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# **From taxes to permits?**

## The Norwegian climate policy debate

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# From taxes to permits?

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**Camilla Bretteville and Guri Bang Søfting**

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## **Abstract**

Taxation as an instrument for environmental policy (green taxes) has been a topic of heated debate in Norway for almost 30 years. The subject of environmental taxes has time after time inflamed both policymakers and scholars alike. The suitability of green taxes as a policy instrument was first discussed in the 1970s. The 1980s introduced the idea that income from green taxes would make reductions in other taxes possible: a green tax reform. In the 1990s, the tax discussion boiled down to whether or not all polluters should face the same carbon tax. Lately, however, the discussion around the Kyoto Protocol has led to increased interest around the alternative of introducing a system of tradable emission quotas. Environmental taxation might thus be a declining policy instrument in Norway. This is contrary to recent developments in several other European countries such as the United Kingdom, Germany, and the Netherlands. This paper explores why the idea of a green tax reform never got off the ground in Norway by providing an overview of Norwegian environmental policy in the period from 1972 to early 2000.

**Key words:** green taxation; environmental policy; emission permits; Norway

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# 1 Environmental taxes on the agenda

Environmental policy made its first serious appearance on the political agenda in Norway about the time the UN Conference on the Human Environment took place in Stockholm in 1972. The negative impact of industrialization on the natural environment was becoming more and more visible, and the issue of pollution was becoming a matter of public concern. The need for further policy regulation became apparent, thus the Ministry of the Environment was established in 1972, and the State Pollution Control Authority (SFT) was established in 1974. Since that time, these two institutions have gradually become the major policy-making authorities in the area of environmental policy.

At the Stockholm meeting, the “polluter pays principle” was introduced on the international political agenda. It received broad international support but made little impact on practical policy before the mid-1980s. The most common interpretation of the principle is that the polluter should be held liable for damages caused by pollutants.

The introduction of the polluter pays principle into Norwegian politics voiced the concept of using environmental taxes to achieve environmental benefits. There was nevertheless no political consensus on whether taxes were a suitable environmental policy instrument. This was in spite of the considerable amount of research conducted by the government, in cooperation with among others the Department of Economics at the University of Oslo and Statistics Norway, and the effort to analyze the benefits and disadvantages of taxes. Environmental taxation was evaluated against direct regulations and subsidization.<sup>1</sup> The recommendations of the succeeding governmental reports (Report. no. 71, 1972–73, and The long-term program of the cabinet 1974–1977) were in favor of environmental taxes because they point directly to the causes of pollution, and also because they would give the industry incentives to develop environmental technology.

Environmental taxes have the potential to result in a cost-effective outcome, i.e. meeting political goals at the lowest possible social cost: It is in each producer’s own interest to equate his marginal abatement cost to the emission tax. As long as all producers face the same emission tax, marginal abatement costs will be equalized across sources (see, e.g., Hoel 1997). However, cost effectiveness requires that emissions are verifiable and that the rate of taxation is socioeconomically correct. Due to constraints on information, it is difficult to determine the optimal rate of taxation. Thus, goal attainment becomes uncertain. Prior to implementation it is difficult to establish to what extent emissions will be reduced at a given rate of taxation, i.e. uncertain control effectiveness. If a country is committed by an international agreement to reduce emissions by a certain percentage, this can be a disadvantage. In the search of the socially optimal level of taxation, the government will have to use a method of trial and error. During this process, business and industry will have fluctuating operating conditions from year to year, which they may view as a disadvantage.

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<sup>1</sup> Subsidization can function as an environmental policy measure when used by the government to regulate the behavior of polluters, especially large stationary sources of pollution.

The lack of political consensus on taxation in the 1970s was apparent even between the ministries. The environmental authorities were loyal to direct regulation instruments because they were thought to be more control effective. The Ministry of Finance, however, favored taxation. In general, the debate about policy instruments became a tug of war between the Ministry of Environment, which controlled direct regulations, and the Ministry of Finance, which made adjustments in the tax system (Asdal 1998). This conflict reflects a game of power between the two ministries. The Ministry of Finance traditionally had almost complete control over economic policy issues, whereas the new Ministry of Environment was trying to position itself as a forceful player in the environmental policy arena.

The environmental non-governmental organizations' (ENGOS) participation in the framing of abatement policy was negligible. Business and industry on the other hand had already established an increasingly strong and well-organized lobby. In contrast to ENGOS, business and industry were represented in all committees that worked on this issue in the 1960s and 1970s (Reitan, 1998). One explanation for this lack of engagement could be that the ENGOS believed their interests to be represented by the Ministry of Environment. Nevertheless, policy was formed largely on the premises of business and industry.

## 2 Stabilization policy

In the governmental debate about various policy instruments, great emphasis was put on keeping Norwegian business and industry competitive in the international market. Green taxes enforced in Norway alone were considered to be too much of a competitive disadvantage for the export industry sector. Few other countries had adopted an environmental taxation regime at this time. Some, including Sweden, had even introduced economic subsidization schemes. Influenced by this, the Norwegian government also chose subsidies as their main policy instrument to regulate industry behavior (Reitan, 1998), despite the clear recommendations of green taxes by various governmental agency reports.

To a great extent regional policy motivations, rather than environmental ones, governed the choice of policy measures. There is a strong political tradition in Norway of supporting and subsidizing a broadest possible residential and employment pattern in every part of the country. Therefore, the subsidies were to a great extent directed at cornerstone industries in small societies in sparsely populated areas.

Another probable causal factor for the introduction of subsidization schemes is the post-World War II development of a social-market economy, with a careful blend of market capitalism, strong labor protection and a generous welfare state. In line with this tradition of strong governmental control over the economy, it was natural for the government to assume most of the responsibility for cleaning up industrial pollution. In fact, the pollution control policy became a part of the economic stabilization policy in the mid-1970s. With respect to the polluter pays principle, however, this implied an indirect subsidization of polluting activities.

The faith in stabilization policy was eventually weakened, and in 1977–1978 the government chose a new line. The Ministry of Finance depicted environmental protection and employment concerns as competing interests, and pointed out that the Labor government had high employment rates as their main objective. Increasing attention was paid to the balance of trade as well as the international competitiveness of export industries. Environmental concerns were not considered a priority for the Ministry of Finance until well into the 1980s. At this time, Norway had to comply with a number of international agreements, such as the 1985 protocol on the reduction of sulfur dioxide (SO<sub>2</sub>) emissions (LRTAP). This forced the Ministry of Finance to consider environmental concerns when designing policy.



### 3 The Brundtland Report

The Brundtland Report<sup>2</sup>, *Our Common Future*, was published in April 1987 and had a significant impact on the political agenda. For example, the then minister of environment, Sissel Rønbeck, addressed the Norwegian parliament (*Stortinget*) in May 1987 and gave a statement on environmental policy. It was the first time such a comprehensive presentation of environmental policy was given in parliament.

The World Commission on Environment and Development (WCED) report and its arguments and points of emphasis brought several subjects to the forefront. For instance the WCED argued for the need of redefining the concept of “growth” to also include environmental as well as developmental concerns (Lafferty et al., 1997). In line with WCED’s recommendations, the Labor Party (Ap) government introduced additional environmental taxes in the national budget for that same year (Tenfjord, 1995). This included taxes on lubricating oil and environmentally harmful batteries.

The 1989 cabinet report on a long-term program further developed the idea that environmental taxes would give producers and consumers incentives to behave in a more environmentally sound manner. But it was also emphasized that environmental taxes had to be seen in relation to other price and tax policies. Income from the environmental taxes was supposed to form the foundation for a reduction in other taxes and at the same time favorably affect the pattern of consumption and production (Report. no. 4, 1988-89). This was how environmental taxes were expected to contribute to more effective usage of resources.

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<sup>2</sup> The report of the World Commission on Environment and Development

## 4 The “Environmental Election”

The environment was, as in many other Northern European countries, at the top of the agenda in the public debate of the late 1980s. The Norwegian parliamentary elections in 1989 were dubbed “the environmental election ‘89” by the press, which argued that environmental issues would swing many voters. A united political community spoke warmly about the necessity of introducing new and more specifically targeted environmental taxes.

The new government was a coalition formed by the Conservative Party (H), the Christian Democratic Party (KrF) and the Center Party (Sp). In his inaugural address, Prime Minister Syse declared that his government would give priority to the fight against pollution. Through greater use of environmental taxes, the government would make environmentally sound behavior profitable both from a private and a social point of view. The government also promised to quicken the pace of environmental policy, and to hurry the work with a plan for the use of environmental taxes, as requested by the parliament (*Aftenposten* news archives, 1989). Thus, the government commissioned an environmental tax committee and instructed it to report to the parliament in 1992. The committee comprised members from the relevant ministries (Finance, Transport and Communications, Environment, Industry, and Oil and Energy) as well as members from the research community (Statistics Norway, the University of Oslo, and the Norwegian Petroleum Institute). The committee’s mandate was to submit a total overview and plan for how the use of environmental taxes was to be incorporated into environmental policy.

A year after taking office, the government submitted a proposal to introduce carbon taxes on gasoline and mineral oil, in connection with the 1991 parliamentary negotiations on the national budget. After the Labor Party (Ap) regained power that same fall, a new proposal was submitted to expand the carbon tax to apply to the petroleum industry as well. This was intended to be the policy that would ensure the parliament’s ability to attain the very ambitious goal set in 1989: to stabilize the Norwegian emissions of CO<sub>2</sub> at a 1989 level by the year 2000 (Tenfjord, 1995). A further expansion of the carbon tax would be considered in the light of the forthcoming report from the environmental tax committee.

## 5 Mobilization of interests

Powerful actors in Norwegian society saw their interests being threatened as it became clear that the costs of introducing environmental taxes would be high for them. For instance, political actors representing regional interests and the automobile lobby reacted to the further increase in gasoline prices. Norway spans a relatively long distance and has large uninhabited areas. The considerable distances between regions leads to high costs of transportation. Since more transportation is required in the more sparsely populated regions and remote northern regions, transportation costs here are naturally higher. This differentiation in transportation costs implies a potential for conflicts between these regions and the southern regions where 2/3 of the population lives. The oil industry also joined the protest bandwagon after the Labor Party expanded the carbon tax to affect offshore activities.

Nevertheless, the strongest reactions came from the petrochemical industry and the process industry, even though these sectors had not yet been taxed. CO<sub>2</sub> emissions are an inevitable consequence of the production process in the ferro-alloy and aluminum industries. A reduction in emissions would necessarily mean lower production or investments in new technology. Maintenance of jobs in cornerstone industries thus became one of the main arguments in the industry's lobby against taxes. Another key argument was concern regarding international competitiveness. The Confederation of Norwegian Business and Industry (NHO), a powerful lobby in Norwegian politics, argued that taxes should only be introduced as a result of international cooperation (*Dagens Næringsliv* news archives, 1991).

## 6 Environmental Tax Committee

In February 1992, the environmental tax committee released its report “Towards a more cost-effective environmental policy in the 1990s”. The report ascertained it was just during the last couple of years that “taxes were implemented with the explicit purpose of affecting consumption and the use of production factors through an improved socioeconomic pricing of the environment.” (NOU 1992:3, author’s translation). It further concluded that the taxation system at that time deviated significantly from the criteria of cost-effectiveness. The report pointed out that a total of 40 percent of the CO<sub>2</sub> emissions and 60 percent of the SO<sub>2</sub> emissions were exempted from taxation. The committee raised the important point that the principle of cost-effectiveness dictates that all sectors should be subjected to the same rate of taxation (across-the-board taxation).

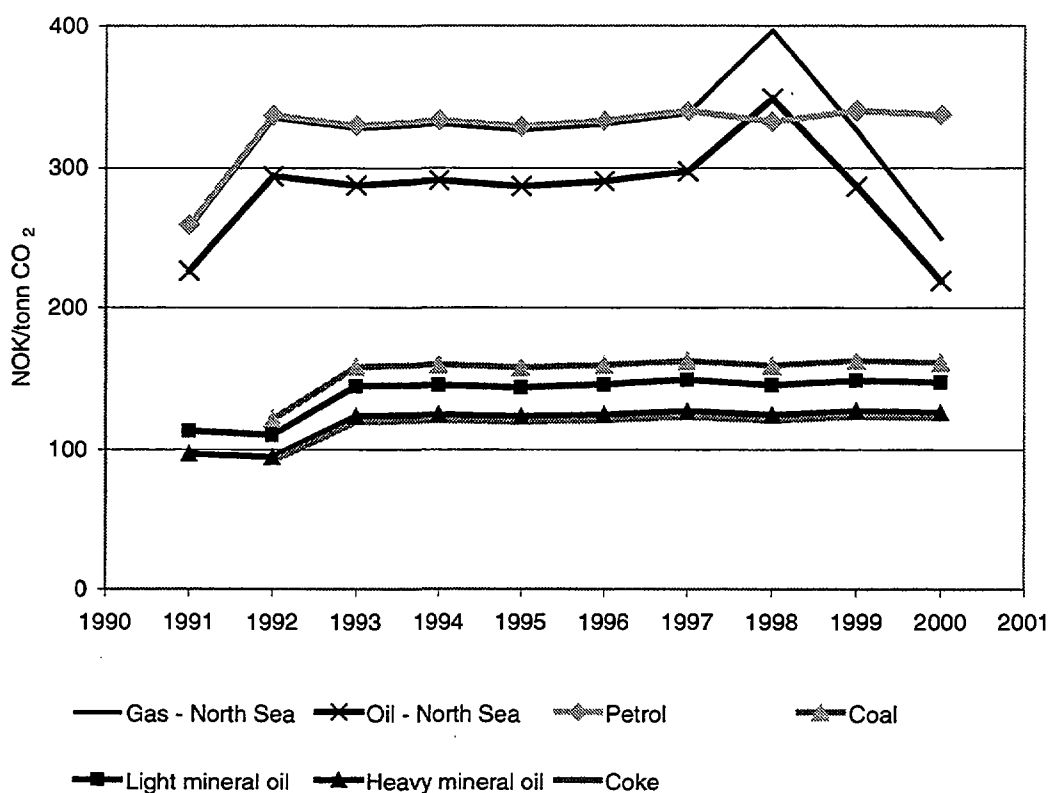


Figure 1: Norwegian CO<sub>2</sub> taxes adjusted for inflation.

The report states: “The purpose of environmental taxes is to contribute to an improved resource use. It is thus important to see improved pricing of the environment as an integrated part of a comprehensive policy for growth, more effective use of resources in the Norwegian economy, and a gradual changing of economic systems in a more environmentally sound direction.” (NOU 1992:3, author’s translation).

## 7 Green Tax Commission

In the fall of 1994, on the recommendation of the environmental tax committee, the parliamentary majority decided to establish a commission to look more closely at how different kinds of taxation regimes could achieve both an improved environment and high rates of employment.

The proposal to establish a green tax commission received a majority vote as a result of bargaining between the Socialist Left Party (SV) and the Labor Party (Ap). During the parliamentary committee of finances' preparation of the 1994 budget, the Labor Party barely succeeded in passing its tax scheme. In return they had to support the Socialist Left Party's proposal to establish a green tax commission (*Aftenposten* news archives, 1994). The commission was composed of representatives from the relevant ministries, research communities, the Norwegian Federation of Trade Unions (LO), the Confederation of Norwegian Business and Industry (NHO), some major industrial corporations, and ENGOS.

The mandate of the commission was to look at "how the interests of both increased employment and an improved environment can be protected by shifting the burden of taxation from employment to activities that imply increased use of resources and increased pollution." (NOU 1996:9, author's translation) In other words, the commission was to look into the possibilities of a shift from red to green taxes (see below).

The current tax system was formed primarily during a time when environmental concerns were given less weight, at the same time as reorganization and structural problems in the job market were less serious than they are today. Red taxes function purely as income sources for the government. The traditional taxes on labor, which is a substantial part of today's tax system, are examples of red taxes. A shift to green taxes would be achieved by increasing environmental taxation and simultaneously reducing other taxes and duties. If this is done in a such way that the public income remains the same, the tax reform is said to be revenue neutral. In recent years, there has been a focus on attaining double dividends by implementing such tax shifts. For example, a shift in taxation from labor to environmentally harmful activities can, over time, contribute to a sustainable development and an industry structure with high levels of employment (see, e.g., Hoel 1997).

During the Green Tax Commission's period of work, it became clear that export industries were skeptical to a green tax reform. The industry feared that the desired increase in employment would not occur, and that profitability from production would also decrease. The increased unemployment that marked the Norwegian society strongly in the 1980s was still fresh in the collective mind. In addition, they maintained that the increased taxes would lead to moving economically important, but pollution intensive, industry out of Norway (*Dagens Næringsliv* news archives, 1995). This again would lead to an increase in airborne emissions because other countries use coal-fired plants to produce energy instead of hydropower. Global emissions would therefore increase, they argued. The export industries instead proposed voluntary agreements with the decision-makers.

Just prior to the publication of the commission's report in June 1996, it became known that there was substantial internal disagreement. In large part, the disagreement was

about whether or not one should tax the carbon emissions from industry exempted from taxation. The minority in the commission—comprising NHO, LO, Norsk Hydro, and the Ministry of Industry and Energy—wanted voluntary agreements. The majority, however, were in favor of introducing a carbon tax of NOK 50 per metric ton of emissions in return for a reduction in employers' social security contributions of 0.7 percent.

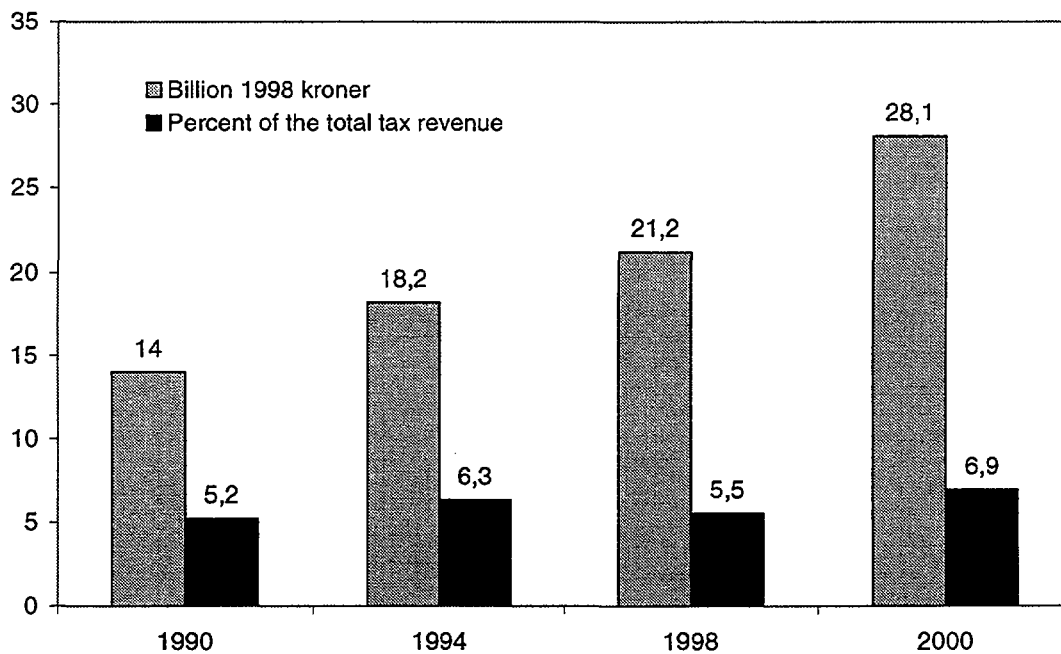


Figure 2: Environmental taxes measured in billions 1998 Norwegian kroner and in percent of the government's total taxes and duties 1990–2000. Sources: Ministry of Finance, Proposal no. 54 to the *Storting* (1997–98), and Proposal no. 1 (1999–2000). The numbers for 2000 are estimates.

## 8 Internal disagreement

At the last meeting of the Green Tax Commission, in May 1996, representatives from the Ministry of Finance, Ministry of Transport and Communications, and the Ministry of the Environment surprisingly withdrew their support for the majority proposal. In an annotation they stated that the decision about the carbon tax should instead be left to the politicians. Other places in the report make it clear that these ministries in principle favor an across-the-board taxation. The representative of the University of Oslo gave a statement at the press conference on the day the report was released. He claimed that the ministry representatives' sudden shift was dictated by the Prime Minister. He said, "To me it seems most likely that the Prime Minister has intervened" (NRK *Dagsrevyen*, 1995, author's translation).

At the same press conference, the leader of the commission stated that he had been asked to postpone the release date of the report. The request came from a meeting between the Prime Minister and the head of the ministries involved in the commission's work. The commission leader believed the request came as a result of concerns about the contents of the report, most probably related to the complex natural gas issue. The Labor Party government had proposed the construction of two gas-fired power plants. This had caused a great controversy and debate, especially from the environmental movement and the political left wing. Electricity production in Norway is based on 99 percent hydropower, and a shift towards gas-fired electricity production would lead to higher emissions of CO<sub>2</sub>. A parliamentary decision was expected two weeks after the report's release. There is therefore reason to believe that the government tried to postpone the release date because it feared that the recommendations of the report could swing the parliamentary vote. The leader of the commission called the request "a very unfortunate and unusual attempt of control" (NRK *Dagsrevyen*, 1995, author's translation).

The alleged intervention caused a political row and storm in the media. However, several days passed before Prime Minister Brundtland responded to the allegations. She rejected all accusations of interference in the Green Tax Commission's work. She claimed that the government simply had considered giving the commission more time to look into the natural gas issue. The opposition obviously did not trust this version of the story, but still were not able to agree on a vote of no confidence towards the government (*Dagens Næringsliv* news archives, 1995). The confrontation proved that the opposition was not able to form a viable political alternative to the Labor government in office.

The main message of the Green Tax Commission was a recommendation to shift the burden of taxation from red to green taxes. The commission presented a number of concrete recommendations as to how such a reform could take place. It recommended both new and expanded environmental taxes and cuts in subsidies that had a negative impact on the environment. The reception of the report generally followed the expected pattern. The ENGOs, the Liberal Party (V), and the Socialist Left Party (SV) were pleased that, despite everything else, a majority in the commission favored a green tax system, while business and industry interests yet again emphasized the dangers posed by environmental taxes to competitiveness and employment levels in cornerstone industries.

## 9 Green tax reform?

The Green Tax Commission's report received a great deal of attention when first released, but some time passed before it was followed up with proposals on tax policy reform. At the end of its most recent term in executive power, in 1997, the Labor Party (Ap) presented the case for an expanded carbon tax. In two key parliamentary reports, the Green Tax Commission's proposals were presented favorably. In both reports, the carbon tax was promoted as the main instrument in climate policy.

In September 1997, the parliamentary elections resulted in a new center-based coalition government being formed by the Christian Democratic Party (KrF), the Liberal Party (V), and the Center Party (Sp). As with all governments in Norway since 1986, this too was a minority government. The executive-legislative balance in the Norwegian parliamentary system gives the parliament the right to overthrow the government in the case of a no-confidence situation. The government, however, does not have the opportunity to dissolve the parliament and call for new elections. This gives the parliament majority a strong lever on a minority government. The center minority government therefore ruled more or less by the will of the opposition. At the same time it was a coalition and thus faced with the pitfalls of internal disagreements.

In the fall of 1997, the departing Labor environmental minister, Thorbjørn Berntsen, said to the press, "The intention was that the proposal of an across-the-board carbon tax would be submitted in connection with a parliamentary report over the fall. The government has not made a final decision, but the completed presentation is with the Ministry of Finance. Now it is up to the new center government to follow up this work." (*Aftenposten* news archives, 1997, author's translation). And the new government did exactly that. In spring 1998, they proposed a small tax (NOK 100) on all CO<sub>2</sub> emissions that had previously been exempted from environmental taxes. Out of consideration for competitively disadvantaged industries, however, they agreed that the tax should be fully compensated in the first years, after which the compensation would be gradually reduced, and finally phased out in 2010 at the very latest (Report. no. 29, 1997-98, and Proposal. no. 54, 1997-98).

Another one of the government's proposals was to increase the tax on electricity without corresponding cuts in other taxes and duties. This caused a stir not only within the coalition, but also among the opposition and the general public because it seemed to counter the principle of revenue neutrality. After considerable attention from the press and other media, the Minister of Finance was forced to retract his statement that electricity taxation is primarily an income-generating tax and not an environmental tax.

In preparing the revised national budget in the spring of 1998, the government openly used an expansion of the carbon tax to apply to offshore activities in order to balance the budget. With this, the industry lobby was able to back up its argument that when it came right down to it, environmental taxes were just another source of income for the government. It was argued that, with this, the government took a step away from using environmental taxes as a political instrument. However, all taxes that affect sales of goods and services that are directly or indirectly connected to polluting emissions will have environmental impacts, and effects will be green, even if the underlying motive is not.



## 10 From taxes to permits?

Not unexpectedly, the proposal to expand carbon taxes incited a storm of protest from the industry lobby. The heavy industry's national association (PIL) calculated that the tax, after the completion of the compensation plan, would cost up to NOK 400,000 per industrial employee. They protested strongly and predicted bankruptcies and re-location of export-oriented industry abroad (*Dagens Næringsliv* news archives, 1998). The figures prepared by the Ministry of Finance for various industries, however, showed that the companies would keep most of their profit, even if the government's proposal should be passed.

This proposal to expand carbon taxes was never implemented. The Labor Party (Ap) did a total turn-around and, along with the conservatives (Frp and H), stopped the proposal during the parliament's preparation of the government's scheme during summer 1998. Instead they proposed the introduction of a system of emission permits<sup>3</sup> to regulate untaxed CO<sub>2</sub> emissions. The idea of an across-the-board carbon tax was thereby weakened.

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<sup>3</sup> We have chosen to use the term 'permit' to denote domestic emission rights. The term 'quota' is used merely for emission rights distributed between countries.

## 11 A System of Tradable Permits ?

The idea of emission permits and permit trading received political interest after the Conference of the Parties (COP) to the Framework Convention on Climate Change in Kyoto in 1997. The COP adopted a Protocol that distributes greenhouse gas emission reductions, or quotas, between countries, and introduced flexibility mechanisms like quota trading and joint implementation as a way to implement those goals. Flexibility is a way to secure cost-effectiveness. The Protocol was a breakthrough for international cooperation, as it incorporates legally binding reduction commitments for the signatories (industrialized countries). However, the ratification process of the protocol is proceeding very slowly, causing serious doubts about whether it will ever be ratified by crucial countries like USA, EU, Japan, and Russia.

Like green taxes, a system of tradable permits is a policy instrument that has potential for a cost-effective outcome. Tradable emission permits will also equalize marginal abatement costs across sources, provided markets are perfectly competitive. The argument for cost effectiveness is thus an argument for emission taxes or tradable permits on the one hand and non-tradable permits and other types of direct regulations on the other hand (Hoel 1997).

The Norwegian parliament decided to consider the consequences of a domestic system of tradable emission permits for greenhouse gases, and a committee was established. The Quota Commission released their report in December 1999. They recommended a system that would include all emissions suitable for regulation by permits, which would cover about 90 percent of Norwegian emissions of greenhouse gases. The majority recommended further that all sources should pay market price, in line with the polluter pays principle. No allocation of free permits should occur. One part of the minority recommended, however, that the yet untaxed emissions should be granted free permits, whereas the other part believed that the issue of free permits should be left to politicians (NOU 2000:1). Over the next few months, the report will go through a process of hearings, where interest groups can present their opinions on the subject. After the hearings, the government will consider the recommendations made in the report. Thus, fast policy results cannot be expected.

## 12 Conclusions

The issue of environmental taxes became an important aspect of Norwegian environmental politics in the wake of the 1987 Brundtland Report. In the course of the decade that has followed, however, the problems associated with the use of taxes have received increasing attention. The environmental taxes that have been introduced are primarily directed towards interest groups that do not have much influence on decision-makers, such as private households and the service sector. It would appear that the burden of taxation has been placed where it meets with the least resistance.

In Norway today, environmental taxes seem to be a declining political instrument. This is contrary to recent development in other European countries such as Germany, Great Britain, Denmark, and Italy. In Germany, for instance, a green tax-reform was implemented in April 1999. There is reason to ask why the idea of a green tax reform never got past the starting gate in Norway. It is important to remember that the Labor (Ap) government never desired the establishment of a green tax commission, but accepted it as part of a budget compromise with the Socialist Left Party (SV). The political foundation for a green tax reform was therefore never in place. This has not changed after the most recent parliamentary elections.

With the permit debate, Norwegian environmental policy has entered a new era. The resistance to environmental taxes is still great, and this is probably much of the explanation for the industry's positive attitude towards a system of permits. This is in spite of the fact that it might imply high costs. The costs mainly depend on the firmness of the permits, and also whether or not they are allocated free of charge. Giving non-tradable free emission permits to some sources would violate cost effectiveness. It would also decrease the government's revenue, revenue that could be used to lighten the burden of taxation in other parts of the economy.

If a system of permits is decided upon, several years might pass before it is established. Most likely, this will be linked to the ratification and implementation of the Kyoto Protocol, where the first emission reduction target period is 2008–2012. This leads to the question about the untaxed greenhouse gas emissions. Will they be left unregulated until 2008? If so, introducing a possible permit solution could be seen as part of a strategy to delay further emission regulations. Most likely however, the previously protected sectors will eventually fall under public regulation. Thus one of the most important consequences of the Green Tax Commission's work is perhaps a new focus on alternative environmental policy instruments. Their idea of a green tax reform is easily combined with a system where the polluters pay market price for emission permits and could therefore still be implemented.

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**CICERO (Center for International Climate and Environmental Research – Oslo)**

CICERO (Center for International Climate and Environmental Research – Oslo) was established by the Norwegian government in 1990 as a policy research foundation associated with the University of Oslo. CICERO's research and information helps to keep the Norwegian public informed about developments in climate change and climate policy.

The complexity of climate and environment problems requires global solutions and international cooperation. CICERO's multi-disciplinary research in the areas of the natural sciences, economics and politics is needed to give policy-makers the best possible information on which to base decisions affecting the Earth's climate.

*The research at CICERO concentrates on:*

- Chemical processes in the atmosphere
- Damage to human health and the environment caused by emissions of greenhouse gases
- Domestic and international climate policy instruments
- International negotiations on environmental agreements

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