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**Goal Formulation and Goal
Achievement in National
Climate Change Policies in
Annex-I Countries**

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Abstract

This paper gives a comprehensive overview on the GHG emission targets and the actual GHG emission developments in industrial countries since 1990. For selected countries, the decision-making processes leading to the voluntary targets and the national discussion about them will be outlined. From the background of these empirical results, we a) try to identify the driving forces behind the setting of voluntary national GHG emission targets; b) discuss the reasons for the almost overall failure to meet the target and c) draw some lessons for future goal setting processes.

Zusammenfassung

Dieser Aufsatz gibt einen umfassenden Überblick sowohl über nationale Ziele zur Begrenzung der Treibhausgasemissionen als auch die gegenwärtigen Emissionsentwicklungen in den entwickelten Industrieländern. Für ausgewählte Länder wird der politische Prozess, der zur Zielsetzung führte, näher beleuchtet. Vor dem Hintergrund dieser empirischen Befunde setzt sich der Aufsatz mit folgenden Fragen auseinander: Was veranlasste nationale Entscheidungsträger freiwillige nationale Ziele zur Begrenzung eines globalen Problems zu setzen? Warum scheiterten die meisten Regierungen, diese Ziele zu erreichen und welche Lehren können daraus für zukünftige Zielsetzungsprozesse gezogen werden?

1 Introduction

During the early 1990s, governments of almost all industrial countries set voluntary targets for national emissions of greenhouse gases (GHG), to be met at the beginning of the new millennium. Unfortunately, hardly any of these targets were or will be met as intended. In 1997, the same governments negotiated in Kyoto new national GHG emission targets, to be met in 2010 (+/- 2 years). Several countries, including the United States, have already officially abandoned their Kyoto goals. Among the remaining countries, there have been increasing doubts whether these targets can be – or even should be – met anymore. Many of these countries are prepared to meet their national targets at least partially with the help of the so-called “Kyoto mechanisms” which allow countries to meet their targets by helping to reduce GHG emissions outside their own national territory. In the meantime, discussions about “post-Kyoto” GHG emission targets have already started.

This paper gives a comprehensive overview on the GHG emission targets and the actual GHG emission developments in industrial countries since 1990. For selected countries, the decision-making processes leading to the voluntary targets and the national discussion about them will be outlined. From the background of these empirical results, we try to address the following questions:

1. Which were the driving forces behind the setting of voluntary national GHG emission targets? Inasmuch were the national developments influenced by the developments in other countries and international discussions, i.e. inasmuch did these targets *diffuse* internationally?
2. What might have been the reasons for the almost complete failure in meeting these targets? In addressing this question, we are not trying to explain the actual GHG emission developments but rather ask: Why did governments systematically choose goals they were either not willing or not able to achieve? Under which circumstances might it be conceivable that the public negotiations of a national goal and its official proclamation by the government helps in achieving the goal (“governance by objectives”, “goals as instruments”) – and what might be the reasons that this has hardly happened in the case of GHG emission reduction?
3. What lessons should be drawn for future goal-setting processes?

In this paper, we use the terms “targets”, “goals” and “objectives” interchangeably. In general, goals and targets do specify the direction of change, desired end-states and or norms to be attained or maintained. The paper specifically discusses targets to reduce total national GHG emissions or national carbon dioxide (CO₂) emissions.

The paper proceeds as follows: In a first step we discuss how national targets can address a global problem and define criteria for the effectiveness of such targets. Characteristic features of the voluntary national targets are described which had been adopted before any international agreement was made. It will be shown that the setting of the initial emission goals follows a pattern of policy diffusion which is described first from a macro perspective pointing to the interplay between international stimuli and the specific national policy response. In the next step, more detailed information is given on the motivations of national policy makers in selected countries.

It will be demonstrated that apart from unilaterally pushing for international cooperation to tackle a serious environmental problem, the interplay between emerging global norms and national responses – ranging from jumping on an international bandwagon to domestic party competition – has to be considered when accounting for the avalanche of national adoptions of quantified emission targets in the early 1990s. Within this section the level of national ambitions and the respective changes will be compared with the level of emissions reached at the end of the 20th century. The paper proceeds with a discussion of the causes of both the almost over-all failure in achieving the targets announced voluntarily as well as the imminent failure in achieving the targets negotiated in Kyoto and within the EU burden sharing. Starting with a more micro-based discussion why goals might matter, we offer several interpretations of failure and the respective recommendations for goal setters. The paper concludes with addressing the relationship between the governance functions of environmental goals and the distinct requirements to their quality which might depend on the stage of the issue evolution. In contrast to the early phase of the climate change evolution process, today, the sheer proclamation of national ambitions might not suffice anymore in order to stimulate other governments to set more ambitious national goals and to intensify their efforts in GHG emission reductions, unless it can be shown that the new goals will be achieved much more likely than the past ones. Only if the national goals regain some of their lost credibility by real achievements, they have a *chance* of being an environmentally effective policy instrument both domestically and in the international realm.

2 Greenhouse Gas Emission Targets and Developments

2.1 National Targets for a Global Problem

At first sight, it is quite obvious that a *national* target seems to be rather inadequate to solve the *global* problem of climate change. But on the other hand, “solving the problem” is too simple at all to judge such policy targets because global warming, like many other problems, is too complex to be solved once and for all (Levy et al. 2001: 88). Therefore, in order to evaluate whether national targets to reduce greenhouse gas emissions do matter as policy instruments, the perspective has to be broadened. Levy et al. suggest that “[t]he merits of goals and strategies can (...) be judged fairly only according to how well they promote more efficient management – the ‘getting on’ with the problem at hand.” (ibid.).

Surely, environmental effectiveness seems to be the ultimate criterion to assess environmental targets: Environmental effectiveness of emission reduction targets is “fundamentally a question of the magnitude of global GHG emission reductions.” (Philibert & Pershing 2001:2). But as far as we intend to assess *national* goals, this criterion is too strict and we assess environmental effectiveness simply as the level of goal achievement, i.e. the difference between the target announced and the domestic emission level achieved.

Of course, this criterion alone would oversimplify the ways targets may matter in policy processes. Marc Levy and colleagues developed some broader criteria for an assessment of the effectiveness of goals in the management of global risks (Levy et al. 2001: 88-89) which we use in a slightly modified way: Thus, national GHG emission targets can be perceived as effective, if,

- at the international level, they stimulate others to follow – i.e. broaden the range of actors and countries actively involved in risk managements efforts (*policy diffusion and regime formation*), eventually resulting in emission reductions in other countries;
- at the domestic level, they prompt and guide the development of policy responses and instruments (*policy evaluation and development of new instruments*) and stimulate non-state actors to collaborate, eventually resulting in domestic emission reductions¹.

From this perspective, the German Environmental Advisory Council argued that even in the case where goals or targets do not result in immediate policy measures, the process of goal setting itself is an asset, as it may ensure political support, induce or sharpen the problem awareness among relevant actors, and assign environmental policy an own profile among competing policy areas (SRU 1998: 11). Nevertheless, the effectiveness of a target in these respects is much more difficult to evaluate than the simple level of goal achievement – in fact, the simplicity of evaluating the level of goal achievement is one of the major reasons for choosing quantified targets in the first place.

2.2 Voluntary national targets and their features

Before the Kyoto protocol was agreed upon in December 1997, many governments had already set voluntary goals for the development of national GHG emissions. A streamlining of national goals is a characteristic feature in this early period of these national target settings. Almost all industrial countries had declared their intention

- either to stabilise emission levels until 2000, mostly referring to 1990 as the base year – this goal was also adopted by a EU Council decision at the end of October 1990, was internationally promoted by the EU since the second World Climate Conference in Geneva in 1990 (Becker et al. 2001; Gupta & Ringius 2001), and was suggested in 1992 by the Framework Convention on Climate Change (FCCC), Art. 4, 2 a) and b);
- or to reduce emissions by 20% until 2005 – in the rest of the paper referred to as “Toronto goal”², because it resembles the most important recommendation which had resulted from the Toronto conference in 1988, i.e. to reduce world CO₂ emissions by this rate until 2005³;
- or both.

Some other countries had adopted quite similar targets: In 1989, the Netherlands declared their intention to stabilize CO₂ emissions until 1995 compared to 1989, followed by more ambitious goals for 2000 in subsequent years (-3-5% CO₂ emissions, set in 1990, and -20-25% GHG emissions, set in 1991); Germany's target, set in 1990, was to reduce CO₂ emissions by 25% until 2005 compared to 1987; the Belgian goal, set in 1991, was to reduce CO₂ emissions by

¹ These criteria are - although slightly modified - adapted from Levy et al. 2001.

² A couple of countries explicitly refer their national target to the Toronto goal. Austria for example even labelled the national target adopted in 1990 by government in its “Energy Report 2000” as “our Toronto Target” similar to the Slovak Republic in its “Energy Strategy and Policy up to the year 2005” in 1992 – that means already before it became an independent state (January 1993).

³ Other recommendations of Toronto's conference final resolution included the reduction of CO₂ and other GHG emissions by 50% until 2050 and an increase in energy efficiency by 10% until 2005. Nevertheless, it should be noted, that the actual Toronto goal of 25% decrease in world emissions would be impossible to achieve, if the industrial countries would not reduce a much greater share of their emissions, because developing countries are not expected to reduce their emissions that strongly.

5% compared to 1990 until 2000; the current British one, set in 1997, was to reduce GHG emissions by 20% until 2010.

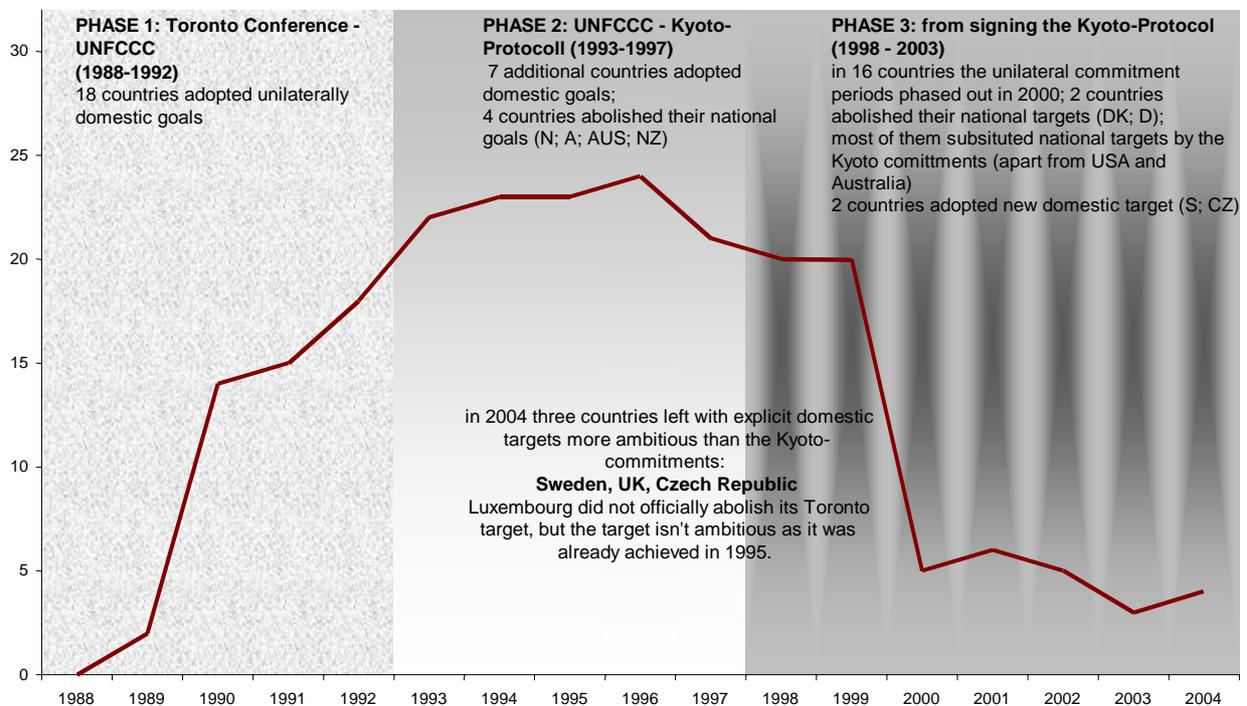
Only some fast-growing and poorer European countries adopted emission targets totally different from stabilisation until 2000 or 20% reduction until 2005 (all for CO₂ and 1990-2000): Spain (in 1992, first +25%, then changed to +15%), Ireland (in 1993, +20%), Greece (in 1995, +15%) and Portugal (1996, +40%). Among the Annex-II countries of the FCCC, only Italy and Turkey have not set any national emission targets (Turkey has not even signed the FCCC).

Thus, it is fair to say, that the voluntary goal setting process before Kyoto focussed almost entirely on the two options mentioned, with very little national variations except for poor countries. But contrary to these pretty similar goals, the development of GHG emissions has differed tremendously among industrial countries, and only very few countries achieved their voluntary goals or are likely to achieve them in the near future (see chapter 2.4).

2.3 Diffusion of voluntary domestic targets

It is not surprising that the process of developing national climate change policies is strongly influenced by international policy developments concerning this global risk. Nevertheless, looking at the pattern of subsequent adoptions of national reduction goals reveals differences in the countries' responses to these international drivers. We can distinguish three stages in the development of an international norm and respectively of national GHG emissions targets (Fig. 1).

Fig. 1: Development of voluntary national targets to reduce greenhouse gas emissions



First period Toronto (1988) – Rio (1992): It is quite interesting to see that a majority of industrialized countries already in this early stage of the international norm building process adopted national targets to reduce greenhouse gas emissions (*example setters and early norm adopters*).

Most of the early mover countries explicitly expressed their ambition to be among the front runners in the process of establishing an international climate change regime. They demonstratively adopted national targets unilaterally to set standards to be followed by others. Especially the Netherlands and Norway demonstrated this type of leadership in international processes which refers to the domestic policy development. This period is characterized by a shift of the key actors: Originally, scientific and NGO networks promoted the issue for at least a decade. But, increasingly, states started to define the rules of the emerging “negotiation game”. They were influenced by domestic interest groups which awoke to the issue by the increasing international and domestic attention it had gained. This phase is framed by a variety of international conferences which established the climate change challenge on the international political agenda. The cornerstones were the Toronto conference in June 1988, the Second World Climate Conference in October/November 1990 in Geneva and the Rio conference in June 1992 where the UNFCCC was signed by 154 countries. In 1990 alone, an avalanche of 12 national adoptions of unilateral emission targets increased the number of countries with domestic goals to 14 (plus Norway and the Netherlands in 1989). By the year 1992, 18 countries had announced voluntary targets.

Second period Rio (1992) – Kyoto (1997): In this phase almost all remaining industrialized countries adopted national targets, mostly as a response to the commitment made by signing the – albeit in this respect non-binding – UNFCCC (*late norm adopters*). This period is characterized by international negotiations to develop an international regime of binding targets and timetables for climate protection.

From 1997 up to now: This period is characterised by a process of abolishing the originally defined national targets and/or their substitution by the negotiated Kyoto commitments. Sporadic unilateral adoption of more ambitious national target in selected countries occurred (*new pushers and example setters*).

Table 1: Development of National GHG Reduction Targets (without Kyoto commitments and EU-burden-sharing)

<i>Country (Annex 1)</i>	<i>Year of adoption</i>	<i>National Reduction Target</i>	<i>Subsequent amendments</i>			
Norway	1989	Stabilization CO ₂ (1989-2000)	1995	abolishment of target		
Netherlands	1989	Stabilization CO ₂ (1989-2000)	1990	Stabilisation (1989-1995); minus 3-5% (1989/90-2000)	1991	minus 20-25% GHG(1989/90-2000)
Denmark	1990	minus 20% CO ₂ (1988-2005)	2002	abolishment of target		
Germany	1990	minus 25-30% CO ₂ (1987-2005)	2003	abolishment of target		
France	1990	Stabilization CO ₂ (1990-2000)				
Japan	1990	Stabilization CO ₂ (1990-2000)				
Canada	1990	Stabilization GHG (1990 – 2000)				
Austria	1990	minus 20% CO ₂ (1988-2005)	1997	abolishment of target		
Switzerland	1990	Stabilization CO ₂ (1990-2000)				
Australia	1990	Stabilization GHG (1988-2000) and minus 20% GHG (1988-2005)	1995-1997	tacit abolishment of target		
Luxembourg	1990	Stabilization CO ₂ (1990-2000) and minus 20% CO ₂ (1990-2005)				
New Zealand	1990	minus 20% CO ₂ (1990-2005)	1993	Stabilization CO ₂ (1990-2000); 20% cut ultimate goal, subject to various conditions	1994-1997	Tacit abolishment of the target
Poland	1990	Stabilization CO ₂ (1988/89-2000)				
United Kingdom	1990	Stabilization CO ₂ (1990-2005)	1995	minus 4-8% CO ₂ (1990-2000)	1997	minus 20% CO ₂ (1990-2010)
Belgium	1991	minus 5% CO ₂ (1990-2000)				
Spain	1992	25% CO ₂ (later 15% due to new projections) (1990-2000)				
Hungary	1992	Stabilization CO ₂ (1985/87-2000)				
Slovakia	1992	minus 20% CO ₂ (1988-2005)	2003	Not mentioned anymore		
Ireland	1993	20%CO ₂ (1990-2000)				
Sweden	1993	Stabilization CO ₂ (1990-2000)	2000	minus 2% GHG (1990-2010)	2001	minus 4 % GHG (1990-2010)
USA	1993	Stabilization GHG (1990-2000)				
Finland	1993	Stabilization CO ₂ (-2000)				
Iceland	1994	Stabilization GHG (1990-2000)				
Greece	1995	15% CO ₂ (1990-2000)				
Portugal	1996	40% CO ₂ (1990-2000)				
Czech Republic	2004	minus 30% CO ₂ (1990-2000/2020)				

2.4 Awareness, competition and bandwagoning – the sources of unilaterally targeting GHG emissions

In this section, we describe the national goal-setting processes in selected countries and compare the level of ambition announced with the level of emissions reached at the end of the 20th century⁴. It will be demonstrated that apart from unilaterally pushing for international cooperation to tackle a serious problem, the jumping on the international bandwagon and domestic party competition were the main sources of unilaterally announcing GHG reduction targets.

Norway

Norway, one of the first two countries to adopt a unilateral CO₂ stabilisation target in 1989, obviously did so in order to increase the credibility of the Norwegian international efforts to push multinational agreements. Norway had a very high reputation at the international environmental scene since the mid 1980s. Gro Harlem Brundtland, Norway's Prime Minister and chair of the World Commission of Environment and Development, not only firmed as the label of the so-called "Brundtland Report" which singled out climate change as a major environmental problem but also was the only head of government attending the Toronto conference apart from the Canadian host. She even called for new international institutions with non-unanimous decision making at the Hague Conference as the only way to manage this global risk. Norway (together with the UNECE) convened the Bergen Conference in 1990.

The Norwegian position changed quite rapidly in autumn 1991. The Norwegian government still maintained that domestic actions are necessary, but it announced its unwillingness to sign any international agreement without the option of joint implementation – a tension which characterized international negotiations from the very beginning (Andresen & Butenschøn 2001; Andresen et al. 2002). The changes in the Norwegian position are attributed to the fact that new domestic actors entered the scene (ibid.). During the initial period when the ambitions were announced, potential economic costs were not discussed. Instead, the environment was one of the most important issues in the elections in 1989: parties overcalled each other in proposing national emission targets. This visionary stage of the early Norwegian climate policy was characterized by defining the global problem as a serious challenge in political terms both internationally and domestically. Yet, little emphasis was put on domestic implications.

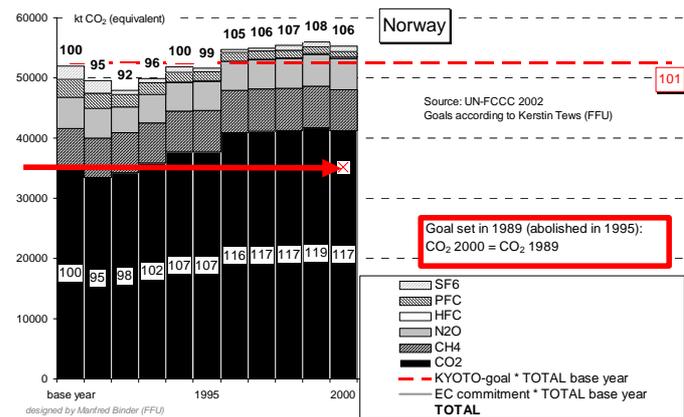
However, shortly after the national goal had been adopted, industry associations, research institutions and politicians started to question it. A new understanding of the Norwegian situation occurred – as a country with few potential for emission reductions in energy industries due to hydropower as the main source of electricity, a large transport sector due to Norway's geography and an already high taxation. It was argued that the cheapest domestic measures had already been taken. Industry brought the "gas argument" into the climate change debate – selling gas in order to replace coal in other countries was perceived to "...do far more to preserve the envi-

⁴ The emission data used in these figures are from the on-line searchable database of GHG inventory data of the UN-FCCC (<http://ghg.unfccc.int/>). Since there are no data available for years before 1990 and for 1990 only for those countries which have not chosen another year for base year, the data for the reported base year (mostly 1990) were used as a proxy for missing data before 1991 in designing the red arrows representing the voluntary national targets. These arrows start in the year when they were first declared (i.e. not necessarily in the respective base year).

ronment than ... domestic actions” (Andresen & Butenschøn 2001). The argument was echoed by the governing Conservatives and their successors, the Labour Party. Key research institutions also put the finger on the high cost of additional domestic measures and voted for joint implementation and tradable quotas (ibid.). This downplaying of the domestic approach became officially visible five years after the announcement of the goal in the Governments White Paper focussing on international measures, as it would be much more costly for Norway to reduce CO₂ emissions than in most other OECD countries.

This gradual dissociation of a national emission target is reflected in the actual development of emissions (Fig. 2): During the first half of the 1990s, Norway faced a tremendous increase in emissions which came to a halt but not a reverse in the second half, resulting in 17% CO₂ emissions increase during the decade. Relatively early – in 1995 – the national stabilisation target was openly abolished as “it was not possible to plan a policy that will ensure stabilisation of our total CO₂-emissions by 2000” (Government Report to the Storting Stortingsmelding No. 41, quoted in Andresen & Butenschøn 2001: 340).

Fig. 2: GHG emissions/targets in Norway



The Netherlands

In 1989, the Netherlands adopted the target to stabilise CO₂ emissions by the year 2000 within its first National Environmental Policy Plan (NEPP). One year later the government extended its target. It announced to reach the stabilisation target already in 1995 and to reduce CO₂ emission to 3-5% below 1989 levels by the year 2000 (NEPP-Plus). Similar to Norway and Canada, it was quite active in organising scientific and political meetings to put the issue on the international political agenda. In 1989 for example, the Dutch Government (together with the Norwegian and French Governments) organised the already mentioned The-Hague-Conference and later that year the Noordwijk Ministerial Conference. Both are perceived as crucial in the international agenda-building of climate change (Andersson & Mol 2002). In documents prepared for the international audience, the Netherlands were keen on pronouncing that “the Netherlands’ climate change policy had been already established before the FCCC was signed in 1992” (Second NC: 2).

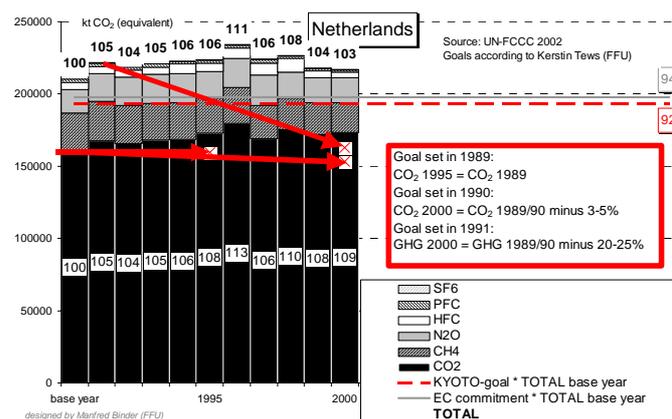
According to IEA sources, an even more ambitious “additional target to reduce emissions of all greenhouse gases by 20-25% by the year 2000 – on a CO₂ equivalent basis – from their 1988/89 levels [was] set out in a white paper on climate policy forwarded to parliament in September 1991 by the Minister of Housing, Physical Planning and Environment” (IEA 1994: 117). This target has not been mentioned anymore.

In contrast, the domestic targets set out in the NEPP-plus were re-announced several times as for example in the second NEPP from 1993. However, already in 1995 the Netherlands started to water down its ambitions concerning CO₂-emission reductions. In the so called “CO₂-letter”

sent by the VROM (Ministry of Housing, Spatial Planning and Environment) to the parliament, the CO₂-goal for 2000 was lowered to minus 3%. In a follow-up policy document on climate change issued in the same year, this goal was formulated slightly differently as aiming at a post-2000 stabilisation at minus 3% compared to 1990. In 1999, the domestic goal was finally substituted by the EU-burden-sharing commitment to reduce greenhouse gases by 6% in 2008/12 compared to the 1990 level (Minnesma 2003: 47pp). Additionally, it was claimed to realise half of the reduction domestically and the rest of it abroad by using the Kyoto-mechanisms.

In fact, emissions were not stable in the early 1990s but increased and did also not decline afterwards when they were supposed to (Fig. 3). GHG emissions have decreased slightly since 1996, yet hardly so because of CO₂ but of CH₄ and N₂O emission decreases. In 2002, the VROM openly stated that even the watered-down domestic targets were not met: CO₂-emission had risen by 8% compared to 1990 levels (according to Minnesma 2003: 48), reportedly due to the highest economic growth compared to its European neighbour countries, but also to climate policy failure (ibid.).

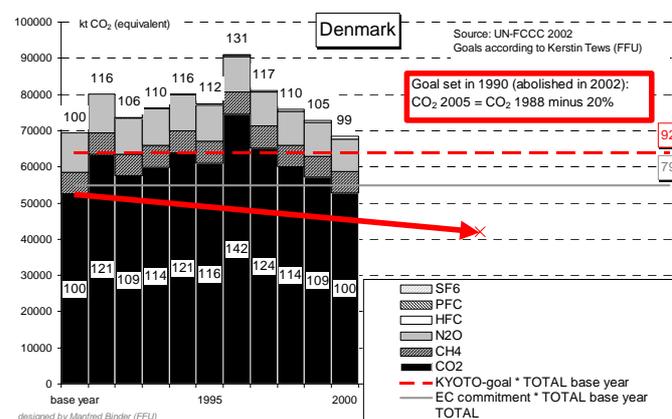
Fig. 3: GHG emissions/targets in the Netherlands



Denmark

In Denmark, the Brundtland Report and the Toronto Conference stimulated a parliamentary discussion on sustainable development. Parliament and Government decided that there should be sector strategies for sustainable development. In 1990, the Danish Government adopted national action plans on transport and on energy with specific targets for the energy industries (-28% CO₂) and the transport sector (stabilisation) whose combined effects and timeframe correspond to the Toronto target of -20% CO₂ (1988-2005). The national target was approved by parliament. This goal was valid until a new government took over in November 2001. By then, major climate policy decisions had been made by a “green majority” in the parliament (1987-1993) and by governments led by the Social Democratic Party (1993-2001).

Fig. 4: GHG emissions/targets in Denmark



Denmark is the only industrial country which managed to reverse a trend of increasing emissions substantially (Fig. 4). Therefore, the Toronto goal eventually looked achievable. However, climate change and environmental policy changed dramatically in Denmark under the new liberal government since 2001, which couldn't be balanced by the parliament – there was no

longer a “green majority”. The new government gave up the CO₂ target of minus 20% by 2005 compared to 1988, cut away most of the support for renewable energy sources, reduced energy taxation for the commercial sector etc. (Boye Olesen 2003: 160).

Denmark now pursues the Kyoto target negotiated within the EU-burden-sharing (minus 21% GHG) and is increasingly inclined to use flexible mechanisms to buy emission credits abroad. It combines this new direction in climate policy with insisting on its previous front-runner policy and early actions: “The latest calculations indicate that only relatively few national policies and measures with a significant potential that do not exceed DKK 120/tonne CO₂ equivalent⁵ would be able to compete with the price of flexible mechanisms. This must also be seen in the light of the fact that Denmark has already done a great deal nationally up through the 1990s, while there is a large, unexploited potential in other countries.” (Third NC 2003: 17).

Germany

Germany did already in 1987 establish a parliamentary Enquete Commission on “Preventive Measures to Protect the Earth’s Atmosphere” (“Vorsorge zum Schutz der Erdatmosphäre”). The Commission took the Toronto goal as a reasonable starting point in assessing the feasibility and the impacts of a national target in Germany (Levy et al. 2001: 100). Based on the commission’s recommendations, a national target was adopted by a cabinet resolution under a Christian democrats’ government on June 13th 1990. It aimed at a 25-30% reduction of CO₂ emissions until 2005 compared to 1987⁶ levels for the old “Bundesländer”. Immediately afterwards, the government appointed an inter-ministerial working group “CO₂-reduction” and on November the 7th 1990 the government adopted its first CO₂-reduction program (first report of the inter-ministerial working group “CO₂ reduction”) as the core of the German climate change strategy.

Thus, Germany adopted the most ambitious national target. On the one hand, the Kohl government wanted internationally to keep pace with other leader countries in the climate change process. Domestically, the climate issue and the German front runner role was perceived as a promising issue in the election campaign as the climate change threat gained a lot of public attention. Behind the doors the 25% goal wasn’t unanimously shared. Whereas the ministry for the Environment pushed for this political target and the measures to achieve it, the Ministry of Economics was more reluctant to a binding quota for emission reductions and stressed the costs and prospective losses in national competitiveness and growth. These conflicts over goals are perceived to be responsible for the weakness of the first CO₂-reduction program presented by the inter-ministerial working group in November 1990. It was criticised for failing with respect to concrete measures compared with e.g. the action program recommended by the Enquete Commission (Wille 1990). Consequently, the Government reduced its level of national ambitions due to these conflicts. In a Cabinet’s Resolution from December 1991, the target was confirmed but now related to the whole area, the older and the new *Bundesländer*, i.e. the former GDR (Loske 1996:285). Herewith, the case of Germany already indicates that the level of domestic policy ambition not necessarily corresponds to an equally high level of national implementation due to conflicting goals and ambitions. Obviously, those who advocate more ambitious policies have advantages to push them domestically through when internationally the issue ranks very

⁵ Economic benchmark for cost effective national measures set by the Danish Government (3. NC 2003:17).

⁶ Later, 1990 was defined as base year.

prominently. Yet, the facilitating function of those international stimuli seems to be restricted to the formulation of goals, the decision on concrete policies is framed more by the domestic constellation of interests. However, the very clear signal to set this ambitious target given by Chancellor Kohl and it's Cabinet in June 1990 has been characterized apart from the Dutch and Danish front runner ambitions and efforts as one central driver for the EU council decision at the end of October 1990 to formulate the common stabilisation target of CO₂ by 2000 at the level of 1990 (Loske 1996).

At first glance, the German goal looks feasible given the decline in emissions by 15% in 2000 compared to 1990, i.e. after two thirds time until 2005 (Fig. 5). But the reduction rates have slowed down remarkably after the first three years following re-unification. Germany's CO₂ balance benefited enormously from the decline of the socialist system resulting in economic structural change in the new *Bundesländer*, which had not even been analysed by the Enquete Commission in calculating a reasonable national target.

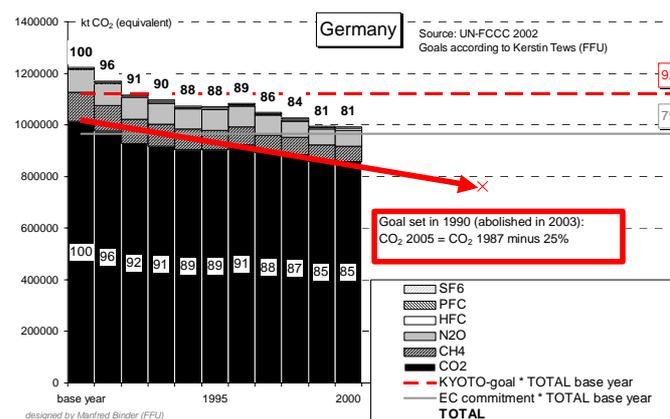
In October 2003, the German Government took leave of the national CO₂-reduction goal. The red-green government was forced by opposition parliamentarians by the means of a "kleine Anfrage" (Drs. 15/1542) to officially announce the abolishment of the 25% reduction goal. Already in June 2003, parliamentarians from CDU/CSU complained that the red-green government had tacitly taken leave of the national CO₂-reduction target and oriented itself at the much less ambitious obligation under the European burden-sharing. Yet, the goal defined by the Kohl-government in 1990 had been frequently confirmed by the red-green government not only in the coalition agreement of 1998 and 2002 but also in the national climate change programme of 2000.

The abolishment of the target did not gain a lot attention in the public. Hardly a handful of newspapers - most from the more leftist spectrum - mentioned it with some critical comments (e.g. Frankfurter Rundschau, TAZ, Neues Deutschland). In contrast, scientists had warned that the measures undertaken so far, will not suffice to meet the goal (Ziesing 2002).

United Kingdom

In contrast to most other countries the United Kingdom successively sharpened its national reduction target. Already in Mai 1990, Premier Thatcher announced the target to stabilise CO₂-emissions at the 1990 level by the year 2005 (Michaelowa 2000). Before the Rio-conference in April 1992, the government brought forward its previous target and, provided other countries took similar action, set itself the target of returning CO₂ emissions to 1990 levels by 2000 (IEA 1992: 112).

Fig. 5: GHG emissions/targets in Germany



In 1995 new emission projections allowed for a more stringent target to reduce CO₂-emissions of about 4-8% by 2000, which was essentially again a stabilisation target, now for the second half of the decade. In 1997 the new Prime Minister Tony Blair announced a new national target to reduce CO₂-emissions by 20% in 2010 compared to 1990 levels, reflecting the decreasing trend which had started five years before (Fig. 6). Nevertheless, the targets accepted in Kyoto (92%) and in the following year with the EU burden sharing scheme (87,5%) were much more cautious than the voluntary goal and were already met two years later. The government claims, that the unilateral domestic target is far from being only a reflection of the expected reductions by the business as usual development, but instead an ambitious target as it corresponds to a higher than expected reduction, which is estimated at 15.3% in 2010 (UK Draft National Allocation Plan).⁷

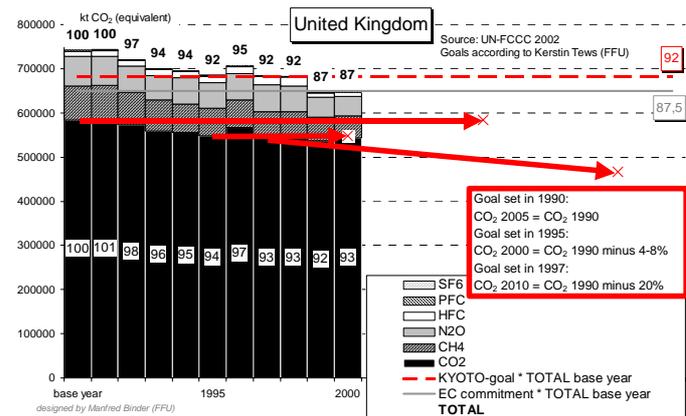
Yet, the main reason for the decline so far has been the “dash for gas”, i.e. the switch from coal to less carbon-intensive natural gas as fuel in the production of electricity: This was not a result of unexceptionally ambitious climate change policies, but of the privatisation and de-regulation of the energy industries, which were done for other reasons, and the easy availability of natural gas from the North Sea.

Sweden

In its Government Bill on the Swedish Climate Strategy, adopted in 2001, the government claims “Sweden is a pioneer in the field of climate policy. A Climate Strategy was already formulated in the energy and climate policy resolution in 1991. Also in that year, Sweden introduced the world’s first really effective carbon dioxide tax” (Summary Gov. Bill 2001/02:55: 16)⁸. However, it was not until the Swedish Riksdag ratified the Climate Convention in 1993 that a Government Bill on Actions to limit Climate Change set a national CO₂-stabilisation target (1990-2000) (First NC 1994). In contrast to most of the other countries, policy measures as for example the CO₂-tax had been adopted *before* national emission reduction targets were proclaimed.

The first National Communication to the UNFCCC strongly focussed on international measures to cope with goal achievement: “In Sweden marginal cost for further reduction of carbon dioxide emissions is high, compared to most OECD countries. As part of our national programme we have taken initiatives in the Baltic countries and Eastern Europe in order to finance measures in the field of renewable energy, energy management and certain supportive measures. The pos-

Fig. 6: GHG emissions/targets in Great Britain



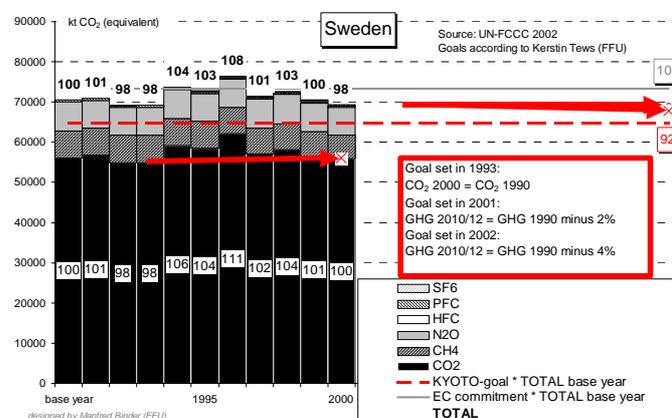
⁷ “The latest provisional projections of UK CO₂ emissions suggest that, taking into account the impact of the measures set out in the UK Climate Change Programme which have already been implemented or for which firm plans are already in place (referred to as the ‘with CCP’ projections), total UK emissions of CO₂ in 2010 will be around 512.4 Mt CO₂ (139.75 MtC) (a reduction of 15.3% from 1990 levels).” (UK DRAFT NATIONAL ALLOCATION PLAN FOR 2005-2007, January 2004, page 4).

⁸ Finland was the first country to introduce a carbon tax in 1989. Norway and Sweden both adopted energy/carbon taxes in 1991.

sibilities for joint implementation or similar policy measures are of great importance for Sweden” (1. NC 1994: 11). Within the EU-burden-sharing to implement the Kyoto-commitment Sweden committed to prevent greenhouse gas emissions from exceeding 1990 levels by more than 4%. A parliamentary commission for measures against climate change, appointed by the government in May 1998, proposed a draft Swedish Climate Strategy in 2000 aiming at a reduction of greenhouse gas emission by the year 2010 by 2%. This target should be realised domestically for example by additional energy taxation measures. Another parliamentary commission established at the same time was charged with examining the potential application of the Kyoto mechanisms in Sweden. This commission came to quite contrary conclusions culminating in the recommendation to replace “the current carbon taxation system ... entirely with an emission trading scheme integrated with those of other countries.” (for more details see: Hodes & Johnson Francis X 2002).

Among the rather late adopters of a stabilisation goal, Sweden (Fig. 7) showed CO₂ emission levels in 2000 roughly the same as in 1990. In November 2001, the Swedish government presented the Government Bill of The Swedish Climate Strategy based on recommendations of the Climate Change Commission, and it even aimed to reduce GHG emission by 4% in 2010 compared to 1990 levels. Most strikingly and in contrast to the announcements of previous Swedish governments

Fig. 7: GHG emissions/targets in Sweden



and the recommendations of the Parliamentary Commission on Flexible Mechanisms, the Bill states: “This aim is to be achieved without any compensation for uptake in carbon sinks or by the use of Flexible Mechanisms” (Summary Gov. Bill 2001/02:55: 2). It legitimates this “substantial unilateral commitment” (ibid.) in the following manner: “Other countries have also announced stricter targets than they are legally committed to under the Kyoto protocol and the agreement within the EU” (ibid.). Progress on targets will be evaluated in 2004 where adjustments will be made as needed, including the utilisation of the flexible mechanisms.

Critical voices in Sweden do criticize this approach as legislation which reflects a “...political driven domestic agenda” which “appears short-sighted and seems unlikely to be sustainable or desirable” as the trends do suggest that achieving the target would be difficult and costly by domestic measures alone (Hodes & Johnson Francis X 2002: 62). Others add that the Swedish unilateralism is not only costly but also ineffective for a small country as it sets incentives to other countries “to utilize the ‘room’ created by Sweden’s voluntary decision to abstain from a certain amount of carbon emissions granted by the Kyoto protocol” (Hill & Kriström 2002b: 21)⁹.

⁹ This argumentation reflects the classical argument that unilateral action to address a problem of common goods would reduce marginal benefits of actions of the others – or in other words – induce free rider behaviour (see for example Hoel 1991; Hill & Kriström 2002a).

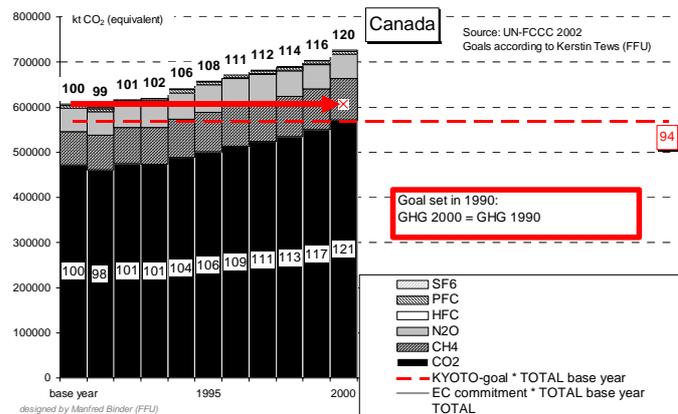
It is interestingly to note that within this early group of industrialized countries which committed themselves unilaterally to domestic reduction targets without being forced by any international obligation, there are even countries which in the subsequent stages of the regime formation process strongly opposed the domestic approach pushed by the EU. Already during the international negotiations which led to the Kyoto protocol, they rather favoured the utilisation of JI-measures and other flexible mechanisms to buy emission credits abroad as well as the inclusion of sinks – for example Norway, Australia, Canada, Japan and New Zealand, all members of the informal JUSCANZ group led by the USA.

Canada

Canada was an early pusher for a multi-lateral management of the climate change issue. While Canadian scientific research in atmospheric issues including global warming had developed rapidly since the 1950s, their warnings and recommendations gained only little public and political interest at the domestic level until the late 1970s. In contrast, Canadian scientists or scientifically trained officials were active in pushing WMO activities to advance the climate change agenda internationally – e.g. as organizers of the First World Climate Conference in Geneva 1979 convened by the WMO and as chair of the subsequent Villach Conference in 1980. Governmental bodies were also involved in these initial efforts as for example the Atmospheric Environment Service (AES) as a part of the environment ministry headed by an assistant deputy minister responsible for all research concerning atmospheric issues. Following a suggestion of the AES, in the mid-1980s the Canadian Environment Minister announced to host a major conference on global atmospheric change. The Toronto Conference which took place in June 1988 originally intended to consider several forms of atmospheric change but became dominated by the climate change issue, mainly due to the situational factor of an extreme drought and heat wave at the North American continent in this summer. Though not an official international conference, additionally to scientists and NGOs also representatives of about a dozen governments attended. The signal effect of the target recommended in the final conference statement have been already mentioned. In Canada, it marked a starting point of increasing political attention. In late 1988, the energy minister formed a task force to review the Toronto target and commissioned a study to assess the cost of meeting it. While a preliminary draft of this study suggested that the Toronto target would be achievable even with net savings, the revised official study later found substantial costs (Parson et al. 2001:242). By pointing to the costs estimated in the revised study, Canada at that time deferred to adopt a national reduction target. Only a couple of months later the Canadian environment minister announced at the Bergen conference in May 1990 that Canada would stabilize CO₂ emissions by 2000 at current levels.

According to observers, this announcement was made in order to destroy rumours that Canada would support the US position in opposing the European fixed target and timetable approach

Fig. 8: GHG emissions/targets in Canada



(Parson et al. 2001: 246). The subsequent environment minister had to develop a more sophisticated position during intense and conflictual consultations and a draft of the National Action Strategy on Global Warming was released by the Canadian Council of Ministers of the Environment in November 1990 for Geneva Second World Climate Conference. At this conference, the environment minister committed Canada to stabilize emissions of all GHG at 1988 levels by 2000. In the draft action plan the stabilization target was added by four principles which should guide further greenhouse gas commitments including that Canada would not act unilaterally and commitments must be comprehensive across all GHG and sinks. The official comprehensive environment strategy, the "Green Plan" released later in December 1990, restated the stabilisation target of GHG and explicitly referred emission reductions to net emissions reductions (i.e. including the effects of sinks), which according to the projections then were estimated to be nearly zero (Parson et al: 2000 footnote 56). Both of these amendments to the initial announcement made at the Bergen Conference, which was a much more environmentally aggressive position than that of the USA, exhibit similarities to the so called comprehensive approach favoured by the US government (Fisher-Vanden 1997). Nevertheless, Canada missed its stabilisation target by a wide margin with no change in trend in sight (Fig. 8).

Japan

Japan was a latecomer in addressing global environmental risk. This seems to be quite surprising as Japan was one of the most successful countries implementing air pollution control measures and improving energy efficiency (Schreurs 2001). It was not until the late 1980s that the global risk of climate change gained more attention among Japanese scientists, the NGO community and politicians. In most of the other countries non-state actors as scientists and NGOs were the main actors in pushing for political responses to the growing threat of climate change. Not so in Japan. In part this is explained by the overwhelming improvements in the quality of the environment pressured by citizen organisations, and local governments which were achieved by the national government in the 1970s and 1980s. Yet, the globalization of these transboundary environmental issues reanimated Japanese environment movement and stimulated politicians to respond – not only for environmental reasons. The greening of politicians was mainly forced by political considerations that global environmental issues might become the suitable area to play a more active role in international relations (Schreurs 2001: 201).

Consequently, a domestic system was gradually established: in May 1989, the Council of Ministers for Global Environment Conservation was established. In July 1989, the Director General of the Environment Agency was appointed by the Prime Minister as minister in charge of global environmental issues against strong opposition of the Ministry for International Trade and Industry and the Ministry of Foreign Affairs.

The Noordwijk ministerial conference in 1989, where Japan still resisted an international CO₂ stabilization target together with the USA, the Soviet Union and China, introduced the plan for a second World Climate Conference to be held on October 1990 in Geneva. It was quite clear that Japan had to present a kind of plan how to deal with climate change. The domestic debate on response options was mainly shaped by the Ministry of International Trade and Industry (MITI) and the Environment Agency. Whereas the latter backed the idea of a stabilisation target, as it was demanded by the EU, the former rejected such a fixed short term target for economic con-

siderations and for concerns related to the divergent positions regarding the stabilisation target between the EU and the USA. Yet, the compromise between the divergent positions within Japanese government became possible only because the Environment Agency was supported by other important ministries as for example the Ministry of Foreign Affairs and the governing party. The Liberal Democrats were keen on having a CO₂ stabilisation target to bring to Geneva (Schreurs 2001: 203). Hence, one week before the Geneva conference on 23 October 1990 the Japanese Council of Ministers adopted the Action Program to Arrest Global Warming. This Program bundled the divergent positions on the fixed-target approach as it stated two goals: first, to stabilize per capita emissions of CO₂ at the 1990 level in 2000 (MITI position) and, second, to undertake efforts to stabilize total amount of CO₂ roughly at the 1990 level in 2000 (Environment Agency position) (IEA 1992: 78; Schreurs 2001: 203).

Although Japan already in the beginning of the 1990s favoured Joint Implementation measures it still intended to focus on domestic abatement measures at that time: “Japan (...) does not intend to include emission reductions from joint implementation in the calculation of total greenhouse gas emissions under current commitments.” (IEA 1994: 108).

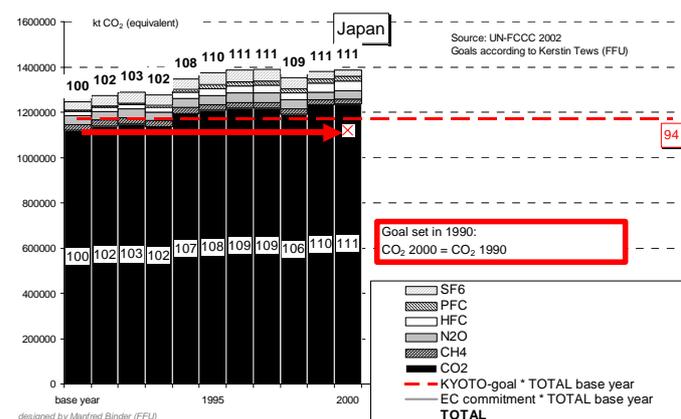
In following the successful course of action of the 1970 air pollution policies which made Japan the world’s most energy efficient country and leading producer of pollution control technology, the government defined the climate change challenge mainly as one of technology development. It began to demonstrate internationally the desire to become a leader in technology efforts to address global warming. Yet, it became clear that even with its strong technological capabilities emissions would rise and it would be difficult to meet the domestic stabilisation target.

Thus, in its first Communication to the UNFCCC the Environment Agency stated that the second part of the domestic target – the stabilisation of total amount of CO₂ – would require additional measures. The in-depth-review of the first communication even stated that Japan would have problems to even meet the per capita stabilisation target. Nevertheless, Japan did not officially abolish its target, although the problems to meet it were repeatedly mentioned and emissions proceeded to grow (Fig. 9).

Australia

Australia adopted a national interim planning target on 11 October in 1990, just before the second World Climate Conference (29.10.-07.11.1990). This target committed the government to stabilise Greenhouse gas emission to 1988 levels by 2000 and to reduce these emissions by 20% until 2005. Yet, the target was added by the caveat that no measures will be adopted which have negative impacts on national competitiveness (IEA 1992: 37). This policy caveat reflects contradictory policy goals already obvious at that time. In the early 1980s – shortly before Australian scientists gained more public and political attention for their warnings concerning cli-

Fig. 9: GHG emissions/targets in Japan

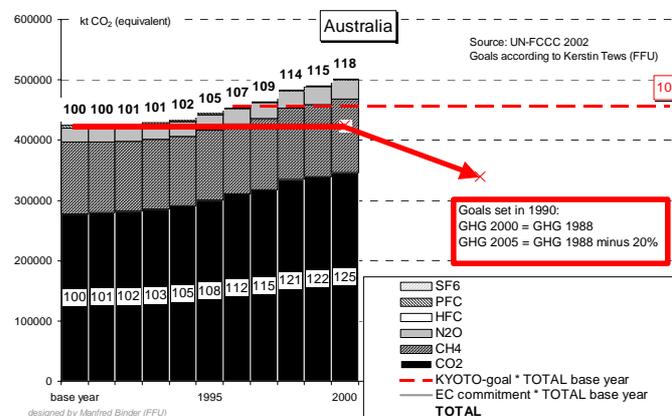


mate change and issue related institutions were set up at state and federal government level – large state government investments in coal power plants contributed e.g. to a more than four-fold increase in aluminium production (Hoerner & Muller 1996).

Australia with its very energy intensive economy and being the world's largest exporter of coal and third largest of aluminium seemed to be a very unlikely early adopter of ambitious national reduction targets. However, it did – due to the international momentum combined with increased credibility of concerns expressed by the domestic scientific and NGO-community (Bulkeley 2000: 38). Nevertheless, government failed to implement measures foreseen in the National Greenhouse Response strategy (1992).

In 1994 it became clear that Australia would not achieve any national or international commitments publicly made¹⁰. Thus, the Federal Government adopted a more hesitant and cautious attitude in the international negotiation process and aligned itself with the JUSCAANZ group, opposing further domestic commitments (Taplin & Yu X. 2000). At the domestic level in 1996 a new government took power, which immediately “wound back or abolished several of the already meagre federal programs aimed at reducing emission.” (Hamilton 2000a: 67). Among the few countries which adopted both goals, Australia (Fig. 10) showed the most disappointing results in achieving the goals. Emissions have grown with an increasing pace, resulting in 18% higher GHG and 25% higher CO₂ levels by the end of the decade. Incidentally, the emission target which Australia accepted in Kyoto (+8% compared to 1990) was a kind of stabilisation goal, but now with 1997 as base year, the year of the Kyoto protocol, when Australian GHG emissions had already grown by 8% compared to 1990.

Fig. 10: GHG emissions/targets in Australia



New Zealand

New Zealand's climate policy formation process started in 1988 with the establishment of New Zealand's Climate Change Program – a framework comprising four expert working groups (facts on climate change, impacts, policy response and Maori matters) coordinated by the visionary and entrepreneurial Environmental Minister, Geoffrey Palmer. Climate awareness was mainly pushed by New Zealand's scientific community which was strongly cooperating with Australian scientists (Basher 2000; Hamilton 2000b). On the other hand international norm pressure to respond nationally to a high ranking global issue gave impetus to express national willingness. Similar to Japan and Australia, New Zealand's target was announced by both the governing Labour and the opposing National Party shortly before the Second World Climate Conference in 1990. Prior to the government's election in October 1990, the National Party was even forced by environmentalists to follow suit the example of the governing Labour Party and to adopt a target. They argued that “government officials would be attending the Ministerial level international meeting...[starting two days after election] without a climate policy should the National party

¹⁰ Critical discussion on reasons for failure see Hamilton 2000a; Diesendorf 2000.

come to power. Accordingly, it too adopted a 20% reduction target ...” (Hamilton 2000b: 147). Thus, domestic scientific studies and increased public concerns¹¹, international momentum and party competition brought about the consensual national target to cut CO₂ by 20% by 2005.

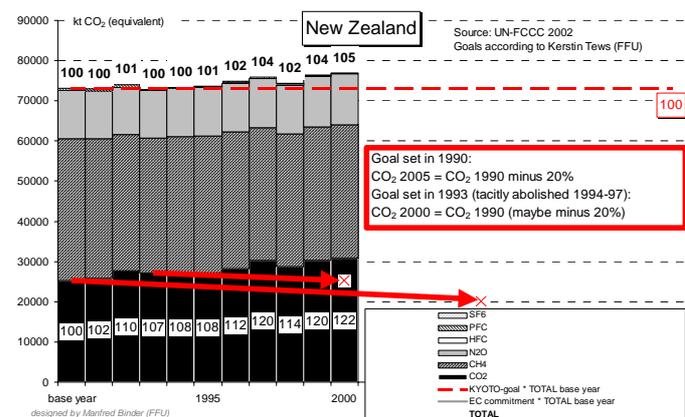
Since New Zealand is one of the very few OECD countries where energy intensity increased markedly in the 1980s and early 1990s and where conditions for producing energy from renewables are favourable, many scientist and environmentalists hoped that the aim was achievable or even not ambitious enough, especially due to the feasibility of no regret measures in increasing energy efficiency. However already in 1991, first doubts about the willingness of the government to reach the target arose. In the CO₂-Reduction Plan adopted in July 1992 only few concrete actions were included. The disclosure of interdepartmental correspondence revealed that the Treasury blocked the funding of further climate change measure (Hamilton 2000b: 153). A power crisis in 1992 forced New Zealand’s energy consumers to cut down on energy consumption what induced the main state-owned Energy Company to complain to the Ministry about the adversely effects on the corporation’s revenues (ibid.). The Parliamentary Commissioner for Environment conducted a comprehensive study with recommendations for energy restructuring and efficiency improvements – the report was ignored by the Energy Minister. A “low Level Carbon Charge” was proposed in 1994 within a package of climate change measures. The proposal failed not only due to resistance from industry but also to strong opposition from within government. Policy decisions to build new gas power plants were estimated to increase emissions additional to the projected increases in a business as usual scenario. These decisions were legitimated by utilizing the net emission approach – meaning the inclusion of sinks – which would allow the achievement of the stabilisation goal.

At Kyoto, New Zealand was strongly opposing any commitment without the inclusion of sinks and finally was granted a zero reduction target. The dominating government’s ideology concerning climate change policy from 1994 at the latest, proclaimed a “minimal inference in the market” and “if actions are required only with the total lowest cost to society” (Gillespie 2000).

Among the countries which have tried to meet the Toronto goal of a 20% decrease in CO₂ emissions by 2005, New Zealand (Fig. 11) fared worst with a 22% increase by 2000 and no change in trend in sight. A target restricted on CO₂ emissions does not make much sense in New Zealand anyhow, because it is the only country where CO₂ is responsible for less than half of total GHG emissions.

One of the core problem as stated by scientists, that the response options of “increased energy efficiencies and renewable technology ... remain fundamentally restrained by an overall pricing system which makes nearly all forms of NZ’s energy comparatively cheap”

Fig. 11: GHG emissions/targets in New Zealand



¹¹ Not at least influenced by the indigenous Maori having close linkages to the South Pacific neighbours – making New Zealand sensitive against the concerns of the Small Island States (Basher 2000:136) .

(Gillespie 2000: 185) wasn't approached by the government due to a lack of political will in market intervention and the failure of environmentalists to use policy windows during the energy crisis in 1992 to mobilise support among the society. It is unclear, whether New Zealand's government has officially abolished the domestic target. However, in 1993 the cabinet adopted the less ambitious stabilisation target and redefined the 20% cut of CO₂ until 2005 as the ultimate objective, *subject to various conditions*. At the Kyoto negotiation at the latest, the domestic target can be perceived as tacitly abandoned by government.

USA

Despite early efforts and a dominance in climate change research and assessment, the United States have been relatively hesitant in taking political actions. Efforts to coordinate national climate research programs started already under the Carter Administration in the 1970s and prompted the adoption of the National Climate Program Act in 1978, which increased the level of research funding and established the National Climate Program Office which was in charge with organising all federally-funded climate research (Fisher-Vanden 1997). Under the Reagan Administration the situation changed, previous federal decisions on research funding were perceived to be too excessive. Policy climate changed to an already existing national trend towards more conservative views – including the desire for less government and for industry deregulation (ibid.). The level of certainty concerning the climate problem was perceived by key politicians as too vague to move the issue further and to develop policy options. The discovery of the ozone hole, the increasing international policy response to these atmospheric global risks combined with a severe drought and heat waves in summer 1988 alarmed not only the American public but also the U.S. government. Presidential Candidate George Bush promised the nation in the election campaign to bring a "White House effect" to bear in the battle against global warming. As president he even called at international meetings for common efforts to limit emissions and to create a framework convention on climate change (Clark & Dickson 2001: 270).

These and further announcements finally awoke industrial and business interests to the issue they had ignored so far. They formed associations to prevent "uneconomic climate legislation" and criticized the scientific basis of anthropogenic climate change. They found open ears in the White House: In an effort to explore other options, the Bush Administration requested the Department of Justice (DOJ) to propose recommendations on the type of climate policy it should advocate. In 1991 the DOJ presented the Comprehensive Approach to Addressing Potential Climate Change. Specific features of this approach were that no specific policy actions were recommended, instead a bottom-up approach of no regret measures was proposed, what was in conflict with the approach chosen by most of the other countries (top-down in favour of targets and timetables); all greenhouse gases and all sources and sinks had to be considered when deciding policies; and the idea of establishing a tradable permit market to achieve lower cost emission reductions was promoted (Fisher-Vanden 1997). This approach to refuse any commitment to specific targets and timetables became the official American position at negotiations for the Climate Convention.

Although concerned as well about the political and economic cost, the Clinton administration was more ambitious with reducing emissions domestically. Yet, it was concerned about the political willingness to commit to actions. Shortly after taking office, Clinton proposed an energy

tax (BTU-tax) to find synergies between his own policy goal to reduce federal deficit and Vice president Gore’s environment agenda. It was perceived as a kind of testing the public’s willingness to bear climate actions (Fisher-Vanden 1997). According to some observers they failed, mainly due to the concessions they made too early to the opposing business, which did not soften the political restrictions to adopt the tax, but instead made business lobbying even more demanding and aggressive. Political mismanagement to mobilize a supportive actor coalition both among pro-environmental senators and the environmental NGOs may have caused the failure of this proposal (Hoerner & Muller 1996). Furthermore, a political climate characterised by the public’s animosity against state intervention and taxes in general has hampered fiscal measures like that (Fisher-Vanden 1997).

In 1993, the Clinton Administration adopted its Climate Change Action Plan and submitted it as required under the UNFCCC (article 4) to the secretariat. It mainly contained the extension of existing programs and voluntary measures undertaken by US business. The plan aimed at stabilizing GHG emissions at 1990 levels by 2000 and the US claim to “achieve its target for the year 2000 with domestic measures alone, but has not excluded the possibility that some joint implementation projects could be considered in meeting the domestic commitments if it later appears that the target will not be met.” (IEA 2004: 175). The climate change issue disappeared quite quickly from the political agenda. It began to peak again as the climate regime approached the negotiations for a binding protocol. Due to concessions mainly made by the EU – concerning the incorporation of six (instead of three) greenhouse gases, the inclusion of sinks, the use of multi-year instead of single-year targets, the incorporation of the flexible mechanisms and the EU’s renunciation to cap the use of them – enabled the US – previously strongly opposing to binding targets and timetables – to sign the protocol and commit to cut emissions by 7%. The US are perceived to be the most decisive player in shaping the protocol (Agrawala & Andresen 2001; Hovi et al.

Fig. 12: GHG emissions/targets in the USA

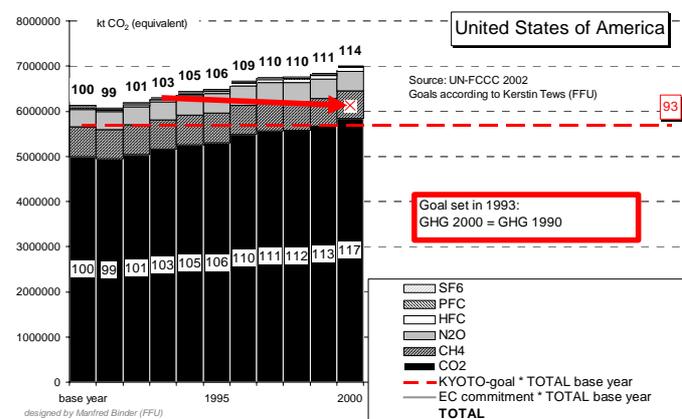


Fig. 13: GHG emissions/targets in Luxembourg

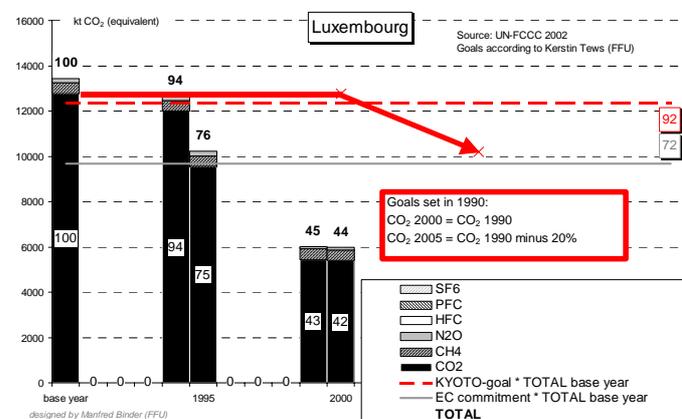
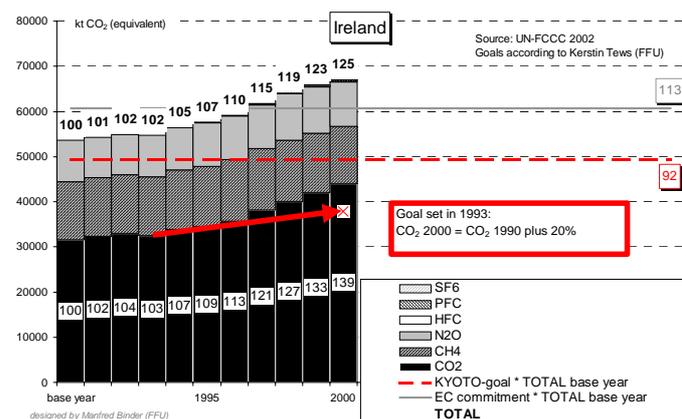


Fig. 14: GHG emissions/targets in Finland



2003). Yet, in 2001 President Bush Jr., who in the election campaign in September 2000 still tried to outgun his environmental opponent Gore with the announcement that he would regulate carbon dioxide instead of only proposing voluntary measures, rejected a ratification of the Kyoto Protocol with the statement that he would not accept any plan that will harm the national economy and workers welfare.¹² During all these debates in the 1990s, emissions have risen continually (Fig. 12), GHG by 14% and CO₂ by 17%. If the USA would ratify the Kyoto protocol now and would try to achieve its goal with domestic measures alone, a reduction in emissions by some 20% of the current level would be necessary in the remaining few years.

Further Annex I countries

Only Australia and Luxembourg adopted both the Toronto and the stabilisation goal, Australia for GHG, Luxembourg for CO₂ emissions. But the development in Luxembourg was completely different from the one in Australia, with a cut in GHG emissions by more than half (Fig. 13). During the 1990s, the last blast-furnaces as well as major electricity-producing facilities in Luxembourg were de-commissioned. Today, almost all electricity used in Luxembourg is imported, and steel is not produced anymore by raw materials (coke and iron ore), but recycled from scrap with electricity as the major energy input due to the regional primary resources' loss in competitiveness. Especially the development in the steel sector was more or less a continua-

Fig. 15: GHG emissions/targets in Austria

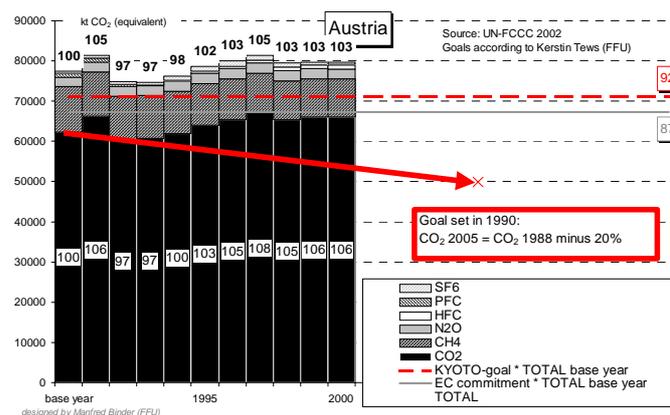


Fig. 16: GHG emissions/targets in France

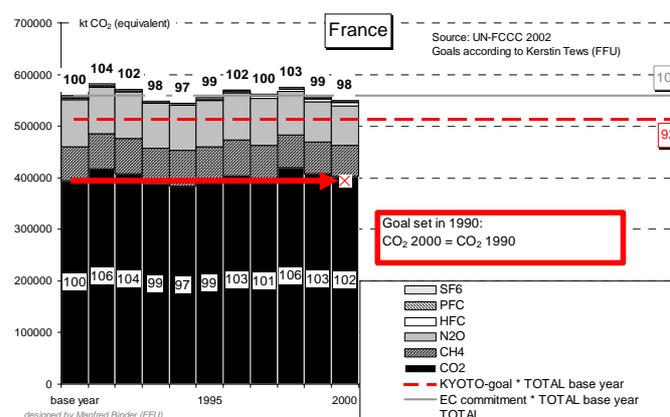


Fig. 17: GHG emissions/targets in Switzerland

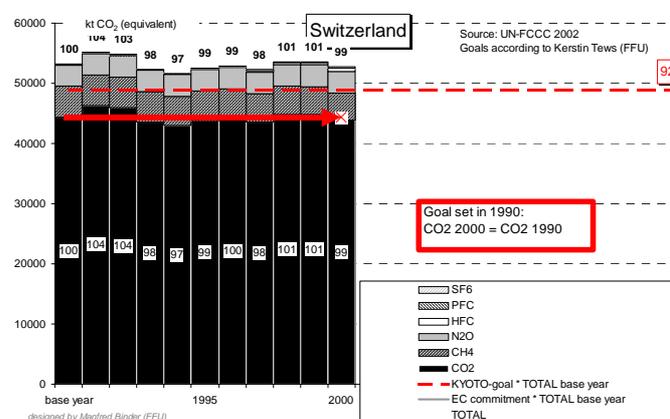
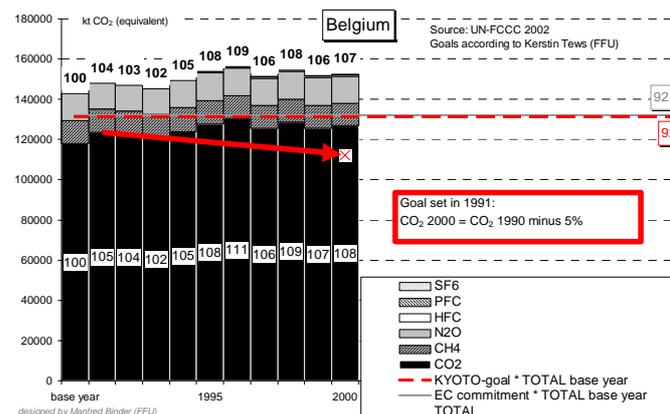


Fig. 18: GHG emissions/targets in Belgium



¹² For some comprehensive analyses on US climate policy evolution see Agrawala & Andresen 2001, Fisher-Vanden 1997, Clark & Dickson 2001.

tion of trends starting as early as 1974 (world steel crisis). Insofar, it is striking, that Luxembourg did not set more ambitious targets, but simply adopted the most fashionable goals at the time

The Finnish trend is not easy to discern (Fig. 14). The data for CO₂ emissions from fuel combustion suggest increasing emissions with strong annual variations since the mid-1980s. The re-increase since 2000 – as reported by the national statistical office (Statistics Finland 2004) – indicates no change in the medium and long-term development, which is roughly in line with Finland’s stabilisation target.

In Austria (Fig. 15), the trend of increasing CO₂ emissions was stopped but not reversed in the second half of the 1990s. Thus, emissions in 2000 were 33% higher than the emission level intended for 2005 according to “our Toronto goal” of the government’s “Energy Report 2000” from 1990. According to the third national communication the target has lost importance since 1997 (FCCC/IDR.3/AUT 2003: 4).

Among the other early adopters of stabilisation targets, France (Fig. 16) and Switzerland (Fig. 17), actually ended the decade at almost exactly the same emission levels as they started. But, at least with respect to energy related CO₂ emissions, this was not a reversal of trends for the better: Switzerland continued its very slightly increasing trend since 1975, and the decreasing French trend since 1979 – due mainly to the increasing use of nuclear energy – came to a halt by the end of the 1980s (IEA 2003)

Among countries in transition, Polish emissions decreased even further after the sharp drop 1987-90 (base year is not 1990 but 1988!), thus over-achieving the

Fig. 19 GHG emissions/targets in Poland

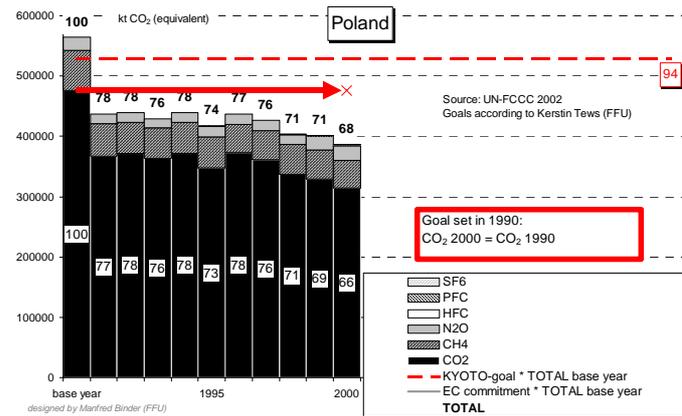


Fig. 20 GHG emissions/targets in Hungary

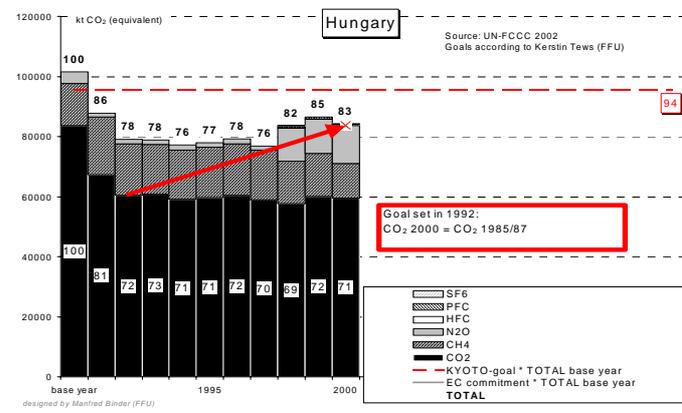


Fig. 21 GHG emissions/targets in Slovakia

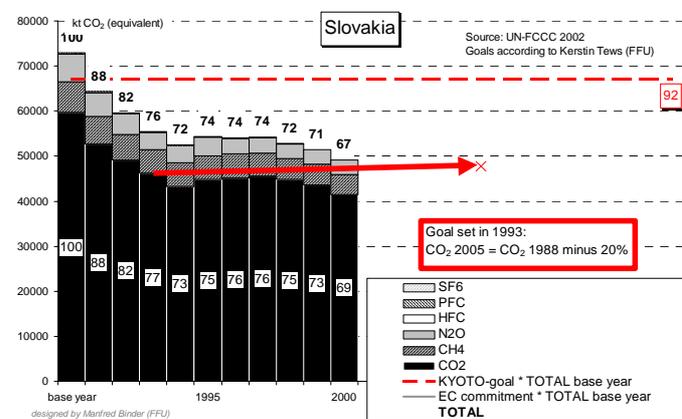
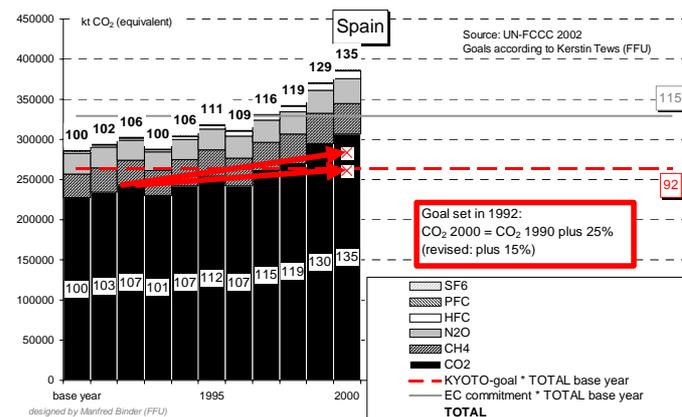


Fig. 22 GHG emissions/targets in Spain



stabilisation target of the government (Fig. 19). In Hungary (Fig. 20) the stabilisation goal for the period 1990-2000 would have resulted in a substantial re-increase compared to the emission level in 1992, when the target was announced¹³. But actually, CO₂ emissions have remained stable since. In the case of Slovakia (Fig. 21) the Toronto goal turned out to be a stabilisation target at the time when it was decided, due to the tremendous drop in emission in the beginning of the transition period. Since then, emissions have decreased even further, despite a temporary re-increase 1994-97.

The poorest countries of the European Community set voluntary national CO₂ emission targets as well – Spain (1992, Fig. 22), Ireland (1993, Fig. 23), Greece (1995, Fig. 24) and Portugal (1996, Fig. 25) –, but all of these targets allowed for substantial increases in order to give leeway for higher economic growth. The national GHG emission targets negotiated in the EC burden sharing also allowed for emission growth in these countries compared to the levels of 1990, but to a smaller degree (with the exception of Greece). Given the higher than expected emissions growth until 1998, when the burden sharing was agreed upon, these targets could only be met by stabilising emissions in the following years – but growth has rather accelerated since.

Fig. 23 GHG emissions/targets in Ireland

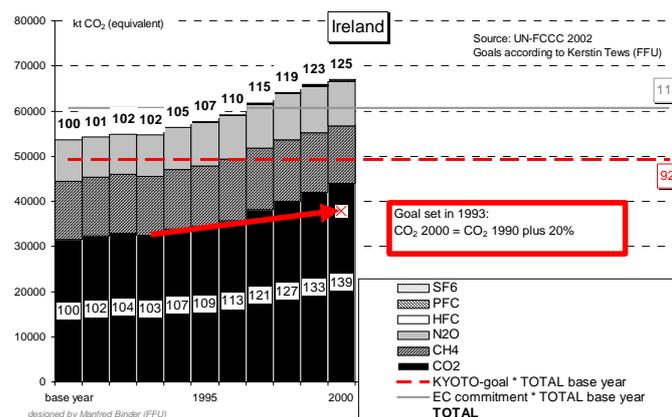


Fig. 24 GHG emissions/targets in Greece

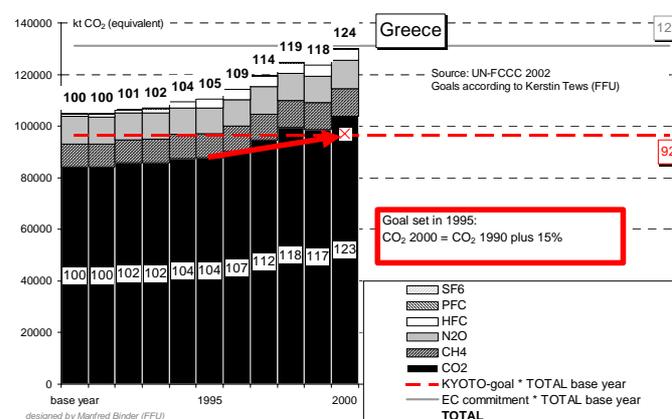
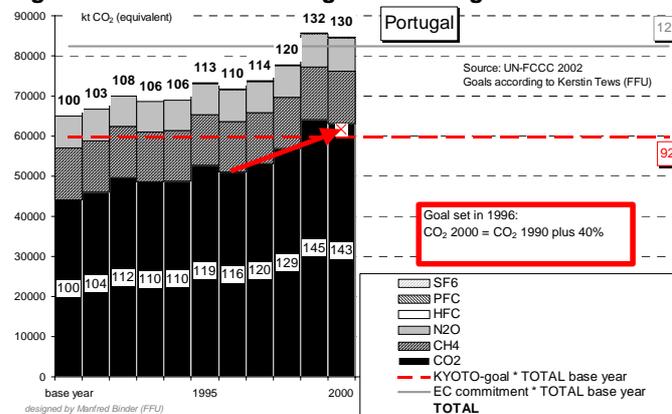


Fig. 25 GHG emissions/targets in Portugal



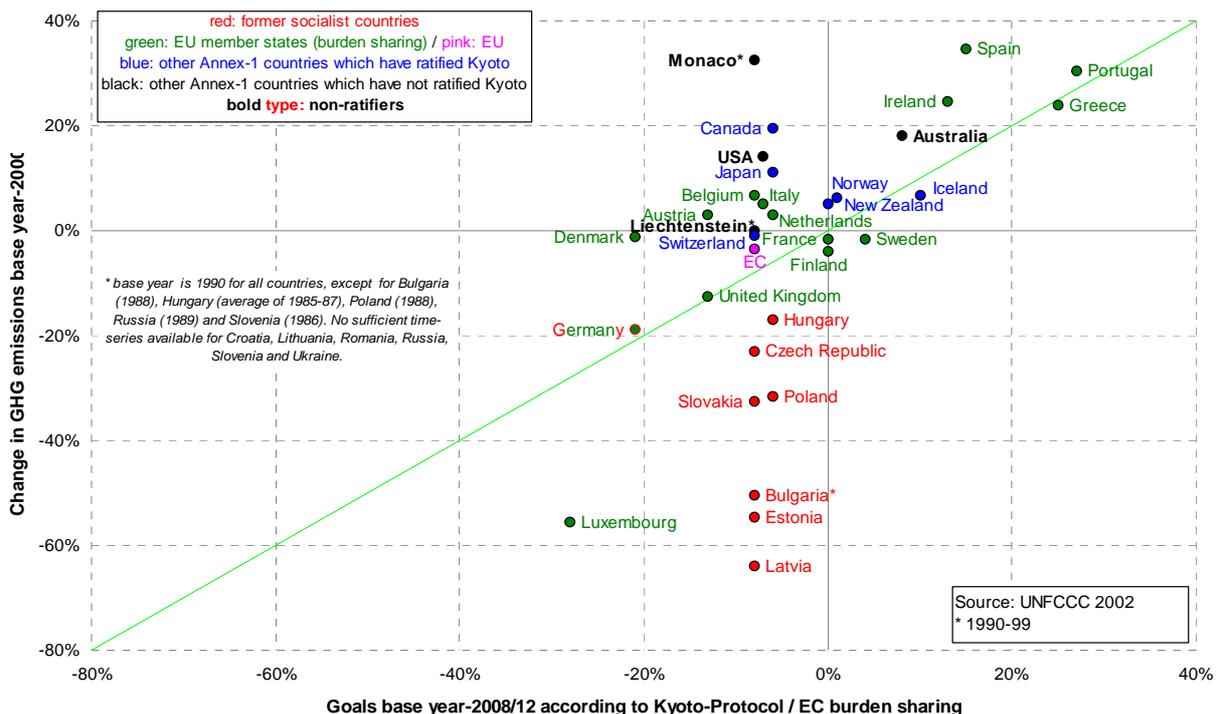
¹³ The arrow in Fig. 20 over-states the actually intended re-increase, since Hungary has chosen the annual average of the emission levels in 1985-87 as base year for its Kyoto goal. Nevertheless, CO₂ emissions from fuel combustion was still some 13% lower in 1992 than in 1990 (according to IEA).

2.5 Negotiated Targets: Kyoto and EU Burden Sharing

In Kyoto in 1997, almost all industrial countries agreed upon a set of national goals for GHG emissions with the purpose of making them legally binding according to international law. Today (early 2004), it seems that the change in GHG emission in almost every country is developing contrary to the goals agreed upon by national governments in the Kyoto protocol or in the EC burden sharing commitments. These goals have been set to be achieved by the annual average of 2010 +/- 2 years. Therefore, one would expect that the national emission in 2000 should have been somewhere halfway between the level in the base year and the goal, i.e. in Fig. 26 national data points should lie between the horizontal line representing 0% change and the green line representing emission levels identical with the national goal. But there is no single country which fits to this description. Instead, we find

- the wildly over-achieving countries in transition and Luxembourg,
- Germany and the United Kingdom which have achieved their goals in one decade instead of two and who will over-achieve by a wide margin if emission trends continue,
- Denmark, Switzerland and Liechtenstein which planned to decrease, but haven't done so,
- a lot of countries with increasing instead of their intended decreasing or stable emission trends (e.g. Canada, USA, Japan, New Zealand, and several EC member countries),
- countries which were allowed to grow their GHG emissions to a certain extent but have grown already that much or even more in one decade instead of two (Portugal, Spain, Greece, Australia, Norway and Iceland),
- Finland, Sweden and France which decreased without the intention to do so (according to their EC burden sharing goals).

Fig. 26: GHG emission change in Annex-B countries (Kyoto Protocol) base year-2000 and national goals according to the Kyoto Protocol or EU Burden Sharing



The only signatory of the Kyoto protocol whose emission level in 2000 was halfway between its 1990 level and its goal for 2008-12 is the European Community while none of its member states has developed as intended. Of course, these data do not prove that the development in many countries may not finally reach exactly the intended GHG emission levels in 2010: E.g. fast economic growth in Eastern Europe might lead to dramatic re-increases in national GHG emission.

2.6 Why have the goals hardly ever been achieved?

The first round of medium-term targets in climate change policy was perfectly voluntary but still comprehensive: Almost all industrial countries set one or more targets for national CO₂ or GHG emission levels in 2000-2005 during the first half of the 1990s. But this first round ended with many misses, often by a wide margin, and only a few hits, which were probably all by chance: Hardly a country showed a change in its emission trend which seems to be due to successful climate change policies. In many countries, trends were worse than expected in business-as-usual scenarios before, since the decreases in emission intensities (emissions per unit of GDP) as results of (among others) the oil crises and the growth of nuclear power in some countries during the 1980s slowed down substantially in the 1990s (IEA 2004).

The targets of the second round of medium-term goals were negotiated in Kyoto and subsequently in the EU. They do not seem to fare better: The USA and Australia have already officially abandoned their goals and will not ratify the Kyoto protocol, a lot of other countries plan to fulfil their Kyoto commitments by the so-called flexible mechanisms, i.e. by helping or recompensing other countries for over-achievements instead of achieving the national target on their own territory.

How is this total failure to achieve the self-imposed goals to be understood and what lessons can be drawn for the target-setting process in the future? As a starting point, it might be helpful to understand what these goals could *not* be and were not meant to be:

- *Firstly, they were not meant to declare only what would be desirable, but also – and even more so – what is achievable. Therefore, the failure to achieve these goals was really a failure, and not only a disappointment – which, of course, does not mean, that the setting of the goals had no positive effects at all.*

Not all kinds of goals necessarily imply the possibility to achieve them, but all goals we discussed in the analysis above. E.g. the objective of the UN-FCCC – “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (Art. 2) – is a goal that does not bother with achievability. *This* goal should be met, must be met, because anything else would mean an intolerable disaster, which has to be prevented by all means possible. This also means, that even if you doubt the achievability of this goal and rather expect the disaster, it is still a noble goal worth fighting for. On the other hand, imagining unattainable utopias and the quest for perfection may inspire and stimulate the troubles for even small improvements: “Man would not have attained the possible unless time and again he had reached out for the impossible” (Weber 1946).

But contrary to such goals which define what is desirable without bothering with whether it is achievable, the mid-term goals we are discussing here are all about achievability: The world climate would not be measurably different today, if the stabilisation goal had been achieved (or if Norway's stabilisation goal had been achieved). As has been pointed out correctly and repeatedly, even the perfect fulfilment of the Kyoto targets would change hardly anything in the course of the world climate. All these targets were meant to be first steps on a long journey, and if we happen to stumble on our first steps a bit, it will not make much of a difference. We can make up for that in the innumerable steps to come. Of course, stumbling with the first steps might be seen as a bad omen for the journey, but it is nothing more than that. Maybe we learn from our mistakes, maybe we have better luck tomorrow. These goals were not chosen because their non-achievement would be an intolerable disaster, but because they were thought to be achievable, and in this respect the non-achievement is definitely a failure, either a failure to achieve a desirable and achievable goal or a failure to correctly assess the achievability of that goal.

- *But, secondly, the failure was not the failure of the goal-setters alone, because the governments did not and could not control the development of national GHGs in the first place. They were goals for all energy users and producers combined, i.e. for whole societies, set by their governments with or without the collaboration of other major actors. The governments could influence, but they could not control the behaviour of all societal actors important to the outcome. Indeed, the setting of goals was one instrument aimed at influencing the behaviour of all societal actors, but the results proved to be disappointing, and it is important to understand this failure in influencing others.*

Again, not all goals are like that. When a person is setting a goal for himself or herself or if a hierarchical organisation is giving itself a target and a plan to achieve it, they try to organise their own actions, which – properly organised and with a little bit of luck – are sufficient to achieve the goal. They need not even communicate this goal to others. In a more or less controllable situation, goals may have the function to calculate the means to reach them: Given a proper road map, the knowledge of your destination is both necessary and sufficient in order to decide which road to take with which means of transportation, and once you made this decision, only a change in mind or an accident can detain you from reaching your end. But to know the national emission target is neither a sufficient condition in determining who should do what in order to meet this target nor are the goal-setters able or willing to force these actors to do whatever must be done for that end. Investors are to a large extent free to invest as well as citizens are free to consume whatever they can afford, and each of these decisions has impacts on energy consumption and the generation of GHGs. It is one thing for a government or a parliament to set a limit to the growth of National Debt, and another thing to set a limit on the number of unemployed, the rate of inflation or the level of national GHG emissions, because the National Debt is controlled almost totally by the decisions of government and parliament, but employment, inflation and emissions are not *controlled* by governmental action, but at best influenced, and often influenced in unknown or uncertain ways.

In complex situations where goal-setters have little control on most of the decisions important for the achievement of the goal, the purpose of goals has to be perceived totally differently from

hierarchical decision-making. To have little control means in this respect that the goal-setters either do not know in detail what other actors can and should do or they cannot or do not want to force actors to do it (or both). Of course, this does not mean that there is nothing a government can or should do or enforce, but that all it can do and enforce will be far from sufficient in reaching the goal. The goal-setter has to entice others to look for solutions and to do things beneficial for the goal without being forced to do so. But why should the other actors do this, and, especially, why should the setting of a national goal entice them to do so?

For those actors who are sympathetic with the government at least in respect of the target in question, the goal – or the current degree of fulfilment of the goal – may indicate the urgency of the problem and how much effort is still needed by everyone who is willing to contribute whatever only he or she knows to be able to. This effect can be perceived a bit like that of a goal for the sum of donations to be collected at a charity event which might give potential donors second thoughts about how much they can afford to donate. The goal bonds all contributors and provides them with a team spirit and, if successful, with a sense of achievement they would lack if they had only a common cause but not a common purpose. And with respect to climate change policies we are not talking only about altruistic behaviour motivating sacrifices for the common good, because there is still a lot of win-win potential to be detected and used. In order to join the team and enjoy its successes, many actors do not have to do anything else than minding their own business more efficiently. In addition, there are a lot of professional actors profiting from climate change policies who could use an uplifting experience. And lastly, it might not be the care for the world climate or for the wishes of the current government, which entices actors to join the team, but e.g. the reputation in doing so or the disgrace of publicly refusing to do so.

But not only sympathetic actors might be influenced by such a goal, but unsympathetic ones as well, i.e. as long as they have no veto or exit options: E.g., if technologies necessary or helpful in achieving the goal are known by an actor who is not especially interested in climate change issues or even fearing disadvantages by these technologies, this actor might come forward with this knowledge lest someone else does this before him or her and thus gain first-mover advantages of some kind. Say, the most efficient way to reach the goal would be to substitute coal power plants by gas fired plants but the electricity companies are the only ones who really know it or can do it and are disinclined to do it as long as their already existing coal power plants make good money. If the goal is announced and reliable, each electricity company has to fear competitors coming up with the idea, thus receiving permission and political backing in superseding coal power plants. The first mover might still be better off with everyone producing with coal alone, but it's worse to produce with coal when others produce with gas or renewables. Thus, a properly designed goal may – in combination with expected first mover advantages – reinforce or even create a typical prisoners' dilemma. Once a goal is formulated, the competition may begin for the best ideas to reach that goal.

But all these arguments depend critically on the goal's *respectability*, which includes both the level of consent to the goal (and/or the goal-setter) and the reliability of its achievement: If no one sympathises with the government and its goal, if it is clear from the outset that it will never be achieved and that no-one will ever care whether it has been achieved, if it is common prac-

tice for politicians, governments and scientists to set up goals and forget about them immediately, these goals cannot have any impact in the ways just described.

And if the goal-setters can be sure that the goals will be eventually forgotten or ignored, they are free to choose goals for totally different reasons. Maybe most importantly: With setting the goal, the goal-setter does not only tell something about the problem, about the dangers involved and the opportunities perceived, but he tells something about himself or herself. An actor choosing a target perceived as ambitious will probably be perceived as an ambitious actor, and another one who chooses a more cautious target will be perceived as a more cautious actor. Whether eventually the target will prove to be really ambitious or really cautious or in fact unachievable or on the other hand way too tame, will be unimportant, because the goal will be forgotten, whereas the image of the goal-setter stays. Yes, even if the goal will not be forgotten, nobody can blame the once seemingly ambitious actor for his or her in fact much too tame goal, because most of the other actors and observers were even more cautious at the time, and the actor was still (one of) the most ambitious one(s) then. Thus, there is an enormous incentive for the goal-setter to set the goals according to the self-image he or she wants to communicate instead of according to the necessities of the problem in question, especially when the future prospects of the problem are unsure or highly controversial. But goals set in this manner are very likely to have no impact on the problem.

With this discussion in mind, several interpretations of the over-all failure in achieving the goals for national climate change policies in industrial countries come to mind which we will discuss briefly in the following paragraphs. Each interpretation suggests different recommendations for subsequent goal-setting processes. We think, that all of these interpretations are true to some extent, while the relative importance of each interpretation is difficult to assess and will be different in each individual case. Unfortunately, sometimes the recommendations based on single interpretations contradict each other. In order to choose the appropriate recommendation for an individual actor in an individual situation it will be necessary to assess the relative importance of each interpretation in each goal-setting process. This is a highly difficult task, and in the end the decision will have to depend to a certain extent not only on an impartial analysis of the situation in question but also on pre-scientific general attitudes and expectations as well as on the preferences of the actor.

1. *Goal achievement is an indicator for success, and therefore under-achievement one for failure.* In discussing the actual developments in GHG emissions by now, we already dismissed this interpretation as implausible to explain the major cross-national *differences* in achievement. Nevertheless, the *general* tendency of under-achievement might still be due to bad policies, while the national deviance from the general tendency might have other reasons. Additionally, to *some* extent the differences in the performances of national climate change policies may still have had influence on the differences in the level and the change of national GHG emissions, even if they have obviously not been the dominant driving forces.

Inasmuch this interpretation is appropriate, the recommendation for future goal-setters would be: Define new goals, but this time mean it and actually do what you pretend to do!

2. *Many of the driving forces for national GHG emissions have not been well understood and have therefore been almost impossible to predict.* The failure in achieving the goals would

be in this respect virtually a failure in assessing its achievability. This is clearly the main reason for the tremendous over-achievement by the former socialist countries. But all medium- and long-term predictions for energy consumption are notorious for their inaccuracy, which is hardly astonishing since they are based i.a. on medium- and long-term predictions for GDP growth and structural change which have also shown disappointing results due to the extremely complex nature of their driving forces. Additionally, in most of the countries the goals were not even based on elaborate predictions, models or cost-benefit analyses. Otherwise, it would not have made much sense to set almost the same targets for so many so different countries. But the lack of detailed analysis can hardly have been the main reason for unrealistic targets: In Germany, the enormous research projects and discussions in the course of the parliament's Enquête-Commission resulted in the most ambitious goal in international comparison. That Germany's emissions have been at least somewhere close to the projected development was to a large extent due to the decline in emissions in the former GDR, which was not analysed and definitely not foreseen by the commission.

Inasmuch this interpretation is appropriate, the recommendation would be: Define new goals, but this time more realistic ones! It is doubtful that the forecasting skills have improved so much in recent years that future forecasts of national GHG or CO₂ emissions will be much more accurate than the ones in the past. Therefore, goals for other indicators than absolute national emissions may be more important, e.g. goals for emissions per unit of GDP or even sector specific energy or emission intensities (sectoral energy use or emissions per unit of sectoral activity, e.g. per kilometre travelled by car or per ton of steel produced). Of course, such indicators are unsatisfying from a purely ecological point of view, since the world climate is endangered by rising absolute GHG emissions and any goal achievement in terms of intensities can easily be outbalanced by faster growing activities. But as we pointed out before, the intermediate goals we are talking about are mainly chosen for their feasibility and not so much for their desirability: They define feasible steps on a journey to a desirable end. And in this respect, it does not make much sense to define these steps with indicators which cannot be predicted let alone controlled.

3. *The actors who set the goals simply changed their mind or, even more simply, the actors in charge changed.* Several national governments were replaced during the 1990s, some by markedly less eager proponents of climate change policies: Most prominently, the Clinton administration was followed by the administration of the former oil manager George W. Bush. On the other hand, in Germany and the United Kingdom parties with a somewhat stronger commitment to environmental issues than the former conservative incumbents were elected which may have prevented an otherwise slackening of efforts in climate change policies. Such changes are not only conceivable with *new* national governments: Each administration consists of competing forces whose respective power may change over time even for reasons which have nothing to do with the issue at stake. And finally, people may change their mind as well, both politicians and voters (and other actors). The emission trends do not suggest strong impacts of changes in course, since there are so few breaks in trend to see, but again this factor might have had some impact in some countries.

Inasmuch this interpretation is appropriate, the recommendation for future goal-setters would be: Define new goals, but this time make sure that the goals are shared by your pos-

sible successors! While party competition over goals might be helpful to gain attention for the issue, the final setting of medium-term emission goals does hardly make any sense without consensus including the most important opposition parties. Inasmuch the goal-setters themselves change their mind, there is nothing really to recommend, since there is no point in achieving a no longer desired goal.

4. *The goals were not respectable and thus had no effect on other actors.* There are many reasons to believe that the voluntary goals were not taken very seriously. For example, there is no single country where the non-achievement of the goal led to some kind of political crisis. Usually, it did not even get much attention. For most of the countries, it is very difficult to get the information when exactly the government abandoned its goal and what the consequences were, if any. In many cases the goal was tacitly abandoned, i.e. it was simply forgotten. When the German government finally recognized that its goal will not be met, it went almost unnoticed by the media.

Since the goals usually were not met, those who did not respect them were perfectly right. Thus, every other interpretation discussed here, if expected by the actors, undermined the respectability of the targets: Every actor who knew or suspected that the government did not really mean it, that it would not take the necessary actions to achieve the goal, that it would not very likely back actions by others beneficial to the goal and provide first-mover advantages, that the targeted indicators were mostly influenced by uncontrollable factors anyhow and that the goal-achievement was therefore merely a matter of chance, that the goal-setters themselves might very likely have changed their minds or be replaced by the time aimed at, that most other major actors held similar opinion in these respects, etc. rationally ignored the goal.

Besides, much of what has been said in the general discussion of what makes a goal a respectable one can explain why these were not: Oftentimes, goals were set without the participation of major actors. Governments announced them as if they could achieve them alone. Consequently, they were perceived as the goals of the government, no-one else identified with them, and their non-achievement was seen as the failure of the government and not of the whole society. No wonder that governments were not inclined to give the abolishment of the targets much public attention – unless the goals had been set by their predecessors and had already been criticized by the new incumbents (as in Denmark). Since it was clear from the outset that the non-achievement will have little or no consequences for anybody, no new prisoner's dilemma situation occurred. The goal was a wish and no fact to be counted on.

Inasmuch this interpretation is appropriate, one recommendation for future goal-setters would be: Define new goals, but this time make sure that the goals are shared and will be pursued by as many actors important to the goal as possible! Of course, there are limits to this approach, since climate change policies are not only about conflicting opinions but also and foremost about conflicting interests. Again, it might help to define goals (also) for other indicators than national GHG emissions, namely sectoral indicators, in order to reduce the number of actors to be involved and to increase the pressure on individual actors. Sure enough, a single goal is much more easier to communicate than goals for an armada of sectoral indicators. But on the other hand, what's the use of easy communication if the content

communicated does not make much sense or is irrelevant for the actual decisions of most actors involved? Another recommendation in order to increase the reliability of goals by increasing the credibility of the government's commitment is: Rise the stakes! Make sure – and make known! – that the government will get punished if the goal is not met! In this respect, internationally binding agreements have an important *domestic* function, especially when they are known to include significant sanctions for non-achievement.

5. *The goals were not meant to be achieved in the first place.* As has been shown for several countries, goals were often set in reaction to the international discussion, e.g. immediately before important international conferences. The similarity of the voluntary goals also suggests that they were often set for the sake of international reputation and not so much for their impact on domestic actors which is decisive for the final achievement of the goals. It is also reasonable to assume that for many actors the symbolic value of setting a goal was much more important than its actual design and, consequently, the level of its achievement a decade later: To set a national goal for the near future showed clearly that idle talk and scientific discussion would not suffice anymore but that the time for action had come here and now. The target also set a benchmark in order to put further discussion in concrete terms of present investment decisions: For each sector, even for each individual actor, it could be asked whether its emissions would develop in line with the national target, and, if not, for what justifiable reasons and which other sectors had to outbalance the excess emissions in order to reach the national target. For this purpose, it was not really important whether the goal had been chosen more or less arbitrarily or whether it would be finally met. It was even forgettable once this kind of discussion on sectoral or even individual decisions had started.

But as we have argued in the general discussion above, there are a lot of other reasons to choose targets without meaning to achieve them which do not help solving the problem in question, e.g. to cultivate a certain image of the government and its representatives. Some actors who do not believe in the effects of goal-setting might even accept or promote a goal as a *substitute* for real action, e.g. in compromises with proponents of climate change policies.

Whatever the motives are for choosing a goal without the intention or expectation to achieve it: Such a behaviour can only be reasonable, if there are other actors believing in the seriousness of the goal. Otherwise, it is a waste of time, attention and other scarce resources. At least in dealing with professionals like major decision-makers and experts, one should expect that the same kind of bluff cannot be repeated successfully over and over again.

3 Conclusion

The use of goals in public discourses may serve quite distinct purposes. First and foremost goals set signals. Yet these signals can be instrumental or symbolic. On the one hand, goals are instruments to induce awareness, learning and guide policy development to manage the problem at hand. On the other hand, goals are symbols for the adopting actors to gain very distinct resources – soft resources which might be decisive especially in competitive situations. The announcement of goals often aims at gaining both political legitimacy within one's own society and reputation within the international community of states.

Concerning their function as instruments in environmental governance we defined three effectiveness criteria or functions of goals: Environmental effectiveness in the sense of goal achievement, the stimulation of additional actors both at the international as well as the domestic level and the inducement of further policy responses to manage the problem. However, the question arises:

- whether there is a varying relevance of the distinct governance functions of environmental goals subject to distinct stages of the issue development process and according to that
- whether the quality of goals has to be adapted to the distinct challenges the stages of the issue evolution pose in order to be effective?

In short, it can be assumed, as targets do frame the issue evolution process, that the stage of the issue evolution frames what kind of targets might be needed.

At the beginning of politically dealing with climate change, countries voluntarily committed to reduce greenhouse gases in order to express responsibility and willingness to set examples to be followed by others and/or to respond to an emerging international norm. These goal setting processes were extremely pushed by scientific and NGO actor networks. Dominant political actors were environment ministers both at the international as well as the national level. These initial activities aimed at engaging additional and new actors and countries in risk perception and management. Yet, once on the policy agenda, these domestic policy ambitions were increasingly challenged by those domestic actors who were activated by the initial target settings where they hadn't been involved. Thus, all of the national target-setting processes induced a sort of learning, e.g. awareness raising among additional actors and a partly new definition of the problem which was added by conflicts over the political feasibility of mitigation measures. Yet, setting signals in order to raise awareness and to engage new actors might be relevant when a problem is new. But is it sufficient when the issue evolves?

The risk management has to proceed and so has the quality of targets if they are meant as policy instruments which should guide or alter social actions. Targets in later stages of the issue evolution process have to have a more sophisticated quality as they have to be based on a broader societal consensus about what is required (ecological effectiveness), achievable in the short, medium or long term (political feasibility) to costs that are tolerable for the main actors (cost effectiveness). As such they may serve as planning instruments.

The national goal-settings of the early adopters were effective in terms of their signal effect to other countries to keep pace with the emerging trend. Thus, the approach of some nation states

to go ahead with unilaterally announcing targets in order to influence perceptions of other countries about what is possible and desirable was successful in the early phase of the issue evolution. They performed a type of leadership which is distinct from other types which refer directly to the international level (Young 1991)¹⁴ insofar as it consists of demonstrative *national front runner policy*. In contrast to structural leadership which heavily relies on asymmetric power relations this type does very much depend on a certain degree of attribution by others. Soft factors as reputation and credibility play an important role. In literature it sometimes is mentioned as “environmental leadership” (Andersson & Mol 2002: 50) or “directional leadership” (Gupta & Ringius 2001: 282) or national pioneer policy¹⁵ (Tews 2004). In the current phase of the climate change issue evolution – i.e. a certain threat of failure of the Kyoto-Protocol coming into force and a necessity to negotiate commitments and/or new policy options for the post-Kyoto-period – new impetus from pioneers is required and – indeed – it is even claimed by some countries to be a leader. Yet, it has become much more difficult to be accepted as a pioneer than in the earlier period. Now, not only the level of ambition but increasingly the performance is crucial to gain legitimacy for such leadership. Diffusion effects of pioneer behaviour as they were observed in the early 1990s are much more conditioned today. The level of domestic success restricts the credibility and authority to call upon others – for example transition countries or developing countries – to become more active and committed partners in the international climate change regime. Thus, the level of domestic ambitions alone will not suffice to encourage other countries to follow – domestic targets have to prove their environmental effects too.

Yet, in the light of the emission developments measured at the end of the 20th century these targets were environmentally not effective as hardly a country reached its domestic target. However, this is not the point which raises the most concerns. Instead, the respectability of targets as policy instruments might become questionable due to the fact that only very few countries did actively reflect that their targets set at the beginning of the 1990s were far from being realistic in later stages of the issue evolution. Issues like cost effectiveness entered the public debate on climate change policies and dominated the discussion on feasibility assessments, but the targets stayed untouched and partly unconsidered in these debates. Most of the countries tacitly substituted their national target by the sometimes less ambitious Kyoto commitments. Only few governments openly reflected over prospective or factual non-achievement of their own ambitions, as for example Japan or the Netherlands. The stickiness of goals is a well-known empirical phenomenon reflected in theories of learning (Levy et al. 2001) – but, a stickiness of policy goals might seriously threaten the image of these instruments and the image of those adopting these instruments. When goals are not adjusted in the light of new knowledge – which will probably occur when new actors start to shape the problem definition (one of the effectiveness criteria) – they will not contribute any longer to a better risk management. As Martin Jänicke puts it: “The approach of a target-oriented policy allows for target deviation, yet it re-

¹⁴ Young made a distinction between structural, entrepreneurial and intellectual leadership – all refer to the international regime formation process but base on distinct sources: power for structural leadership, diplomatic skills as a broker for entrepreneurial leadership and the production and use of innovative ideas for intellectual leadership.

¹⁵ Both of the other terms come quite close to our notion of national pioneer policy. From a common understanding, a pioneer is someone who paves the way and prepares others to follow. Therefore, we build the pioneer concept on two pillars: a) The capacity to produce *innovative* policies how to deal with a problem, and b) the capability to stimulate others to follow.

quires the disclosure of reasons for deviation.” (Jänicke 2003, author’s translation into English). Yet, forgetting about the own ambitions sets new signals which do threaten the overall credibility of environmental targets as policy instruments.

In sum, domestic emission targets did play a role in an issue area with global dimensions. Their effects in stimulating countries to keep pace are obvious, at least in stimulating countries to set national emission targets themselves. However, in the current phase of the evolvement of the climate change issue, domestic targets might stimulate others – both within and beyond national jurisdiction – to follow only when a certain degree of environmental effectiveness proves the credibility of the ambitions of nation states.

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