate protection', signed jointly by the German government and representatives of the participating industry associations, in order to 'emphasize the validity of the commitments for both parties' (http://www.bmu.de/english/climate_change/doc/3313.php accessed on 29.08.2007).

²² Also associated with the ESCO programme launched in 2000 to promote the ESCO sector in order to stimulate measures with longer payback time (Kahn, 2006).

The Finnish ECAs have gathered a high degree of participation in the industry (above 80%) and public sector, but to a lesser extent in the private services sector (Heikkilä et al., 2005; Kahn, 2006). Evaluations estimate improvements of energy performance to be in the range of 5-6 % (Kahn, 2006), avoided energy costs over 90 M€/yr and reduction of CO₂ emissions in the range 1.3-1.7 Mt (Heikkilä, et al., 2005). However, the schemes seem mainly to collect ‘low hanging fruits’; most measures have relatively short payback time (0-2 years), whereas measures with longer payback time are rarely implemented (Kahn, 2006).

This conclusion, which resonates with a common argument in the literature, according to which VAs induce incrementalism rather than innovation (Jordan et al., 2003, p. 215ff.), also applies for the voluntary agreement between the European Commission and car manufacturers. The three covenants, in which European, Japanese and Korean carmakers committed themselves to reduce average specific emissions from new cars to 140 CO₂/km until 2008/2009, have mainly induced gradual improvements, for example the ‘dieselisation’ of the European car fleet, rather than innovative power trains for low-emission cars (e.g. Kågesson, 2005; Bongardt and Kebeck, 2006; EEA, 2007b).²³ Overall, despite some progress, the car industry is expected to miss its 2008/2009 target, prompting the Commission to announce a legislative framework including a binding target for average fleet emissions.²⁴

Bongardt and Kebeck (2006) identify a number of “success and fail factors” for the ACEA (European Automobile Manufacturers Association) agreement that are also of relevance for voluntary measures more generally: for such a measure to be effective, the absence of regulatory pressure must be compensated for by strong internal peer and public pressure. The absence of explicit burden-sharing under the covenants led to implementation efforts being largely based on mutual expectations of ‘who is contributing what’ and may also have constituted a significant obstacle to common learning and exchange of technologies (Bongardt and Kebeck, 2006).

In sum, we posit that while voluntary programmes appear conducive to overcoming non-technical barriers and to stimulating incremental improvements, for the most part, they have had limited effect on emissions, with little additional impact beyond the baseline. The quantitative impacts range from near zero in the German case up

²³ Another problem is the car industry’s limited influence on consumer preferences that favour stronger, larger and heavier vehicles (e.g. Kågesson, 2005), which has led the car industry to argue for an ‘integrated approach’ on vehicle efficiency (assessed in the framework of ECCP II).

²⁴ COM(2007) 10 of 24.01.2007 "*Results of the review of the Community Strategy to reduce CO₂ emissions from cars*"

to potentially nine percent in the UK case (based on uncertain ex-ante assumptions), with the Finnish case somewhere in between. Morgenstern and Pizer (2007) regard five percent as a typical achievement of a VA. Most of the evaluations explain the disappointing performance of VAs by citing unambitious targets and the lack of incentives for participation and compliance mechanisms. The Finnish experience shows, however, that if applied in the right setting and with adequate incentives, VAs can play a useful role in a carefully designed policy mix (Krarup and Ramesohl, 2000; OECD, 2003a; Fiorini, 2006).

7. Timing and Temporality/ predictability of policies.

Issues of timing and temporality are of great significance in many policy fields. However, in an area like climate policy that is characterised by long time horizons and great uncertainty over potentially disastrous impacts, reflections on the merits of regulatory stability against flexible, ‘adaptive’ governance are particularly relevant.

For the realm of mitigation, predictable long-term policy frameworks are commonly seen as a key condition to stimulate the investment flows necessary for large-scale technological transformation, especially in the energy sector, but also beyond. Thus, a number of reports in our sample of evaluations emphasise the importance of ambitious long-term emission reduction targets based on sound science, referring to all levels from sectoral and national to EU, and up to global (e.g. Environmental Audit Committee, 2007; Friends of the Earth Europe, 2005). Predictability also features as a concern with regard to the EU ETS. Some experts suggest longer trading periods in order to create a stronger impetus for technological innovation through the scheme (e.g. Egenhofer et al., 2005, Sachverständigenrat für Umweltfragen, 2006).

The following discussion will focus on the need for policy continuity in one particular area of climate policy, the promotion of renewable energies. As renewables policies are among the ‘oldest’ elements of climate policy, they lend themselves best to demonstrating the interrelation between regulatory (in)stability and dissemination of clean energies. Not surprisingly therefore, most empirical evidence in our sample of evaluations relates to them.

Predictability in this case has essentially two dimensions: (1) Broad-based and continuous political support for renewable energy in general; and (2) predictability built into the instrument that is chosen for the promotion of renewable energy sources.

The first dimension becomes self-evident if one considers the long planning horizon necessary for the expansion of renewables. The process from applying for land use permits to the installation of the necessary infrastructure, and possibly the adjustment of the grid to an increased share of intermittent capacity is likely to take years – and policy commitment is necessary throughout the process.

A number of evaluations in our sample describe the specific conditions that enabled the German ‘success story’ with regard to renewables. Cross-party support, policy continuity

even after changes in government, and an increasingly strong advocacy coalition of green energy producers are cited as key reasons for Germany's long-standing frontrunner position (e.g. Ragwitz et al., 2005). Interestingly, one author also demonstrates how decreases in licensing applications for renewable facilities coincided at three points in time with a flagging of political support, twice at the national level, and in a third instance due to uncertainty over the direction of EU policy on this issue (Agnolucci, 2006).

A second example where long-standing political support has encouraged strong growth of renewables is the case of bio-energy in Finland (Ericsson et al., 2004). Although specific policies changed over time, overall commitment to biomass for energy has remained strong for more than 20 years, resulting in a biomass share of 20% in the total energy consumption (Statistics Finland, 2007). In contrast, renewable energy policies in the United Kingdom and in Italy have been marked by relative political and regulatory instability. Support systems have changed over time, and renewables policy in the UK even suffered a regulatory gap between 1998 and 2002, as the transition was made from the Non-fossil Fuel Obligation to the Renewables Obligation (Connor, 2003).

Regarding the second dimension of continuity in renewables promotion, namely predictability built into the policy instrument, the ability of a policy to reduce the risk for investors in green energy is undoubtedly a key factor. The two main types of instruments employed (feed-in tariffs and certificate schemes) across the EU display considerable differences in this respect.

Feed-in tariffs are the most common form of renewable support across the EU (CEC, 2005a). They are characterised by a price fixed for a period of several years in advance that must be paid by electricity companies or distributors to domestic producers of green energy. Often, this tariff is 'degressive' in order to reflect technology learning curves. Certificate schemes, on the other hand, do not set a specific price for green energy, but require consumers (or sometimes producers) to purchase a certain number of green certificates according to a fixed percentage or quota of their total electricity consumption/production.

Feed-in laws (used for example in Germany and Portugal) are generally considered to fare better in ensuring investment certainty as the price paid for renewables is stable: green energy producers bear no so-called 'volume risk' because distributors are required to accept all generated green energy, and the former do not have to balance intermittent production (Mitchell et al., 2006). By contrast, in the case of certificate schemes, the value of the certificates is much less predictable as it depends on supply and demand in the market. Accordingly, Mitchell et al. (ibid, 302) argue with reference to the British 'Renewables

Obligation’: “exact knowledge of the state of deployment and generation output for every eligible renewable power plant is necessary to understand the value of the [renewable energy certificate] and green premium for each year”.²⁵

Despite the apparent effectiveness of feed-in tariffs in providing investment certainty for clean energy producers, an inevitable trade-off between the predictability of an instrument and its cost-effectiveness should not be ignored. Given the general uncertainty as to an instrument’s precise effects, the question in essence is who is going to carry the burden of risk: if the investor is made to do so (e.g. via green energy quotas), this would emphasise cost-effectiveness (for the society as a whole), but might lead to less investment due to risk averseness. Alternatively, the risk is passed on and dispersed to consumers, thereby reducing the need for cost-effectiveness (a strategy which could, in the long run, politically backfire when ‘waste’ is discovered). The greater the uncertainty, the stronger thus seems to be the case for relieving the investor of the risk.

The potential of a policy to strike an adequate balance between investment certainty and cost-effectiveness, however, depends ultimately on the details of its design. Considerations about timing and temporality are again relevant in this regard. While regular assessment and downward adjustment of tariffs over time are vital to increase the cost-effectiveness of a feed-in system (e.g. Reiche and Bechberger, 2004),²⁶ investment certainty under a certificate scheme can be increased through continuous tightening of the renewable quota. This is an unfortunate deficiency in the British Renewables Obligation; while in place until 2027, the quota only displays a rising profile until 2014/2015.²⁷

In sum, we posit that predictability in renewable energy policies is a core condition for enabling their successful expansion. This concerns not only continuous political support, but also predictability built into the policy instrument. With regard to the latter, reducing risks for investors in clean energy is undoubtedly important, but may imply a trade-off with regard to cost-effectiveness of the instrument.

²⁵ Furthermore, given that certificate schemes do not differentiate between different renewable energy sources, although they may well fulfil their purpose for close-to-market technologies, they are unlikely to succeed in ‘pulling through’ less developed technologies, unless effectively supplemented by other instruments.

²⁶ The German feed-in law provides a positive example here, while the Portuguese system still seems to display weaknesses in that regard (IEA, 2004). Poland is again a different case: feed-in rates were set at such a low level that investment in renewables has so far failed to take off (OECD, 2003b).

²⁷ Consequently, a report of the Science and Technology Committee of the House of Lords emphasised the need for greater long-term predictability in British renewable energy, either through rolling targets ten years a head, or by guaranteeing a minimum certificate price for the duration of the obligation (House of Lords Science and Technology Committee, 2004).

8. Implementation and enforcement

Implementation is the part of the policy process wherein chosen instruments are applied to a target group, their response monitored, and deviations responded to. About 25 years ago, implementation of environmental policies was still a largely ignored topic in academic literature. The discovery of an ‘implementation deficit’ (Mayntz, 1978) and the importance of the interactions and networks surrounding enforcement and implementation in the late 1970s and early 1980s (Mazmanian and Sabatier, 1983) were major novelties. Much has changed today; we know that implementation is a key element in the policy process, even to the extent that formally endorsed policies can be completely negated and changed. The idea of an ‘implementation gap’ in EU environmental policy, including on climate change, is now also prevalent in European policy circles. A number of EU level evaluations express concern at the incomplete implementation of the measures outlined in the European Climate Change Programme - referring both to political adoption of the policies, transposition into member state law, and ultimate enforcement (e.g. CEC, 2006c; CEC, 2006d; CEC, 2007b). Concerns have also been expressed at the absence of mandatory targets in many climate policy related directives (CAN-Europe, 2005). The Commission itself acknowledges that the degree to which ECCP measures will reduce emissions is to some extent dependent on how member states implement them (CEC, 2001).

In this section, we address two particular challenges identified in our sample of evaluations. The first relates to factors that could be called ‘internal’ to climate policy, while the second is broader, and could be described as ‘external’, related to its interaction with ‘other’ policy domains.

The first climate policy ‘internal’ factor determining effective implementation relates to monitoring. Monitoring data is of course a precondition for establishing the effectiveness of policy instruments and learning from implementation experience. Thus, one particularly striking theme to emerge from our sample of evaluation studies has been the widespread condemnation of the poor provision for monitoring of effectiveness that characterizes many policy instruments (see for example Ecofys et al. 2007, EAC, 2005; Maslin et al. 2007, RWI, 2000). Even in a state with a relatively advanced climate policy such as the UK, a leading watchdog body recently expressed its distress at the time it took to acknowledge that policy

was 'so far off course' (EAC 2005), due to inadequate monitoring.²⁸ In their attempts to evaluate the effectiveness of 20 energy efficiency policies, Ecofys et al (2007) were hampered by the fact that most instruments lack a comprehensive monitoring system. The availability and quality of monitoring data turned out to be much lower than expected. Data to assess target achievement and energy savings impact were available for roughly half of the evaluated instruments. The authors highlight the challenge this constitutes in the context of the implementation of the Energy Services Directive, which requires Member States to achieve 1% yearly energy savings in the retail, supply and distribution of electricity, natural gas, urban heating, and other energy products including transport fuels. In order to enable monitoring of the targeted verifiable savings, Member States will have to improve their monitoring and verifications systems significantly.

Also noteworthy is the fact that the sanctions for non-compliance with environmental policies are often minor or even non-existent (e.g. IPA Energy and Water Consulting, 2007; Sachverständigenrat für Umweltfragen, 2005; O'Cleirigh and Frontier Economics, 2001), especially in cases of voluntary agreements. Several evaluations note the success of the UK's system of Climate Change Agreements, in which monitoring and enforcement provisions are particularly well-specified, unlike most voluntary instruments (Glachant and de Muizon. 2006, Bailey 2006, Bailey forthcoming). This is not to say that this factor alone explains policy effectiveness, but it is certainly a significant contributory factor.

On the basis of their evaluation of 20 energy efficiency policies, Ecofys et al (2007) identify a number of 'general success factors' that facilitate the implementation of policy instruments. These include:

- (i) stakeholder participation in design and implementation,
- (ii) continuous revision and improvement of instruments during the implementation phase,
- (iii) existence of a flexible, non-bureaucratic, legitimate and authorized implementing agency and
- (iv) smart integration of policy instruments into effective policy packages.

A further aspect, already to some degree transcending the category of climate policy 'internal' factors, is the importance of political will. It is abundantly clear that implementation of climate policies requires a solid level of political commitment (as already discussed in the specific case of renewables), for instance in communicating the need for the policies and

²⁸ Issues relating to national frameworks for monitoring and evaluation are discussed in more depth in a sister paper.

overcoming (initial) opposition (Wüstenhagen and Bilhartz, 2006). Such commitment is not always available, which translates into various problems, including a lack of implementation and enforcement capability (e.g. Zbigniew et al., 2003). Especially singled out in various evaluation studies is the building sector, where energy standards for new buildings are often poorly enforced (see e.g. Darkin, 2006, Oxera 2005), apparently due to concerns over the impact on property developers. The abandonment of relatively stringent duties on road fuel in the face of popular opposition and rising global oil prices around the turn of the millennium contributed to the lower than expected emissions savings from this particular instrument (Maslin et al., 2007). Finally, the flagship instrument of the EU, the EU ETS, has been undermined by the lack of political will in various Member States to adopt a stringent cap (as already discussed in the costs and benefits section).

Moving on to the broader challenges related to implementation, the issue we want to discuss in some greater depth is that of 'inter-policy cooperation' (Knoepfel, 1995) and the effects of interaction between policies across domains. The importance of such interactions for ultimate implementation has been stressed in work by Glachant (2001). For Glachant, the focus of much of the debate on EU implementation deficits is misplaced. In a complex, multi-level governance system such as the EU, implementation gaps are completely to be expected. Outcomes are shaped by the impact of policy interactions that are pervasive. Arguably, the key choice facing policy makers is whether to ignore these interactions, continuing to operate in 'policy silos', or to seek to develop better forms of integrated policy development and policies that have capacity to adapt to unforeseen circumstances during implementation. Given that climate change policies tend to have implications for other policy domains, and vice versa, it is not surprising that one of the recurring themes in the evaluation studies is the degree to which policies are coordinated across these domains. Particularly relevant are the connections between climate change and energy policies (EEA, 2002, 2006b). Although the three declared goals of EU energy policy - security of supply, competitiveness and sustainability (CEC, 2006a) - have the potential to be mutually re-inforcing, in practice they may pull in divergent directions.

As discussed already, markets for renewable energy sources require a degree of stability over time if private investment is to occur. Such investments are naturally also sensitive to market prices (Electro-Watt Ekono Oy, 2004). Our sample of evaluation studies demonstrates a degree of ambiguity over the present and likely future effects of liberalisation of the energy market (ending monopolies, privatizing public companies), particularly arising from lower prices for consumers – a key goal of the policy. While the window of opportunity that liberalisation has presented for green power suppliers is acknowledged (e.g. Wüstenhagen and

Bilhartz, 2006), so too are the major difficulties created for the cogeneration industry by falling electricity prices (EEA, 2006b, Michaelowa, 2003) and the perverse incentives to greater energy consumption from lower energy costs generally (EEA, 2002, 2006b). In the UK, the effect of the New Electricity Trading Arrangements (NETA), the goal of which is to bring about further price reductions for consumers, have attracted strong criticism (EAC, 2002).

Summing up, we posit that in order to respond to the failure of individual policies to deliver, or problems resulting from negative interaction with policies in other domains, there is a need first of all for better monitoring data, and then for better capacity to adapt policy in the light of such feedback. This, to borrow a phrase, might be referred to as ‘governance by evaluation’ (Martinuzzi, 2004). It may be that the UK’s concept (embodied in the Climate Change Bill currently going through Parliament) of a well-resourced, de-politicised, standing Climate Change Committee, at the heart of government but independent from it, able to scrutinize policy effectiveness and report regularly, to raise the alarm if necessary if emissions trends are not on a sufficiently downward trajectory, is one that the rest of Europe will need to emulate.

9. Conclusions

In this concluding section, we reflect on the quality of the evaluations that we have reviewed in our analysis, and the reliability of the judgments regarding effectiveness that they convey. It is an increasingly common refrain among policy-makers that evaluations should quantify the impacts of policies, and indicate how many tons of carbon have been saved on account of their implementation. Indeed, it is increasingly required by policy. How reliably, however, can this really be done?

In the course of our review, we have encountered the following reasons why the quest to attach definitive, hard numbers to policy impact should be treated with some circumspection, or why evaluation of climate change policies in general is so challenging.

- i) Some policies are better monitored than others, possibly because they contain more explicit reporting requirements, such as the EU's key CCPMs. Lack of monitoring data is the most common problem facing evaluators.
- ii) some member states take monitoring more seriously than others, making attempts to make judgments for the EU as a whole problematic (EEA 2006a). Similarly, evaluations are often hard to compare due to the diversity in methods and indicators used.
- iii) it may be too early to evaluate the success of many instruments – particularly those adopted as part of ECCP (EEA 2006a).
- iv) often evaluators are given too little time to conduct evaluations in the manner that they would ideally like.
- v) cause-effect relations are difficult to discern. Sometimes there may be parallel actions that lead to the same effect; other times, one action can have several effects. Sometimes, various exogenous developments influence the impact. De-composition analysis, of the kind performed by Schleich et al (2001), can try to distinguish policy effect from other effects, but there are debates over exactly how it should be done.
- vi) closely related to the previous point, policies often take effect in combination, as part of broader packages of measures. Effects of specific components can be difficult to specify.
- vii) conducting an evaluation requires assumptions about the counter-factual, or reference case – what would have happened without the policy in question. This introduces considerable uncertainty.

We suggest that the best studies are open about their limitations, and the methodological difficulties they have encountered. The following disclaimer is taken from an evaluation of energy efficiency policy by a leading consultant in the field, commissioned as one part of a significant evaluation of the UK's Climate Change Programme:

Given the scope and timescales of the work, the study has mostly relied on existing information and as such has been to a degree limited by the availability of appropriate monitoring data on individual policies. [...] The nature of the study is that there are uncertainties in the results as a consequence of limitations in the data and assumptions that have to be made. [...] For most policies the actual energy and carbon savings are reasonably well defined, though can be subject to assumptions made regarding typical savings from specific measures, what would have happened anyway (the counter-factual) and on attribution between individual policies that interact with each other (Future Energy Solutions and PSI, 2005, pp.ii-iii).

The evaluations we have reviewed vary widely in the degree to which they are systematic and based on a transparent methodology. Our review highlights that UK evaluation system is probably the most sophisticated among our chosen member states, and we would suggest most likely to offer accurate numbers. Rigour is promoted by the practice of requiring official evaluations under the Climate Change Programme Review to follow a detailed guidance document, be peer reviewed and overseen by an inter-departmental advisory group. There is, nevertheless, often a strong political component to evaluation, and a temptation for government departments to present as favourable a picture as they can. Such a desire can manifest itself in an apparently purposeful ambiguity at times over such crucial issues as whether emission reductions that have been proclaimed (or are presented as due to occur in future) are absolute or relative to 'business as usual' (EAC 2007).

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Appendix 1. Extract from Research protocol for P2.3/P2.4

P2.3 Scope and Research Questions

Scope

Screening the literature to select relevant evaluations requires a set of criteria.

i) What is an evaluation?

The literature contains a variety of definitions of evaluation, none of which is likely to be fully satisfactory (Newburn 2001). According to a key UK government guidance document (Cabinet Office 2003):

- Policy evaluation uses a range of research methods to systematically investigate the effectiveness of policy interventions, implementation and processes, and to determine their merit, worth, or value [...].
- Policy evaluation uses quantitative and qualitative methods, experimental and non-experimental designs, descriptive and experiential methods, theory based approaches, research synthesis methods, and economic evaluation methods.
- Policy evaluation for government privileges no single method of inquiry and acknowledges the complementary potential of different research methods.
- The methods used in government evaluation and analysis are usually driven by the substantive issues at hand rather than a priori preferences

As for what that object of evaluation (evaluandum) is, a distinction is frequently made between outputs, outcomes and impacts. Our own Theory and Methods paper notes that evaluation can relate to one or all of the following: policy substance, policy process, policy impact. While the DoW refers to evaluations of policy *implementation*, given our concern for governance, it seems appropriate to broaden the scope to include evaluations which take the policy-making process as their object. The relative newness of many policies, and consequent dearth of evidence on which to base assessments, is another argument in favour of including evaluations of the policy *process*.

While some definitions take evaluation to be a 'service' provided to a client, we do not follow suit, since such a definition would appear to exclude more critical studies, for example by NGOs. Furthermore, for our purposes, an evaluation need not be based on original empirical research; it could, for example, entail a review of existing evidence which frames it in a novel way.

Another important question for P2.3 is whether to include *ex-ante* forms of evaluation. The DoW - which calls for 'meta-analysis of studies evaluating implementation of EU and Member State policies relevant to climate change adaptation and mitigation' - implies that the relevant studies are *ex-post* evaluations of policies that have been implemented, not *ex-*

ante assessments of policies that may or may not be implemented in future. Therefore, *ex-ante* studies of potential new policies are outside our scope. However, policies that are now implemented may once have been subject to *ex-ante* evaluations. If our primary interest under P2.3 is *evaluation practice*, rather than policy substance, then there is a case for including *ex-ante* evaluations. Pragmatically, it was decided to proceed by identifying these studies, and if the number is not huge, potentially deciding in January to include them in our analysis.

ii) What policy is 'relevant' policy?

The DoW says we will cover policies 'relevant to' adaptation and mitigation. Deciding how we interpret this text involves a fundamental trade-off within P2.3: if we follow the 'self-reporting' approach to what is climate change policy, excluding evaluations of policies/sectors where the authors have not themselves recognized 'relevance', we lose the opportunity to report on how well or badly EU evaluations in general handle climate issues. This would be regrettable if evaluation practice, rather than policy, is our key interest, and if this aspect is something we might eventually want to publish on. It would also lead to an under-emphasis on adaptation policy, since these are less likely to be explicitly reported. But adopting the broader approach requires more time (as envisaged in the DoW, months 9-18) and manpower. A further question arising is whether the numerous evaluations of *sustainability* conducted on EU policies and programmes (particularly structural funds), which touch on climate issues within a broader framework, should be included. Furthermore, there is the DoW's reference to 'agriculture, water and nature conservation' sectors to consider.

It was decided to proceed pragmatically for the time being. The self-reporting approach should be followed until January (i.e. climate policy is what national communications to the UNFCCC say it is), when the possibility of widening the focus would be re-opened. One possibility would be for one or two sectors to be chosen at first, perhaps one with particular relevance for adaptation, such as water.

iii) Which member states?

Here it seems logical to address the same countries that were included in the climate policy inventory (Finland, Portugal, Poland, UK, Germany, Italy, as well as EU level).

iv) Is there any cut-off date for "old" evaluations?

How far back in time to go for evaluations to analyse again depends on whether our primary interest is in *policy substance* or *evaluation practice*. If the former, then only evaluations of policies still in force should be considered; if the latter, an evaluation of a defunct policy could still be worth reviewing. Given the ambiguity regarding the division of tasks between P2.3 and P2.4, it was agreed that a pragmatic path should be taken for the time being: start with the most recent reports and work backwards, reviewing the situation in January 2007. If an evaluation appeared interesting *qua*

evaluation, then it should be reviewed, regardless of the current status of the policy it evaluated.

As a general point regarding all of the above points, it was agreed to be more important to cover enough ground to have something valuable to report than to aim for complete comprehensiveness.

v) how to handle reports that will be of use to P2.5?

Attention should be paid to creating synergies between the meta-analysis and subsequent research on the EU-ETS, under P2.5. Much of the literature on EU policy is likely to focus on emissions trading and the information we gather should directly feed into P2.5. Therefore Harro van Asselt will carry out the meta-analysis of evaluations of the EU-ETS.

Possible research questions

In the light of the discussion contained in the Theory and Methods paper, the following questions are potentially of interest in reviewing available evaluations:

- i. What types of evaluation are undertaken r.e. the typology of Fischer (1995) and/or Guba and Lincoln (1989)? (see Theory and Methods paper for detail).
- ii. Which types of actor commission policy evaluations, what motivates them, and who performs them? Are they used to inform policy making?
- iii. Which criteria are used for evaluation (e.g. effectiveness, cost-effectiveness, fairness, predictability, legal acceptability, legitimacy, etc.) and why? Over what spatial and temporal scale are judgements made?
- iv. Which methods (as compared to the list developed in the T&M paper) are used in evaluations?
- v. What assumptions are made by evaluators regarding our main 'attention points/governance dilemmas' in constructing their evaluations, e.g. regarding problem framing, definition of costs and benefits, what policy linkages/ interactions are considered relevant?
- vi. What main conclusions do the authors come to and what recommendations do they give, if any, regarding the future development of climate policy? How do these relate to the six governance dilemmas/attention points? Is there widespread consensus on certain policies or are opinions largely diverging?
- vii. Do certain topics receive a much larger share of attention than others? Are there other gaps in other fields?

While these are all potentially of great interest, limited time and resources require us to be selective. We have therefore decided that researching the ultimate effect of evaluations on policy, and the precise motivations behind evaluation exercises is not feasible.

Research Approach and Method

Overview of the template

P2.3 will be an extensive, desk-based documentary review, covering sources including official policy evaluation agencies, governments, academia, NGOs, and industry associations. In member states with which we are not familiar, we could approach around five specialist academics per sample country for advice on the most relevant literature.

Having screened and made an inventory of the literature according to the above criteria, the sources will subsequently be analysed based on a standard template, in order to guarantee coherence in categorising and assessing the literature. This template will be reviewed on the basis of early experiences of its usefulness/ economy/ operability (probably in mid-December). It may be, for example, that essentially the same information is unnecessarily being recorded under different headings.

Source	Full author and report title, date of publication
Affiliation of author	State whether the evaluator is a government agency, commercial consultancy, or independent
Work commissioned by	Where evaluation carried out by paid consultancy, state commissioning agency.
Purpose of report/ Target audience (as self-reported)	If given in the text, briefly describe stated purpose of the report and the intended target audience. E.g. to ensure accountability ('summative' evaluation), to improve policy ('formative' evaluation), to inform a decision over continuation of a particular policy/ programme, to contribute to a pressure group campaign.
Is the evaluation a legal requirement?	Yes or No. NB. Some EU directives now require ex-post cost-effectiveness analysis.
Which sector(s) is principal focus?	energy; transport; business/industry; agriculture; households; public sector; waste management; water; waste management; nature conservation
With what time period is the evaluation concerned?	e.g. performance of policy over last ten years, Kyoto commitment period, to 2050.
Evaluandum: policy substance or policy process?	Do evaluators focus attention on how well policy is performing, quality of policymaking process, or both? (In cases where policy has not had time to take effect, evaluators may concentrate on quality of policymaking process).
Headline objectives/ targets set in sector?	e.g. 20% reduction in emissions by 2010. This question will help identify the gaps between official commitments and what policy is delivering that we need in P2.4.
Type of evaluation	Technical-analytical (programme verification, taking official objectives as given); Discursive (questions official objectives/ problem framing)
Methodology	e.g. cost-benefit analysis, MCA, stakeholder analysis. See Theory and Methods paper for full list.
Main Evaluation criteria	effectiveness (achievement of a particular policy objective, e.g. to

Relationship of report assumptions and findings to attention points	See separate list below for guidance.
Main conclusions, including gaps identified between objectives and actual outcomes	As recorded in the text.
Are political recommendations made?	Yes/ No. If yes, briefly describe.
Further comment, e.g. noticeable omissions?	For example, that an evaluation of climate policy neglects adaptation could be recorded here.

Type of evaluation

Regarding ‘type of evaluation’, it was considered that Fischer’s 4 types were not sufficiently distinct on some matters to be used with consistency by several researchers. Two broad categories were therefore adopted. This does not rule out the possibility of disaggregating evaluations falling under the ‘discursive’ category into more precise categories in time.

Relationship of report assumptions and findings to ‘attention points’

Certain assumptions will have been made by evaluators in constructing their evaluation, which relate to our ‘attention points/ governance dilemmas’. For example, the spatial scale at which effectiveness is considered is one important assumption. We will endeavour to record these assumptions in this section, as well as how the report’s ultimate findings relate to the attention points (despite, in the latter case, the obvious overlap with the ‘conclusions’ section).

1. *Problem perception and objectives:*

- Does evaluation take dominant/ official problem framing as given [Y] or question it [N]? [Y/N plus further brief qualitative comment on problem perception].

NB. this requires us to have a clear view of what dominant policy discourse is. It is possible that we may need advice from experts in member states about which we lack knowledge, if an indication is not given by the report itself

NB. Overlap with *type of evaluation* column.

2. *Levels and scales of policy:*

What institutional and spatial assumptions inform the evaluation?

[requires short qualitative comment, e.g. if policy considered locally/ nationally successful, are implications at other spatial scales considered? This is rather like asking whether side-effects, unintended consequences are considered. If policy action is recommended at other levels (e.g. harmonization at EU level), are advantages, disadvantages considered?]

3. *Instruments and modes of governance:*

Are alternative instruments/ instrument mixes considered? [Y/N]

Are interactions (positive and negative) between policies considered? [Y/N, plus short qualitative comment on which – this will inform task P2.4]

4. *Timing and temporality of policies:*

What assumptions about temporal scale are made? [short qualitative comment]

5. *Implementation and enforcement of policies:*

Is implementation/ enforcement considered [Y/N, followed by a short qualitative comment on what were considered to be the main driving forces or obstacles to effective implementation and enforcement.]

Was any monitoring system put in place at the inception of the policy/ programme for the purposes of subsequent evaluation? [Y/N/unknown]

6. *Costs and benefits:*

Which costs/ benefits are considered? [brief qualitative comments. E.g. costs and benefits to those directly affected, or economy-wide effects? Opportunity costs? – see *Panacea* report, which suggests that even within cost-effectiveness analysis there is considerable variation]

Are costs and benefits monetised?

Is discounting used?

Is attempt made to recommend ‘optimal’ policies? [are reports essentially utilitarian in their orientations?]