

Environmental Incentives for Nordic SMEs

Keith Clement and Malin Hansen



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PO Box 1658, SE-111 86 Stockholm, Sweden
Tel. +46 8 463 54 00, fax: +46 8 463 54 01
e-mail: nordregio@nordregio.se
website: www.nordregio.se

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Nordic co-operation

takes place among the countries of Denmark, Finland, Iceland, Norway and Sweden, as well as the autonomous territories of the Faroe Islands, Greenland and Åland.

The Nordic Council

is a forum for co-operation between the Nordic parliaments and governments. The Council consists of 87 parliamentarians from the Nordic countries. The Nordic Council takes policy initiatives and monitors Nordic co-operation. Founded in 1952.

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is a forum for co-operation between the Nordic governments. The Nordic Council of Ministers implements Nordic co-operation. The prime ministers have the overall responsibility. Its activities are co-ordinated by the Nordic ministers for co-operation, the Nordic Committee for co-operation and portfolio ministers. Founded in 1971.

Stockholm, Sweden
2002

Preface

Small and medium-sized enterprises (SMEs) play a significant role in Nordic economic development through creating employment, stimulating competition and developing new technologies and products. However, these companies are often disadvantaged by internal and external constraints that prevent them from realising their full potential. Nordic governments acknowledge that environmental management forms one of these constraints, and accordingly its integration into working practices is supported by a range of public sector financial assistance schemes. However, to date, there has been no exploration of the extent of this provision, nor is there any comparative knowledge of the impact that these "environmental incentives" have on the environmental performance or the economic competitiveness of Nordic SMEs.

This report presents the first cross-national overview of the main environmental incentives available for SMEs in the Nordic countries. Specifically, it includes detailed descriptions of fifteen environmental grants and loans currently or recently offered in Denmark, Finland, Norway and Sweden. Each scheme is presented in accordance with a common structure, which facilitates a comparative analysis of selected themes and the identification of issues of research significance.

This research has been commissioned by the Senior Officials Committee for Industrial Policy within the Nordic Council of Ministers. The report was written by Senior Research Associate Keith Clement and Research Fellow Malin Hansen, with Keith Clement acting as project manager.

The content of the report is based substantially on information derived through interviews and analysis of materials provided by a range of environmental finance administrators. Nordregio would like to express its appreciation of all those who participated in the interviews, who made documentation available and who assisted in the verification procedure.

Stockholm, September 2002

Abstract

The aim of this research project is to provide insight into the availability, uptake and impact of environmental incentives for Nordic SMEs. This Phase 1 report identifies the main incentives currently or recently available in Denmark, Finland, Norway and Sweden, and it presents a comparative analysis of this provision.

Fifteen environmental incentives were included in the survey. In Denmark, this comprises four grants relating to environmental competence, green jobs, energy efficiency and renewable energy. In Finland, the survey included two grants for environmental protection and energy conservation, and a loan for environmental protection. In Norway, three grants were included for sustainable production and consumption, environmental technology and renewable energy, and a loan for environmental technology. Lastly, in Sweden, four grants were surveyed, relating to environmental management, environmental design, environment-driven business development and renewable energy.

Four broad themes are identifiable in incentive coverage, those of environmental management, environmental technology, environmental employment and energy. The related objectives range from launching research and development through to implementing environmental technology, raising awareness and skills, creating jobs and competing in the specialist environmental sector. In comparison with Europe-wide survey data, the Nordic countries appear to use a greater proportion of grants amongst their environmental incentives. With regard to selection criteria, a wide range of factors is considered in assessing project eligibility, and in some cases this extends into formalised scoring systems to allow prioritisation. With certain exceptions, evaluation of the impact of environmental incentives on company performance appears insubstantial.

Three issues of research significance are highlighted for further consideration in Phase 2 of this project:

- There is a lack of clarity regarding company perceptions, appreciation and use of Nordic environmental incentives.
- Very little information is available concerning the impact of incentives on SME environmental performance.
- No information is available on whether environmental incentives have an impact on SME economic competitiveness.

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1. Introduction

1.1 Research Context

Since the publication of the Brundtland Report (WCED, 1987) the international corporate response has contributed significantly to the operationalization of sustainable development. Over the past ten years in particular, events such as the World Industry Conferences on Environmental Management have progressively explored and developed this theme, and the *Business Charter for Sustainable Development* has been a very influential part of this initiative. Launched by the International Chamber of Commerce in 1992, the Charter commits enterprises to improving environmental performance and demonstrating to governments and society that business takes its environmental responsibilities seriously. Since its launch, the ICC Charter has gained considerable support world-wide, having been signed by more than 2,300 companies and associations in over 50 countries, with virtually all economic sectors represented.

This broad expansion of environmental awareness within industry means that the momentum launched by European governments has seen a parallel response – mostly by large companies – to improve environmental performance (Vaughan *et al*, 1997). The corporate interest in environmental practice has occurred partly as a result of the tightening controls on emissions and waste disposal, but also because of changing consumer attitudes to the environment and the enhanced standards required by international clients and investors. As this degree of environmental awareness heightens, so does its potential as a source of enhanced competition between countries and between companies.

Within the European Union, the competitiveness of small and medium-sized enterprises (SMEs) is a theme that receives special attention (Greenan *et al*, 1997). These companies play a significant and vital role in economic development through stimulating competition, developing new technologies and products, and by creating jobs. However, there are often internal and external constraints that prevent them from realising their potential, and national industrial policies support a range of initiatives and programmes to assist their growth and development. Nevertheless, SMEs remain disadvantaged in many ways.

Despite their innovative nature, smaller companies find it difficult to carry out research and development, and they are often unfamiliar with the range of specialist services available to them. Whereas they may appreciate the importance of good environmental practice, they are frequently unaware of how this can best be achieved. For example, research by the Business Environmental Barometer, Helsinki School of Economics, has indicated that large companies in Finland have

substantially incorporated environmental thinking, building up internal systems for environmental affairs, but SMEs have not integrated environmental factors nearly as effectively. At the same time, SMEs seem eager to use environmental arguments in their marketing efforts, and they acknowledge that eco-competitiveness is an important success factor alongside the price-quality ratio applicable to a company's goods or services (Virtanen, 1997).

In previous years, governments relied on regulation to push SMEs towards environmental compliance, aiming for so-called "win-win" scenarios (Porter and van der Linde, 1995). However, rather than positively impacting on companies, the experience was often characterised by increased costs and reduced profits, and in some cases companies were even pushed over the brink into bankruptcy (Palmer et al, 1995). In the Nordic context, a survey conducted to test the win-win hypothesis showed clearly that strict regulation had disadvantaged those firms (Brännlund et al, 1996).

More recently, in a change of approach, governments have moved away from legislating firms to change their practices, and instead seek to persuade them to do so. In Denmark, for example, there has been a move from regulation to co-operation and "gentle coercion", and in Finland, levying charges and imposing fines on companies is no longer seen as the most effective way to tackle environmental threats (Georg, 1994; Virtanen, 1997). Public sector agencies now seek to help enterprises develop a longer-term approach to business management, improving their business prospects while encouraging them to invest in new technology, better R&D, product development and activities that are sustainable in economic, social and environmental terms. One element of this initiative has been the provision of environmental incentives.

Within the Nordic countries, survey research has not focused on the incidence of environmental incentives. Instead, attention has been given to environmental disincentives in the form of market-based instruments such as charges or taxes or on broad-based thematic evaluations (Brännlund and Kriström, 1999a and 1999b; Swedish Environmental Protection Agency, 1997). Although certain major schemes such as the former Swedish Ecocycle Billion have been critically appraised and the results made public, the availability, uptake and effect of differentiated environmental finance has been neither categorised nor evaluated at national or Nordic level. Although a number of such schemes are currently operational in Denmark, Finland, Norway and Sweden, vital information regarding the impact of these incentives on the performance and

competitiveness of individual SMEs – of considerable importance for policymakers and companies alike – currently does not exist.

Lack of knowledge of existing environmental incentives means that companies are immediately disadvantaged and distanced from taking steps towards technical and managerial progress. Furthermore, without overview data from different sectors or countries, practical comparisons cannot be made, either to support investment decisions or to appraise whether other national administrations use more effective methods. Of the more accessible incentives, there is no knowledge of the uptake and response from industry regarding the themes and forms of assistance that are most popular or the motives for participation. For example, if these companies are already environmentally aware, the message may be missing the most vulnerable SMEs that need to be steered towards sustainable working practices.

1.2 Aim and Objectives

The aim of the research is to provide insight into the availability, uptake and impact of environmental incentives for Nordic SMEs. In part-fulfilment of this aim, this report concentrates on the first of three inter-related objectives:

- To identify the main environmental incentives available for SMEs in the Nordic countries and to prepare a comparative review of this provision.
- To evaluate the impact of selected incentives on company environmental performance.
- To assess the impact of those incentives on economic competitiveness.

In addressing the first objective, this work is intended to provide a basis for international comparisons of incentive form and content, with detailed attention given to themes such as eligible activity, project selection procedures, award characteristics and scheme evaluations.

To meet the second and third objectives, a further study will investigate the type and scale of impact that incentives have made on the environmental performance of enterprises, and whether improvements have subsequently been translated into tangible business competitiveness. In this context, environmental performance would encompass broad changes in business attitudes towards the environment and sustainable development, as well as specific actions such as corporate environmental strategies, sustainable production strategies, or certification with an environmental management standard. Related indicators of enhanced

competitiveness would include revisions to the business and company profile and strategy, budgeting ahead for compliance costs, and impacts on business investments, employment levels, sales performance, market share and operating efficiency.

1.3 Methodology

The methodology for this first stage research comprised an extended period of data gathering, supplemented by consultation with incentive administrators, to establish an overview of financial instruments in each national context. The next phase will include face-to-face interviews with companies to investigate the implementation of different environmental incentives, and the preparation of a comparative analysis of the impact on performance and competitiveness. Together, these two phases encompass the following tasks.

PHASE 1

Refinement of methodology, identification of relevant schemes, and review of content and uptake by industry

This work commenced with a further development of the themes to be pursued and preparation of a detailed plan for the fieldwork. This was followed by contact with government departments involved in implementing industrial and environmental policy to identify and categorise the range of incentives on offer. The resultant network of environmental finance administrators (see Appendix 1) confirmed that materials were accessible and meetings were scheduled to review the incentive characteristics.

For the interviews, a common structure was used to document a range of features (see Appendix 2):

- *Fundamental elements* include the form and purpose of schemes, spatial coverage, periods of operation and financial base.
- *Operational features* comprise scheme promotion, selection criteria, the application process and success rate.
- *The company focus* considers SME sectoral profiles, environmental awareness, reporting mechanisms and insights from scheme evaluations.

Fifteen incentives were selected for inclusion in this report. The choice was based on their clear operational identity, the availability of documentation, ready co-operation from the incentive

administrators/organisations, and their potential to yield the most useful insights.

Anticipating the second phase, invitations have been extended to several officials from industry and environment ministries to act as members of an informal Advisory Panel (see Appendix 3).

PHASE 2

Confirmation of Advisory Panel participants, joint selection of appropriate schemes and companies, conduct of SME interview programme

For this stage, two incentive schemes will be selected from each of four countries, and five companies in receipt of each incentive will be invited to participate in the survey i.e. a total of 40 companies covering eight schemes. The final choices will be agreed with the Advisory Panel. Thereafter, the companies will be contacted to arrange interviews to pursue issues ranging from the initial motivation for becoming involved with the programmes to the benefits both anticipated and realised.

1.4 Report Structure

Following this Introduction, the report is divided into a further seven chapters.

Chapter 2 considers SMEs and environmental finance. Applying the EU definition for SMEs, it examines their relative importance within the European and Nordic economies, attempts made to link environmental and economic performance, and the practice of offering environmental subsidies to business and industry in Europe. With reference to environmental incentives available for SMEs in the Nordic countries, a common structure is described for the subsequent data presentation.

Chapters 3-6 form the bulk of the report. They present detailed descriptions of fifteen recent or currently operational environmental incentives in the countries of Denmark, Finland, Norway and Sweden.

Chapter 7 conducts a comparative analysis of the surveyed incentives. More specifically, it addresses their thematic coverage, objectives, form, timeframes, selection criteria, award rates and evaluation.

Chapter 8 presents conclusions, identifying key findings from Phase 1 and highlighting issues of research significance for Phase 2.

2. SMEs and Environmental Finance

“As the environmental performance of business is increasingly being subjected to scrutiny by regulators, customers, employees, insurers, funders and the local community, doing nothing is no more an option for smaller businesses than it is for larger ones.” (Fay, 2000, p.9)

2.1 The Ubiquitous SME

- In 1996, a degree of convergence was established in Europe with the introduction of a specific EU definition for SMEs. It identifies these enterprises according to employee numbers, turnover or balance sheet total and ownership. Accordingly, companies in this category should have:
- Fewer than 250 employees.
- Either an annual turnover not exceeding EUR 40 million, or an annual balance sheet total not exceeding EUR 27 million.
- Independent status, i.e. capital or voting rights owned by a larger enterprise cannot exceed the threshold of 25% (CEC, 1996).

Applying these criteria, surveys indicate that within the EU economy, SMEs account for nearly all enterprises (99.8%), two-thirds (66.2%) of jobs and over 50% of the turnover in the non-agricultural market sector (CEC 2001, p15). Representing such an important proportion of national economies, SMEs act as a source of entrepreneurial spirit, competition and innovation in both the goods and services sectors, and they are fundamental to future business growth.

Amongst the Nordic countries, statistics available for SMEs during the years 1996-97 show that Sweden has by far the largest number of such enterprises, and correspondingly the greatest employment and turnover totals for this sector (see Table 1). However, when viewed against EU totals, the differences appear less dramatic, as Denmark, Finland and Sweden respectively have 0.8%, 1.1% and 1.3% of the SMEs, 1.4%, 0.9% and 1.8% of the employment, and 1.6%, 1.3% and 2.3% of the turnover.

Table 1: SMEs in the Nordic countries, 1996-97

	Enterprises	Total employment	Turnover (EUR millions)
Denmark	159,930	1 057,640	151,173
Finland	203,290	681,270	117,613
Norway	n.a.	n.a.	n.a.
Sweden	241,970	1 306,790	213,215
EU	18 390,550	74 034,000	9 408,333

Source: CEC, 2001

2.2 Access to Finance

Although SMEs are acknowledged as globally innovative, they remain at a disadvantage in terms of access to finance (OECD, 2001). In certain activities SMEs face fewer constraints than large enterprises, but once a project has been launched, the high cost of innovation and lack of finance are frequently quoted problems. Consequently, even though the main objectives of innovation are to capture new markets or market share and to improve products and services, SMEs actively seek to reduce the cost of labour on account of their high staff-costs ratios. In addition, they are generally more dependent than large enterprises on short-term debt, and consequently interest charges tend to form a greater proportion of their turnover.

The problem of SMEs accessing finance is the subject of attention in the EU multi-annual programmes for SMEs and for Enterprise and Entrepreneurship (2001-2005). Nevertheless, given these existing financial constraints, this is clearly a factor that would discourage or even prevent companies from investing in environmental change.

2.3 Environmental Features

The total environmental impact of SMEs is still unknown. A figure of 70% has been offered as an estimate of the SME contribution to pollution levels, but without hard data, a precise figure cannot be calculated (Hillary, 2000, p11). Nevertheless, such a high estimate – even though provisional – indicates that this dimension of SME impact is expected to be significant.

Companies of all sizes experience impacts from environmental regulation, but SMEs have fewer resources, fewer staff and less time to become familiar either with legislative obligations or with the assistance available. Similarly, whereas larger companies can afford their own environmental units or environmental managers, for SMEs this is often

not possible. In consequence, SMEs continue to miss opportunities firstly because of a basic lack of information, failing to see the benefits of undertaking environmental or sustainable development activities, and secondly through risk aversion, as a consequence of a company's perception of likely poor rates of return from undertaking environmental projects.

2.4 Linking Environmental and Economic Performance

The relationship between the environmental and economic performance of firms has been studied for some time, generally focusing on regulation as the catalyst. However, no conclusive results have emerged, ascribed to the following reasons:

- Early studies used only small samples, they frequently lacked objective measures of environmental performance – using pollution control expenditure to proxy for environmental performance – and they used data that is now very old (Cohen et al, 1995; Konar and Cohen, 1997).
- Empirical studies have often made no distinctions between different approaches to improving environmental performance, such as end-of-pipe treatment or reduction of pollution at source, and they have not accounted for moderating factors such as firm size, processes used, market structure of the industry, and the regulatory characteristics of the country of location (Wagner and Wehrmeyer, 2001 & 2002).

In more recent studies, these shortcomings have been reduced, but problems are still encountered with different questions being asked in different studies, incompatible methodologies being used, or different problems being examined.

Nevertheless, the “Porter hypothesis” presents a positive view of regulatory impact:

”The relationship between environmental goals and industrial competitiveness has normally been thought of as involving a trade-off between social benefits and private costs...Framed this way, environmental improvement becomes a kind of arm-wrestling match. One side pushes for tougher standards; the other tries to beat the standards back. Our central message is that the environment-competitiveness debate has been framed incorrectly” (Porter and Van der Linde, 1995, p97).

In the new paradigm, it is argued that properly designed environmental standards can trigger innovation that may partially or more than fully offset the costs of regulatory compliance. This win-win scenario has been supported in empirical studies. In an example from the US chemicals sector, the response by Du Pont to regulatory change is considered to have brought enhanced profits, pre-empted further and potentially stricter controls by the regulators, and given the company a 'first mover' advantage (Howes et al, 1997, p34). In other cases, environmental management responses encompassing minor changes in technologies and organisational practices as well as major innovations in products and process have generated substantial cost savings in companies (Gouldson and Murphy, 1998, p23).

However, the positive perspective has also been widely challenged:

"If the Porter hypothesis were true, then why do we see firms lobbying against environmental protection programs instead of lobbying for tighter environmental regulation? Porter and van der Linde cite dozens of examples that allegedly buttress their case. But 'exemplarism' is no substitute for systematic empirical evidence." (Neumayer, 1998, p39)

In a third category of studies, much less significance is attached to the potential impact of environmental regulation. For example, the relative stringency or laxity of environmental standards has been described as having little or no influence on the general competitiveness of countries or on their trade balances. This conclusion was based on examinations of the relationship between the costs of compliance, environmental regulations and international trade patterns. Basically, environmental compliance does not represent a large share of overall costs to industry, and in most sectors it accounts for only between one and two per cent of total costs or turnover (Stevens, 1993).

Evidently, research into regulatory impact appears to be both contradictory and inconclusive, suggesting that it would be more advantageous to pursue an alternative and more transparent means of promoting environmental competitiveness. In practice, this role may be fulfilled in part by the public sector provision of environmental subsidies.

2.5 Environmental Subsidies for Business and Industry

Offering subsidies to business and industry can be a controversial policy measure, prompting objections on the grounds of unfair competition, distortions to international trade and inefficiency (OECD, 1997). Furthermore, in the environmental arena, pressures on government and

industry have increased with the introduction of the Polluter Pays Principle (PPP). The assertion that polluting companies should bear the cost of measures to reduce pollution has meant that the legitimacy of environmental subsidies has been questioned. Nevertheless, Environment Ministers from OECD countries have accepted that various forms of economic instruments must be used in working towards environmental policy goals. In practice, most European countries have made exceptions to the PPP, and a range of incentive schemes now supports the transition to environmental sustainability.

Interestingly, independent research into environmental finance maintains that such policy instruments are perfectly compatible with market competitiveness. On the basis of econometric analysis, it has been argued that supporting environmental R&D, technological innovation and diffusion provides firms with very appropriate incentives to avoid damaging the environment, and that it ultimately has a positive effect on economic growth (Carraro and Galeotti, 1997). In addition, OECD research has for some years supported the view that financially assisting the transfer to cleaner technologies is economically justifiable if the costs are offset by cumulative environmental and social gains (OECD, 1994).

Of the environmental finance offered directly to industry in Europe, the themes range from general environmental protection and investment to specific research and development applications. These incentives typically support cleaner technology, environmental auditing, implementing environmental management systems, skills training, sustainable transport and sector-specific development. For technology alone, a comparative survey published in 1997 identified 34 incentives operational in the EU Member States (Clement, 1997).

Broader aims of environmental incentives include raising awareness of global issues surrounding sustainable development and encouraging companies to develop strategic responses through sustainable business planning. This could encompass improvements in operating costs, resource efficiency and the management or recycling of waste, and perhaps even identify business opportunities emerging from forthcoming environmental legislation.

Three main forms of environmental incentive are available in Europe. These comprise grants, soft loans (offered at below-market rates of interest or with repayment holidays) and tax concessions through accelerated depreciation allowances. Grants tend to dominate, particularly amongst environmental technology schemes, accounting for 60 per cent of the assistance available; soft loans comprise 30 per cent of the total; and special depreciation allowances account for the remaining 10 per cent.

Reflecting the specialist needs of SMEs, one-fifth of the environmental technology incentives contain an SME clause, i.e. that small and medium-sized firms are to be given preference, higher rates of award or exclusive access. This is sometimes linked to location, for example with all firms being eligible in enterprise zones, but only SMEs outside these zones.

2.6 Environmental Incentives for SMEs in the Nordic Countries

Within the Nordic countries, a range of environmental incentives is available for SMEs either directly or indirectly through intermediaries. In total, fifteen incentives have been identified as meriting attention in this overview (see Table 2).

In considering the choice of schemes, two points of clarification are necessary. Firstly, a number of the schemes are available to companies of all sizes, and so they are not exclusive to SMEs. These incentives have been included because they form part of the overall selection open to small and medium-sized firms. Secondly, the coverage includes existing and recently completed incentives, an approach designed to maximise the insights into different scheme types and experiences for this first phase project.

In the following four chapters, the incentives surveyed are presented according to the country of operation, mirroring Table 2. A common structure is used for data presentation, with the following components:

- Background and funding base, outlining any relevant history, legal developments or scheme evolution, and identifying, where available, the scale of funding that supports incentive implementation.
- Eligible activity and spatial coverage, describing the themes and actions for which the incentive can be received, and the territorial boundaries within which it is available.
- Scheme promotion, listing the various outlets and formats used to advertise and draw attention to the incentive.
- Project selection, following the application process through from formal submission to project assessment criteria and re-submission procedures, where applicable.
- Award characteristics, identifying typical rates or scales of award, upper limits, levels of approvals and any conditions that may accompany award decisions.

- Company characteristics, assessing the degree of environmental knowledge within applicant companies as well as their sectoral origin.
- Scheme evaluation, noting the frequency and orientation of evaluations performed within recent years.

This data forms the basis for the comparative analysis in chapter 7.

Table 2: Environmental incentives for SMEs in the Nordic countries

<i>Denmark</i>
• Environmental Competence Grant, Danish Environmental Protection Agency • Green Jobs Grant, Danish Environmental Protection Agency • Energy Efficiency Grant, Danish Energy Agency • Renewable Energy Grant, Danish Energy Agency
<i>Finland</i>
• Environmental Protection Grant, Ministry of Environment • Environmental Protection Loan, Finerva • Energy Conservation Grant, Motiva
<i>Norway</i>
• Sustainable Production and Consumption Grant, GRIP • Environmental Technology Grant, Norwegian Pollution Control Authority • Environmental Technology Loan, SND • Renewable Energy Grant, Norwegian Water Resources and Energy Directorate
<i>Sweden</i>
• Environmental Management Grant, NUTEK • Environmental Design Grant, NUTEK • Environment-Driven Business Development Grant, NUTEK • Renewable Energy Grant, Swedish Energy Authority

3. Denmark

3.1 Introduction

At the time of survey, the environmental incentives identified in Denmark comprised grants exclusively. However, a change in government following the general election in November 2001 has led to a considerable shift in political priorities. Themes other than environment are being given precedence, and as a consequence available funding may be substantially reduced. Although existing grant awards will be honoured and administered, the range of incentives in future may be more restricted.

A Danish initiative not reviewed here, but which acts as a backcloth to the energy incentives, relates to the administration of energy agreements. These company-specific and sector-specific agreements allow taxes to be reclaimed. However, only companies with heavy industrial processes can participate in these agreements, and SMEs usually represent fewer than 10% of the applicants.

The incentives considered here relate to the following four themes:

- Environmental competence.
- Green jobs.
- Energy efficiency.
- Renewable energy.

3.2 Incentives for SMEs

3.2.1 Environmental competence grant

➤ Background and Funding Base

As part of Danish Law, the Environmental Protection Agency administers a four-year package of integrated environmental initiatives – the Programme for Cleaner Products – with a new individual priority plan devised each year. There are 4 main parts to the programme:

- The *Development Programme*, which has various R&D subdivisions, is open to companies, institutions and research institutes.
- The *Environmental Competence Scheme*, within which SMEs form the main users.
- The *Environmental Label Enforcement Scheme*, which assists companies in attaining environmental labels in new areas only.

- The *Perspective Grant Scheme* for projects that do not fit easily into the above categories, but which are considered interesting and worthy of support.

The total programme budget in 2001 was DKK124 million. Of this sum, DKK60 million were drawn from CO² tax revenues – forming part of the repayment to companies – and the remainder originated from central government funds. In practice, there is a degree of cross-financing and positive interaction between the work of the different schemes.

SMEs can apply for funding through the Development Programme, but their scale of operation means that they lack necessary knowledge, and the periodic calls for project applications are mostly too specialised. A new programme element launched in 2001 contains opportunities for smaller enterprises, including preferential award rates, for substituting certain materials and chemicals in production processes.

From the SME research perspective, the Environmental Competence Scheme is of greatest interest, and it forms the focus of this description. In 2001, this scheme was financed with DKK30 million. However, there is also scope each year to acquire surplus funds from other schemes, and so move beyond the minimum budget.

➤ *Eligible Activity and Spatial Coverage*

As indicated above, each year the themes eligible for support will vary with perceived priorities, but they remain mostly directed at internal competence building.

Eligible environmental competence activity can range from a company's purchases through to its products (reflecting the importance of communication right across the supply chain to the consumers), including the product development process and company aspirations to gain environmental labelling certification. The most advanced companies can address the final step in the sequence, namely the incorporation of lifecycle assessment (LCA) into their working practices.

The scheme is available across Denmark, with no regional differentiation.

➤ *Scheme Promotion*

The Environmental Competence scheme is promoted through a number of initiatives. It is included in advertisements in journals and daily newspapers that form part of the publicity for each new round of the Development Programme, and it features on the homepage of the Agency's website. Local networking is also used, including regular contacts with consultancy companies, local institutions, environmental

groups and advisers. As the scheme is now in the third year of operation, it is generally well known to those who are active in this field.

➤ *Project Selection*

Applications are made on a standard form, submitted to the Environmental Protection Agency. From the outset, companies are expected to display some knowledge of environmental management, either at the time of application or through designing a project directly to attain this knowledge. A further requirement is that companies must be prepared to commit half of a man-year of their own staff to the project implementation.

These criteria are incorporated within a list of general requirements for all projects and applications considered by the Agency. They include that a company must:

- Have environmental organisations and routines in place.
- Involve its staff in the project.
- Identify a specific problem for attention or a targeted impact.
- Justify how the budget is tailored to meet the project goals.
- Demonstrate how environmental results will be achieved.
- Specify how the results will be used in company development.
- Operate in accordance with environmental law.

Thereafter, different and more specific criteria would be applied, depending upon the particular industrial or management sector of the application. For large projects or grant sums, the economic health of the company would also be assessed.

Other factors influential in the selection process include establishing lasting systems of environmental management, especially through certification, and the creation of new jobs associated with a new environmental competence.

For projects meeting the appropriate criteria, awards are made automatically i.e. there is no competitive bidding between projects.

➤ *Award Characteristics*

The maximum rates of award are 50 % for SMEs and 40 % for larger companies.

With regard to financial limits, the maximum amount for SMEs is DKK 300,000, whereas for large companies the corresponding upper

limits are DKK 100,000 for projects such as EMS and DKK 300,000 for more advanced projects such as LCA.

➤ *Company Characteristics*

Statistics on applicant company size indicate that 28% have fewer than 10 employees, 20% have 10-19, 24% have 19-49, 10% have 50-99 and 100-249, and 8% have more than 250 employees.

The sectoral origins of project holders comprise production (54%), building and construction (6%), car sales and repairs (7%), other private companies (20%) and the public sector (including publicly owned companies)(13%).

As an indicator of their level of environmental knowledge, less than 10% of the beneficiary companies had environmental management systems in place prior to the project start.

➤ *Scheme Evaluation*

With regard to the overall programme, annual reports are available for all years of operation, namely 1999, 2000 and 2001.

For the Environmental Competence Scheme, beneficiary companies are required to carry out a self-evaluation report assessing time used, educational impact and plans drawn up, amongst other factors. At this stage in the programme, approximately one quarter of companies has been behind schedule in completing their projects, between 2-6 months late against an expected timeframe of 9-18 months. Nevertheless, all participant companies have fulfilled or exceeded the project goals.

3.2.2 Green jobs grant

➤ *Background and Funding Base*

In a period of high unemployment in Denmark, the Green Job Pool was an initiative of the Social Folks Party designed to create new environment-friendly jobs and contribute to a cleaner environment. Following national discussions on environment and employment, it appeared as a commitment in the annual financial agreement. The scheme was initially very broad in its scope, reflecting its origins outside normal government channels, a feature that was perceived as one of its strengths.

It was launched as a grant in 1997, initially for a 4-year duration, supported by an allocation of 305 million DKK and administered by a Green Secretariat in the Danish Environmental Protection Agency. Following a positive mid-term evaluation, it was proposed that the grant should continue into a second phase. Currently, 28 million DKK is available each year for the next four years, essentially divided in half between job-creation and environmental technology.

➤ *Eligible Activity and Spatial Coverage*

During the first phase, a wide range of activity was eligible for support. Adopting an Agenda 21 bottom-up approach, the scheme favoured concrete local projects that created jobs (preferably permanent jobs) and improved the environment. This related to broad themes such as environmental management, new (green) firms and (green) products, knowledge and network projects, and various pilot projects designed to solve environmental problems in a manner that allows the direct transfer of experience.

For the second phase, a new agreement in Parliament in 2000 narrowed the scope of the grant. This reflected the considerable decrease in Danish unemployment – to the lowest in 20 years – and represented a move away from the wide-ranging remit to tie this instrument more closely to existing government policies. The grant now concentrates on two main activities:

- Creating jobs for those on the periphery of the labour market.
- Marketing innovative environmental technologies.

As there is already large-scale activity in retraining or re-skilling the unemployed, the Green Job Pool grant now focuses on practical environmental considerations such as how to save water or energy. The people receiving this training often subsequently find employment as environmental advisers or managers.

The grant is available across Denmark, with no regional differentiation.

➤ *Scheme Promotion*

During the first four years, the grant was promoted with a brochure sent out annually to communes, newspapers, libraries, green organisations, unemployment offices and mailing lists from previous projects. However, the publicity surrounding the formative negotiations meant that very little advertising was required, and there was no shortage of applications during the first four years.

The restricted eligibility initiated by the new law has resulted in fewer applications being submitted, and in consequence the scheme is now being promoted again by placing articles in magazines and sending out materials.

➤ *Project Selection*

A three-member Board appointed by the Minister for Environment and Energy has prepared guidelines for applicants. Other supporting materials

include a programme description that identifies project types, goals, success criteria and an evaluation plan.

To be considered, project applications must satisfy three basic core criteria:

- The project must contribute to environmental improvement.
- A sustainable job must result.
- The company should have a good basis economically and organisationally.

Thereafter, applications related to innovative technologies must be at the cutting edge in their field, and they must meet the following requirements:

- Address a new theory, idea or product.
- Contain demonstration value for other projects.
- Have obvious growth potential.

In comparison, projects designed to create jobs for the unemployed are more straightforward, and there is no requirement to be cutting-edge in the environmental part of the project.

Once received, applications are mostly assessed in-house, with only a limited number of technology-based projects being sent to experts for comment. Each application is assessed for its prospects in relation to market size, contacts to the market, the company's business accounts, and the likely success of the project. This assessment takes about five weeks, and then a recommendation is made to the Board for a decision.

➤ *Award Characteristics*

For job-creation projects, grant awards are made on the basis of a half-salary contribution, usually on a scale between DKK 350,000 and DKK 750,000. The DKK 350,000 level would correspond to one-year support for a single employee, and DKK 750,000 would represent two-year coverage. Projects related to innovative environmental technology usually received grant awards over DKK 600,000.

Following the EU *de minimis* rule, DKK 750,000 (100,000 Euro) is the maximum award that can be made to a company. There are also sectoral restrictions, precluding awards for activities related to farming, fishing and traffic.

Approximately 10-15 percent of rejected applications return as re-submissions, following advice from the Agency on how to improve the application.

Payments to applicants are made on a quarterly basis. The beneficiary companies must provide quarterly reports, mostly economic in content, and a final report on project completion, which is more detailed. The end-of-project form can vary from 3-20 pages in length, and it specifically includes a section on environment. For example, it questions goals relating to lifecycle assessment (LCA), environmental standards, reducing dangerous substances and whether a green network has been created.

➤ *Company Characteristics*

In practice, over 50% of the successful applicants in 2000 were private companies, and they received approximately 20% of the finance. In order of significance, these awards were for activities in sectors related to water, energy and waste, building, organic food, nature and environmental management, amongst others. Most of the applicant companies were SMEs.

In terms of prior environmental awareness, most of the firms applying for grants were not certified with environmental management standards.

➤ *Scheme Evaluation*

The Centre for Alternative Social Analysis has carried out a mid-term evaluation of the Green Job Pool in 1999. The assessment, which focused on the business-economic impacts, showed the initial results to be very positive. In summary, 91 new permanent jobs have been created in 74 projects, 80% of projects continue their activities after project completion, significant positive environmental impacts resulted from this activity, and most participants believed they had obtained new qualifications or skills through project involvement.

A final evaluation will be made at the end of the programme.

3.2.3 Energy efficiency grant

➤ *Background and Funding Base*

Improving energy efficiency in trade and industry has been highly prioritised in Denmark. Amongst other methods, subsidies have been used to reduce energy consumption and to work towards meeting the Danish CO² reduction target. Energy-efficiency grants were introduced in 1993, drawn from green taxes that had the overall target of reducing CO² emissions in Denmark by 20% by the year 2005. The taxation demands are based on the amount of energy used by companies, and this scheme was introduced as a complementary means for the government to be seen to be returning money to these enterprises. The taxation revenues are

recycled in several ways, one of which comprises subsidy schemes for energy reduction.

With regard to financial allocations, the energy-efficiency grants programme was supported with DKK 2 million each year from 1993-1995, and then DKK 1.8 billion for the whole period 1996-99. From 2000 onwards, DKK 175 million has been available annually for industry only.

➤ *Eligible Activity and Spatial Coverage*

Most of the money is allocated for investment, using grants with various eligible themes. These include:

- The “Standard Solutions” scheme, which is the one most commonly applied for by SMEs. The Energy Agency has decided in advance which items or activities can be subsidised, and this takes the form of 16 categories of eligibility that include highly efficient motors, electric motors for ventilation, the use of biomass, and solar cells, amongst others. In 2000, this grant supported 2,356 projects at a cost of DKK 51 million.
- The “Non-Standard Solutions” scheme, covering a broad range of investments not eligible within the standard investment grant. In this case, the Agency considers requests from companies for co-financing. Eligible large projects include investments such as changing machinery, lighting or cooling systems. In 2000, this grant supported 818 projects at a cost of DKK 160 million.
- A separate subsidy for consultancy projects, which is aimed at large companies, relates to themes such as energy management, energy efficient design and energy audits. In 2000, it supported 79 projects at a cost of DKK 10 million.
- A grant for the development and demonstration of energy-saving technology, which supported 11 projects in 2000 with a budget of DKK 15 million. This sum is now being increased to DKK 40 million.

Any size of firm is eligible, and nationality is not important, as long as the enterprise is using Danish energy.

These grants are available across Denmark, with no regional differentiation. The remainder of this description will concentrate on the Standard Solutions incentive, which has the greatest significance for SMEs.

➤ *Scheme Promotion*

The Energy Agency promotes these grants through advertising in newspapers, brochures, exhibitions, Internet advertising and through the Agency's own website. In addition, discussions are held with industrial organisations to disseminate information on available schemes.

However, the applications do not utilise the whole budget, and the Agency has also taken more direct approaches, such as writing to 10,000 companies, each of which had more than 10 employees

➤ *Project Selection*

Applications are submitted to the Energy Agency, and there is usually a 3-week turnaround period. For Standard Solutions, the process confirms that the project is eligible for funding, based on the pre-determined list of machinery, motors and other investments.

Fundamentally, the project must require a subsidy for the investment to proceed. Other factors considered in project assessment include the amount of CO² reduction in relation to the overall project costs. Specifically, the Agency aims to achieve a minimum reduction of 0.2 kilograms per year of CO² for each *krona* invested. The selection criteria are also partly related to payback time for the investment – if this is fewer than two years or more than nine years, it will not be subsidised.

Each year, between 10-15% of applications are rejected, generally for reasons such as the motor is not on the list or the CO² reduction is not high enough.

➤ *Award Characteristics*

The Standard Solutions grant has a maximum award rate of 26% of project costs. This ranges from a minimum of DKK 2000 up to a maximum of DKK 10 million. The maximum award is taken as the lower of either the financial limit or the set percentage. It is paid in one single instalment.

In 2000, 1024 SMEs applied for support through this scheme, and 993 were awarded grants. In general, 10-15% of the projects approved never commences, and consequently this level of the funding remains unclaimed.

There is no requirement for companies receiving Standard Solutions grants to report on how they have used or benefited from the incentive. In some instances, a random questionnaire may be initiated, and this would be only likely form of monitoring.

➤ *Company Characteristics*

SMEs participating in the Standard Solutions scheme comprise over 40 % of the total applicants, and they account for more than 40 % of the funds allocated.

No information is available on the sectoral origins or environmental knowledge of applicant companies.

➤ *Scheme Evaluation*

The whole package of Danish energy efficiency grants was evaluated in 1999. It estimated that a 1.2% reduction had been achieved in CO² emissions for trade and industry for the 2005 target date, corresponding to 0.7 million tonnes. When considering the impact on companies, the recycling of tax revenues was not estimated to be creating negative impacts on the market; instead, it was perceived as balancing out elements of unfair competition.

3.2.4 Renewable energy grant

➤ *Background and Funding Base*

The Danish renewable energy grant was launched in 1990. In the first years of operation, the annual funding was set at DKK 150 million. In 2001, as part of broader budget economies, the funding allocation was reduced to DKK 110 million, and in 2002 further reduced to DKK 89 million.

➤ *Eligible Activity and Spatial Coverage*

There are three aspects to the renewable energy grant.

- A capital grant is available for the installation of solar heating, biomass etc inside houses. Whereas this element usually accounts for DKK 40-70 million annually, it is to be reduced. The high energy prices in recent years have made biomass and other renewables more economical investments, with the result that there is no longer a requirement to subsidise this activity.
- The grant supports technology development, research and demonstration projects, and this is where SMEs derive the greatest benefit. Projects in this area especially include windcraft technology. Discussions are currently focusing on whether to merge this aspect of renewables with the energy research programme, which mostly supports larger companies.

- Funding is provided for a testing station for assessing the various technologies that have been supported. This maintenance might involve 20-30 million DKK annually.

There are no sectoral restrictions on eligibility.

The grant is available across Denmark, with no regional differentiation.

➤ *Scheme Promotion*

The grant is promoted in Danish newspapers and magazines, often with whole-page advertisements. However, its existence is already well known in the energy sector.

Calls for proposals are sometimes issued under the renewables scheme, mostly in relation to special areas. However, this may be reformed in future to have two formal announcements each year.

➤ *Project Selection*

General criteria for an application to be considered include that the project must support renewables, it must have a positive impact on CO² reduction, and it must be in accordance with the national energy plan/policy. Where special programmes exist for technologies such as windcraft and hydro-power, conformity with these documents would also be expected. The economic health of each company would also be reviewed as a standard procedure and essential criterion.

Applications are sent to the Danish Energy Agency, which forwards them to the appropriate expert committee on windcraft, biomass, solar energy, wave power and hydro energy. There are ten people on each of these five committees, comprising a combination of academics, researchers, consultants and industrialists, and each individual is appointed for a period of three years. The committees meet between 2-4 times each year, and the assessment process takes about three months overall.

Under the present system of open application dates, projects are approved on an on-going basis. In future, a reserve of funds may be retained, so that a facility is always available to support especially good applications.

Projects that are obviously ineligible or certain to be refused funding are rejected at the outset. In practice, two-thirds of applications are rejected, generally from people new to the area/process. The grounds for refusal are usually that the projects are poorly designed, even though the Agency provides advice during the application process. Selected applicants are encouraged to revise and resubmit, following which the likelihood of success is considerable higher.

➤ *Award Characteristics*

There is no formal financial limit on the scale of an award, but DKK 500,000 is estimated to be about average. Exceptionally, small companies can receive awards of up to 100% funding, if the Agency decides to take a calculated risk, based in part on a company's annual accounts.

No conditions are placed on awards. This was attempted in the mid-1980s, but the enforcement process proved to be problematic, and the amount of scrutiny required was too time-consuming. This would only be reconsidered if the number of bankruptcies were to grow significantly.

The payments of the grant are made in phases according to the number of hours completed each year. Nevertheless, the final payment of 15% is held back until project completion. The average length of a project would be 2-3 years, but in some instances a project might extend for five years.

If a project proves unworkable, the Energy Agency would attempt to reclaim the money already awarded. However, this is not always feasible, and about DKK 200,000 is lost each year through this process.

Beneficiary companies must provide a quarterly report during project implementation and a more detailed report on project completion. These reports detail the work carried out, the results derived, how the results are being applied, and the final balance of accounts.

➤ *Company Characteristics*

SMEs applying for renewable energy grants are principally small producers in the technology sectors, for example boat builders converting to manufacturing wings for windmills, consultancy firms or even IT companies.

Previous environmental knowledge is not especially high amongst applicant companies, as their motivation generally comes from having an idea or a product to sell, rather than from environmental aspirations. Typically, an SME would be looking for a new area of operation – perhaps a small export niche – and specialist staff members are used to attract funding to facilitate research and development.

➤ *Scheme Evaluation*

The scheme was evaluated in October 2001. Although the focus was not specifically on companies, telephone interviews were conducted with 20-35 enterprises, most of whom stated that the grant had been a useful instrument. When asked if the projects would have proceeded without grant support, the majority said it would not have taken place.

The evaluation recorded some criticism of the expert committees, particularly that projects originating from committee members were more likely to be funded, allowing scope for favouritism.

4. Finland

4.1 Introduction

In Finland, the theme of environmental protection is used as a means of adopting a broad approach to incentive content, so allowing considerable flexibility in the choice of projects supported. In terms of instruments, this relates to both a grant and a loan operated by the Ministry of Environment and Ministry of Trade and Industry respectively, but directly involving the Regional Environment Centres and a public-sector company in the administration.

Energy incentives have been a long-standing feature, with a focus on renewable energy and energy conservation, and this is now incorporated within the National Climate Strategy. As in Denmark, voluntary agreements also feature as a background factor.

The incentives reviewed for Finland relate to the following themes:

- Environmental protection (both grant and loan form).
- Energy conservation.

4.2 Incentives for SMEs

4.2.1 Environmental protection grant

➤ Background and Funding Base

The Environmental Protection Grant was launched in 1996. Administered by the Ministry of Environment and the Regional Environment Centres (RECs), its aim is to support the development of new technologies or new environmental applications and practices. The projects are principally carried out by SMEs.

Tekes, the National Technology Agency, is perceived as the main funding institute for projects of this type, but it focuses primarily on the environmental dimensions of new business projects, and a number of significant development projects may not meet Tekes criteria. Consequently, the Ministry of Environment has established this special grant system to accommodate projects that deliver the best possible environmental benefit. The scheme is based on Council of the State Decision 894/96 (from 1996).

From an annual budget of EUR 5 million, the funding is divided between national and regional levels. Projects of national interest are funded from the Ministry allocation and cannot draw on finance intended for individual regions.

➤ *Eligible Activity and Spatial Coverage*

Examples of broad themes eligible for support include waste handling, waste management, air quality management and water quality management. New forms of co-operation or good practice would also be encouraged. Whereas environmental management systems (EMS) would not be supported in terms of implementation, developing new approaches or systems for EMS would be eligible.

The grant is not available for projects designed simply to comply with environmental legislative requirements; there must be a development dimension.

The grant is available across Finland, with no regional differentiation.

➤ *Scheme Promotion*

The grant is promoted through an annual call for applications. No information is available for applicants in published form, but those individuals with environmental responsibilities are usually aware of the grant through contact with local REC. There are plans to produce a booklet for distribution through the RECs.

➤ *Project Selection*

Following the call for tender, applications are submitted each year to the RECs, where decisions are taken on whether they have national or regional significance. For proposals with purely regional character, the RECs have decentralised authority to make the funding decision. However, if a project has potential national environmental benefits, it would be sent to the Ministry of Environment for appraisal within the national budgetary allocation.

For the past year, a system of six criteria has been applied in a standardised fashion to score projects in national-level applications. As this methodology is considered to have increased objectivity and transparency in project assessment, its usage has now been expanded to apply to all applications at regional and national level. The list of criteria, which has been sent to each of the RECs, appraises the following elements:

- Correspondence with the scheme's thematic coverage.

- The extent of the environmental problem and the likely environmental benefits to be derived from project implementation.
- Innovative character and project methodology;
- The quality of the financial plan;
- Technical and administrative feasibility, and soundness of the applicant.
- Job-creation potential (treated as a bonus criterion, with less weight).

A threshold has been established for the categorisation of proposals against final scores. Applications that fall below this threshold are not financed, and if an application scores zero for any of the criteria it is automatically rejected.

Applications of regional importance are sent to the Ministry, which oversees that the assessments have performed correctly. A board of six members with different areas of expertise confirms that the methodology has been followed and the criteria have been applied as intended. Very few assessments have been questioned, indicating the broad applicability of this instrument. Discussions are now focusing on whether the project documentation sent to the Ministry could be reduced during the second year of operation.

For application of national importance, experts from either the Ministry or the Finnish Environment Institute use the criteria to evaluate the proposals, and the board then carries out the second level of appraisal. After the board has completed its review, the Minister for the Environment approves the decisions.

➤ *Award Characteristics*

In financial terms, there is no maximum award limit. The average rate-of-award is about 50%, but the actual rate varies considerably, depending on the nature of the project. In exceptional cases, 100% grants have been awarded.

Of the national-level applications received in 2000, approximately 50% were approved for grant assistance.

Beneficiary companies must provide a report on project completion, indicating how they have fulfilled the goals. The level of detail within each report depends on the project, with more substantial information expected from larger projects

➤ *Company Characteristics*

In general, the companies could be described as environmentally advanced, because they are presenting new ideas for development, and the expected level of innovation usually requires good background knowledge.

No information is available on applicant company size and sector.

➤ *Scheme Evaluation*

A few years ago, a scheme evaluation was carried out focusing on REC practice in the central Finland region of Jyväskylä. The main factors of interest were the environmental benefit of these projects, the effectiveness of project implementation, and the impact on employment.

A more comprehensive evaluation of the whole system for Finland is planned for 2002, complementing the previous work on project appraisal methods.

4.2.2 Environmental protection loan

➤ *Background and Funding Base*

Finerva, a public limited company specialising in risk capital, administers the Finnish Environmental Loan. One of Finerva's main responsibilities is to provide new loan and guarantee products for Finnish SMEs, and it should assist these companies to improve their competitiveness and performance in international markets.

Work with the environmental loan commenced in 1996, prior to the institutional merger that established Finerva. The first steps were the production of an environmental strategy, and this marked the onset of thinking about awakening environmental responsibility in SMEs. This especially involved ideas such as perceiving environmental factors as a means of competitiveness, developing new products and encouraging companies to specialise in environmental technology. Another objective was to involve Finnish SMEs with environmental programmes in the border regions with Russia and Estonia.

On obtaining approval from the European Commission, the Environmental Loan was launched in 1997. This was accompanied with a workbook for environment, similar to the workbooks for EMAS (eco-management and audit scheme). However, only a minority of SMEs has proved willing to pay the EUR 50-60 to obtain the workbook and start their environmental analyses.

Nevertheless, most large Finnish companies now have the environmental management standard ISO 14001, and they have stated that in 3-4 years they will not accept suppliers without an environmental

programme. These types of threats tend to initiate changes in SME practices, and Finerva's on-going role is to offer products that help finance this transition.

The European Investment Fund (EIF) provides Finerva with a loan guarantee that has facilitated a lower interest rate for the Environmental Loan. However, the guarantee is currently under review, and it may be withdrawn if it is not appraised as essential.

Each year, the funding base supporting new environmental loans is approximately EUR 25-30 million.

➤ *Eligible Activity and Spatial Coverage*

Eligible activity for the Environmental Loan is not prescribed, but instead proposals are considered for a wide range of applications. By way of example, the loan can be used for the following purposes:

- Energy saving and energy conservation.
- Investing in recycling companies.
- Investing in environmental technology companies, especially those launching new products.
- Modifying treatment processes within the metal industry.
- Installing production components that have a lower environmental impact.
- Assisting the transition to a closed system.

The loan does not support activity designed to meet legislative obligations.

The Environmental Loan is available across Finland without regional differentiation.

➤ *Scheme Promotion*

It has been marketed by placing advertisements in newspapers and journals, by the production of brochures, and by including information on the Finerva website.

In addition, there is one analyst in each regional office that has a special responsibility for environmental issues, and this person also has the role of training colleagues by passing on skills useful in promoting the environmental loan. The 100 analysts currently employed have very varied educational backgrounds, including degrees in law, economy and civil engineering.

➤ *Project Selection*

Companies apply for the loan using a standard form that is available from Finerva directly or alternatively from the website. Completed applications are then submitted to the nearest regional office. To qualify for consideration, SMEs must meet the following criteria:

- The maximum number of employees is 250.
- The company's turnover should not exceed EUR 40 million, or the balance-sheet should not be greater than EUR 27 million.

In addition, companies wanting to benefit from the EIF guarantee cannot have more than 100 employees, and they must be within risk groups A1-B2, the best within the investment grading system. These applicants will also be asked to complete a special form detailing the company's environmental characteristics.

An analyst from the appropriate regional office then visits each applicant company. His or her objective is to prepare a comprehensive analysis of the company, identifying any weaknesses in its financial base - for example in environmental systems or product development - that require assistance. In this context, Finerva is generally acting as a "second wave" financier, supporting companies that banks consider too high a risk. Consequently, Finerva takes substantial risks to stimulate activity in these companies, but experience has shown that the beneficiaries improve their performance when they assume responsibility on receipt of the Environmental Loan.

All the subsequent financial decisions are based on the company analysis, which usually comprises between 5-15 pages addressing internal and external factors affecting the company and its competitiveness, and environmental factors represent one component of this assessment. Although the environmental analysis is considered especially important, SMEs have generally not carried out this work in advance.

The decision on whether to approve a loan would generally be taken in the Finerva regional offices, with the exceptions of when companies submit especially large loan requests or have substantial previous liabilities. In that case, the level of decision-making would be higher in the organisation.

➤ *Award Characteristics*

A typical award for the Environmental Loan is about EUR 175,000. There is no formal upper limit financially.

The loan is paid in two instalments each year. Thereafter, the first two years act as a grace period, and repayment takes place over the subsequent 3-4 years.

The interest rate on the loan will vary in accordance with the risk rating, whether the project is based in a EU regional policy programme area, and collateral. In general, the Environmental Loan interest is set below the market rate.

During project implementation, Finerva analysts visit each beneficiary company between 1-3 times in a year, when they will discuss recent developments and market now loans and guarantees.

After project completion, monitoring options include further visits from Finerva or EIF accountants to verify that the money had been spent on an environmental investment. There is no formal obligation on companies to report either on how the award was used or on its subsequent impact.

➤ *Company Characteristics*

The applicants are mostly small rather than medium-sized companies, especially in the tourism industry, and it is usually straightforward to identify eligible environmental investments to support at this scale.

For most companies, applying for the loan represents the first time that they have had to think in detail about issues of environmental management.

➤ *Scheme Evaluation*

The only evaluation associated with the loan has been conducted by the EIF, and this is focused on the EU level of activity.

4.2.3 Energy conservation grant

➤ *Background and Funding Base*

A set of voluntary energy conservation agreements forms a framework in Finland for the implementation of grant assistance. The Ministry of Trade and Industry, which is the energy authority in Finland, designs the agreements in partnership with a number of industrial or sectoral organisations. This system commenced in the early 1990s, as part of the government energy efficiency programme, which has in turn become part of the national climate strategy.

In terms of the sequence, overall sectoral objectives for energy efficiency are defined, these are marketed to companies, and if the companies choose to join the agreements, they must then prepare action plans to reach the targets. The agency of Motiva acts for the ministry in the day-to-day processes of administration, marketing and associated

follow-up activities. In practice, each participating company must carry out a survey of its overall energy efficiency, followed by energy audits of its production facilities and/or buildings. The information from the energy audits is used to prepare the action plan for improving energy efficiency, and the next step is to realise the plan.

Within this sequence, the Ministry of Trade and Industry provides financial support to companies for the energy audits and for subsequent investments in energy efficiency or the use of renewable energy.

The annual budgetary allocation is approximately EUR 170,000, and this total has been relatively stable in recent years. In 2002, the budget was increased, because the energy subsidies directly support the newly approved climate strategy.

➤ *Eligible Activity and Spatial Coverage*

Activities eligible for grant support include energy auditing for a building or production plant, and investments in energy efficiency or forms of renewable energy.

The scheme is available across Finland, with no regional differentiation.

➤ *Scheme Promotion*

Motiva, in partnership with the sectoral organisations, devises methods of promoting the grant. This includes various types of marketing and promotional campaigns, directed primarily at companies that have not already joined the energy conservation agreements.

➤ *Project Selection*

Each company and its consultants prepare grant applications and project plans for energy audits or investment support. These documents are submitted either directly to the Ministry of Trade and Industry or to a regional branch of one of the ministries responsible for labour, agriculture or trade and industry. Project evaluation is then performed in-house by government staff.

Basic eligibility for audit projects or investment projects is determined according to conventional quality criteria. The Ministry publishes these rules on its website, indicating that only projects complying with these rules are approved for public subsidy.

The projects are handled on a first-come, first-served basis, until the annual budget is used up. All projects are assessed individually, and decisions on funding are taken on a project-by-project basis.

The public authorities take the funding decisions, following a normal bureaucratic application procedure.

No information is available on rejected applications.

➤ *Award Characteristics*

Whereas any company can apply for the grants, those that have entered into the voluntary energy conservation agreement receive higher rates of award, as indicated below.

For the energy audits, participant companies can receive up to 50% grant for eligible costs or 50% of actual costs, depending on which is lower. The maximum levels are also associated with the type of building or process being audited. There is a maximum audit cost defined in terms of €/m³ of audited building volume or in terms of percentage of annual energy costs of the plant. The audit subsidy is a maximum of 50% of the eligible audit cost for companies that have entered the voluntary agreement and 40% for companies that have not joined.

For investment subsidies, participant companies can receive up to 10% for "conventional investments" with no extra technical or financial risk. In comparison, for investments that incorporate new advanced technology, and which have associated financial or technical risks, participant companies can receive a rate of award between 10 % and 30 %, depending on the particular technology and the field of application. To qualify for the investment grant, the project should have a minimum size of about EUR 41,000. In addition, the maximum subsidy is EUR 82,000.

Companies that have joined the voluntary agreements are committed to reporting annually to Motiva, the Ministry of Trade and Industry and to the sectoral organisations on progress made. This obligation extends to specifying how the subsidy was used and the impacts after project completion. For companies outside the agreements, there is no obligation to report on the actual project outcome.

➤ *Company Characteristics*

In terms of their environmental knowledge, applicant companies have different characteristics. Some companies with advanced environmental management schemes apply for support both to implement and develop the schemes further; other companies pursue energy auditing and energy investments only as a means of reducing production costs, and these applicants may find it surprising that energy auditing directly supports environmental management.

No information is available on the sectoral profile of SMEs receiving support.

➤ *Scheme Evaluation*

At the level of the energy conservation agreements, some have been evaluated, others are currently being evaluated, and there are plans to evaluate even more over the next two years.

The evaluation reports review the impacts of the grants on environmental performance with regard to CO² emissions and energy costs, but no attention is given to economic competitiveness.

5. Norway

5.1 Introduction

In recent years, the funding available in Norway to support a system of environmental incentives has diminished, and there is now increasingly less support in grant form.

With regard to taxation, Norway has an extensive environmental tax system, but – following the administrative reform in 1992, when concessions attached to specific objectives were removed – there are presently no environment-related corporate income tax advantages. Nevertheless, government policy statements have indicated that tax concessions will be utilised more broadly.

The incentives considered in this chapter relate to the following themes:

- Sustainable production and consumption.
- Environmental technology (in both grant and loan form).
- Renewable energy.

5.2 Incentives for SMEs

5.2.1 Sustainable production and consumption grant

➤ *Background and Funding Base*

Ten years ago, the Norwegian Ministry of Environment established the Foundation for Sustainable Production and Consumption (GRIP). Through the provision of grants, the Foundation acts as an agent for promoting environmental policy dedicated to the furtherance of sustainable production and consumption.

GRIP works primarily with industries that are not traditionally considered to be polluting in a legal sense, but that do have an impact on the environment through the consumption of goods, chemicals and energy, transport and refuse. The operating strategy is to co-operate with private and public enterprises in developing and testing methods to improve eco-

efficiency, communicating these methods to other enterprises so they can initiate measures to reduce their environmental impact, and working for changes in framework conditions that will benefit the environment.

In 2001, with a budget of NOK 55 million, GRIP funded 90 projects. Although the Ministry of Environment provides the basic financing for GRIP – amounting to NOK 16 million in 2002 – other ministries also make financial contributions, mostly linked to specific projects.

➤ *Eligible Activity and Spatial Coverage*

GRIP grants are available for a wide range of activities in different sectors. Over time, the programme themes have included ecobuild (for the construction and real estate sector), chemicals, purchasing, retail/wholesale and travel and tourism. The thematic coverage is progressive, following the sectors promoted by the government and working in accordance with the deliberations of the GRIP Executive Committee (see below). During 2002, GRIP is also supporting companies aiming for EMAS and ISO certification.

In terms of company size, larger enterprises were favoured in the early years, reflecting the priority to demonstrate how they could progress environmentally. However, that phase is now complete, and the focus is increasingly turning towards SMEs.

GRIP grants are available across the whole of Norway, without regional differentiation.

➤ *Scheme Promotion*

The grants are promoted through websites, sectoral organisations and the Norwegian Research Council. GRIP also publishes project reports to disseminate knowledge of completed activity. The reports vary in content, but most adopt a straightforward and brief style, to remain accessible to a wide audience.

➤ *Project Selection*

For a project to be considered, it must support some aspect of new technology or innovation, and it should be a pilot from which other companies can learn. Clearly, its environmental impact of greatest interest (such as energy use, waste, recycling, materials use, and health impacts), but other factors include evidence of consumer/client company demand, the availability of co-financing, and whether projects have a competitive edge to help them succeed in the market.

There is no specific date for submissions, and applications are accepted throughout the year. The application form is available on the

Internet, and applicants must also provide various accompanying materials.

On receipt, projects are scored on the basis of their impact on environment, energy, waste etc. This process seeks to identify those that correspond most with GRIP programme interests – for example relating to the use of materials, chemicals or recycling – and to estimate which projects will give the greatest positive impacts. Five criteria are used, and each category has a potential of 5 points, so allowing a maximum total of 25 points. Any project scoring under 10 at this stage would not be taken further; however, the majority falls into the 10-25 range. This information has been recorded in a database for the past three years.

Thereafter, the route of the application depends on the scale of funding requested:

- Applications over NOK 300,000 go to the Executive Committee.
- Applications between NOK 100,000 and 300,000 go to an appropriate sub-committee.
- Applications for less than NOK 100,000 are decided by GRIP.

The Executive Committee appoints sub-committees for 2-3 year periods to run in parallel with programmes. There are presently two sub-committees:

- Real estate and building construction, consisting of twelve members and including representation from the largest companies.
- Paints, comprising seven members representing producers and sellers (and including SFT, the Norwegian Pollution Control Authority).

The projects chosen are ones that already show promise for success. With regard to high-risk investments, a limited number of projects in the area of experimental technology/methodology are supported, but these are chosen very carefully.

➤ *Award Characteristics*

A maximum of 50% grant is available as co-financing. Projects invariably received this maximum rate-of-award in the early years, but now the average awards are within 30-40%.

No SME differentiation is made in the award rate. As there is no upper limit on an individual award, this means that larger companies can receive larger grants. However, sometimes these more substantial projects

are allocated 10% grants, to help spread the available funds over a wide range of companies.

The grant is paid out in three instalments, typically over a timescale of 9 months. Money is only given for one year, but the option exists to extend the project, and in a few cases this has stretched to 3 years.

Of the 400-500 applications received in 2001, approximately 350 (30%) were rejected. This usually meant they did not meet the standard criteria, most importantly regarding environmental impact. Appeals against rejection can be made either to the Executive Committee or to the Ministry of Environment, but no company has yet taken this option. In some cases, GRIP has advised on how a rejected application could be improved. In 2001, between 30-40 applications were resubmitted, and some were put on a waiting list for available finance.

Companies usually must provide two progress reports, one during project implementation and the other when it is completed. However, in certain projects, up to four reports per year are required. Although these reports should follow a prescribed standard format, this has not always been complied with. Again, this information is to be integrated into the GRIP database, so that companies can refer to it as a benchmarking tool, both within a sector and across sectors for comparison.

➤ *Company Characteristics*

With regard to company size, a high number of large companies receive grants. The major producers dominate certain GRIP programmes – such as the building and paint themes – for example due to the use of chemicals in paint.

In comparison, SMEs are receiving support in the eco-design and tourism and travel sectors. Eco-design companies comprise 10-20 people and sometimes fewer, whereas companies in the hotel sector are slightly larger, with about 50-60 persons.

Companies in the chemicals sector are usually already environmentally advanced, and in comparison the travel and tourism sectors are rapidly improving in this respect. However, SMEs across the programmes often find this a new departure, particularly compared to larger companies that use this factor to gain a competitive edge.

➤ *Scheme Evaluation*

GRIP carries out internal evaluations in different sectors, usually on programmes that are completed to identify what lessons can be learned. One result of this work, for example, has been modifications to the project selection criteria.

The evaluations have not normally included examinations of company perceptions and/or impacts, but this will be initiated during 2002. The retail and wholesale programme area is the only exception, where a number of companies have already been visited on the initiative of the GRIP programme manager.

Professional consultants have considered external impacts of GRIP activity in the chemicals, purchasing, travel and tourism, and eco-build sectors.

In addition, the "GRIP Barometer" – which surveys enterprises' attitudes and environment-related activities – can be used to compare trends in each sector. It may also allow some insight into whether those companies with the best environmental performance were also the best economically.

5.2.2 Environmental technology grant

➤ Background and Funding Base

A report to the Norwegian National Assembly on Environment and Development (No.46 of 1988-89) stated that, in order to achieve a sustainable industrial sector, it was necessary to stimulate environmentally sound technological solutions through grant provision. Other countries had already launched programmes of this nature, but it represented a new departure for Norway and a significant step for Norwegian industry. Within the environmental authorities' Strategic Plan for Industry, the objective of the Environmental Technology Programme was to stimulate technology innovation, with scope envisaged for selling this technology abroad. Prior to this scheme, no such funds had been available in grant form. SMEs were to be the main target of the programme, as the Ministry of Environment considered that the greatest environmental gain could be achieved within this sector.

The programme commenced in 1990, administered by the Norwegian Pollution Control Authority (SFT), with an allocation of 200 million NOK for a 6-year period. This funding was committed at a rate of 40 million NOK in the first year 1, then approximately 25-30 million NOK in each of the following years. In 1996, the programme's funding was discontinued as part of overall budgetary reductions. The last funded project was completed in 1998.

➤ Eligible Activity and Spatial Coverage

An important strategy of the programme was that grants awarded for development projects should reduce the economic risk incurred by companies prepared to try out new technological solutions either to reduce emissions or to lower the costs of reduction. From the outset, cleaner

production assessments were a major theme for support. In this context, the term "cleaner technology" was defined as:

"..using other raw materials, modifying production processes and changing the quality of products in an attempt to achieve maximum reduction of emissions to air and water and of generation of waste" (SFT, 1995, p.1).

Various safety measures to prevent acute emissions from industry were also accepted as approximating to cleaner technology. Another feature was that the process had to be 'new to Norway', and it had to be capable of being shared with other companies. In practice, the focus on cleaning systems meant that companies manufacturing and/or purchasing cleaning devices were eligible for financial support.

As the programme progressed, the cleaner production assessments were subsequently augmented by pilot or demonstration projects, either to adapt known technology or products to new areas of application, or to test completely new technology or products. However, end-of-pipe technology was not eligible, and neither were research activities or the actions of companies working to meet the demands of environmental legislation.

This grant funding was available to companies in all areas of Norway, but with differentiated rates in certain locations in accordance with regional policy priorities.

➤ *Scheme Promotion*

In the first year, the task for SFT was to market the scheme to the community and especially to the groups that would carry out the cleaner production assessments. Advertisements in newspapers were used in this launch phase, but latterly advertising was unnecessary, as the scheme had become known. Only in the final year of operation did SFT need to return to actively identifying and persuading companies to invest; by that time, the standard rate of award was perceived as too small – new technology investors needed more money, to compensate for the high risk.

They also co-operated with the Institute for Technology and sectoral organisations, both of which are still active in this field, but more from the perspective of protecting companies from government, or promoting their interests and international activity.

➤ *Project Selection*

Applications were made directly to SFT, where the officer responsible for that particular sector would assess the application for its eligibility. In this selection process, there were three general criteria that applicants had to meet:

- The project should help to solve a high priority environmental problem in Norway.
- The “owner of the problem” and/or the supplier of the technology must also contribute financially.
- It should be possible to transfer the results of the project to other enterprises with a similar problem.

Thereafter, there were several SFT internal specific criteria:

- The project results must not remain confidential, but should be open for others to use.
- The funds could not be used for marketing or research purposes, but must be put to practical use.
- If the project had a sectoral focus, it must be representative so that other enterprises could benefit.
- The Ministry needed to see and approve a financial plan.
- The Ministry was to be appraised of the amount of risk in this particular technology.

On certain occasions, if the SFT were not persuaded of the innovative nature of the technology, applicants would be asked to provide more detailed information and evidence. If some disagreement still remained, a third opinion would be sought, with SFT operating independently in this process. Most of these cases were decided in-house, but evaluations of more complex technology were referred to academics, industry, and consultants such as the Institute for Technology.

➤ *Award Characteristics*

With regard to rates of award, SMEs could receive up to 40% of eligible costs if located in designated areas in northern Norway and up to 35% in the rest of the country. The accepted definition for SMEs was that the company should have fewer than 250 employees, the turnover should be less than 160 million NOK per year, and the company should not be more than 25% owned by a larger company. Rates of award for larger companies amounted to up to 35% in the designated Regional Development Fund areas, and 25% elsewhere.

Grant awards were generally made for 1, 2 or 3 years. An average of 60-70% of applicant companies received awards each year, most rejections being due to failure to meet the criteria or presenting too high

an economic risk. In the final year of operation, between 300 and 400 projects were supported.

Standard award conditions included obligations on performance reporting during the project, submission of a final report, and the production of factsheets following project completion.

➤ *Company Characteristics*

SMEs supported by this scheme were drawn from the chemical industry and food industry, but there were also beneficiaries in metal finishing (mostly medium-sized enterprises) and shipyards offshore (medium and larger companies).

Unlike larger companies, the SMEs were mostly not environmentally advanced at the time of application. However, the cleaner production assessments helped them to identify how good environmental management could deliver an economic return. The act of applying for the grant was taken as an indication by SFT that a company was taking the first steps to attain improved environmental knowledge, and it was estimated that participation in the programme was an effective education for companies.

The more advanced a company was at the time of application, the more likely it was to deliver a successful project. In general, projects that failed had less advanced owners. In some cases, this meant that these companies did not have the resources for project implementation, but it was still judged as worth giving them the grant – at the very least as an educational step – in pursuit of broader benefits.

➤ *Scheme Evaluation*

The last programme evaluation was in 1995; no evaluation was performed in 1996, as the decision to close the scheme had already been announced. In part, this closure may have been linked to the establishment of the new SND Environmental Loan, so reflecting the general re-orientation from grants to loans as more appropriate policy instruments.

In terms of their depth, the evaluations comprised a general review of the programme performance, and they did not investigate the impacts on individual companies.

As an example of failures and successes amongst the projects, of 24 grants allocated to metallurgy companies, 12 finished. Of those twelve, three were very successful, four were partly successful, and the remaining five were considered to have failed. Of the funds paid out to the 12 twelve that did not complete the programme, nothing was retrieved.

5.2.3 Environmental technology loan

➤ Background and Funding Base

An environmental technology loan known as the Norwegian Environment Fund was administered by the Norwegian Industrial and Regional Development Fund (SND) for two years during 1998-2000.

The former Minister for Foreign Affairs – who was also a former Prime Minister – originally proposed the loan, and it was perceived as a political statement to demonstrate that government was taking action to meet the Kyoto target, supporting technology that reduced emissions.

NOK 250 million was the total allocation for the two-year period. All of this money has been marked for company use, and some loans have already been paid back. It is then returned to the Ministry of Finance, which re-allocates it to other tasks of government. On occasions when projects are cancelled and the money has not been claimed, SND may re-allocate it to new projects.

➤ Eligible Activity and Spatial Coverage

The main purpose of the loan was to promote investment in – or development of – environmentally-friendly technology that reduces emissions of greenhouse gases, as well as other harmful substances. Waste was a common project theme, typically focusing on minimisation, re-use, incineration, recycling, bio-energy and compost degradation. Other eligible themes encompassed energy-efficient production processes, alternative energy sources, and energy recycling.

It was targeted at projects that generally experienced difficulty in obtaining funding either because of their high-risk character or because the estimated profitability was too low. Investments aimed at meeting the demands of environmental legislation were not eligible for support.

The loan was available in all parts of Norway, but with a preference for peripheral areas, as part of regional policy fulfilment. However, the majority of the population lives and works in central areas, and in consequence more than half of the projects have been allocated to non-peripheral areas.

➤ Scheme Promotion

The loan was promoted through newspaper advertisements, conference presentations, and the production of a dedicated brochure. In practice, knowledge of the scheme spread quickly throughout Norway – perceived in administrative terms as a small country – and SND easily reached the target number of applications.

➤ *Project Selection*

Project applications were sent to the 18 SND regional offices in each of the Norwegian counties. As there were no submission deadlines, applications were received on an on-going basis. The county offices assessed the applications, but copies would also be sent to the main SND office in Oslo and to the Norwegian Pollution Control Authority (SFT), for parallel assessment and comment. In practice, only a few specialists in SFT were consulted, and the assessments were generally positive.

The Fund operated in accordance with certain standard criteria:

- At least two-thirds of supported projects should reduce greenhouse gases, directly or indirectly.
- For a project to qualify, the investment's eco-efficiency and/or resource efficiency should be positive.
- Projects implementing new technology or attempting new applications of existing technology would be especially encouraged.

There was no standard application form, but instead a brochure acted as a guide on how to apply. It emphasised straightforward information requests, such as identifying which problem the project would be attempting to solve or partly contribute towards, the extent to which it would reduce emissions, describing the resource and environmental efficiency of the technology, and assessing whether the project would be economically and financially viable. In accordance with normal SND procedures, a close dialogue was conducted with the client prior to the formal application. The technical aspects were addressed by SFT.

The selection process was operated on a "first come, first served" basis. Accordingly, if a project seemed sound, it was approved and funded. Rejected applications were generally undermined by financial rather than technological factors.

➤ *Award Characteristics*

At the time of survey, 62 companies had received a loan. The first 19 cases received a very low rate of interest between 1% and 4%, varying with each project's capacity to reduce greenhouse gas emissions. However, the Ministry of Finance intervened to state that this level of subsidy should not continue, and the interest rate was subsequently raised to 4.6% for the following projects.

There was no formal upper limit on the amount of the loan as such, but award decisions followed EU rules on the scale of eligible project costs. In practice, maximum of 50% were generally observed. The

corresponding aid intensities were calculated from an equation based on the interest rate and the length of the repayment period, while taking into account the share of the total financing borne by the Norwegian Environment Fund.

In total, 28% of the overall project costs was financed by the Fund. For the SND portfolio seen as a whole, the Environmental Loan projects generally exhibit marginal profitability. Accordingly, supplementary government financing, mainly in the form of grants, has been necessary for the realisation of approximately 40% of the projects. This has required close co-operation with other government funding agencies, and it has relied heavily on the use of SND's other financial instruments.

Certain companies take a long time to get their projects started. These delays might relate to government policy changes, for example lowering energy charges so that companies find it less urgent to take up the projects. The CO₂ tax and energy prices are important in this context. The companies wait until times are harder financially before committing their money to these investments. Another reason for the long timescale is that, in many projects, new facilities/factories are being planned and built, and these processes are very time-consuming.

Companies have the option to wait for up to three years before taking the loan and in some cases the loans may never be claimed. Some companies might also regard it as a financial reserve. The payback time on the loans varies from 2-3 years up to 20 years.

Monitoring reports should be submitted once a year during the implementation of each project award. However, only a very limited number of reports have been submitted. Whereas companies do appear to be following the environmental requirements, they are reluctant to complete the periodic reports. This is now seen as a weakness in the initial agreements, where insufficient emphasis was placed by SND, and no standard format was prescribed. In practice, very brief reporting would be accepted, as a minimum estimating the reduction in emissions.

➤ *Company Characteristics*

In terms of scale, the majority of applicant companies are well below the 250 SME-threshold. With regard to environmental knowledge within companies, the capacity varies widely in accordance with the sectoral character of the enterprises, which range from a Norwegian church through to a number of energy companies working with waste and bio-energy.

SND has not surveyed the degree of environmental knowledge within companies, but informal estimates suggest that 20% of applicant companies have little or no environmental knowledge, 70% have a

focused or process-specific environmental knowledge, and 10% have a broader, advanced environmental knowledge.

➤ *Scheme Evaluation*

When the total funding had been allocated, an internal evaluation was carried out, and this formed a report to the Ministry of Environment. This report shows – in theory – how much the cumulative effect should be of all these loans and investment. A decision will be taken in a future Ministry of Environment White Paper on whether a more extensive evaluation should be carried out.

The loan was discontinued as a separate policy instrument, as part of the trend towards integrating environmental issues and projects into ordinary industrial schemes. The onus is now on considering environmental factors alongside all other aspects in the company development process.

Of the original NOK 250 million allocation, it is estimated that NOK 10 million has already been lost, and a further NOK 40 million (together totalling 20% of the original sum) is expected to be lost. However, given that the Environmental Loan was operated on the principle that “to be winning you need to be losing” the loss of NOK 50 million is considered inadequate – suggesting that the loans were too small and not adventurous enough. The SND view is that with an improved risk profile, it would have been possible to attract and engage with more high-technology and higher-potential projects.

5.2.4 Renewable energy grant

➤ *Background and Funding Base*

The Norwegian Water Resources and Energy Directorate (NVE) have the objectives of promoting energy efficiency, contributing towards greater flexibility in the energy system, and increasing the use of new renewable sources of energy. As part of its remit, NVE offers four grants aimed specifically at renewable energy, new technology, wind and gas.

The new technology grant was launched in 1994, reflecting a new orientation towards supporting technology manufacturers and designers rather than end-users, and removing barriers in making and marketing products. The renewable energy grant followed in 1997, commencing with bio-energy, which was the cheapest source after hydro-electric generation. Political interest in such an alternative had arisen following a very dry winter.

The gas energy grant also appeared in 1997, reflecting political preferences for North Sea exploitation of a resource that was cheaper than oil and resulted in fewer emissions, even though it was not a renewable.

Lastly, the wind energy grant commenced in 1998, when it effectively narrowed the gap between production prices for hydro and wind, making it easier for new producers to enter the market.

In terms of budgetary allocations, the categories of renewables and wind together amounted to 200 million NOK, technology received 10 million NOK, and gas was given 20 million NOK (most of which was spent on pipelines). Given that the majority of funding is focused on renewables, the remaining sections of this description concentrate on that incentive only.

A new authority, ENOVA, was established at the beginning of 2002, and it assumes responsibility for the future administration of Norwegian energy incentives. At present, its strategies are still under development, but it is anticipated that loans and guarantees will replace grants as the favoured policy instrument.

➤ *Eligible Activity and Spatial Coverage*

Examples of eligible activities within renewable energy include bio-energy projects, district heating based on waste heat, installing heat pumps and new wind power facilities. These projects relate to heating buildings, delivering process heat to industry, and establishing new capacity, and they fulfil goals outlined in the Energy White Paper (No.29, 1998-99), which established energy policy guidelines for the next 10 years.

The renewable energy grant is available all across Norway, with no regional differentiation.

➤ *Scheme Promotion*

Information on the grant is available on the NVE website, where all relevant eligibility criteria and dates are published.

➤ *Project Selection*

The budget for the renewables grant is finalised by Parliament in January each year, and the subsequent application deadline is set in March. This method is favoured partly because its administration costs are lower than open application methods, but also because it allows the Directorate to see the whole range of submissions and to choose the best applications to support.

As a general condition, securing a renewables grant must be critical for the project to be considered. Linked to this scenario, it is accepted that, in certain cases, the Ministry needs to take risks that the banks would not consider.

The selection criteria for renewables projects change slightly each year, following directions from Parliament. Nevertheless, among a

maximum of seven criteria, the main factor remains the amount of energy that would be saved. The projects are scored on a preliminary basis within the Directorate according to a grading of A and B (projects worthy of further consideration) and C (rejected applications). Using this system, the majority of applications receive similar grades, requiring further scrutiny to identify projects with the greatest potential i.e. those with innovative capacity.

➤ *Award Characteristics*

Each case is judged on its own merits, but as a general rule the rate of award is set at the minimum necessary for the project to proceed. In special cases only, there may be scope to sanction higher-than-average awards.

For renewables, the maximum grant awards are 40% for public sector projects and 60% for private sector projects, almost all of the latter representing SMEs. In practice, average awards in each category are usually considerably lower.

The grant is paid in instalments. One-third is given out at the project launch, and there are two subsequent payments that require documentation. These comprise a brief progress report during project implementation and a more comprehensive report (focusing on energy) at project completion.

From 200 applications for renewables projects, 60 were awarded grants, with an average payment of NOK 200,000. In general, of those projects approved, about one-quarter do not proceed.

➤ *Company Characteristics*

Other than being within the energy sector in broad terms, no data are available on the characteristics of applicant companies.

➤ *Scheme Evaluation*

The renewables grant scheme has been evaluated, incorporating a survey of company experience. In economic terms, a performance ratio has been derived for the amount of energy saved, but environmental benefits were not directly explored.

In relation to targeting, the evaluation recommended that in future the grants would be more effective if focused on one industrial sector rather than covering several sectors simultaneously.

6. Sweden

6.1 Introduction

With the exception of the renewable energy incentive, the main environmental incentives surveyed in Sweden represent an indirect benefit to SMEs, rather than a direct subsidy. This is an unusual approach amongst the Nordic countries, and it relates more to information provision, networking and co-operation amongst universities, research institutes and other regional actors for the benefit of SMEs than it does to financial investment in the production sector.

Environmental technology has also featured as a special focus in Sweden, with a programme to encourage exporting spearheaded by the Swedish Delegation for Sustainable Technology from 1997-2000. Its task was to stimulate the commercialisation, faster market introduction and increased sale of products that have lower negative effects on the environment. A major part of the beneficiaries were estimated to be SMEs.

The incentives reviewed for Sweden relate to the following themes:

- Environmental management.
- Environmental design.
- Environment-driven business development.
- Renewable energy.

6.2 Incentives for SMEs

6.2.1 Environmental management grant

➤ Background and Funding Base

From 1996-1998, NUTEK administered the programme Environmental Management in SMEs (*Miljöstyrning i små och medelstora företag – MISF*). Its origin followed a government order in 1995/96, within which NUTEK was asked to determine how questions raised by the EU Eco-management and auditing scheme (EMAS) could be promoted amongst Swedish SMEs. Through providing grant assistance, the MISF scheme had the objective of stimulating the development of high environmental awareness amongst these enterprises.

The MISF programme was not open to individual companies, but rather to groups of companies (see *iv* below). It involved approximately 50 local network projects with 500 participants over a three-year period.

During this time, NUTEK's budget for the scheme amounted to SEK 17 million.

➤ *Eligible Activity and Spatial Coverage*

The main activity supported by the programme related to launching environmental management systems (EMS). Projects did not necessarily have to lead to formal EMS certification, but they were expected to establish environmental goals that secured continuous improvement in company performance.

The project results were intended to benefit a wide group of companies, and therefore eligible activities had to have a broad applicability. Within the MISF programme, the focus was principally on municipal projects and regional networks.

The grant was available across Sweden, and finance was directed at the best projects nationally. Although there was no regional differentiation in awarding grants, NUTEK generally sought to create a balanced distribution of activity.

➤ *Scheme Promotion*

The MISF was marketed through advertisements that included dedicated free (020) telephone numbers for further information.

➤ *Project Selection*

In the first instance, general demands had to be met. These included co-operating in a network (the minimum was three companies, but more were usually involved), fulfilling an existing need, being based clearly within a specific trade or industry, and producing documentation that made the results accessible by a larger group.

Thereafter, specific selection criteria were used as a means of differentiating between competing projects. For example, this might relate to whether companies were well established locally or regionally, viewed in comparison with their links to the sector. Ideally, companies would meet both these criteria.

An internal grading template was used to assist project selection. Although this contained a certain degree of subjectivity, it still afforded support to decisions. If unconditional demands were not met, projects received a zero score, and approval could not be granted. In practice, NUTEK administrators consider that this decision support tool was effective in selecting the better projects. A decision protocol was also completed, addressing categories such as project feasibility, value-added, and dissemination of results, generally considered from a NUTEK perspective.

A reference group also assessed the applications as part of the decision process. The group consisted of about 10 people, representing a wide spectrum drawn from municipalities, consultancy firms, universities, and companies of varying sizes, amongst other sources. The reference group was especially active in this environmental management programme, with frequent meetings to cope with the on-going process of application submission. The continuous/open system for applications meant that it proved difficult to compare the different proposals.

➤ *Award Characteristics*

NUTEK would normally co-finance MISF projects with an award rate of up to 50 percent of the total project cost. Only rarely was the sum of SEK 500,000 exceeded.

Project leaders had to submit a final report after project completion. In addition to an economic statement of how the money was used, this report often contained a description of a tool or method, or good examples worth highlighting. As the companies involved in each project reported to the project leader, NUTEK had no direct contact with those SMEs.

➤ *Company Characteristics*

The SMEs participating in the MISF programme were very heterogeneous in character. The company size also varied, but a large proportion had around 50 employees.

As there were no eligibility requirements stating that applicant companies had to be environmentally advanced, involvement in the programme often represented the first steps in environmental management for those enterprises. However, NUTEK considers that companies already familiar with quality assessment or environmental considerations derived greater benefits.

➤ *Scheme Evaluation*

NUTEK always requires that an external evaluator be appointed to carry out a programme appraisal. This can take different forms, but in the case of MISF it was interview-oriented. Companies were asked about their experience of the scheme; however, this did not include in-depth analysis of outcomes corresponding to environmental improvements, and economic impacts were considered too difficult to measure accurately.

Instead, insights related to company understandings of the relationship between environmental factors and competitiveness, how to retain market share, and increasing the emphasis on product development, amongst other factors.

6.2.2 Environmental design grant

➤ *Background and Funding Base*

From 1997-2000, NUTEK administered the programme Design for the Environment in SMEs (*Metodik för miljöanpassad produktutveckling i små och medelstora företag* - MPU). In content, this scheme sought to focus on products within an environmental management system, and a strong emphasis was placed on research and development. Consequently, the participants were mostly industrial research institutes and universities. In comparison with the parallel environmental management scheme (MISF), it proved more difficult to involve companies in the MPU.

The MPU grant programme was not open to individual companies, but rather to groups of companies (see *iv* below). It involved approximately 20 projects and 120 companies over a three-year period, and during this time, NUTEK's budget for the scheme amounted to SEK 25 million.

➤ *Eligible Activity and Spatial Coverage*

The theme of "design for the environment" related to practical means of improving products environmentally. This was approached from two perspectives: first, devising new methods or tools for product design; and second, modifying existing methods and promoting examples of good practice.

In the latter category, an eco-design project managed by Swedish Industrial Design was considered a particular success. It used existing methods to integrate lifecycle assessment knowledge into companies' operations, with good examples resulting. In this context, the themes supported could also be influenced by the existence of specialist sectoral organisations, industrial research institutes or universities with a certain competence.

The MPU scheme was available across Sweden, and finance was directed at the best projects nationally. Although there was no regional differentiation in awarding grants, NUTEK generally sought to create a balanced distribution of activity.

➤ *Scheme Promotion*

MPU was promoted through press releases and other press contacts, and information was available on NUTEK's website and through links from the homepages of other organisations. In addition, NUTEK maintains a directory of all the previous project applicants, health offices and trade and industry secretariats in the different municipalities, as well as other

sectoral organisations. Each year, this database was used to send information to almost 3,000 addresses.

➤ *Project Selection*

In the first instance, general demands had to be met. These included co-operating in a network (the minimum was three organisations, but more were usually involved), fulfilling an existing need, being based clearly within a specific trade or industry, and producing documentation that made the results accessible by a larger group.

Thereafter, specific selection criteria were used as a means of differentiating between competing projects. For example, this might relate to whether the applicants were well established locally or regionally, viewed in comparison with their links to the sector. Ideally, the applicants would meet both these criteria. For MPU, there was a specific demand that the company should have some kind of product development or could influence product development.

An internal grading template was used to assist project selection. Although this contained a certain degree of subjectivity, it still afforded support to decisions. If unconditional demands were not met, projects received a zero score, and approval could not be granted. In practice, NUTEK administrators consider that this decision support tool was effective in selecting the better projects. A decision protocol was also completed, addressing categories such as project feasibility, value-added, and dissemination of results, generally considered from a NUTEK perspective.

A reference group also assessed the applications as part of the decision process. The group consisted of about 10 people, representing a wide spectrum drawn from municipalities, consultancy firms, universities, and companies of varying sizes, amongst other sources. The reference group was very active in the design programme, but the continuous/open system for applications meant that it proved difficult to compare the different proposals.

➤ *Award Characteristics*

In comparison with the environmental management programme (MISF), projects supported by the design programme were fewer in number and received higher awards. This reflected the strong research orientation of several major projects.

Project leaders had to submit a final report after project completion. In addition to an economic statement of how the money was used, this report often contained a description of a tool or method, or good examples

worth highlighting. As the companies involved in each project reported to the project leader, NUTEK had no direct contact with participating SMEs.

➤ *Company Characteristics*

The SMEs in the MISF programme were very heterogeneous in character. The company size also varied, but a large proportion had around 50 employees.

As there were no eligibility requirements stating that applicant companies had to be environmentally advanced, involvement in the programme often represented the first steps in environmental management for those enterprises. However, NUTEK considers that companies already familiar with quality assessment or environmental considerations derived greater benefits.

➤ *Scheme Evaluation*

NUTEK always requires that an external evaluator be appointed to carry out a programme appraisal. This can take different forms, and in the case of MPU it was not interview-based, but rather concentrated on the realisation of project objectives. This revealed difficulties in working with design for the environment in smaller companies. Whereas environmental management makes clear demands – especially on suppliers – environmental design has no standardised approach, which makes it more difficult to evaluate.

6.2.3 Environment-driven business development grant

➤ *Background and Funding Base*

From 2001, NUTEK has administered a grant programme on environment-driven business development (*Miljödriven affärsutveckling – MAF*). Drawing on the experience and results of the previous two programmes (MISF and MPU), this scheme seeks to increase existing levels of competence and upgrade the knowledge base.

The overall aim of the programme is to strengthen the competitiveness of SMEs by stimulating them to develop their operations and their products from the perspective of sustainability. The focus is on the entire company, with improvements not only reducing environmental impact but also offering new business opportunities. The philosophy is that profit can be made from transition, based on being in the forefront of development.

As in the previous programmes, NUTEK does not work directly with the companies, but instead through regional actors, who ultimately become project leaders for group applications. The projects are conducted through networks with active participation by SMEs.

The MAF scheme is open to local and regional institutions (e.g. environment and business departments in municipalities, ALMI, or county administrative boards), non-governmental or trades organisations, industrial research institutes, universities and groupings of companies, amongst others.

The MAF programme is set to run until 2003. With regard to funding, The Ministry of Trade and Industry has allocated SEK 11 million to NUTEK for the first year of operation. About 25-30 projects will be granted money for a pilot phase, but only about a third of that number will be financed for the subsequent main phase.

➤ *Eligible Activity and Spatial Coverage*

The MAF programme is divided into two thematic areas.

The first relates to environmentally sound products as a competitive device. Its aim is to raise environmental and sustainability performance in product and business development. In this process, it is important for companies to establish the balance between ecological, economic and social aspects at an early stage. Eligible activity under this theme includes new ways of thinking, new working methods and tools to influence the business strategy of the company, as well as the preparation of plans to introduce sustainable products that open doors to new markets. The product must be developed in some way so that it generates more business, and it has to lead to environmental improvements. One example would be to involve a group of companies in a supply chain and work on the development of a product at all the different stages.

The second theme relates to operational development that focuses on continuous improvement. This refers to the unexploited potential in the environmental management systems (EMS) of companies, where the capacity to deliver on-going improvement has decreased. Accordingly, the aim is to stimulate, measure and communicate continuous improvements within the framework of a company's EMS, with an emphasis on organisation, leadership, participation, communication and competence building.

No finance goes directly to the companies, but instead they gain access to the knowledge within the network, to experts, and to events such as competence-raising seminars. However, participants must also become active in development.

The MAF programme is available across Sweden, and finance is directed at the best projects nationally. Although there is no regional differentiation in awarding grants, NUTEK generally seeks to create a balanced distribution of activity.

➤ *Scheme Promotion*

MAF is promoted through press releases and other press contacts, and information is available on NUTEK's website and through links from the homepages of other organisations. In addition, NUTEK maintains a directory of all the previous project applicants, health offices and trade and industry secretariats in the different municipalities, as well as other sectoral organisations. Each year, this database will be used to send information to almost 3,000 addresses.

➤ *Project Selection*

For MAF, there is only one call annually for project applications. This method allows all applications to be considered simultaneously in the competition for funds. The standard application form, which can be downloaded from the NUTEK website, has been revised and simplified for MAF.

The application is divided into two steps. The first step leads to a pilot study, which takes four months, and the second stage relates to the main project.

For theme 1, the principle criterion is that the companies wanting to participate must already have some form of organised environmental system. They do not have to be EMS certified, but they must have experience of dealing with such questions. Alternative qualifications include experience with quality systems and an interest in environmental issues.

Theme 2 relates more to SMEs that have already profited from environmental work and see a market value in developing environmentally sound products; and to organisations or companies that work with small enterprises to develop products from an environmental and sustainability perspective.

In considering applications, general demands must be met, and these are the same for both themes. They include co-operating in a network (with a minimum of three companies), fulfilling an existing need, being based clearly within a specific trade or industry, and producing documentation that makes the results accessible by a larger group. Thereafter, specific selection criteria are used as a means of differentiating between competing projects. They differ slightly between themes, reflecting the different arrangements.

An internal grading template with two variants is used to assist project selection. Although this contains a certain degree of subjectivity, it still affords support to decisions. If unconditional demands are not met, projects receive a zero score, and approval cannot be granted. In practice,

NUTEK administrators consider that this decision support tool is effective in selecting the better projects. A decision protocol is also completed, addressing categories such as project feasibility, value-added, and dissemination of results, generally considered from a NUTEK perspective.

A reference group also assesses the applications as part of the decision process. The group consists of about 10 people, representing a wide spectrum drawn from municipalities, consultancy firms, universities, and companies of varying sizes, amongst other sources.

➤ *Award Characteristics*

NUTEK finances pilot studies with up to 100% grant awards. This is subject to an upper limit of SEK 100,000, which is given in relation to the number of participating companies.

For the main projects, NUTEK provides co-financing of up to 50% of the total project cost, with a financial upper limit of SEK 800,000. In order to guarantee the quality of the project, participating companies are expected to contribute by engaging their own staff and by making an obligatory cash investment in the main project of minimum SEK 5,000 per company.

NUTEK's co-financing can be combined with other public and private funds, provided the EC provisions on state aid are followed. The *de minimis* rules on support allow a company to receive public aid totalling maximum EUR 100,000 during a three-year period. Companies in the agricultural, fishery and transport sectors are not eligible.

The money goes to the project owner, in most cases a university, industrial research institute or municipality. In practice, it is seldom a group of companies, because they are less effective in disseminating project results, and they often have insufficient regional ties/anchorage.

Project leaders must submit a final report after project completion. In addition to an economic statement of how the money was used, this report often contains a description of a tool or method, or good examples worth highlighting. As the companies involved in each project report to the project leader, NUTEK has no direct contact with participating SMEs.

➤ *Company Characteristics*

The SMEs in the MAF programme are very heterogeneous in character. The company size also varies, but a large proportion has around 50 employees.

In contrast to the previous schemes, applicants for MAF grants should already be working with environmental issues, or at least have experience of working with quality issues and an interest in environmental management.

➤ *Scheme Evaluation*

Considerable emphasis is put on evaluation in the MAF scheme. As a condition of the grant award, the project management must devote 2-3 days to evaluation, perhaps in the form of evaluation seminars. NUTEK considers it important to obtain information on the positive and negative features of programme implementation.

6.2.4 Renewable energy grant

➤ *Background and Funding Base*

The Renewable Energy Investment Grant was launched in 1997 to stimulate an increase in the use of renewable energy sources in electricity production, encouraging wind power, hydropower and bio-fuel. Renewables have a number of advantages, in that wind power generally has no negative environmental effects – its only disadvantage being aesthetic impact on landscape – and hydropower is very easily regulated and can be turned on-and-off at will. There is currently a strong state interest in Sweden to increase the amount of hydropower where it is possible, with due regard for environmental protection. Bio-fuel was launched as a practical means of supplying the need for local heat production under the Swedish climate conditions.

Administered by the Swedish Energy Authority (STEM), the grant programme has a 5-year duration, terminating in 2002. The programme target for wind power of creating 500 GWh (million watt-hours) of capacity will be met, but the small-scale hydropower target of 250 GWh will not be fulfilled.

The total financial support available is SEK 220-240 million each year, and this encompasses wind power, small-scale hydropower and bio-fuel. Wind power has received the largest budget, with allocations of SEK 100 million in each of the last three years from a total of SEK 450 million over the whole programming period.

➤ *Eligible Activity and Spatial Coverage*

The primary eligible activities comprise wind power, small-scale hydropower and bio-fuel-based combined heat and power (CHP) facilities, used to supplement Swedish electricity production.

The grant is available across Sweden, with no regional differentiation.

➤ *Scheme Promotion*

The Investment Grant is marketed in various ways. Information is available on the STEM website, and the authority also has direct contacts with sectoral organisations. In addition, companies will frequently make

enquiries about available energy incentives. In general, when a 15% grant subsidy is on offer for hydro and wind power, active marketing is seldom necessary.

➤ *Project Selection*

Applications are sent to the Swedish Energy Authority, where they are checked to ensure that complete documentation has been submitted, including items such as building permits and, for some larger plants, environmental permits. If this is confirmed, the applicant may obtain provisional approval to start the construction process, but this does not guarantee a positive decision on a grant award.

Further processing of the application then takes place. The selection criteria for wind power include a minimum scale of 200 kW, but there is no upper limit. A cost-efficiency measure must also be met, namely 4 SEK and 60 pence per kWh.

For small-scale hydropower, the lower eligibility limit is 100 kW, and the upper limit is 1500 kW. Other criteria determining project eligibility often prove to be a barrier for many applicants, such as obtaining the necessary permits in relation to aspects of environment and physical design.

For bio-fuel projects, the criteria include an assessment of kWh new electricity production per krona invested, and a requirement that bio-fuel should comprise a minimum of 70% of the total fuel consumption. Again, environmental permits should be secured in advance.

If the grant application is for less than SEK 1 million, the decision is taken at departmental level. If it lies between SEK 1-5 million, the departmental level takes the first decision, and then the Director General takes the final decision. If the application is for more than SEK 5 million, the Energy Development Board takes the decision.

Approximately half of the hydropower applications received by STEM are turned down on grounds of inadequate energy-efficiency or absence of legal permits. If wind power applications are rejected, which is very rare, it is usually based on low cost efficiency. In bio-fuel, applications are rejected for failing to meet the standard eligibility criteria, or because the project has already commenced or would use an inappropriate fuel type.

➤ *Award Characteristics*

The grant for wind and hydropower currently covers 10% of eligible costs (previously set at 15% in 2001), and there is no financial upper limit on individual awards. For bio-fuel, the grant has a maximum award rate of

25% of eligible costs, calculated on the basis of SEK 3,000 per KWh of installed new electricity capacity

The award conditions on wind power grants include submission of a final report on project completion. After the plant has been built, the costs must be shown to be in line with the original budget, and for a further 5 years these beneficiary companies must report on the operation of the plant. Small-scale hydro projects must also hand in a final report, but there is no condition requiring preparation of production statistics.

If applicants do not fulfil all conditions attached to the original decisions, the grants can be revoked for up to 10 years from the date of the approval.

➤ *Company Characteristics*

Grant recipients for wind projects comprise a small number of relatively large companies very active in construction, a large group of agricultural concerns, and a range of small limited companies/private individuals. Consequently, most beneficiaries are larger companies, and SMEs are a minority. For hydro projects, the profile is reversed, as the majority of applicants are smaller companies, for example different farming enterprises. In bio-fuel, the applicants are mostly energy companies owned by municipalities.

Although some applicants have strong environmental credentials, environmental awareness amongst companies is generally not a significant factor in initiating renewable energy investment decisions. For example, wind power tends to attract major enterprises seeking an improved profile for corporate marketing, hydropower is perceived by companies as presenting no harmful environmental impacts, and bio-fuel applications are motivated by the scope it offers for enhanced profitability.

In recent years, ownership patterns in the energy field have been moving towards larger enterprises, as smaller municipal companies are bought out. As these larger actors are generally not interested in maintaining production in the smaller plants, the effect is that overall capacity tends to diminish.

➤ *Scheme Evaluation*

No evaluations are available for the Renewable Energy Investment Grant.

7. Comparative analysis

7.1 Introduction

Drawing upon the information presented for Denmark, Finland, Norway and Sweden, this chapter conducts a comparative analysis of factors fundamental to the incentive structure, content and administration.

The two objectives are firstly to prepare an overview of the differences and similarities between Nordic environmental incentives, and secondly to draw together material for individual countries. The approach adopted for each issue is to describe why it is significant, how it compares across the Nordic region, and then to elaborate on country-specific characteristics.

To facilitate the analysis, and for ease of reference, the key characteristics of all fifteen incentives are summarised in Tables 3-6.

The issues addressed in the following sections comprise the incentive themes, objectives, instruments, timeframes, core criteria, award rates and evaluation.

7.2 Thematic Coverage

The formal titles attached to incentives are usually generic or specialist in focus. Generic titles – such as “environmental protection” – are used to accommodate a range of themes, often for budgetary convenience, but this can convey the impression that the coverage is less than comprehensive, which may be misleading. Alternatively, with specialist titles, the subject coverage is more readily apparent, allowing an easier appreciation of content.

Grouping the incentives at this level of analysis, four broad themes are identifiable from the survey. These relate to environmental management, technology, employment and energy (see Table 7).

Incentives within the first three themes address specific aspects of company behaviour or activity in the context of environmental improvement. Although the national titles of individual incentives differ, each theme receives attention in all four countries. Accordingly, from a thematic perspective, the coverage of these topics is very similar across the Nordic countries.

Use of the generic theme of environmental protection appears only in Finland, where it acts as an umbrella for supporting new technology, systems applications, and new products, for example. In the other countries, the incentive titles focus on specific targeted activities and key problems to be resolved, such as environmental technology or environmental business development.

Stimulating the environmental sector is a particular focus in Sweden, where three of the four incentives address this issue, and the current principle scheme is devoted to environment-driven business development. This represents a culmination and integration of the previous Swedish support for SMEs.

Table 3: Environmental incentives for SMEs in Denmark

Theme	Instrument	Timeframe	Objectives	Core Criteria	SME Award Rates	Evaluation
Environmental Competence	Grant	1999-2003	Increase environmental management skills in purchasing and product development through to lifecycle assessment.	Previous knowledge of environmental management, staff commitment, how results will be achieved, impact on company development.	Up to 50% of eligible expenditure, and a maximum of DKK 300,000.	Annual reports available for 1999-2001 operation. Selfevaluation reports completed by beneficiary companies.
Green Jobs	Grant	1997-2002	Create new environment-friendly jobs for people on labour market periphery, and market innovative environmental technology.	Contribution to environmental improvement, sustainable job creation, address a new theory or product, growth potential, demonstration value for other projects.	For job-creation, half salary of between DKK 350-750,000; for environmental technology grants over DKK 600,000.	Evaluations in 1999 and 2001 focused on business-economic impacts, environmental impacts and social gains in qualifications/skills.
Renewable Energy	Grant	1990-	Support technology research, development and demonstration projects, especially in windcraft.	Identification as eligible technology, estimated impact on CO ² reduction, national energy technology programmes compatibility.	Up to 100% of project costs - exceptionally - with no formal financial upper limit.	Evaluation carried out in 2001, incorporating minor survey of company experience.

Table 4: Environmental incentives for SMEs in Finland

Theme	Instrument	Timeframe	Objectives	Core Criteria	SME Award Rates	Evaluation
Environmental Protection	Grant	1996-	Support the development of new technologies, systems applications or forms of co-operation and good practice.	Initiation of development activity, expected environmental benefits, innovative character, job-creation potential, technical feasibility.	Between 50% and 100% of project costs, with a lower financial threshold of EUR 17,000.	Comprehensive evaluation planned for 2002. Single region evaluation has examined environmental benefit and employment impact.
Environmental Protection	Loan	1997-	Awaken environmental responsibility in SMEs related to competitiveness, new products and specialisation in environmental technology.	Company size (maximum of 250 for loan and 100 for loan guarantee) risk assessment (low rating from investment grading system for guarantee), financial base, environmental analysis.	Level of interest set below market rate. Typical award is around EUR 175,000, but there is no upper limit financially.	Evaluation carried out by the European Investment Fund, but with a restricted focus on EU level of activity.
Energy Conservation	Grant	1992-	Support energy efficiency surveys, energy audits of production facilities and buildings, preparation of action plans to increase efficiency, and energy investments.	Participation in energy conservation agreements, conventional quality criteria.	For energy audits, up to 50% of eligible or actual costs. For conventional or advanced technology, up to 10% or 30% respectively. Award limit of EUR 83,000.	A number of energy conservation agreements have been evaluated, reviewing project impacts on CO ² emissions and energy costs.

Table 5: Environmental incentives for SMEs in Norway

Theme	Instrument	Time-frame	Objectives	Core Criteria	SME Award Rates	Evaluation
Sustainable Production and Consumption	Grant	1992-	Develop and test methods to improve eco-efficiency, communicate these methods to enterprises, support EMS certification	New technology and innovative content, knowledge transfer, evidence of demand, expected environmental impact, competitive attributes.	Up to 50% of project costs, with no upper limit financially. Average awards are between 30-40%.	Internal evaluations have modified project selection criteria. Impact on companies will be evaluated during 2002.
Environmental Technology	Grant	1990-1996	Support cleaner production assessments and pilot projects, seek technical solutions for a sustainable industrial sector.	Environmental problem tackled, innovative content in new or existing technology, knowledge transfer capacity, emissions reduction.	Up to 40% of eligible costs in designated regions in the north, and up to 35% elsewhere in Norway.	The most recent evaluation was in 1995, reviewing overall performance, but not company impacts.
Environmental Technology	Loan	1998-2000	Promote investment or development in environment-friendly technology that reduces emissions of greenhouse gases, amongst others.	Emissions reduction capacity, eco-efficiency and resource efficiency, innovative content related to new technology or new applications of existing technology.	Level of interest initially 1-4%, latterly raised to 4.6%. No upper limit financially.	Internal evaluation prepared as report for Ministry of Environment, appraising cumulative impact of loans and associated investments.
Renewable Energy	Grant	1997-	Support energy efficiency through creation of renewable energy capacity.	Major factors are the amount of energy that would be saved, and the innovative content of the project.	Up to 60% for private sector projects. Average awards are around NOK 200,000.	An evaluation derived a performance ratio for the energy saved, but environmental benefits were not explored.

Table 6: Environmental incentives for SMEs in Sweden

Theme	Instrument	Time-frame	Objectives	Core Criteria	SME Award Rates	Evaluation
Environmental Management	Grant	1996-1998	Stimulate the development of high environmental awareness amongst SMEs, especially through EMS.	Sectoral base, well established locally, project feasibility, value-added, accessibility of documentation.	For networks only, up to 50% of project costs, SEK 500,000 was rarely exceeded.	Evaluation has focused on company experiences, but not environmental and economic impacts.
Environmental Design	Grant	1997-2000	Devise new methods or tools for product design, modify existing methods, promote good practice.	Sectoral base, well established locally, project feasibility, value-added, accessibility of documentation.	For networks only, up to 50% of project costs.	Evaluation has followed up on project objectives, but not environmental and economic impacts.
Environment-Driven Business Development	Grant	2001-	Strengthen the competitive ability of SMEs by introducing sustainability to operations and products and initiating on-going EMS improvements.	Existing EMS, quality systems experience, environmental products focus, sectoral base, well established locally, project feasibility, value-added, accessibility of documentation.	For networks only, up to 100% for pilot studies, with SEK 100,000 upper limit, up to 50% for main projects, with SEK 100,000 upper limit.	No evaluation has taken place yet.
Renewable Energy	Grant	1997-	Increase renewable energy capacity in electricity production, especially wind and wave power.	Scale of electricity generation, estimated cost-efficiency.	Up to 10% of eligible costs, with no upper limit financially.	Quantitative evaluation features in company annual reports only.

Environmental technology as the sole focus of an incentive occurred only in Norway, where it has been developed through successive schemes. In the other countries, it receives attention as one element of broader initiatives.

Table 7: Thematic Coverage

- | |
|--|
| <ul style="list-style-type: none">• Environmental management• Environmental technology• Environmental employment and sectoral competitiveness• Energy efficiency and renewables |
|--|

With regard to the theme of energy, these schemes constituted one third of the incentives in the survey, and they are available in all four countries. However, even though this support encompasses renewable energy and environment-friendly options, the driving force is to achieve greater efficiency rather than to promote an environmental transition. In this respect, the energy incentives contrast with the majority of schemes encountered.

7.3 Objectives

Moving beyond the broad titles, the range of objectives specified in incentive guidelines gives greater insight into the associated priorities, indicating the types of changes or end-states that each administration seeks to realise. An overview of the content of objectives, organised by theme, is presented in Table 8.

Table 8: Objectives by theme

Environmental Management
• Increase environmental awareness and working practices • Develop skills in new areas, including product design
• Environmental Technology
• Promote research and development • Reduce emissions through introducing new technology and cleaner production
• Environmental Employment
• Promote growth and new and existing specialisms in the environmental sector • Create environment-friendly jobs
• Energy
• Support research and investment to increase capacity in renewables • Promote energy efficiency through surveys, audits, action plans and associated investment

From a practical perspective, these objectives show a very wide coverage from launching research and development through to implementing feasible solutions with environmental technology and energy investments. From an enterprise perspective, the missions include raising awareness and skills levels, creating new jobs and equipping companies to compete in the specialist environmental sector.

If considered on a country basis, Denmark covers a wide spectrum of the comprehensive range of activities supported. The Danish grants aim to develop new skills in companies, to encourage and support the purchase of new technology and the promotion of R&D in energy technology, while creating jobs that are environmentally friendly.

In Finland, the overarching theme of environmental protection is used to stimulate a range of activities such as new technology development, co-operation and good practice, as well as informing SMEs about environmental responsibilities and environmental opportunities in technology, new products and competitiveness. The energy objectives encompass a host of related activities including efficiency surveys, audits, action plans and linked investments.

In Norway, environmental technology is the major theme. Initially, support was focused on cleaner production assessments, pilot projects and

the pursuit of technical solutions. This was subsequently augmented by the purchase or development of environment-friendly technology that would reduce harmful emissions. In addition to energy efficiency, there is also direct support for eco-efficiency, environmental management systems and knowledge transfer.

Lastly, in Sweden, the incentive objectives have been very focused on SME development, with a series of schemes sequentially covering environmental management, design and environment-driven business. These initially related to securing high environmental awareness and increasing activity on improving product design, both of which are now combined in an incentive addressing operations, products and environmental management systems. The renewable energy support has the objective of increasing capacity in wave and wind power.

7.4 Instruments

Of the fifteen incentives surveyed, thirteen are grants and two are loans. In comparison with the European overview of environmental instruments quoted in Chapter 2, the Nordic countries have utilised a greater proportion of grants recently, registering 87% as opposed to 60% in the European survey.¹ With regard to loans, the corresponding figures are 13% usage in the Nordic countries, compared with a European figure of 30% (see Figure 1).

Clearly, the European survey was carried out several years ago, and in contrast to the present study it focused exclusively on environmental technology incentives (Clement, 1997). Nevertheless, a broad comparison of the relative popularity of different types of instrument conveys a limited sense of perspective.

With the recent closure of the Norwegian Environmental Protection Loan, three of the four Nordic countries surveyed now offer only grants. Of these three, the Swedish administration is unusual in that the grants do not reach individual companies directly, but instead they are disseminated through regional networks in activities designed to benefit SMEs overall.

¹ The European survey covered the twelve member states prior to Nordic accession. Denmark was the only Nordic country included, and at that time it had two environmental incentives, namely a grant for the promotion of environmental technology and a loan for environmental projects.

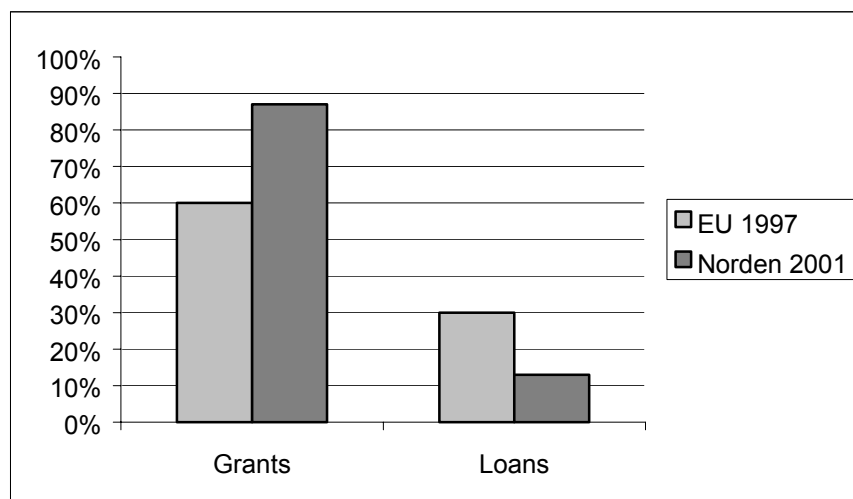


Figure 1: Incentive type

7.5 Timeframes

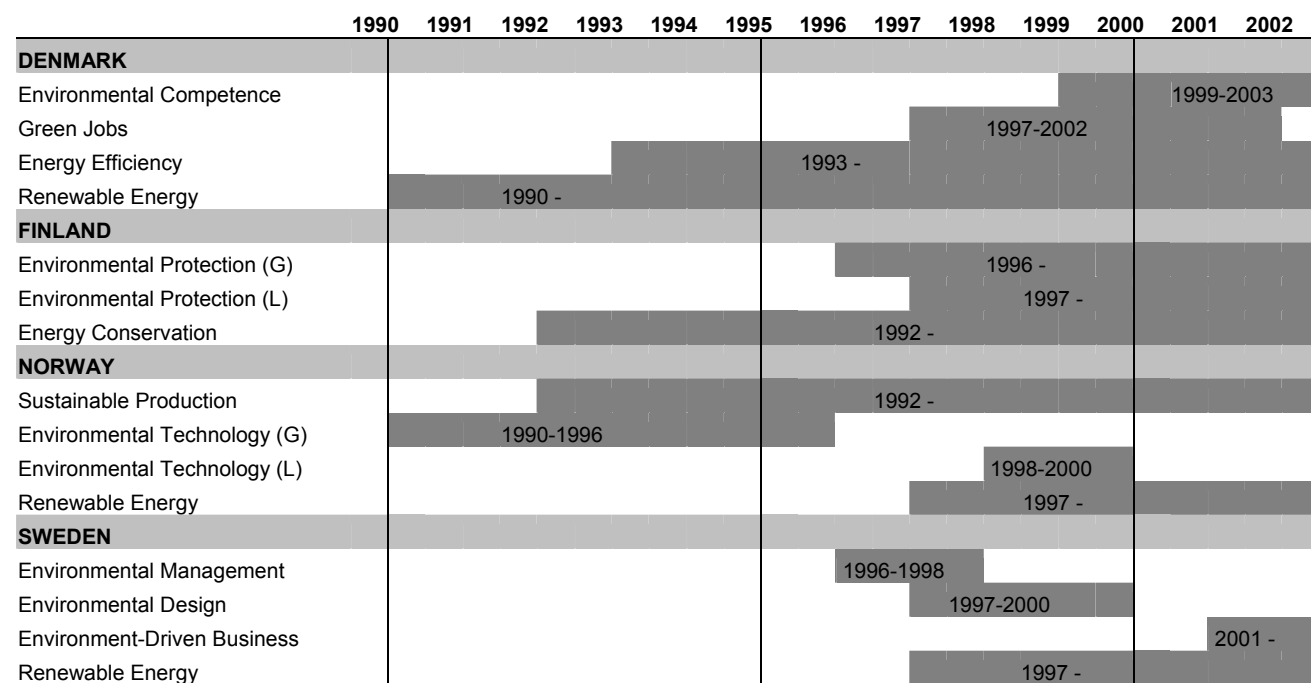
The incentives chosen for the survey are all current or recent initiatives. This means that the picture presented is selective rather than comprehensive with regard to time-series. However, the overview allows distinctions between longer-running and relatively new incentives, as well as identifying schemes with a short lifespan that operated for a few years only (see Figure 2).

In Denmark and Finland, all the incentives extended into 2002, and – subject to government policy revisions – they are currently operational. The energy incentives are the longest standing in both countries, with the Danish schemes having been operational for 9 and 12 years and the Finnish scheme for 10 years. The remaining environmental incentives appeared in the second half of the 1990s, within the last 3-6 years.

In Norway, both of the environmental technology incentives were operational until very recently, with the loan succeeding the grant. However, the sustainable production incentive has been in existence for the longest consecutive period, now totalling 10 years of operation. The renewable energy grant is more recent, having been launched five years ago.

In Sweden, the timeframes are quite different than in the other countries. The surveyed incentives were all launched within the last five years, but only two remain, and one of these was launched very recently, in 2001.

Figure 2: Incentive timeframes



7.6 Core Criteria

Selection criteria form an essential component of the project appraisal process. They support the basic standards that must be met, while refining the method by which projects are assessed, and they can also introduce additional dimensions when projects compete for the available funding.

Some core criteria are clear and straightforward to meet, following which a grant, loan or tax concession may be automatically awarded. In other cases, the systems are discretionary, allowing decision-makers the opportunity to select and support the best projects. In such scenarios, scoring systems may be developed and weighted, especially if there are limited funds and an excess of project applications.

The application process can also affect how the criteria are used. For example, with fixed deadlines for applications to be submitted, the choice between projects is simplified, and they compete on an equal basis. By contrast, if applications are accepted on an on-going basis, administrators cannot be certain whether better project ideas that exceed the criteria will arrive later in the year. In such cases, departments sometimes retain a proportion of funds as a reserve to support exceptional projects.

Combining the criteria in accordance with the themes identified in Section 7.2, a wide range of applied factors is addressed in assessing project eligibility (see Table 9). Some factors are more measurable than others, but overall they can be drawn together to present a rigorous appraisal of a project's quality.

Viewed by country, environmental technology in Denmark should apply a new theory or product, demonstrate growth potential, and have demonstration value; whereas energy technology should indicate CO² reduction and compatibility with national energy technology programmes. In comparison, the company-oriented criteria focus on skills development, knowledge levels, staff commitment, means to achieve results, and anticipated impacts on company development.

Table 9: Criteria by theme

<i>Environmental Management</i>
• Previous knowledge and skill levels, staff commitment, how results will be achieved, impact on company development, sectoral base, local significance, value-added, accessibility of documentation, product design.
<i>Environmental Technology</i>
• Growth potential, innovative character, technical feasibility, demonstration value for other projects, scope for knowledge transfer, positive environmental impact on problem addressed, evidence of demand, emissions reduction, eco-efficiency and resource efficiency.
<i>Environmental Employment & Sectoral Competitiveness</i>
• Sustainability of employment, environmental improvement contribution, environmental management and quality systems experience, environmental products, local significance.
<i>Energy Efficiency & Renewables</i>
• Impact on CO² reduction, compatibility with national energy programmes, participation in energy conservation agreements, scale of generation, amount of energy to be saved, innovative content.

In Finland, the environmental protection schemes have wide-ranging criteria, encompassing environmental analysis, expected environmental benefits, innovative character, job-creation potential, technical feasibility, risk assessment and the company financial base. The energy scheme employs conventional quality criteria as well as a requirement to participate in energy agreements.

The two Norwegian environmental technology schemes relied on similar criteria, even though separated in time, namely emissions reduction, eco-efficiency, resource efficiency, innovative content, and knowledge transfer capacity. Renewable energy core criteria currently include energy savings and innovative content. The sustainable production incentive incorporates a range of standard criteria, but it also asks for evidence of demand and competitive attributes.

In Sweden, the previous SME environmental incentives shared common criteria on project feasibility, sectoral base, local establishment, value added and the accessibility of documentation. With the current SME incentive, the accumulated experience was used to suggest additional criteria on environmental management systems, quality systems experience, and a focus on environmental products. The energy scheme addresses the scale of electricity generation and cost efficiency.

7.7 Award Rates

Published rates of award highlight the full range of percentage capacity upon which decision-makers can draw. However, average awards are generally lower than advertised maxima, with agencies seeking to agree the lowest amount of subsidy that will ensure a project commitment. Accordingly, the upper award limits quoted in Tables 3-6 indicate the power or range available, but in practice they are rarely used. Nevertheless, for exceptional or interesting projects, the option to award this level of subsidy exists.

Viewed across countries, approximately half of the grants peak around a 50% award level, three of them extend as far as 100%, depending on circumstances, and the three others fall within the 10-30% range, varying with the project theme. Of the two loans, neither has an upper limit financially, but the Norwegian interest rate was fixed at 4.6%, and the Finnish one sets its interest level below market rates.

In Denmark, the grant awards range from 26-100% of project costs, the two extremes being occupied by the energy grants. Upper limits are imposed on the grants at DKK 300,000 for environmental competence, DKK 600,000 for environmental technology, and DKK 10 million for energy efficiency.

In Finland, environmental protection is supported at between 50-100%, with a minimum financial threshold of EUR 17,000. The energy grant has an upper limit of EUR 83,000, with different rates for energy audits and advanced technology (reflecting the greater expense associated with technology).

In Norway, the three grants have similar award ranges, collectively between 40% and 60%. The sustainable protection grant is unusual in specifying that no financial upper limit is observed on awards.

In Sweden, the only direct grant (awarded to companies) is for renewable energy, and it has a low maximum award rate of 10% of costs, but no upper limit financially. In comparison, the three indirect grants all

observe 50% as the upper award limit, the only exception being for environment-driven business development, which allows up to 100% for pilot studies. The business development grant has an upper limit of SEK 100,000, a considerable reduction from the previous financial maximum of SEK 500,000.

7.8 Evaluation

Periodic evaluation of the impact of incentives on companies is useful in identifying strengths, weaknesses, and lessons for future practice or incentive administration. The insights derived can also direct research towards systemic variables that appear especially effective or conversely that appear to undermine an incentive's operation.

With the exception of Denmark, the formal evaluation of environmental incentives within the Nordic countries appears insubstantial, with little investment placed into scheme monitoring or evaluation.

In Denmark, there are a number of recent evaluations for each incentive, ranging from 1999 to 2002 in implementation. Within the environmental competence scheme, the beneficiary companies have prepared self-evaluation reports, and the green jobs initiative has been evaluated both at mid-term and the end of phase one (2001). The energy incentives were evaluated in 1999 and 2001.

In Finland, less evaluation has been carried out. For the environmental protection grant, an evaluation is planned for 2002, going beyond previous work that focused on a single region only. No evaluations have yet been performed for the environmental loan, other than material relating to the EU level of engagement. With regard to the energy grant, selected energy conservation agreements have been evaluated, examining CO² emissions and energy costs.

In Norway, evaluations of impacts on companies have not been carried out. However, for the sustainable production grant, internal evaluations have led to project selection criteria being modified, and a full evaluation is expected during 2002. For the technology schemes, the grant was last evaluated in 1995, and the loan has been subjected to an internal evaluation that looks at cumulative impacts. In comparison, the renewable energy grant has been evaluated, but it did not explore environmental benefits, only the amount of energy saved.

Lastly, for Sweden, the survey recorded the lowest level of evaluation. Although the two earlier SME schemes incorporated evaluations focusing on company experiences, these studies considered neither environmental nor economic impacts. The currently operational business development incentive has not yet been evaluated. For renewable

energy, the only available data appears within annual reports published by beneficiary companies.

8. Conclusions

8.1 Introduction

In presenting the report conclusions, this final chapter is divided into two sections. The first part considers the key findings that have arisen during the survey and analysis of Nordic environmental incentives; and the second part identifies issues of research significance to be given further consideration in formulating the follow-up project.

8.2 Key Points

- *All of the Nordic countries surveyed actively support SME environmental improvement*

Acknowledging the financial challenges faced by small and medium-sized enterprises, the practice of supporting companies through public-sector subsidy is recognised as an important element in securing an environmental transition. This principle extends to Denmark, Finland, Norway and Sweden.

Common attributes can be identified in the sophisticated procedures used in approving projects for funding, a current preference for grants as the main instrument, and the broadly similar financial parameters within which incentive awards are made.

Distinctions between the national contexts include factors such as the level of annual budgets committed for individual incentives, the means by which funds are distributed, the timescale of incentive operation, the choice of environmental themes to pursue, and the conduct of monitoring and evaluation.

- *The thematic coverage of incentives and the specific objectives addressed are very wide-ranging in content*

For each of the four environmental themes of management, employment, technology and energy, financial support schemes are operational within the Nordic countries. Thereafter, within this framework, each country has identified an area for concerted action. For Denmark and Sweden, this would primarily relate to environmental

management, whereas for Finland and Norway greater attention has been given to environmental technology.

As a long-standing issue, energy receives support in all four countries. However, although the outcomes are usually beneficial from an environmental perspective, this theme is often more driven by concerns of energy efficiency rather than ecological improvement.

Collectively, the incentive objectives relate to a spectrum of environmental activity including increasing awareness generally, developing skills and employment in the environmental sector, supporting purchases that reduce emissions and facilitate the transition to renewable energy, changing working practices, and promoting research and development to bring forward technological advances.

- *In recent years, grants have been favoured as the most appropriate instrument for supporting environmental improvement in SMEs.*

In contrast to European trends, the Nordic countries have utilised grants more widely, but with national differences in the way that the finance is distributed. In particular, rather than giving funds directly to companies, the Swedish approach is to distribute the grants via an intermediary, so constituting indirect support considered to bring broader benefits.

Overall, there is an expectation that environmental funding will be reduced over time, and the number of schemes supporting environmental activity. Within this scenario, rather than turning towards loans as the next step, it is anticipated that tax concessions will succeed grants as a means of assisting the financial requirements of SMEs.

However, this aspect of public sector subsidy has proved to be very dynamic recently. Two-thirds of the surveyed incentives appeared within the last five years, and a number of those new schemes appeared and disappeared or became integrated during that period. This suggests that experimentation will continue as administrators seek the most effective instrument.

- *The project selection process is characterised by closely targeted criteria, following which successful applicants generally receive support for up to half of eligible costs.*

With competition for funding, project selection is linked to different criteria in each country, varying with the sectoral priorities and specific problems tackled. In some cases, systems of project scoring and weighting have evolved to enable prioritisation, though in practice some criteria prove to be more difficult to measure than others, requiring a degree of subjective assessment.

In addition to the technical requirements and themes such as innovation, expectations placed on company profiles include an active interest in skills development, knowledge accumulation, staff commitment, product demand and other competitive attributes.

For those companies that receive incentives, the most common award limit is around 50% of costs, best exemplified by the surveyed Norwegian schemes, which would represent an equal contribution from public and private sector sources. Several incentives have upper limits financially, a precautionary measure against large projects draining these resources.

- *Monitoring and evaluation are the weakest element in incentive administration, being generally insubstantial and providing very limited information on incentive impact.*

With the exception of Denmark, where a number of evaluations have been recently completed, the impact of incentives has not been closely examined. The monitoring activity that does exist is frequently not in depth, with little insight into elements such as incentive uptake and usage. In some cases, these problems originate with application forms designed without questions of subsequent evaluation in mind; in other instances, competing administrative pressures have not allowed adequate time for structuring and analysing data returned from completed projects.

To appreciate the hidden and longer-term impacts, there is a need to investigate at company level to ascertain the relative influence and effectiveness of particular forms and levels of funding. Evaluations have not been addressed at appraising outcomes from such a perspective, meaning that decision-makers have inadequate qualitative and quantitative information either to target new policy initiatives or to justify existing or recent interventions.

8.3 Issues of Research Significance

This report has highlighted administrative systems and documented the incentive instruments that exist, but it has also revealed that vital knowledge regarding the impact and effectiveness of incentives is not accessible. Accordingly, the following issues are intended to inform the second phase of this research.

- *There is a lack of clarity regarding company perceptions, appreciation and use of Nordic environmental incentives.*

Fundamentally, it is important for incentive administrators to understand how these beneficiaries experience the system. For example, are SME requirements being adequately recognised, are incentives tailored effectively, and is the selection process seen from an industry sector perspective as building a bridge that facilitates or hinders SME access to environmental improvement? Other factors of interest include whether the form of incentive is appropriate, why obligations such as reporting are not always fulfilled, and how much significance is attached to the level of subsidy.

Focusing on usage, why was the funding pursued initially, and how was it used within the company? What activities did it support (e.g. training, product development, resource management etc), and did the content and/or commitment correspond with expectations?

- *Very little information is available concerning the impact of incentives on SME environmental performance*

For companies that have accepted incentives, it is important to have a broad appreciation of the impact that this has made on the environmental performance of the enterprise. Rather than restricting the coverage of reporting to factors such as emissions reduction, a wider range of impacts could be appraised. For example, this might encompass specific actions such as the development of corporate environmental strategies, sustainable production strategies, or certification with an environmental management standard such as EMAS or ISO 14001, as well as changes in business attitudes towards the environment and sustainable development.

Multiplier effects may also be identified. These could include engaging new suppliers for raw materials or energy provision, developing plans for new forms of waste disposal or waste recycling, or perhaps gaining new business partners through participation in initiatives such as an environment-business forum.

- *No information is available on whether environmental incentives have an impact on SME economic competitiveness*

Have environmental performance improvements been translated into improved and tangible business competitiveness? Indicators of such impacts range from revisions to the business and company profile and strategy, to specific and measurable changes in business investments, employment levels, sales performance, market share, costs and operating efficiency.

Whereas it may be difficult for businesses to attribute economic performance improvements directly to the receipt of environmental funding, agreement may be reached on attributing a proportion of aggregate business performance to this intervention. In cases where the assistance has been very recent, insufficient time may have elapsed for benefits to emerge or be measurable, but in such instances, attempts could still be made to identify the extent to which companies can make attribution, while exploring the rationale for any estimates of benefits.

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<i>Denmark</i>	
• Tove Jensen, Danish Environmental Protection Agency • Hanne Eriksen, Danish Environmental Protection Agency • Dorte Maimann, Danish Energy Agency, • Kai Worsae, Danish Energy Agency • Henrik Andersen, Danish Energy Agency	
<i>Finland</i>	
• Jukka Saarinen, Ministry of Trade and Industry • Pekka Harju-Autti and Antero Honkasalo, Ministry of Environment • Jari Pirinen, Finerva • Ilari Aho, Motiva	
<i>Norway</i>	
• Grethe Torrissen, Ministry of Environment • Hege Normann, Norwegian Pollution Control Authority • Bjorn Nordby, SND • Eva Britt Isager, GRIP • Birger Bergesen, Norwegian Water Resources and Energy Directorate	
<i>Sweden</i>	
• Arne Andersson, Swedish Energy Authority • Monique Wannding, NUTEK • Carl Naumburg, Vinnova	

APPENDIX 2 QUESTIONNAIRE FROM INTERVIEW PROGRAMME
<i>The initiative</i> 1. What form of incentive do you work with (grant, loan, tax concession etc)? 2. What type of eligible activity does it support? 3. Where is the scheme available (spatial coverage)? 4. How long has it been in existence? 5. Why was it launched? 6. What level of funding supports it?
<i>Operational features</i> 7. How is the scheme promoted or publicised? 8. Are there specific selection criteria against which applicants are assessed? 9. How does the procedure work in practice (application process through to award decision)? 10. What form do typical awards take? 11. What percentage of the applicant companies receives award?
<i>Client characteristics</i> 12. Can you describe the profile of SMEs receiving support (e.g. sector, employment soze, turnover)? 13. Are applicant companies generally environmentally advanced, or is this a new departure for them? 14. Are companies obliged to provide reports on how they have used or benefited from the incentive? 15. If the overall scheme has been evaluated, was any attention given to the impact on companies in terms of environmental performance or economic competitiveness?

APPENDIX 3

INVITATIONS FOR ADVISORY PANEL MEMBERSHIP

- Tove Jensen, Danish Environmental Protection Agency, Copenhagen
- Hanne Eriksen, Danish Environmental Protection Agency, Copenhagen
- Jari Pirinen, Finnvera, Oulu
- Pekka Harju-Autti, Finnish Ministry of the Environment, Helsinki
- Bjorn Nordby, SND, Oslo
- Eva Britt Isager, GRIP, Oslo
- Stefan Henningsson, Nutek, Stockholm

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