

New Policy Ideas and Old Policy Networks: Implementing Green Taxation in Scandinavia¹

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ABSTRACT

In the past, green taxation has become a widespread tool in pollution control in Europe. This new type of state intervention is based on an idea developed by environmental economists and diffused internationally through various channels of information exchange. We argue that the idea itself does not inform us about the way in which green taxation is designed because sectoral policy networks influence power relations, which in turn influence the actual design of green tax schemes. Thus, policy networks are the intervening variable explaining why an internationally diffused policy idea is implemented differently in various national settings. This argument is supported by a comparison of pesticide taxation and CO₂ taxation in Denmark, Norway and Sweden.

The role of ideas in public policy-making has been the focus of many studies. Some focus on the ideas themselves as the factor determining the contents of public policy, while others aim at explaining why an idea influences policy contents differently across countries. Our paper uses the latter approach.

During the recent two decades, the idea of using green taxation has gained force in industrialized countries. Environmental policy-makers have introduced various types of green taxes to reduce emissions. Earlier environmental policy was based largely on the command-and-control approach, which regulates by the use of standards and which tends ‘to force all businesses to adopt the same measures and practices of pollution control and thus accept identical shares of the pollution control burden regardless of their relative impacts’ (Andersen 1994: 21). The basic idea of using taxes in pollution control is to put a price on negative externalities to internalize them in production decisions.

Although green tax schemes adopted are based on the same basic idea, their specific design varies significantly for pesticide and CO₂ (carbon

dioxide) taxation in Denmark, Norway and Sweden. From a methodological perspective, CO₂ and pesticide taxation in Denmark, Norway and Sweden are almost ideal cases for comparative analysis because they enable us to keep constant crucial parts of the context within which the policy processes were embedded. First, the three countries have fairly similar political systems. Second, the driving force behind the green tax proposals in all three countries was the Social Democratic parties. The taxes were all introduced by either Social Democratic governments or governments in which the Social Democratic Party was the leading party.² These governments were either not dependent on the support of parties which traditionally speak for farmers and industrialists, or they were in a situation in which these parties would not challenge the governments on the question of green taxes. Third, environmental interest groups played a limited role in the process in which the specific tax schemes were worked out (Daugbjerg and Svendsen 2003: 80–87). Finally, the tax schemes were introduced to cope with similar types of pollution problems. To explain the variation in tax schemes, we focus on the way in which institutions influenced the transformation of Social Democratic policy proposals into specific tax measures (see Andersen and Sprenger 2000 for a similar institutional approach to environmental policy-making). This raises the question whether the focus should be on macro-political or sectoral institutions.

A brief view on the cases suggests that we concentrate on sectoral institutions. If macro-political institutions were a major explanatory factor, the cross-national ranking as to the degree to which producer interests were accommodated in green tax designs should be similar for the industrial and agricultural sector. This is not the case. For instance, in pesticide taxation, Danish farmers were best off, while in CO₂ taxation, the Norwegian industry was best off. Had national institutions been the main factor explaining variation in tax design, agriculture and industry should have been similarly ranked cross-nationally. These findings point at sectoral institutions as explanatory variables. Thus, the research question is as follows: Do sectoral policy institutions explain the variation in the way in which the idea of green taxation has been transformed into concrete tax schemes? The analysis mainly focuses on the formative periods of green taxation in Scandinavian agriculture and industry in which the tax models were laid down from the mid-1980s to the mid-1990s.

Ideas and policy networks

Many studies have demonstrated that ideas are important in public policy-making (e.g. Hall 1993; Goldstein and Keohane 1993; Goldstein, 1989). Peter Hall (1993: 279) argues that ‘policymakers customarily work

within a framework of ideas and standards that specifies not only the goals of policy and the kinds of instruments that can be used to attain them, but also the very nature of the problems they are meant to be addressing.' Furthermore, he argues that 'the policy making process can be structured by a particular set of ideas, just as it can be structured by a set of institutions' (ibid., 290). Although policy ideas outline the policy instruments to be applied, they seldom specify their specific design. The way new ideas are transformed into specific policies is dependent upon a number of conditions. As Hall (1989: 362) points out:

Simply recognizing that ideas are important to the development of policy is not enough. All too often ideas are treated as a purely exogenous variable in accounts of policy making, imported into such accounts to explain one outcome or another, without much attention to why those specific ideas mattered. But if we cannot say why one set of ideas has more force than another in a given case, we do not gain much explanatory power simply by citing ideas. In short, if we want to accord ideas an explanatory role in analyses of policy making, we need to know much more about the conditions that lend force to one set of ideas rather than another in a particular historical setting.

Explaining how and to what extent new ideas become the underpinnings of public policy has been the focus of several empirical studies (e.g. Hall 1989, 1993; Pekkarinen 1989; Skogstad 1998; Weir and Skocpol 1985). This paper focuses on the factors which explain why the idea of green taxation was implemented differently in three countries with fairly similar political systems. Ideas do not automatically become the underpinnings of public policies. New ideas must be processed through existing political structures and are thus constrained and facilitated by 'structural realities' (Haas 1992: 7). In the public policy literature, the structure of relations between government departments and producer groups is regarded as an important 'structural reality' at the sectoral level affecting policy choices.

In the explanation of policy variation, the policy network approach is particularly useful. It addresses the policy consequences of different organizational arrangements and argues that certain network types tend to be associated with distinctive shapes of policy (e.g. Daugbjerg 1998a). The policy network concept is essentially a comparative concept because it is concerned with variation, irrespective of whether this occurs within a nation or among nations. It has developed an analytical framework enabling analysis of variation in government-interest group relations.

Unfortunately, however, network analysts have not been able to show the real value of network analysis since, to a great extent, their work has been based on single case studies rather than on comparative studies. The latter can be designed to enable a test of whether or not policy networks make a difference in public policy-making; that is, do different network types lead policy choices in different directions? Rhodes and Marsh (1992)

have demonstrated that it makes good sense to apply a continuum to describe and understand government-interest group relations. The terms ‘policy community’ and ‘issue network’ describe the extremes of this continuum. Although some network analysts do not explicitly apply the network continuum in their research, the notion of its existence seems to characterize most of the network literature. Most network analysts use the policy community concept to characterize and describe a tight, closed, highly integrated and highly institutionalized network in which membership is very restricted. The other extreme on the continuum is an issue network in which access is relatively open and in which the degrees of integration and institutionalization are low. Therefore, the network is basically unstable. Table 1 shows one version of the network continuum.

How do we apply the policy network concept in environmental studies, and in particular in studies of green tax policy-making? One approach would be to map who participates in environmental policy-making and then classify this network of actors. It is, however, questionable whether such an approach would help to explain environmental policy choices because it would mislead us to think that there is a distinct environmental policy network, which may not be the case. Instead of being a network in which both polluters and environmentalists are represented, the actual actor constellation may in fact be better conceived of as two conflicting networks, one representing polluters’ interests and one representing environmental interests. This paper applies the latter approach.

In many policy sectors, producer interest groups established relationships with state actors, and thus policy networks, long before environmental problems became an important issue on the political agenda. Advocates of green taxation, therefore, have had to operate within a set of already established state-producer policy networks which their founders did not construct with the issue of pollution control in mind; many other concerns had their attention. To varying extents, the structures of these established state-producer networks have been barriers

TABLE 1: *Extremes on the policy network continuum*

Dimensions	Policy community	Issue network
Membership	Very limited number of members Narrow range of interests represented	Large number of members Wide range of interests represented
Integration	Bargaining and negotiation Frequent interaction	Consultation Unstable pattern of interaction
Institutionalisation	Consensus on policy principles and procedures to approach policy problems	Conflict over policy principles and procedures to approach policy problems

Adopted from Daughbjerg 1998a.

to green taxation. Some established policy networks enable producers to have a considerable say on the environmental policy design because they facilitate the mobilization of opposition to green taxes. Other networks have been less of a difficulty for advocates of green taxation because their design did not facilitate the formation of strong opposition.

The extent to which producer interests are privileged by established state-producer networks, largely, depends upon the character of the networks themselves. Producer groups who are members of policy communities or other types of closed and tight networks, are more likely to succeed in deriving political resources from the network and use them to influence the design of the tax schemes than are members of issue networks and other types of loose networks. When outsiders challenge a policy community by suggesting the use of environmental charges, producer groups can fairly easily form a powerful coalition with state actors sympathetic to producer interests. Since only a narrow range of interests are represented in a policy community, counterbalancing interests need not be taken into account. Well-established traditions of bargaining and negotiation and consensus on procedures and policy principles ensure that policy community members can easily find common positions which enable them to meet reformers with forceful counter arguments. These are often of a highly technical nature. Usually, the purpose of such arguments is to convince other actors 'that "outsiders" are not qualified to make decisions in a given area' (Baumgartner and Jones 1993: 6).

In contrast, in issue networks and other types of loose and open networks coalitions to oppose the introduction of green taxation are difficult to form. Such networks consist of a large number of interests of which many are in conflict, and the lack of stable procedures for interaction makes it difficult to develop common positions. Further, since there are no shared policy principles, coalitions among network members will be formed on ad hoc basis and are basically unstable. Therefore, producers cannot rely on the network as a power resource.

Basically, farmers and businessmen are opposed to green taxes because they increase production costs and are burdensome since they create uncertainty about future tax levels. Therefore, producers usually oppose green taxation.³ If they fail, they attempt to influence the design of the tax schemes; in particular, tax levels and reimbursement of tax revenue seem important to them and producer influence on these matters may be the factor which makes them tolerable to producer groups. It is obvious that producers prefer low tax levels. However, producers may accept high tax levels if tax revenues are reimbursed (Buchanan and Tullock 1975: 143). Obviously, producers are better off if proceeds are reimbursed instead of becoming general state income. Hence, producers prefer green tax

revenues to be considered ‘sectoral money’, which means that revenue is spent within the sector subject to the taxes. However, even though revenues are reimbursed, producers may still oppose the tax scheme because reimbursement may involve redistribution of income among producers and, consequently, there will be winners and losers within the producer community concerned. Therefore, they prefer reimbursement schemes, which involve no more than a minor redistribution of income. If these can be developed, green taxation may become acceptable to producers.

In principle, there are two ways to channel revenue back to producers. The *earmarking approach* pays revenue back as various types of environmental subsidies and requires producers to engage in environmentally friendly activities to qualify for reimbursement (see Andersen 1994: 204–210). However, since some producers may have better opportunities to take advantage of such reimbursement schemes than do others, they may involve redistribution within the producer community.

The *non-earmarking approach*, reimburses proceeds automatically through direct subsidies or through reductions in various types of taxes. The revenue is refunded irrespective of whether producers engage in certain environmentally friendly activities or not. Producers prefer this approach since there are no requirements on behaviour.

The proposition to be tested in this article suggests: the closer the established sectoral state-producer policy network comes to an ideal type policy community (and thus privilege producer interests), the more likely that: (1) producer tax levels would be low; (2) tax revenues are considered ‘sectoral money’; (3) tax revenues are reimbursed automatically by the use of the non-earmarking approach; and (4) redistribution within the sector concerned is minimal.

Tax schemes

In Denmark, Norway and Sweden green taxation became a salient issue in the environmental policy discussions during the 1980s and 1990s. Although a similar concept, or idea, was discussed, the specific tax measures differed across the three countries and across sectors within the countries. This section briefly accounts for and compares the tax schemes in Denmark, Norway and Sweden.

Pesticide tax schemes in Scandinavia

Agri-environmental taxes were introduced in Scandinavian agriculture in the 1980s and 1990s. Sweden has applied pesticide taxes since 1984 and

Norway since 1988. In Denmark, a pesticide tax was put into effect in 1995. In the three countries, the pesticide tax schemes were all introduced by Social Democratic governments or governments in which the Social Democratic Party was the leading party. Although the three countries faced similar pollution problems, they introduced different green tax schemes.

Denmark

In the early 1990s, reductions in pesticide consumption were found to be smaller than expected. In 1986, the *Folketing* (the Danish parliament) had adopted a pesticide action plan stating that the use of pesticides must be reduced by 50 per cent by January 1997. A number of measures such as strict rules on registration of new and old pesticides, compulsory education of farmers and information campaigns were put into operation, but pesticide use decreased less than expected.

In 1995, the Social Democratic led coalition government, supported by the left wing parties, introduced a tax equal to 37 per cent of the retail price on insecticides and 15 per cent on fungicides, herbicides and crop growth-regulating chemicals. The revenue would be reimbursed by suspending the state's share of the regional land tax. The tax scheme would only involve minor redistribution in the farming community; however, horticulture would lose income and, therefore, special measures would be put into operation to ensure that it was not under-compensated (Skatteministeren 1995; Skatteudvalget 1995).

In 1998, the Social Democratic/Social Liberal coalition government doubled the pesticide tax. The revenue was to be used to fund subsidies for organic farming, monitoring of pesticide pollution and policy measures to limit nitrate pollution. Thus, the spending of the new pesticide tax proceeds, to a great extent, would redistribute money from conventional to organic farming. This situation lasted for less than half a year when the government was forced to give in to farming interests in the negotiations on the annual state budget and hence put a ceiling on local land taxes for 1999 and 2000. This implied that many local governments had to lower the land tax, channelling 175 million Danish *kroner* back to farmers. Thus, the pesticide tax scheme was brought back into line with the non-earmarking reimbursement model decided in 1995 (Daugbjerg 1999: 124).

Sweden

In 1984, the Swedish Social Democratic government proposed a 5 per cent fertiliser tax and a tax of 4 Swedish *kronor* per kilogram active

ingredient in pesticides. The Minister of Agriculture stated that there would be no reimbursement of the tax revenue and that the tax schemes should be easy to administer (Swedish Government 1984). Accordingly, the revenue was considered general state income. The *Riksdag* (the Swedish parliament) adopted the proposal (SFS 1984:410). However, in practice, the tax revenue was spent on general environmental purposes in agriculture, such as research related to agri-environmental problems. Only a minor share (4 per cent) of the revenue was spent on advice to farmers (Jordbrukdepartementet 1987: 10). Farmers who were not big consumers of environmental advice had no opportunity to get the tax money back. In other words, there were only weak mechanisms to ensure that the revenue in practice was reimbursed to individual farmers. Of course, farmers perceived this as an unsatisfactory situation (*ibid.*, 86).

In 1988, the Social Democratic government put forward a proposal to double the pesticide and fertiliser taxes. By raising the pesticide tax from 4 to 8 *kronor* per kilo active ingredient, the Minister of Agriculture hoped to decrease the use of pesticides. Another important purpose of the tax was to provide subsidies for the enlargement of manure storage facilities. These subsidies would be provided during a three-year period. Besides funding environmental investments, the taxes would also fund development projects and land conservation schemes (Swedish Government 1988: 24–26, 28–31, 34–35, 40). What should happen with the tax revenue when the subsidy programme concerning enlargement of manure storage facilities terminated in 1991 was not stated. The majority of the *Riksdag* accepted the proposal (Jordbruksutskottet 1988: 24–25, 34, 45–46; SFS 1988:638).

Subsidies for the enlargement of manure storage facilities meant that approximately one-third of the tax revenue, in practice, was earmarked to individual farmers' environmental investments, but two-thirds still went to general policy measures, such as research and development conducted by state institutions (Daugbjerg 1998b). However, reimbursement through subsidies for enlargement of manure storage facilities involved redistribution among farmers. Farmers specializing in plant production would, because of their reliance on chemical fertilisers as the major nutrition source, provide a relatively high share of the tax revenue compared to farmers that specialized in animal production who also relied on animal manure as a source of nutrition. Since only farmers specialized in animal production could apply for subsidies for the enlargement of animal manure storage facilities, the fertiliser tax would involve redistribution from crop to animal production.

In 1994, the pesticide tax was raised again. The pesticide tax was increased from 8 to 20 *kronor* per kilogram active ingredient (SFS 1994:1706). It was stated that, in principle, green tax revenues were

general state income but in practice there should be parity between tax revenues and agri-environmental subsidies (Jordbruksutskottet 1994). However, later on, this practice was weakened (personal communication, Jordbruksverket, December 1997).

Norway

In Norway, pesticide taxes were also introduced in the 1980s. In the autumn of 1987, the Social Democratic government put forward a proposal in the *Storting* (the Norwegian parliament) which would authorize the government to introduce taxes on chemical fertilisers and pesticides to provide funding for agri-environmental measures. The proposal did not specify the level of the tax but stated that the government had estimated the revenue at 12 million Norwegian *kroner* (Landbruksdepartementet 1987). This was approximately equal to a 1 per cent fertiliser tax (Vatn 2000: 118) and a 2 per cent pesticide tax (Miljøverndepartementet 1989: 75). It was stated that all revenue should be spent on agri-environmental measures (Landbrukskomiteen 1987: 8, 12). However, only a little more than a quarter of the proceeds were reimbursed to individual farmers; the rest was spent on research and development, administration and inspections (Landbruksdepartementet 1988: 50).

In the 1989 state budget proposal, the government proposed an increase in fertiliser and pesticide taxes so that on average pesticides would be taxed by 8 per cent of the retail price. Half of the revenue would be spent on specific measures on individual farms, nutrition planning and prognoses, information, advice and registration of pollution. The rest of the revenue would be spent on research and development projects and on inspections. When environmental subsidies included in the agricultural agreement (85 million *kroner*) (Landbruksdepartementet 1989: 25), are taken into account, the total environmental support directed towards individual farms still exceeded the total green tax proceeds. Since the subsidies to be spent on environmental improvements on individual farms would be open to all farmers, there would, potentially, be little redistribution. Besides, since there were significant environmental subsidies in the agricultural policy, presumably all farmers would be able to get a higher refund in environmental subsidies than they had paid in green taxes.

During 1987 and 1988, the design of the Norwegian fertiliser and pesticide tax schemes was established. In the following years, the taxes were gradually increased but there were no changes in the way the revenue was reimbursed and administered. In the 1990 state budget, the pesticide tax was raised to 11 per cent (Landbruksdepartementet 1989: 74;

Landbrukskomiteen 1989), and in 1991 it was increased to 13 per cent (Landbruksdepartementet 1990: 8, 29; Landbrukskomiteen 1990).⁴ Despite these increases, farmers still received much more in environmental subsidies than they paid in green taxes when the environmental subsidies of the agricultural policy were included in the calculation.

Table 2 compares the tax designs on two dimensions and shows that in terms of accommodating farm interests in the design of tax schemes, Swedish farmers were worst off and their Danish counterparts were best off. Norwegian farmers were in an intermediate position.

TABLE 2: *A comparison of pesticide tax schemes*

	Denmark	Norway	Sweden
Tax level	High	Medium	High
Reimbursement	Yes	Yes	Yes
<i>Sectoral money?</i>	Yes (1)	Yes (2)	To some extent (3)
<i>Type</i>	Non-earmarking	Earmarking	Earmarking of sectoral part of revenue
<i>Redistribution</i>	Minor	Minor	Significant

(1) Fully reimbursed to individual farmers through suspension of the state land tax.

(2) Spent on general agri-environmental purposes and environmental subsidies. Revenue more than fully reimbursed to individual farmers when the environmental subsidies of the agricultural policy are included.

(3) Revenue originally considered general state income, but not stated clearly until 1995. In practice, revenue mostly spent on general agri-environmental purposes, but partially reimbursed to individual farmers from 1989 to 1991.

Industrial CO₂ tax schemes in Scandinavia

The three Scandinavian countries were among the pioneers in introducing industrial CO₂ taxes (Andersen et al. 2001: 11). This step was taken shortly after the 1987 report, *Our Common Future*, from the Brundtland Commission. The report recommended the idea of using green taxes to fight environmental problems (Andersen 1994, 24). Norway and Sweden introduced CO₂ taxes in 1991 and Denmark followed suit in 1992. In Sweden and Norway, the taxes were introduced by Social Democratic governments but in Denmark the Social Democratic Party joined forces with other opposition parties and forced the liberal-conservative minority government to introduce the tax. Although the three countries faced the same global warming problems, and had the same perception about how to combat the problems through green taxes, they introduced remarkably different CO₂ tax schemes.

Norway

The Social Democratic Norwegian government introduced CO₂ taxes in 1991 to reach the goal of stabilizing CO₂ emissions during the period

1989–2000. The idea of using CO₂ taxes followed the accentuation of environmental taxes as a promising tool in several government-sponsored studies (Reitan 1998).

The Norwegian CO₂ tax is differentiated. The mainland energy intensive industries are subject to some very large tax reductions and some of these industries are totally exempted from CO₂ taxation. The pulp- and paper industry and the fish meal industry are entitled to a 50 per cent reduction in the general tax on fuel oils, resulting in a tax level of approximately 100 Norwegian *kroner* per ton CO₂ in 2000. Mainland burning of natural gas, and use of coal in industrial production processes are exempted from the tax (the metallurgical industry is responsible for 95 per cent of total coal consumption; some chemical industries are favoured by this exception as well). The cement- and leca industry is totally exempted from CO₂ taxation. In contrast to the mainland energy intensive industries, the offshore oil industry in the North Sea is embraced by high CO₂ taxes (274–312 *kroner* per ton CO₂). As a result of the exemptions, only 64 per cent of the total Norwegian CO₂ emissions are subject to the CO₂ tax (Pedersen 2002, 36; Statens Forureningstilsyn 2002). Revenue is not recycled, but used as part of the general state budget (Speck 2000).

In 1996, the Green Tax Commission, an expert committee appointed by the government, proposed the introduction of a CO₂ tax on the exempted industries (Kasa 2000b: 7). As part of the 1998 green tax reform, the Norwegian minority centre-government tried to extend the CO₂ tax to embrace all industrial sectors, but after a tense debate, the proposal was voted down in parliament by an alliance between the Social Democratic Party, the Conservative Party and the Progress Party (Svendsen et al. 2001: 494–495).

Sweden

In 1987 a Commission of Environmental Charges was appointed in Sweden. Two years later the commission recommended the introduction of a CO₂ tax, and in 1991 the Social Democratic government introduced a tax of 250 Swedish kronor per ton CO₂. The tax was part of the comprehensive 1990 Tax Reform (Lundqvist 1996: 314; SOU 1989:83; 259). The purpose of the CO₂ tax was to stabilize CO₂ emissions during the period 1990–2000 and to generate tax revenue (SOU 1989:83; Nordic Council of Ministers 1994: 30). At the same time, the general energy tax was reduced and there was a possibility of some tax reductions for very energy intensive industries (e.g. cement, lignite, and glass). Furthermore, the refineries and the steel- and metal industry received important exemptions. But in general, the Swedish CO₂ tax level was high.

In 1991, a new commission recommended to lower CO₂ tax on the manufacturing industry and commercial greenhouse horticulture to improve the competitiveness (SOU 1991:90; 3, 141–166). The incoming centre-right government (1991–94) followed the recommendation and reduced the tax on the manufacturing industry significantly. Revenue from the manufacturing industry's energy and CO₂ taxes decreased from 3.6 billion kroner in 1992 to 0.5 billion kroner in 1993, while the revenue from households and service industries increased. After the reform, the tax levels paid by service industry and households were four times larger than the tax levels paid by the manufacturing industry (Pedersen 2000).

A third commission (SOU 1994:85) proposed to dismantle the CO₂ tax exemptions for the steel and metal industry but in parliament the proposal did not gain sufficient support. When the Social Democrats were back in power, the CO₂ tax on the manufacturing industry was doubled in 1997 (Pedersen 2002: 36). Still the tax level is not as high as back in 1991, and there are still exemptions, e.g. for metallurgical processes. The Swedish tax is index-bound (the Swedish Government 1996) and revenue is normally not reimbursed, but certain pilot projects for the development of environmentally-friendly products can be granted tax relief or tax exemptions by the government (Speck 2000). The nominal industrial tax level in 2003 is 190 kroner per ton CO₂ (Näringsdepartementet 2003).

Denmark

In Denmark, a 1985 commission proposed extending the use of green taxes (Pedersen 2003: 112–113). A few years later, the minority government consisting of the Conservative Party, the Liberal Party and the Radical Liberal Party, presented an energy action plan stating that CO₂ pollution was the worst pollution problem in the energy sector. A goal of 20 per cent emissions reduction in the period 1988–2005 was decided, and it was proposed to combat the problem by introducing CO₂ taxes (Energiministeriet 1990).

In 1991, when the Radical Liberal Party had left the governing coalition, the Conservative-Liberal minority government faced a proposal from the Social Democratic Party and the Radical Liberal Party, suggesting the introduction of a relatively high general CO₂ tax of 100 Danish *kroner* per ton CO₂. The proposal was supported by a 'green majority' of the parliament. Following intense negotiations between the minority government and the 'green majority', the government ended up proposing a tax level of 100 *kroner* per ton CO₂ for households and 50 *kroner* per ton for industry. The tax was not applied to the offshore oil

industry. Special non-earmarked reimbursements for energy-intensive industries reduced the average tax rate to 35 *kroner*. Revenue was reimbursed and earmarked through the use of subsidies for energy saving measures (Speck 2000). A majority in parliament supported the proposal and the new tax was implemented in 1992 (Pedersen 2000: 441).

After more than ten years in opposition, the Social Democratic Party resumed power in 1993 in a majority government with the Radical Liberal Party, the Centre Democrats and the Christian People's Party. A new commission was appointed to investigate the possibility of raising green taxes in general and of reimbursing the revenue (Finansministeriet 1993: 3). After a long process of hearings and negotiations, the government proposed a new CO₂ tax design as part of a comprehensive tax package in 1995. The new tax rates were 600 *kroner* per ton CO₂ regarding space heating, and companies would pay 90 *kroner* for light industrial processes and 25 *kroner* for heavy processes. If individual agreements regarding increased energy efficiency are achieved between companies and the Danish energy authorities, tax rates are lowered to 68 *kroner* per ton CO₂ for light processes and 3 *kroner* for heavy processes (Pedersen 2002, 36). In contrast to the Norwegian offshore industry, the Danish offshore industry is still exempted from paying CO₂ taxes.⁵ Tax revenue incurred by industry is fully recycled to industry through (i) investment grants for energy saving measures (earmarked), (ii) reduction of the employer's contribution to the additional labour market pension fund (non-earmarked), (iii) reduction of employer's contribution according to the Act on labour market funds (non-earmarked) and (iv) a special fund for small and medium sized enterprises because these companies receive only a small share of the other measures (non-earmarked) (Speck 2000).

Comparison

The CO₂ taxes of the three countries vary considerably. Table 3 compares the tax schemes. In general, the Swedish industries are worst off with relatively high taxes although some industries (in particular metallurgical industries) experience tax reductions. Norwegian energy intensive industries are best off, since taxes on mainland energy intensive industries are very low or non-existent. The Norwegian offshore industry is an important exception. Danish industries hold an intermediate position. All mainland industries pay taxes but the offshore oil industry is exempted. In general, the Danish taxes are lower than the Swedish taxes, and, in addition, revenue is recycled to the industrial sector, which is normally not the case in Sweden.

TABLE 3: *A comparison of industrial CO₂ Tax Schemes*

	Denmark	Norway	Sweden
Tax level	Medium (1)	Low (2)	High (3)
Reimbursement	Yes	No	Only a small part
<i>Sectoral money?</i>	Yes		Yes
<i>Type</i>	Earmarking and non-earmarking		Earmarking
<i>Redistribution</i>	Some, minor		Minor

(1) In practice the offshore industry is exempted from taxation.

(2) The tax is high for the offshore industry.

(3) Production processes in refineries and metallurgical processes are exempted from taxation.

Agricultural and industrial policy networks

As mentioned earlier, to explain variation in green tax schemes across the three Scandinavian countries under scrutiny, the analytic approach is to focus on the extent to which producers can use established state-producer policy networks as power resources. Theoretically, it has been argued that to varying extents the structure of these networks privileges producer interests in environmental policy-making. The extent to which sectoral policy networks privilege producer interests can be revealed by examining whether there are counterbalancing forces in the networks concerned and whether the members share common values. The exclusion of actors that are capable of counterbalancing producer interests is an indicator that a policy community exists. Exclusion of certain actors implies that alternative policy options and problem perceptions are not seriously considered in the policy process because there are no insiders to put forward such options. Further, shared values may develop. Looser policy networks are characterized by the presence of counterbalancing interests. This indicates that the extent to which producers are privileged by the network structure is limited. Inclusion of counterbalancing forces implies that alternative options can be put on the agenda and shared understandings are unlikely to develop. It is important to point out that an analysis of whether or not counterbalancing forces are included in sectoral policy networks must not confuse presence with influence; being present does not necessarily mean being influential.⁶

In addition to establishing the extent to which producer groups are privileged by the structure of established state-producer policy networks, we analyse whether this factor actually influenced producers' ability to influence tax designs by analysing the processes in which specific tax schemes were shaped. In other words, we move beyond correlation.

Agricultural policy networks

The extent to which farm interests are privileged by the structure of agricultural policy networks can be revealed by examining whether there are counterbalancing forces, particularly in the price negotiations which are central to agricultural policy-making. The potential counterbalancing forces in agricultural policy are macro-economic constraints and consumer influence. The former constraint is usually the concern of ministries of finance while the latter can be promoted by consumer groups and/or certain state institutions. The existence of counterbalancing forces within the network also means that shared values privileging farm interest may not develop.

Denmark

The Danish agricultural policy network has a core and a periphery. The core consists of the agricultural associations affiliated with the Agricultural Council (*Landbrugsraadet*) and the Ministry of Food, Agriculture and Fisheries (MFAF)⁷ and comes close to the ideal type policy community. These actors share an interest in maintaining the international competitiveness of agricultural production in order to uphold a high level of export earnings and a high level of employment in the agricultural sector, especially in the food processing industry. Contacts between these core members in matters concerning national policies administered by the MFAF take place in a large number of formal committees. The formulation of Danish positions in EU agricultural policy-making and implementation decisions are often made in a complex, continuous system of informal contacts and in various types of ad hoc working groups which usually consist of civil servants from the MFAF and/or its agencies and officials from the agricultural associations. Access to these working groups is open to some non-agricultural interests; however, they only participate on an occasional basis because they have no interests at stake in the specific issues discussed. The non-agricultural interests represented in the advisory commission have not been able to position themselves centrally in the agricultural policy network, and hence they form the periphery of the network (Daugbjerg 1998a: 151–152, 1999: 113–118). Since Denmark has had a considerable economic net benefit from the Common Agricultural Policy (Ackrill, forthcoming), agricultural policy-making has not been constrained by macro-economic concerns. In fact, Danish ministers of finance have had no reason to counterbalance agricultural interests, and therefore the Ministry of Finance plays a minor role within the agricultural policy network (interview, 1998).

Clearly, the agricultural policy network favoured the interests of farmers and they could use it as a political resource in pesticide taxation.

In 1993, the government set up a commission (the Dithmer Commission) consisting of civil servants from various ministries to examine the possibilities of using green taxes in industry and agriculture. It put the question of introducing pesticide and fertiliser taxes onto its agenda. The government made it clear in its mandate to the Commission that green taxes would not be allowed to affect the international competitiveness of Danish industry and agriculture, and that tax revenues had to be reimbursed, using the earmarking approach (Finansministeriet 1994a: 2–3).

In its mid-term report published in April 1994, the Commission examined four pesticide tax models and concluded that only a tax based on the market price could be recommended. Although the government had asked the Commission to consider earmarked reimbursement (Finansministeriet 1994a, 311–321), the issue was excluded from the report to accommodate farm interests and thus decrease the possibility of strong opposition from farmers. Three non-earmarking reimbursement schemes were discussed: one in which reimbursement was based on direct acreage support, one in which refunds were based on the type of crops grown on each farm (crop type and pesticide use are closely related), and one in which proceeds were refunded through a lowering of land taxes. Both of the reimbursement models based on direct payments were dismissed because the Commission concluded that they were likely to contradict European Union Law. Furthermore, it was held that reimbursement based on direct acreage support would redistribute income from arable, pig and poultry farmers to dairy farmers, which made it unacceptable to the farm unions. Reimbursement through lowering of land taxes was seen as less problematic in relation to EU Law and caused only minor redistribution within the farming community (Finansministeriet 1994a: 311–321). Farmers accepted this model as the second best solution. This type of reimbursement did not generate winners and losers among farmers, and therefore the farmers' unions accepted the pesticide tax as a tolerable measure, although they would have preferred not to have it.

The political discussion on the design of the 1998 pesticide tax also demonstrates the power of farm unions. After public concern about the use of pesticides had declined in 1998, farm interests were accommodated in the agreement in the 1999 budget which, in practice, reintroduced non-earmarked reimbursement (Daugbjerg 1999: 123–124).

Sweden

From a comparative perspective, Swedish farmers have lost considerable influence since the late 1950s. The agricultural policy network shares few

characteristics with the ideal type policy community. This is indicated by the fact that consumers have achieved a central position in the agricultural policy network. In the early 1960s, the Social Democratic government encouraged the formation of the Consumer Delegation and provided it with access to the agricultural policy network, (Steen 1988: 214–215). It consisted of representatives from the trade unions, the Co-operative Union and Wholesale Society. Gradually, it gained power, and became an equal negotiation partner in the annual agricultural price negotiations. The usual way of conducting these negotiations was that Farmers' Federation and the Consumer Delegation reached agreement on a framework for price setting and later on agreed on a detailed price proposal. Usually, the Swedish state representatives played a modest role in the process (SOU 1984:86; 76–78, 418–420; Steen 1988: 204–207; Micheletti 1990: 132).

The presence of consumers in the agricultural policy network is not the only indication that Swedish farm interests were only privileged to a limited extent by the structure of the agricultural policy network. Since the early 1960s, the Agricultural Marketing Board (which administers the price policy) has developed into a mediator between consumers and farmers. For example, in the 1990 agricultural policy reform process, it tried to balance between consumer interests favouring deregulation and agricultural interests seeking limited adjustments of the old policy (Daugbjerg 1998a: ch. 6).

The Ministry of Finance has had relatively few contacts with the Ministry of Agriculture (Pettersson 1989: 61–62), considering that it controls the state budget. However, although the Finance Minister and Ministry, in terms of contacts, have not been central actors in the agricultural policy network, they have had an important say in agricultural spending decisions. Before the government could present price agreements to the *Riksdag*, the Minister of Finance had to approve them. Since Swedish ministers of Finance have a powerful position in the cabinet and traditionally have tried to limit increases in expenditures (Larsson 1993: 212), macro-economic concerns have constrained agricultural policy-making.

Swedish farm interests were not privileged to the same extent as Danish farm interests by the structure of the agricultural network, and therefore they were unable to use the network as a power resource. This was evident in the discussion on pesticide taxation. In 1983, a state commission discussed a tax on pesticides. The majority of the commission suggested a differentiated tax on pesticides based on their risks on the users' health, and not on the environmental effects of pesticides. The majority of the commission suggested that 75 per cent of the tax revenue was spent on research, and 25 per cent on registration and re-registration

of pesticides and on information about pesticide use (SOU 1983:11; 320–323, 343–344).

Not surprisingly, the commission's farmer representatives opposed the majority's tax proposals. They argued that most of the purposes which the tax was intended to fund were not farmers' economic responsibility but rather a state responsibility. They were prepared, however, to accept to pay the costs of registration and re-registration of pesticides (SOU 1983:11; 372). The National Board of Agriculture (*Lantbruksstyrelsen*), which administered the agricultural structural policy and provided advisory service to farmers, formed part of the commission's majority and, thus, left farmers isolated in the policy process. Farmers were unable to mobilize sufficient opposition to prevent the Social Democratic government from introducing a tax on pesticides in 1984. The tax introduced was considerably higher than the one suggested by the commission, and the Minister of Agriculture considered the tax revenue general state income and not 'sectoral money'. Originally, the commission had recommended the latter.

In 1988, farmers were again overruled. A working group set up by the Minister of Agriculture suggested an increase in the pesticide tax. The group recommended that tax revenues be reimbursed and spent on environmental measures in agriculture and research. The farmer representatives of the working group opposed the tax increases, arguing that higher tax levels would increase production costs and therefore had to lead to higher food prices. However, they did not obtain support for their position (*Jordbruksdepartementet* 1987: 68–75, 85–86; Swedish Government 1988, bilaga 2: 93). The government followed the recommendations of the working group and proposed a 100 per cent increase in pesticide taxes. The majority of the *Riksdag* accepted the proposal. Surprisingly, the Centre Party, which has traditionally represented farmers' interests, did not issue any statements supporting farmers; only the Conservatives opposed the proposal (*Jordbruksutskottet* 1988: 24–25, 34, 45–46). The proposal to increase the pesticide tax in 1994 was supported by the Centre Party; However, it did try to have tax revenues considered as 'sectoral money,' but failed (*Jordbruksutskottet* 1994; *Skatteutskottet* 1995).

Norway

Norwegian farmers are often regarded as some of the most powerful farmers in Europe because they are heavily subsidised. However, the degree of agricultural support is not necessarily an indication of the power of farmers because it expresses the political will to support farmers' income and says little about Norwegian farmers' ability to mobilize

support within the political system when the issue of green taxes is put onto the political agenda.

At first sight, the Norwegian agricultural policy network looks like a policy community, since consumer groups are excluded from the network. However, the network is looser than a policy community because it includes actors who can bring in alternative problem perceptions and policy options to counterbalance the influence of farmers in the policy process. Steen (1988) has analysed farm price negotiations in Norway since World War II and shows that while there has been no explicit conflict between consumer concerns and the interests of farmers, a conflict between farmers and the state has developed.⁸ He points out that farmers' demands for income increases were in conflict with the state's desire to distribute economic resources to purposes other than agriculture (*ibid.*, 115). A clear indication that the Norwegian State is concerned with interests other than those of farmers is the composition of the state negotiating commission in the price negotiations. Since the early 1970s, the commission has consisted of the Department of Agriculture, the Department of Finance and the Department of Consumer and Administrative Affairs. The Department of Agriculture has chaired the commission, while the Department of Consumer and Administrative Affairs has had the overall responsibility for the negotiations (*ibid.*, 203–204; Klausen 1996: 141). Steen (1988: 202) convincingly argues that the composition of the commission demonstrates that general price and income concerns and macro-economic planning have been of central importance in the negotiations. Another indication that agricultural interests do not dominate the network is the high number of breakdowns in the price negotiations. From 1947 to 1985, 52 per cent of the negotiations broke down in Norway, while this only happened to 14 per cent in Sweden in the same period (*ibid.*, 153–154).

There are some indications that since the mid-1980s, the Department of Agriculture has become less willing to include the agricultural representatives in policy commissions and investigations. Farmers' associations complain that the Department of Agriculture has introduced tough hearing deadlines, which makes it difficult for them to prepare well-considered replies (Opedal and Rommetvedt 1995: 29). This may indicate that the Department, to some extent, has now changed from being a partner to being a counterbalancing force.

In 1989, another counterbalancing force was included in the agricultural network as the Department of the Environment gained access to the price negotiations (Landbruksdepartementet 1989: 12; Mydske, Steen and Taarud 1994: 63). This is not the only indication that the Department of the Environment was becoming an important actor in agricultural

politics in the 1980s and early 1990s. Since 1987, the state under-secretaries of the departments of agriculture and environment have met twice a year, and a co-ordination group consisting of officials of the two departments have met two to six times annually (Hovik and Opedal 1996: 179). These developments in the Norwegian agricultural policy network indicate that farm interests during the period in which pesticide taxation was introduced were losing influence. The network did not privilege their interests to the same extent as earlier and not to the same extent as in Denmark.

Since farmers received much more in environmental subsidies than they paid in green taxes (when the environmental subsidies of the agricultural policy are included in the calculation), they did not need to worry too much about the taxes. This may be the reason, that neither the farm associations nor their representatives in the *Storting*, the Centre Party, opposed the pesticide tax. Farmers accepted the taxes and the tax levels as long as they were used as sources of funding agri-environmental measures (Norges Bondelag 1990: 104). However, there seemed to be a limitation to what the farm associations would accept in terms of tax levels because the international competitiveness of Norwegian agriculture could be damaged (Daugbjerg 1998b: 275).

A comparison of the extent to which farm interests were privileged by the structure of agricultural policy networks in Denmark, Norway and Sweden shows that Danish farmers were the most privileged because the agricultural policy network came closest to the ideal type policy community. There were no powerful actors to counterbalance farm interests within the agricultural policy network. Moreover, macro-economic concerns have not been a constraint on price policy-making. Swedish farmers were the least privileged since the agricultural policy network shared fewest characteristics with a policy community. Within the agricultural policy network, consumers counterbalanced them, and state agricultural authorities acted as mediators between the two conflicting interests. Furthermore, macro-economic concerns constrained agricultural policy making. Norwegian farmers were in an intermediate position. They were not directly counterbalanced by consumers within the agricultural network. However, Norwegian farmers were less privileged than Danish farmers because they were constrained by macro-economic concerns.

Industrial policy networks

The extent to which industrial policy networks privilege business interests can be revealed by analysing the role played by labour

unions, ministries and industrial organizations in industrial policy networks. Do the labour unions and ministries share common values with the industrial interests and do they form an alliance with them in order to protect production and jobs or do they view industry interests as opponents? In other words, are the labour unions and ministries counterbalancing forces?

Norway

Since Norway was one of the pioneers in international environmental politics back in the 1980s (Tenfjord 1995: 70), it seems paradoxical that Norway has not succeeded in levying CO₂ taxes on the heavily polluting energy intensive mainland industries. The policy network representing the interests of the mainland heavy industry (most importantly the metallurgical industry) comes very close to the ideal type policy community. This explains why the interests of the most polluting industries in Norway were privileged in environmental policy-making. The network consists of a small number of actors in- and outside government. The members of the policy community are the Federation of Norwegian Process Industries, the Confederation of Norwegian Business and Industry, the Confederation of Trade Unions, the Ministry of Oil and Energy, and the Ministry of Trade and Industry, who are all devoted to protect the mainland heavy industry. They benefit from very good relations with the Labour Party - which established the heavy industry in the post-war period - and the Conservative Party (Kasa 2000a: 108; Svendsen et al. 2001: 494; see also Thue 1996). The presence of both the trade unions and employer's organizations within the same tight, well integrated and highly institutionalized policy community makes the network powerful (Pedersen 2000).

Kasa argues that 'The network members are few, with a high degree of internal consensus, balanced power resources and clear economic interests' (Kasa 2000a, 108). Furthermore, the members of the policy community have a long tradition for working closely together: 'Due to the fact that the metallurgical industry is a centre-piece of the post-war state-led industrialization drive, this industry traditionally enjoys privileged access to government agencies, most importantly the Ministry of Trade & Industry as well as the Ministry of Petroleum and Energy' (Kasa 2000a: 108; see also Thue 1996). Interviews with members of this policy community revealed that they were very proud of having participated in establishing the mainland heavy industries and perceive themselves as guardians of the jobs that the industries bring about in the Norwegian periphery. The members shared a common *industrial culture* (Kasa 2000a: 108).

There are no counterbalancing forces in this strong network. Norwegian environmental organizations participate in commissions, committees etc. in environmental policy-making, but their influence has been marginal when confronted with the energy intensive industries (Kasa 2000a, 109–115) since they are not members of the powerful policy community. The same can be said for the offshore industry and the private service sectors. Despite the fact that the service and offshore industries are more important for the Norwegian economy than the energy intensive industries, these are not politically privileged to the same extent as the heavy industry, which is the reason why these businesses have to pay high CO₂ taxes (Kasa 2000a: 110, 116). Even though there was a strong pro-environmental drive in Norway in the 1990s, the energy intensive mainland industries managed to stay clear of the CO₂ taxes. The idea of environmental taxation was diffused to other sectors of the Norwegian economy (transport, households, service industries, off shore industries) but the energy-intensive industry remained exempted.

Every time CO₂ taxation of the energy intensive mainland industries have been proposed, the very powerful policy community is activated, blocking the introduction of such policy instruments (Kasa 2000a: 109–115; Svendsen et al. 2001: 494–495). In the early 1990s, the policy community enabled its members to undertake a concerted offensive media campaign and successfully persuade policy makers to make the energy intensive mainland industries stay almost clear of the CO₂ tax (Kasa 2000a: 109; Pedersen 2000: 444–445). In 1996, the policy community was reactivated, when a Green Tax Commission came up with a controversial proposal. The commission was composed of representatives from the Confederation of Norwegian Business and Industry, the Confederation of Trade Unions, the Foundation for Nature Conservation, the energy company Norsk Hydro, and from the ministries for Trade and Industry, Transportation, the Environment, and Finance (NOU 1996:23; Kasa 2000a: 110–111). At the penultimate meeting of the commission, the majority of the representatives agreed to extend the CO₂ tax to embrace all industries at a level of 50 *kroner* per ton CO₂ and reimburse the revenue through a reduction of labour taxes paid by employers, but a minority of representatives from the Confederation of Norwegian Business and Industry, the Confederation of Trade Unions, Norsk Hydro and the Ministry of Trade and Industry were against the extension of the tax (Kasa 2000a: 111–112). After the meeting, the representative from the Confederation of Norwegian Business and Industry leaked the proposal to the newspapers and emphasised the serious consequences of the proposal. When the commission had its final meeting, the former pro-tax ministerial representatives now denied supporting the tax. Later, it was revealed that Prime Minister Brundtland

(Labour Party) had instructed the ministerial representatives not to support the proposal; the motive being to avoid threatening the metallurgical industry (Kasa 2000a: 112). This is an example of how the policy community benefits from the close relations to the Labour Party.

In 1997, a centre minority-government replaced the Labour Party government. The new government, supported by the environmental movement and The Federation of Norwegian Commercial and Service Enterprises, proposed to extend the CO₂ tax to embrace all industries at a level of 100 *kroner* per ton CO₂ (Kasa 2000a: 114–115; Svendsen et al. 2001: 494–495). This time, the Federation of Norwegian Process Industries, the Confederation of Norwegian Business and Industry and the Confederation of Trade Unions, through a combination of a new offensive media campaign (Svendsen et al. 2001: 494–495) and a vigorous lobbying campaign directed towards the political parties, once again avoided the tax (Kasa 2000a: 114–115). This happened despite the fact that the policy community had to fight the less energy intensive industries organized in the Federation of Norwegian Commercial and Service Enterprises, who were in favour of the tax raise.

Sweden

Sweden has a long history of a comprehensive and important energy intensive industry based on domestic resources (ore and wood), and traditionally Swedish government has supported these industries (Hillring 2000: 19). During the 1930s, Swedish industrial policy was based on financial support for investments (Rothstein 1992: 226). When several industries faced a financial crisis in the 1960s and 1970s an industrial policy orientated towards extensive direct support to the largest companies was introduced (Grønbæk 1991; Pontusson 1991). In the 1980s, it was realized that this industrial policy approach did not work well, and as a result, a policy aimed at stimulating technological development was introduced. The purpose was to rearrange industry, making it possible for Sweden to get a foothold in the growth industries. Special attention has been devoted to small and medium-sized businesses (Grønbæk 1991: 115; NOU 1996:23; ch. 5). Parallel with that development, the Social Democratic government taking office in 1982 became more interested in co-operating with the environmental organizations than was former governments (Rothstein 1992: 265). As a consequence, the old industrial policy network disintegrated into a loose network. Sweden has a long tradition of corporatist arrangements, but the Board of Industry never assumed the same prominence as corporatist arrangements in other policy sectors, mainly because the Ministry of Industry was reluctant to delegate competence to the board (Jacobsson 1984: 57; Pontusson 1991:

175). Furthermore, the loosely integrated industrial policy network did not enable a depoliticizing of industrial policy. Traditionally, the Social Democratic Party has been willing to legislate against the wishes of industry when appropriate (Grønbaek 1991: 105–106). This disintegration of the industrial network and the inability to depoliticise the industrial policy meant that Swedish industrial interests have not been privileged to the same extent as in Norway.

This was evident in environmental policy making. Issues of environmental policy remained for many years a responsibility of the Ministry of Agriculture, but in 1987 a Ministry for Energy and the Environment was established. The new ministry was given an offensive and co-ordinating role within the Cabinet (Lundqvist 1996: 270) and was soon the instigator of an ad hoc Commission of Environmental Charges which came up with a comprehensive CO₂ tax scheme (SOU 1989:83; 259) at a time where environmental issues were dominant on the political agenda (Lundqvist 1996: 263). The Commission of Environmental Charges was composed of environmental organizations, the industries affected, and the trade unions. The lack of a well-integrated industrial policy network in Sweden was presumably the reason why the Confederation of Trade Unions did not join forces with the Federation of Swedish Industries, which was strongly opposing the CO₂ tax proposal (Pedersen 2000: 446). Within the commission, the Swedish Society for Nature Conservation supported the introduction of CO₂ taxes strongly, advocating an even higher tax level. Since the industrial policy network was relatively loose, it was possible to introduce a relatively burdening CO₂ tax. However, the heavily polluting metal industry won an exception when most metallurgical processes were exempted from the tax. The pulp- and paper industry (another heavily polluting industry) did not get the same exceptions and had to be satisfied with some tax deduction rules.

Since the industrial policy network is fairly loose, party politics matter in designing green taxes (Daugbjerg and Svendsen 2001). When a Centre-Right-Coalition government replaced the Social Democratic government in 1991, the Ministry of Environment lost influence to the Ministry of Finance. For instance, the Cabinet Office stopped a Ministry of the Environment report on higher environmental taxes after the Ministry of Finance had accused the Ministry of the Environment of being too one-sided (Lundqvist 1996, 271). Instead, the government adopted the advice of a commission which besides a number of civil servants included only representatives from the energy intensive industry (SOU 1991:90; 3, 141–166). The commission suggested that industrial CO₂ taxes were significantly lowered; however, the mainland energy intensive industries would still be subject to taxation. When the Social Democratic Party was back in power in 1994, environmental interests

strengthened their position (Kronsell 1997: 47) and the industrial CO₂ taxes were doubled in spite of protests from industry (Daugbjerg and Svendsen 2001: 79). This development shows that the loose structure of the industrial policy network leaves plenty of room for party politics. The CO₂ tax is subject to change when there is a change in government. It seems that Social Democratic governments raise it while centre-right governments lower it.

Denmark

The Danish industrial policy network is also relatively loose and shares few characteristics with the ideal type policy community. Danish industry is characterized by late development, knowledge intensity, high degree of specialization, and relatively small companies (Kasa 2000b, 11). It is less energy intensive than Norwegian and Swedish industries, and there are no large blocks of energy intensive industries. The membership of the Confederation of Danish Industries is heterogeneous and this has weakened the Confederation's ability to act as a powerful unitary actor. The Confederation of Trade Unions has been weakened as well. During the 1980s and 1990s, more and more special industrial interest associations have become involved in the industrial policy process, weakening the position of the Confederation of Trade Unions (Sidenius 1999: 81). Furthermore, the Ministry of Trade and Industry is not as committed to industrial interests as it once was (Sidenius, 1999: 82). Finally, the Danish Social Democratic Party has been less influenced by heavy industry than its Norwegian counterpart and more strongly influenced by pro-environmental groups (Kasa 2000b: 12). This connection was strengthened, when the Social Democrats realized that green taxes were not necessarily harming employment if the revenue was used to lower other taxes (Pedersen 2003: 140).

Industrial interests could not use the policy network as a political resource in environmental policy-making. The Confederation of Danish Industries has been forced to pay respect to mixed viewpoints on the Danish CO₂ policy within the confederation because some employers' organizations were positive towards the CO₂ tax (Enevoldsen and Brendstrup 2000; Pedersen 2003: 143). Somewhat surprisingly, the confederation agreed that market instruments were acceptable when regulating energy consumption. However, when a parliamentary majority consisting of the opposition parties in the Danish parliament confronted the minority government and suggested a uniform tax of 100 *kroner* per ton CO₂ in 1991, the confederation, after an internal discussion, actively opposed the tax through a media campaign and through the participation in the decision-making process (Pedersen

2003: 137). The Confederation of Trade Unions had mixed attitudes towards CO₂ taxes of the exact same reason as the industry, and it had to find a balance between the different views. One of its important member associations openly supported the viewpoints of the industry (Pedersen 2000: 447–448). The protests against the proposed taxes did have some effect. Although the Ministry of Environment proposed green taxes, it was the Ministry of Taxation which designed the actual tax scheme. The latter was sympathetic to industrial viewpoints and made the proposal less harmful to industry (Pedersen 2003: 112–113, 152–156).

It is evident that the industrial policy network did not privilege the interests of industry to the same extent as in Norway. Although industry managed to make the politicians agree on a lower tax at 50 *kroner* per ton CO₂, it was not as successful as the Norwegian heavy industry, which managed to avoid the CO₂ tax proposed. The Confederation of Danish Industries was more divided than the Norwegian industrial organization and, furthermore, it was not supported by powerful ministries as in Norway.

In 1996, it was proposed to raise the tax to 200 *kroner* per ton CO₂. The Danish Society for the Conservation of Nature proposed to raise the tax to 400 *kroner* (Finansministeriet 1994b). Both proposals met strong opposition from industry. Industrial interest groups and the trade unions formed an alliance which succeeded in having the 200 *kroner* tax level considerably lowered (Pedersen 2000: 448–449), but could not prevent the tax level from increasing. The Ministry of Trade and Industry tried to focus on the problem of redistribution among the taxed industries, but as a less influential ministry it could not match the powerful Ministry of Finance which was not interested in solving that question. Indeed, the Ministry of Finance has been an entrepreneur in introducing green taxes because the revenue could be used to lower income taxes (Pedersen 2003: 156–158).

The industrial interest groups were less successful in influencing the civil servants preparing the tax proposal, but when the proposal reached the parliamentary arena, they succeeded in persuading politicians to lower the tax level.

The Danish Offshore industry has managed to be exempted from the CO₂ taxes. In fact, there is a carbon tax in the North Sea, but in practice, due to a curious tax design, the tax is very rarely released (Skatteministeriet 2000). The Danish oil production in the North Sea is primarily operated by Maersk, which is part of Denmark's by far largest company (in turnover measures), the A.P. Moller Group. Compared to the companies operating in the Norwegian part of the North Sea, the A.P. Moller Group is an old well-established company with considerable

popularity (*Borsen Image* 2001). This popularity, a long glorious past and the economic power of the A.P. Moller Group seems to be part of the reason why the politicians have not dared to introduce an effective CO₂ tax for the offshore industry.

A comparison of the industry's political power shows that the Norwegian energy intensive mainland industry is privileged in CO₂ taxation by the network structure. It comes very close to the ideal type policy community, in particular since there are no counterbalancing forces in the network. The members of the policy community share a common industrial culture. Swedish industry is burdened by high taxes due to a much more loose and unstable policy network where the ministries act as counterbalancing interests. The loose Swedish network leaves more room for government influence on the CO₂ tax scheme. Danish industry is in an intermediate position. This is primarily due to the fact, that the Danish industry is relatively heterogeneous, and that the Danish ministries involved do not support industrial viewpoints to the same degree as the Norwegian ministries. The level of cooperation between Danish industrial organizations and trade unions is higher compared to that in Sweden, but smaller compared to that in Norway.

Conclusion

The comparison of pesticide and CO₂ tax schemes in Denmark, Norway and Sweden clearly demonstrates that the idea of green taxation has been implemented in different ways. In comparing the tax schemes, we focused on the extent to which they accommodated producer interests. In pesticide taxation, the interests of Danish farmers were accommodated to the greatest extent and the interests of Swedish farmers to the least extent. In terms of accommodating farm interests, the design of the Norwegian pesticide tax scheme lies somewhere in between the Danish and the Swedish schemes. In CO₂ taxation, the pattern is different from pesticide taxation. Norwegian industry was, in general, best off while Swedish industry was worst off. Danish industry held an intermediate position. The variation in tax schemes was explained by the existence of different established state-producer policy networks in Danish, Norwegian and Swedish agricultural and industrial politics. These networks privileged producer interests to different extents and thus affected their opportunities to influence the design of tax schemes to minimize perceived costs.

These findings suggest that to explain policy choices, it is not enough to reveal which ideas underpin policies. Ideas do, however, set some kind of policy agenda, but they do indeed leave considerable room for politics. They are not fully-fledged policy solutions, but broader outlines of policy. It is left for policy makers to specify the specific measures, and in this

process sectoral interests and political institutions, particularly policy networks, are important factors explaining the specific policy choices and why similar policy ideas are implemented differently across policy sectors and countries. Policy networks are an intervening variable which cannot be neglected in the study of ideas in public policy. Thus, to understand the role ideas play in public policy-making, we need to focus on the conditions, which influence how they are transformed into specific policy choices.

NOTES

1. Earlier versions of this paper were presented at NOPSA's XIII Nordic Political Science Congress, 15–17 August 2002, Aalborg University and at the 6th Nordic Conference on Environmental Social Sciences (NESS), June 12–14 2003, Turku, Finland. We thank the participants, in particular Susan Marton, for helpful comments. Furthermore, we appreciate constructive comments from an anonymous reviewer of the *Journal of Public Policy*.
2. With the exception of the Danish CO₂ tax which was introduced by a liberal–conservative minority government. However, the tax was introduced following a proposal from the so-called green majority, which consisted of the left-wing parties, the Social Democrats and the Radical Liberals. On several occasions, this majority forced the liberal–conservative minority governments to adopt certain environmental policies which they disliked.
3. However, sometimes producers are split on the issue of green taxation, in particular if proceeds are reimbursed and cause redistribution among producers. Thus, the winners may support the introduction of taxes (Daugbjerg and Svendsen 2001: 128–132).
4. Until 1999, the tax was based on a percentage of the first hand value from manufacturer or importer. Since 1999, the pesticide tax is designed so that those pesticides representing the highest risk for man and environment are taxed higher than low risk products. The tax is also calculated on the basis of area sprayed.
5. There is in fact a tax on the offshore activity in the North Sea, but due to the tax design, the chances of the tax being released are very small (Skatteministeriet 2000).
6. The analyses of the configuration of agricultural and industrial policy networks and the extent to which they privilege producer interests are mainly based on secondary sources of evidence.
7. By 1 January 1997, the Ministry of Agriculture and Fisheries was reorganized and became the Ministry of Food, Agriculture and Fisheries (MFAF). When analysing events taking place before that date, we use the term Ministry of Agriculture.
8. Steen (1988: 119) argues that an important reason why conflict between consumers and farmers did not arise is that in the 1970s an increasingly greater proportion of farmers' income was given in the form of direct state subsidies rather than through high consumer prices (price subsidies). This prevented a conflict from developing since costs were widely dispersed among taxpayers.

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