Government Communication 1999/2000:114

A Strategy for an Environmentally Sound Product Policy

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The Government presents this Communiction to Parliament.

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Göran Persson

Kjell Larsson
(Ministry of the Environment)

Brief summary of the Communication

The purpose of an integrated product policy is to prevent and reduce the impact of products on human health or the environment throughout their lifecycle. All the stakeholders in this process have a responsibility, and both administrative, physical and market-driven incentives and initiatives on the part of industry and other interested parties are needed. In this Communication the Government presents a strategy for an integrated product policy and for how it should be implemented in Sweden, in the EU and worldwide. The Treaty of Amsterdam and the Swedish Environmental Code provide starting-points for an integrated product policy. Activities that further an integrated product policy, for example efforts to implement the transition to ecologically sustainable development and the national environmental quality objectives, and examples of policy instruments and incentives that are essential features of such a policy, are also described. The purpose of the work being done in this field in the EU should be to lay the foundation for an integrated product policy in support of an efficient single market that provides effective safeguards for human health and the environment. Such a policy would also contribute to sustainable development in the international trade system. The Sixth Community Environment Action Programme should, inter alia, embody a common principle of minimization of the environmental impact of products, as well as the principle that producers should be responsible for the environmental impact of their products throughout their lifecycle. Knowledge of the impact of products on human health and the environment needs to be improved.

Contents

1 Subject matter and preparation of the Communication

As instructed by the Government, the Ecocycle Commission (M 1993:A) presented proposals for general producer responsibility for all products in its report *Producer Responsibility for Products – Proposals and Ideas* (Report 1997:19). The report also proposes that producers should be required to supply information about the content of materials and substances in products, the possibility of dismantling and recycling the materials in them and their environmental impact. A proposal for guaranteeing compliance with producer responsibility by means of a compulsory insurance scheme is also presented. The report has been circulated for review (M 1998/179/Kn). According to the statements submitted by the review bodies, the proposals presented in the report need further elaboration.

The Government instructed the Swedish Environmental Protection Agency to report on the feasibility and consequences of establishing a general principle of producer responsibility for the environmental impact of a product throughout its lifecycle. The terms of reference also included analysing the proposals and ideas presented in the Ecocycle Commission's report (1997:19). The Swedish Environmental Protection Agency presented its proposals in the report *Producers' Responsibility for the Environmental Impact of Products* (Report 5043). The report contains fact-finding information about producers' responsibility for the environmental impact of products within the framework of an integrated product policy. It also contains several proposals on future work in this field, including establishment of the principle that producers should be responsible for the environmental impact of products throughout their lifecycle, producers' responsibility for environmental information and further development of ecolabelling schemes and environmental product profiles. The report has been circulated for review (M 2000/14/Kn).

The Ecocycle Commission presented a report entitled Ecocycle Management in Enterprises (Report 1998:23) that was commissioned by the Government (M 1993:A). The report contains an evaluation of the extent to which industry has developed sustainable systems for the management of products, raw materials and residues. According to this evaluation, Swedish companies are showing increasing interest in environmental and ecocycle management. This is most apparent in large companies, but the trend is also spreading to medium-sized companies. Even a few small companies have been active in this field, but most small and medium-sized companies display little awareness of the environmental impact of their products. The Commission concludes that new strategies should be prepared with a view to achieving the objectives of ecocycle management. A common ecocycle strategy is also needed for Europe as a whole.

2 A common integrated product policy

2.1 An integrated product policy - needs and objectives

The Government's assessment: The Government intends to take measures to ensure that an integrated product policy is formulated. This should serve as a guide for developments in the product sector, both at national level and for Sweden's position in the EU and worldwide.

The aim of an integrated product policy is to produce products and services that make the smallest possible impact on human health or the environment at each stage of their lifecycle. Products should be materials- and energy-efficient, at the same time as they should not contain or require the use of substances that may involve adverse effects on human health or the environment.

An internationally established integrated product policy would, moreover, help to improve the function of the single market, give Europe competitive advantages and lower barriers to trade worldwide.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: Most of the review bodies agree with the Swedish Environmental Protection Agency that a common integrated product policy is needed. Several of them also agree on the aims of such a policy. The Federation of Private Enterprises considers that an analysis is needed of the effects of an integrated product policy on small enterprises.

Reasons for the Government's assessment: In its Statements of Government Policy in recent years the Government has declared that measures designed to transform Sweden into an ecologically sustainable society will continue and be intensified, and that Sweden should set an example in this respect. In order to avoid a situation in which pollution and depletion of natural resources and ecosystems compromises the living environment and prosperity of future generations, the Government has set three objectives for ecological sustainability. These are: Protection of the environment, Efficient use of resources and Sustainable supplies. At the same time Sweden should meet the challenges of the 21st century by creating the conditions for high, sustainable economic growth in a world characterized by rapid changes and ever keener competition. An integrated approach to environmental protection, the economy, business, and technological and societal development is an essential condition for sustainable development. The concept of sustainable development also implies a long-term approach to societal development.

Historically, environmental protection activities have focused on reducing emissions to air, water and land from large, well-defined point sources. Many of today's environmental problems are the result of the way materials are utilized and handled. An important element of the transformation to a sustainable society is economical use of materials and energy. The total environmental input of a product depends on its content

and composition, its useful life, and how it is produced, distributed, used and disposed of.

According to the Swedish Environmental Protection Agency (see Report 5043 and Statistics Sweden's statistics on production and waste), the annual net input of products in Sweden amounts to about 160 million tonnes. The use of materials accounts for about 20 million tonnes of waste (excluding water and mining waste) each year. 5-7 million tonnes of this, mostly wood products and metals, is recycled. Even if all the materials in waste were recycled, the input of primary raw materials and other materials would still be considerably larger than the quantities of waste that are generated.

We do not know enough about the content in products of substances that are harmful to human health and the environment. The Swedish Environmental Protection Agency recently presented the report *Information to the Public Concerning the Use and Emissions of Dangerous Chemicals* (M1999/5054/Kn). The Agency proposes that manufacturers should be obliged to inform the public of the quantities of certain specific substances that are used every year in production and losses in the form of emissions to air, water, land and of waste and how much remains in the products.

In the report *Identifying Dangerous Flows* (Report 5036; M1999/5160/Kn) the Swedish Environmental Protection Agency and the National Chemicals Inspectorate note that the emission of hazardous substances in products can be established fairly accurately with respect to products produced in Sweden and hazardous substances that consist of chemical products within the meaning of the Environmental Code, i.e. chemical substances and preparations thereof. This also applies to imported chemical products. However, there is great uncertainty about the content of such hazardous substances, whether chemical products or other substances, in imported products.

The problems confronting us are thus complicated by the emissions from diffuse sources that arise in connection with the use and disposal of products. Increasing attention is therefore being paid to lifestyles, consumption patterns, the organization and planning of society and international cooperation. Ecologically sustainable development is only possible if we apply an integrated approach and if all sectors of society - central and local government, industry, organizations and individual citizens - are involved in the solution.

Environmentally sound products and services are the key to ecologically sustainable development, both at the national and global levels. During the last 20-30 years the Government has carried out and encouraged measures to reduce the environmental impact of products in Sweden. A large number of both soft and hard policy measures have been taken.

These measures would be more effective with an integrated approach, i.e. an approach taking into account the entire lifecycle of products. It is also important to raise awareness among all those who are involved in some way in the lifecycle of a product from manufacture to disposal and to develop the dialogue between players at the various stages of this lifecycle. It is also important to disseminate knowledge and information

to all those involved about the options when it comes to reducing the environmental impact of products.

Sweden has for many years been greatly dependent on trade. Global competition and economic and political developments in other parts of the world determine what can be achieved within the framework of sustainable development in Sweden too. Few products are manufactured, used and disposed of in this country alone, and our production and consumption are largely integrated into and dependent on production and consumption in other countries. As a result of the globalization of the economy, the international trade in products has expanded, and this in turn has increased the diffuse circulation of the pollutants in products.

International cooperation is also necessary in order to avoid creating new barriers to trade and restricting competition. The EU's single market rules and international product and material standards substantially determine the regulatory framework. Integrating environmental concerns into policies relating to the functioning of the single market would make it possible for the single market to promote environmentally sound practices. The main aim should therefore be to seek to achieve an international integrated product policy with a view to establishing uniform rules and common measures that are necessary in order to reduce the overall environmental impact of products.

An integrated product policy could also help Europe to gain a competitive edge as a result of integrating environmental concerns. If clear, uniform guidelines and principles were in place, an integrated product policy would stimulate trade and improve the competitive position of European industry. It could therefore help to avoid conflicts between environmental policy and single market policy. If environmental considerations were integrated into policies relating to the functioning of the single market, the single market could become a driving force for environmentally sound production.

In *Swedish Environmental Quality Objectives – An Environmental Policy for a Sustainable Sweden* (1997/98:145 – 'the Environmental Quality Bill') the Government concludes that an integrated product policy should be elaborated in the EU in order, inter alia, to establish environmental standards for products that are released to the market.

2.2 Guiding principles and supporting activities

The Government's assessment: The starting-point when it comes to achieving the objectives of an integrated product policy should be a body of nationally and internationally recognized principles, e.g. the basic principles laid down in the Amsterdam Treaty and the Swedish Environmental Code.

In order to achieve the objectives of an integrated product policy, continued efforts will be necessary in several areas, for example in connection with the development of national environmental quality objectives, integration of environmental concerns in accordance with the Amsterdam Treaty, the efforts being made to promote sustainable consumption and production patterns in the United Nations Commission on Sustainable Development (CSD) and cooperation on world trade.

Reasons for the Government's assessment: A number of national and international principles have been adopted that would make a good starting-point for an integrated product policy. Work that contributes to the achievement of this objective is being done in many areas and continued efforts are necessary.

2.2.1 Principles set forth in the Amsterdam Treaty

According to the Amsterdam Treaty, the Community shall contribute to pursuit of the following objectives:

- preserving, protecting and improving the quality of the environment;
- protecting human health;
- prudent and rational utilization of natural resources;
- promoting measures at international level to deal with regional or worldwide environmental problems.

The Community's environmental policy is based, among other things, on "the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay". In preparing its policy on the environment, the Community shall, inter alia, take account of the potential benefits and costs of action or lack of action.

In accordance with the objectives of and principles underlying Community environmental policy as defined in the Amsterdam Treaty, pollution should be prevented and limited. Council Directive 96/61/EC establishes a framework of principles for coordinated action in order to prevent and limit pollution by means of provisions calculated to avoid and reduce emissions to air, water and land from certain operations such as waste disposal facilities. The purpose is to achieve a high level of protection of the environment as a whole. The general principles with regard to the fundamental responsibilities of operators mean that the best available technology is to be used (to the extent reasonable), that the generation of waste is to be avoided and, where it exists, taken back by the producer or, if this is not possible, disposed of in such a way as not to

cause any environmental impact. The use of energy must also be efficient, accidents are to be avoided and the consequences of accidents limited. Furthermore, measures are to be taken when an operation is wound up to avoid pollution and to return the site of operation to a satisfactory state. The Directive has been incorporated into Swedish law through various sections of the Environmental Code.

2.2.2 Principles set forth in the Environmental Code

The general rules of consideration laid down in the Environmental Code are to be complied with in the case of any measures that may have an impact on the environment or human health, unless the measure is of negligible significance with regard to the objectives of the Code. The general rules of consideration contain several fundamental principles.

The precautionary principle means that the mere risk of damage and detriment obliges the operator to take necessary measures to prevent or hinder health and environmental effects. In other words, this obligation applies not only where damage has already occurred, but precautions are to be taken the moment there is any reason to assume that damage may be caused. The rule is applicable to all operations that may be of significance for the objectives of the Code. The fact that there is no scientific proof concerning the hazardousness of a substance or the adverse effects of an operation cannot be used as an excuse for postponing cost-effective action to prevent environmental damage.

The principle is enshrined in several international conventions, as well as in Community law and in the Member States' legislation. In recent years the principle has occupied an increasingly prominent place in international environmental policy. The Rio Declaration adopted by the UN Conference on Environment and Development in 1992 (UNCED) contains a provision to the effect that the precautionary principle "shall be widely applied by States according to their capabilities".

In February 2000 the Commission adopted a Communication on the precautionary principle. The Communication was not discussed with the Member States during the drafting process, but has been discussed briefly during the Spring of 2000 in several different councils under the Portuguese presidency. A progress report will be presented at the European Council in Feira on June 19-20 2000. The Commission has pointed out that the Communication is not to be regarded as the final word, but rather as a starting-point for discussions on the precautionary principle.

In the Government's view, certain common basic criteria should be formulated for the principle. The application of the precautionary principle should primarily take place on a sectoral basis and, within the sectors, on a case-by-case basis. One reason for this is that application of the principle varies greatly, for example, when it comes to food security, chemicals management and the use of natural resources such as fish stocks and forests.

The principle of product choice means that the use or sale of chemical products or biotechnical organisms which may involve a risk to human health or the environment should be avoided if the products can be

replaced by other, less dangerous products. This applies also to products that contain or have been treated with a chemical product or a biotechnical organism. Avoiding a product in this context may mean refraining from use of a product that is not actually prohibited.

Anyone who carries on operations or takes a measure must ascertain the extent to which the operations or the measure may damage human health or the environment and how such damage can be prevented or limited. This requirement emphasizes the importance of determining in advance the effects of a certain measure on health and the environment.

Anyone who causes or is liable to cause environmental damage must pay for the preventive or remedial measures. The Polluter Pays Principle is now internationally accepted.

The best available technology must be used in professional operations in order to prevent damage to human health and the environment. An overall assessment should be made when the best available technology is chosen so that the requirements that must be satisfied for one aspect of the operations do not create any problems with respect to some other aspect. This ensures that the choice of method will limit the environmental impact.

The principle of economy means that all operations and measures must be undertaken in such a way that raw materials and energy are used as efficiently as possible and the consumption of materials and generation of waste is minimized. As regards raw materials and products, this principle is closely linked to the cyclical principle. The best results are achieved by product design and manufacture. The cyclical principle means that whatever is extracted from nature must be used, reused, recycled and disposed of in a sustainable manner with the minimum of resource consumption and without damage to nature.

The rules of consideration referred to above are applicable where compliance cannot be deemed unreasonable. Particular importance is attached in this connection to the benefits of protective measures and other precautions in relation to their cost. Decisions must not entail infringement of an environmental quality standard referred to in chapter 5 of the Code.

2.2.3 Other support activities

The changeover to ecological sustainability will require a good measure of economic development and social welfare, but the reverse is also true. The changeover provides an incentive for Swedish industry to develop environmentally sound products and services, which in turn may help it to increase its market share and thus increase the number of jobs. The rapid process of internationalization that Swedish and European industry are now undergoing will also result in a new economic landscape in Sweden and in Europe. Sweden must play a part in framing EU rules and international rules, since that is the area in which most of the major changes will take place. Sweden must also see to it that the environmental investments and other efforts made by industry actually produce the desired results.

With a view to further developing and defining the ongoing work towards ecologically sustainable development in Sweden, Parliament established 15 national environmental quality objectives in April 1999 (Gov. Bill 1997/98:145, Report 1998/99:MJU6, Parl. Comm. 1998/99:183). These environmental objectives describe the future environmental state that is being aimed for.

The Environmental Objectives Committee (M 1998:07) will carry out a comprehensive review of the intermediary objectives and action strategies that will be necessary in order to achieve national environmental quality objectives, with the exception of the objective Limited Climate Change, within a generation. The Committee will present the results of its work by June 1 2000.

The Climate Committee (M 1998:06) has submitted proposals for a Swedish climate strategy to the Government (SOU 2000:23). The proposed climate strategy contains objectives and an action programme for achieving these objectives. The Committee was instructed to develop and propose intermediary targets for the environmental objective Limited Climate Change.

In order to achieve the environmental quality objectives, and also the European Union's environmental objectives, there must be a common strategy for reducing the environmental impact of products.

Most of the environmental quality objectives relate to products, i.e. in connection with manufacture (emissions of pollutants to land, water and air), use, recycling and disposal, but also in connection with the location of production companies etc.

Integration activities in accordance with the Amsterdam Treaty

Following the entry into force of the Amsterdam Treaty on May 1 1999, the objective of sustainable development was enshrined in both the EU and the EC treaties. In addition, under the EC Treaty environmental protection requirements must be integrated into the definition and implementation of all Community policies, in particular with a view to promoting sustainable development. Sweden took initiatives on these matters as early as the European Council in Luxembourg in December 1997, and they have been discussed at subsequent summits.

At the Cardiff European Council on June 15-16 1998 the European heads of state and government agreed to concretize and intensify the work of integrating environmental concerns and sustainable development into all the EU's policies. An integrated product policy is an important element of the overall process towards sustainable development which was launched by the Cardiff process. The Single Market Council and the Industry Council have, for example, identified an integrated product policy as an important aspect of the work of integrating environmental concerns into the activities of the various sectors.

At the European Council in Helsinki in December 1999 a comprehensive review was made of all the action taken so far. The result of the Helsinki summit is that the process will continue and will be

deepened, and the Presidency conclusions may be regarded as a great Swedish success. The decision to undertake the next major review at the European Council in Gothenburg in 2001 means that Sweden will have a key role with respect to these issues.

Sustainable consumption and production patterns (CSD)

The negotiations on sustainable consumption and production patterns take place mainly in the Commission on Sustainable Development (CSD). The discussions following the Rio Conference have been complicated, and have resulted in an exaggerated focus on procedural matters and the division of responsibilities. It has been difficult to find common ground for decisions that go beyond the provisions of Agenda 21 in such a complex and wide-ranging issue as consumption and production in a global perspective.

The work is made even more difficult by the differences between North and South. These differences are more apparent here than in many other issues, since the developing countries have categorically asserted that it is the responsibility of the industrial countries to alter unsustainable consumption and production patterns. However, the industrial countries have not made any tangible progress. Therefore, Sweden's and the EU's ambition has been to achieve a general improvement of the negotiating climate. However, results have been achieved in one area in the CSD. The UN's guidelines for consumer protection have been extended to include sustainable consumption.

At Sweden's initiative, the question of more efficient use of resources was raised at the UN General Assembly Special Session (UNGASS) in 1997 as a long-term objective for the world community. In response to a Swedish proposal, it was also decided that consumption and production patterns, and also poverty alleviation, would be dealt with as an overall theme at the CSD's work programme during the period up to 2002.

2.3 Coordination with other strategies and action programmes

The Government's assessment: The guidelines established within the framework of chemicals policy relating to the use of chemicals in products, to waste management and to more efficient utilization of resources should be components of an integrated product policy. Sweden should urge that this approach be implemented both in the EU and worldwide.

The Government intends, within the framework of the Sixth Community Environmental Action Programme, to advocate the general principle of minimization of the environmental impact of products and producer responsibility for the environmental impact of products in a lifecycle perspective.

In the Government's view, it is important in the ongoing preparations for the EU's next programme for research and development to take into account the need to improve knowledge in this area in order to achieve the objectives of an integrated product policy.

The Swedish Environmental Protection Agency's Assessment: Concurs by and large with the Government's assessment.

Review bodies: Most of the review bodies agree basically with the Swedish Environmental Protection Agency's assessment as regards the need to know more about the content of hazardous substances in products and the need of research. The National Board of Housing, Building and Planning and the Swedish Recycling Industries' Association represent the view that Sweden should propose an integration of integrated product policy into the preparations for the Sixth Community Environmental Action Programme.

Reasons for the Government's assessment

An integrated product policy would cover both the environmental and health aspects of products throughout their lifecycles. It is therefore important that the policy should be coordinated with policies in other areas that are aimed at environmentally sound practices at various stages of a product's lifecycle, such as the waste and chemicals sectors. Adopting common strategies in the EU in these areas would lay the foundation for formulating common rules in future to ensure that basic health and environmental requirements are met. The Government will urge that the next Environmental Action Programme should support the elaboration of an integrated product policy.

Guidelines for chemicals policy

Many chemical substances that are used in products have adverse effects on the environment during all stages of the products' lifecycle. At the

production stage they may affect the work environment and emissions to air and water may cause environmental and health problems. In connection with use, the users' health or the environment may be affected by wear or wastage of the substances that make up the product. Lastly, when the product has reached the end of its useful life, the constituent substances may cause environmental problems if the product is dumped or incinerated. It is now recognized that the environmental pollution caused by chemical substances is increasingly due to emissions from diffuse sources in products rather than point source emissions from manufacturing industries.

According to the guidelines for chemicals policy (set forth in the Environmental Quality Bill), new products introduced onto the market within the next 10-15 years must be virtually free from:

- man-made organic substances that are persistent and liable to bioaccumulate, and from substances that give rise to such substances;
- man-made substances that are carcinogenic, mutagenic and endocrine
- disenptive, including those which have adverse effects on the reproductive system; and
- mercury, cadmium and lead and their compounds.

Furthermore, other metals are only to be used in applications where they do not enter the natural environment in such quantities as to damage the environment or human health.

These guidelines are primarily intended as a guide for industry. They should be useful as a starting-point and objective for the strategies of the companies concerned. They can also provide guidance for the companies' application of the general rules of consideration and principles set forth in the Environmental Code.

The Government entrusted the Chemicals Commission (M 1998:09) with the task of presenting proposals on implementation of the new guidelines within the framework of a chemicals policy. Under the Commission's terms of reference the proposals were to be in conformity with Community law and international conventions, but the investigator was nevertheless instructed to propose amendments and additions if he did not consider the existing regulatory framework sufficient. The Commission will submit its report on June 1 2000.

Chemical control in the EU

The Commission is currently preparing a White Paper on a common chemicals strategy for the EU. This is a response to widespread dissatisfaction among all the parties concerned with the progress made on risk assessment and risk management in connection with chemical substances. The Commission plans to present this White Paper during the summer of 2000. One of the most important issues will be what to do about substances that are used today in cases where, given the present state of knowledge, it is impossible to say whether or not they constitute a risk to health and the environment. Many stakeholders are demanding that the use or release to the market of these substances should be banned unless reliable information about the risks is presented within a specified

period. This knowledge must be available if an integrated product policy is to function properly. Comm. 1999/2000:114

Chemical control at the global level

The global preparation of a chemicals strategy will be on the agenda at the meeting of the Governing Council of the United Nations Environment Programme (UNEP) in February 2001. The final negotiations on the global Convention on Reduced Use and Emissions of Persistent Organic Pollutants (POPs) will be completed this year. The Convention will be signed at a diplomatic conference in Stockholm in May 2001. The purpose of the Convention is to phase out or reduce the use and production for the purposes of international trade of 12 chemical substances with particularly dangerous properties.

Guidelines for waste policy

The Government's efforts to control the environmental impact of products has for many years focussed on the waste sector. Most waste is disposed of by landfilling and incineration. This causes emissions to air and land. The processes used for recycling materials can also cause emissions. In recent years control of these emissions has improved, and there is now discussion of using waste as a resource. The Swedish Environmental Protection Agency considers (see Swedish Environmental Protection Agency Report 4748) that in the case of most materials recycling is better from an environmental point of view than extracting new raw materials. This is because much less energy is consumed in the production of secondary raw materials. The Government has taken a number of measures to reduce the quantities and hazardousness of waste and to improve waste management and disposal. Stricter rules with respect to the landfilling and incineration of waste and the introduction of a waste tax are examples of such measures.

In the Environmental Quality Bill the Government stated that a general principle in waste management should be to reduce the quantity of waste for final treatment, to reduce the hazardousness of waste and to treat waste appropriately with regard to its intrinsic properties.

Waste policy in the EU

Sweden has been a driving force in the EU's revision of the Community's waste policy.

In accordance with the waste management hierarchy, the most important thing is to minimize the amount of waste generated. The waste that is generated should be reused and recycled and, as a last resort, disposed of safely. Recycling should take precedence over energy recovery whenever this is justified on environmental grounds. The Government considers the waste management hierarchy a cornerstone of waste policy.

The EU's ministers for industry adopted Council conclusions on the competitiveness of the recycling industry at the Industry Council's meeting in November 1998. The conclusions were a response to a Communication from the Commission (COM(98) 463/ final) on the competitiveness of the recycling industry. The Council's conclusions were formulated under five points, one of which dealt with the setting up a forum for the competitiveness of the recycling industry. Other elements mentioned in the conclusions were the growing importance of recycling for promoting sustainable development, its economic importance and its contribution to European competitiveness. The Council considered the Communication an instructive example of the way that environmental policies can be integrated with industrial policies.

A recycling forum was set up consisting of representatives of the Member States and industry under the aegis of the Commission. In 1999 the forum discussed the issues dealt with in the Commission's Communication. In February 2000 the forum submitted a report to the Commission on its work, including recommendations for the future.

Guidelines for efficient and sustainable use of materials and energy

The Environmental Quality Bill contains guidelines for measures that are necessary to achieve efficient and sustainable use of resources. According to these guidelines the majority of products must be material- and energy-efficient and upgradable, and their content of materials or energy must be reusable or recyclable. The Bill also notes that great responsibility rests on the producers when it comes to producing energy- and material-efficient products.

In its Bill 1996/97:84, *Sustainable Energy Supplies*, the Government presented guidelines for more efficient use of energy. In the efforts to achieve the overall environmental objectives it is important to enhance the competitiveness of new efficient energy technologies. The energy programme therefore includes a long-term commitment to the development of new energy technologies, more efficient use of energy and increased use of renewable energy sources.

The Community Environmental Action Programme

The Community Environmental Action Programme is a significant tool in the development of environmental policy. The review of the Fifth Community Environmental Action Programme has confirmed the importance of the programme's general orientation - sustainable development and sectoral integration - but has also shown that implementation of the programme has fallen short. Environmental improvements and improved implementation of environmental measures require changes of attitude not only at all levels of society, but also at the regional and global levels. In the preparations for the Sixth Community Environmental Action Programme the implementation of a policy of sustainable development in all sectors is of crucial importance. At the Environment Council in Helsinki in December 1999 the Commission was invited to present a draft Sixth Community Environmental Action

Programme by the end of the year 2000. The new Environmental Action Programme will run for a period of 10 years and will, inter alia, cover chemicals and waste issues.

It is important that the new Environmental Action Programme should support the work being done on integrated product policy in the EU and at the global level. Within the framework of the programme the Government intends to argue for a common principle of minimization of the environmental impact of products and for producer responsibility for the environmental impact of products in a lifecycle perspective.

The Community Framework Programme for Research and Development

The Fifth Community Framework Programme for Research and Development covers the period 1999-2002. The programme contains a number of elements in support of product-related environmental research. In the autumn of 2000 work will start on the preparation of the Sixth Framework Programme for Research and Development. The Government considers it important in the drafting process to take into account the need to improve knowledge in order to achieve the objectives of an integrated product policy.

3 An integrated approach is essential for an integrated product policy

3.1 The lifecycle perspective - the environmental impact of products in a lifecycle perspective

The Government's assessment: The adverse effects of a product on human health and the environment must be minimized throughout the product's lifecycle. It is important that environmental and health concerns, including those relating to the work environment, are integrated into all stages of the lifecycle.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: Most of the review bodies commented on the lifecycle perspective. They all agree with the Swedish Environmental Protection Agency that a lifecycle perspective is necessary in order to reduce the impact of products. *The Swedish National Board for Industrial and Technical Development (NUTEK)* considers, however, that an innovation perspective should be applied as a complement to the lifecycle perspective.

Most of the review bodies also agree with the Swedish Environmental Protection Agency's assessment that many operators do not know enough about the environmental impact made by products at various stages of their lifecycle and that more research and development is needed in this area. Several bodies also mentioned the need for more knowledge about various policy instruments and methods, including lifecycle analysis and

environmental accounts, in order to assess the impact of products. *The National Institute for Working Life and the National Board of Occupational Safety and Health* emphasize that work environment concerns must also be taken into account.

Reasons for the Government's assessment

The impact made by products on the environment varies during the various phases of their lifecycles. In order to set relevant goals and make meaningful priorities between various measures within the framework of an integrated product policy, we must know about the environmental impact made by those products throughout their lifecycle. The content of chemical substances in products must not disrupt the ecocycle management process.

Applying the lifecycle perspective may be difficult in the case of products which are made up of components that are bought and sold by several different operators in different parts of the world. In such cases the lifecycle may be long and difficult to map.

The lifecycle of a product consists of the following phases.

Extraction of raw materials

Environmental impact can arise as a result of the extraction of raw materials that are harmful to health and the environment and where harmful by-products are extracted at the same time. The extraction process in itself may also involve energy consumption, waste generation, emissions of pollutants to land, water and air, soil destruction and depletion of biological diversity. The operators during this phase are the suppliers of raw materials.

Production

Environmental impact can arise during the production process owing to the consumption of resources and energy, emissions of substances that are harmful to the environment and health into air, water and land and to waste generation. The main operators during this stage are producers.

Use (private and public users)

During the use stage extensive environmental impact can be caused by emissions of substances that are harmful to health and the environment and by the consumption of energy. In many cases the use stage accounts for most of the resource consumption. A typical example of this is electrical products, for example refrigerators; in a lifecycle perspective it is the use of energy that consumes most resources. Inappropriate disposal at the end of a product's life can also cause an impact. The players involved here are the users, both public and private, i.e. households, central and local government and enterprises.

If the product is not environmentally sound from the beginning, adverse effects may arise due to the release of harmful substances in connection with recycling, landfilling or other kinds of disposal. Waste disposal can also give rise to energy consumption and the generation of more waste. Many parties are involved in this stage, e.g. municipalities, producers (with producer responsibility) and recyclers.

Marketing, sales and transportation

Marketing, sales and transportation can occur at any of the stages of the product's lifecycle. For example, waste is generated and resources consumed in connection with marketing and sales. These activities are very important as a means of reducing environmental impacts in subsequent phases of the lifecycle. This is the main interface between consumers and producers. It is important at this stage that the information given by the producer about the product is passed on to the consumer. Product information also has a bearing on disposal of the end-of-life product. The producers' knowledge of the products must therefore be passed on to the parties involved in the waste stage so as to enable them to dispose of the end-of-life product in an appropriate manner.

Transport is a key sector when it comes to efforts to achieve ecologically sustainable development. Transport is an element of all stages of any product's lifecycle, and it makes a major negative impact on the environment and human health. Environmentally sounder modes of transport and better organization and coordination are needed to reduce the environmental impact of transport.

Stakeholders at various stages of the product's lifecycle

As was explained above, several players can influence the product and thus help to reduce the total environmental impact at various stages of the product's lifecycle. The chain of stakeholders generally consists of raw material suppliers, manufacturers of components and end products, trade operators (importers, exporters, distributors, wholesalers and retailers), consumers, private and public users and waste disposal operators. All these stakeholders must assume responsibility for achieving the objective of environmentally sound products. 'Responsibility' may involve both economic and physical responsibility and a duty to inform other interested parties. Each stakeholder must assume responsibility both upstream and downstream of the stage in which he is involved. This includes responsibility for ensuring that the work environment meets the statutory requirements and that work can be carried out safely.

The operators and consumers are important for several reasons. They influence material flows and the flow of products in the chain. They also influence each other by making environmental demands and requesting environmental information from each other. They also play an important part as partners in discussions for the purpose of reaching a consensus.

The stakeholders' perception of their own role, their responsibility and their own capacity to improve the environment is essential for a successful integrated product policy. Equally important is their ability to cooperate with each other. The stakeholders and their roles are dealt with in greater detail in chapter 4.

Innovation and product development

Taking the environmental impact of products into account from the start, i.e. in connection with product development, and focusing on material flows and emissions at source greatly increases the possibility of preventing environmental problems and ensuring that they are not merely passed on to some other stage of the lifecycle.

The environmental impact of a product is to all intents and purposes determined by its design. Great potential therefore exists in innovation and product development departments for improving the environmental impact of products.

An integrated product policy should help to build a common platform for environmental policy and innovation policy. New, environmentally preferable products should be designed, and advantage should be taken of the development momentum that may result from the potential market advantages. The development of technologies and products is likely to make a substantial contribution to a sustainable society.

Eco-design - environmentally sound product development - is a tool that is rapidly being developed both in Sweden and the rest of Europe. With eco-design, environmental concerns are addressed and integrated at the very start of the product development process.

The Government has instructed the Design Committee (KU 1999:01) to conduct an inquiry into government responsibility for design. The Committee will investigate the importance of design for ecologically sustainable development and present proposals calculated to strengthen the links between these two areas. The Committee's work is closely linked both to the consumption and production of products and services. It will present its final report to the Government on August 31 2000.

3.2 Policy instruments and incentives in an integrated product policy

The Government's assessment: The Government intends to take measures within the framework of an integrated product policy to ensure that existing and new policy instruments relating to products are coordinated in order to take advantage of potential synergies. It is important in this connection to identify possible conflicts of interest and minimize them wherever possible. The objective is to extend producer responsibility eventually to most products. The Government has appointed a special investigator to carry out a comprehensive review of producer responsibility. Her terms of reference include an investigation, in the light of the abovementioned review, of whether it would be appropriate to apply producer responsibility to any other categories of products.

Reasons for the Government's assessment

For several years the Government has actively pursued a policy of promoting environmentally sound product development, and a number of incentives have been created in this area. The possibility of achieving an integrated product policy will increase if a broad range of incentives is available to operators to allow them to strike a balance between different options. One important aim of integrated product policy is to coordinate and optimize these incentives in order to ensure that they will, individually and collectively, facilitate a rapid and effective changeover to a sustainable society. It is important in connection with this coordination to identify and wherever possible avoid any conflicts of interest that may arise. Examples are given in this section of policy instruments and incentives that, in the Government's view, are crucial to the achievement of an integrated product policy.

Legislation and physical incentives

Traditionally, the role of public authorities has been to promote the environmental performance of enterprises and other operators by laying down general rules establishing minimum standards with which all sectors of society must comply. The provisions on chemicals and waste, in the Environmental Code, the Waste Management Ordinance and the producer responsibility ordinances are examples of such legislation. All operators in the geographical area to which the rules apply are subject to the same rules, which are therefore competition-neutral. However, if the national rules are stricter than those in other countries, this may adversely effect competitive conditions. On the other hand the competitive advantage of having a superior product can bring lesser gains if the general level is raised.

Today's environmental problems and sometimes inefficient use of resources are largely to due to the difficulty of pricing products to take into account the costs incurred by the product's environmental impact throughout its lifecycle. These costs can be internalized with the help of various economic measures. Taxes and charges can have the desired effect provided they are applied in the context of the specific environmental problem.

The advantage of fiscal incentives is that operators are given the incentive to adapt their activities and to do so in a cost-effective manner. Since it is in the operator's interest to adapt, the cost-effectiveness of various technologies may be affected by changes in costs. In this way fiscal incentives can drive technological development. The disadvantage is that it may be difficult in advance to determine whether the incentive will serve its purpose, since there may be uncertainty as to the optimum level of an environmental tax or charge.

Market-driven incentives

Market forces could potentially induce companies to take environmental measures that go beyond those required by the legislation. The possibility of such a development should be taken into account when legislation is drafted. There is today an ever increasing demand for environmentally sound products and services. As a result, the environment has become a marketing argument and business is being driven by environmental concerns. Market forces not only work at the national level, but also worldwide.

Companies operate in competitive markets, and one effective way of keeping costs down is to be economical with resources. Materials can be made lighter and smaller quantities used, the size of products can be reduced, their service life can be extended, their recycling potential increased etc.

New knowledge about and interest in environmental concerns among wider sectors of the population has also had an effect on the work of public authorities. Where they were previously mainly concerned with implementing binding measures in order to achieve environmental improvement, they can now drive developments by stimulating market-driven incentives. This provides greater scope for influencing more and more sectors to assume responsibility and take action for sustainable development.

The demand for products and services is to a large extent determined by information and education. Everyone must assume their share of the responsibility and integrate environmental thinking into their activities. The public sector is also a user of products and can influence demand by making certain environmental standards a condition for tenders. This can give rise to considerable ripple effects if both private enterprise and the public sector require suppliers and subcontractors both upstream and downstream to meet environmental criteria.

Unilateral commitments or environmental agreements have already been made, for example in the construction sector, the chemicals sector and the European car industry. These commitments can contribute to

more consensus and collaboration between operators. It is important that everybody, including small and medium-sized enterprises, should be given the opportunity to take part in this process. This would also reduce the risk of competitive distortions. Commitments can be combined with other incentives and with supervision by public authorities.

A number of tools are being designed by companies to reduce the environmental impact of products. These include the procurement of environmental technologies, unilateral undertakings, environmental accounts, indicators, lifecycle analyses, environmental management systems, ecolabels and environmental product profiles. Certified environmental product profiles, ecolabelling schemes and environmental management systems are examples of tools based on an undertaking by enterprises to improve their environmental performance, which is verified by a third party.

3.2.1 Environmental information

The Government's assessment: One guiding principle in an integrated product policy should be that operators are responsible for providing environmental information.

Ecolabelling and certified environmental product profiles are important instruments that need to be further developed. In the case of products that are not suitable for a certification system it is important that companies should continue to develop environmental product profiles.

The Government intends, within the framework of Nordic and European cooperation, to facilitate coordination between the Community's ecolabelling scheme and the Nordic Swan ecolabel.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: The great majority of the review bodies agree with the Swedish Environmental Protection Agency that operators at various stages of a product's lifecycle should be responsible for providing and disseminating information about the product's environmental properties.

Many bodies are of the view that the responsibility for supplying information should be more clearly defined. Several respondents expressed the opinion that producers have a special responsibility for environmental information. *The Swedish Recycling Industries' Association* sees the need for an improvement in exchanges of information between recyclers and producers.

Among the environmental information systems that several review bodies mentioned as worthwhile developing are ecolabels and certified environmental product profiles. *SIS Ecolabelling* points out that ecolabelling must be developed in such a way as to meet international ecolabelling standards. *The National Board of Trade* mentions the problem of imposing stringent requirements as regards environmental information on small and medium-sized enterprises in view of their lack of expertise and resources. *Lund University* considers that the principle of product choice is more important than environmental information.

Suppliers and manufacturers know most about the materials and substances that are included in their products and are therefore best placed to produce product-related environmental information. They should assume joint responsibility for this and for adapting information to different target groups and ensuring that it is easy to understand.

Consumer groups vary when it comes to their capacity to understand and assimilate environmental information. Generally speaking, professional buyers are better placed than private consumers to understand complicated environmental information. There is a trend among manufacturers and suppliers to require more detailed information. Environmental information aimed at private consumers makes greater demands in terms of adaptation and selectivity of information.

Information works best in combination with other tools. An essential condition for success is that information activities are well planned, systematic and adapted to the relevant target group. It is also important that information should be designed in such a way as not to distort competition and that it meets proper standards of objectivity and transparency.

All stakeholders must shoulder their responsibility and improve their knowledge of the properties of products and their effects on health and the environment. They need this information in order to be able to make informed decisions about their own choices. For example, a producer should not place a product on the market without knowing what it contains and without having assessed the consequences. By making more stringent requirements as regards better environmental information from their suppliers, companies can control the environmental impact of their products and processes. Consumers have the right to know about the content of a product, how it is manufactured, its quality etc. in order to assess the consequences of their choices.

Product-related environmental information is issued today either in accordance with binding rules or on a voluntary basis. The systems that are subject to regulatory control include the classification and labelling of chemical products, product information sheets and environmental reports. The Environmental Code contains provisions on information about the environmental impact of products and services. Such provisions are to be found in the general rules of consideration, for example the condition that precautions must be taken and that producers must know what their products contain. The rules on operators' own-initiative checks also require operators to possess sufficient knowledge about the effects of their activities. The voluntary systems provide information in the form of environmental product profiles, ecolabels and environmental audits etc.

Ecolabels

Ecolabels are an important instrument for informing consumers about the environmental impact made by products. They encourage the development and use of products that are preferable from an

environmental point of view to similar products and thus make it possible for consumers to make appropriate environmental choices.

Ecolabels are a market-driven and voluntary tool. Both consumers and producers have faith in a reliable ecolabel. There are several ecolabelling schemes in Sweden, including the Nordic Swan ecolabel, the Swedish Society for Nature Conservation's Good Environmental Choice and the EU flower logo.

National ecolabels are liable to hamper international trade, since it may be difficult for a foreign manufacturer to find out what requirements apply to a product that is ecolabelled in another country. This may be particularly complicated if there are many different ecolabel schemes, especially if they are not transparent.

The Government intends, within the framework of Nordic and European cooperation, to facilitate coordination between the Community ecolabelling scheme and the Swan ecolabel in accordance with the provisions of the revised EC Regulation on a Community ecolabel award scheme.

In the Government's view, there is also a need to develop the use of the Nordic ecolabel in industry. Evaluation of the Swan ecolabel started in 1998 within the framework of a cross-sectoral group responsible to the Nordic Council of Ministers. This evaluation will be completed by the end of 2000 and will relate to consumers' attitudes to and knowledge of the Swan ecolabel and its environmental effects.

Environmental product profiles

The Swedish EMAS Council is responsible for implementing a national system for certified environmental product profiles. Certification relates to lifecycle-related information based on scientific analyses in accordance with standards and environmental Regulations, as well as on established certification and registration systems. The other main target group for environmental product profiles consists of manufacturers and professional buyers in industry and public administration. A certified environmental product profile contains, inter alia, a declaration of the product's environmental performance based on a lifecycle analysis. The system is still being built up. Profiles have now been elaborated for a few products.

It is important to establish uniform and transparent criteria to avoid competitive distortions.

Several trade organizations have produced common environmental product profile models for use in their line of business. These vary both as to quality and quantity. The information focuses either on certain stages of the product's lifecycle or on the lifecycle as a whole. In the case of products that are not suitable for a certification system, companies should continue to develop environmental product profiles.

Many enterprises and trade organizations are in favour of developing environmental product profiles, since demand, in particular customer demand, for certain types of environmental information has increased. Several enterprises combine ecolabelling for products bought by private

consumers and environmental product profiles for customers who want to know more about the product's properties.

3.2.2 Environmental management systems

The Government's assessment: The Government intends to ensure the continued promotion of environmental management systems in both the private and the public sector. One example of these activities is NUTEK's support to small and medium-sized enterprises that introduce such systems.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: Few review bodies submitted any comments on this matter but those who did endorse the Swedish Environmental Protection Agency's assessment.

Reasons for the Government's assessment: Environmental management systems are a tool for meeting the requirements of sustainable development. They were developed in the 1990s in response to the market's demand for systematic and forward-looking environmental action. Basically, they consist of an administrative system designed to integrate environmental concerns and help both private and state-owned enterprises to manage their environmental impacts. The two most well-known systems are EMAS (Eco-Management and Audit Scheme) and the International Standardization Organization ISO 14001 system. Enterprises and organizations introduce these systems on an entirely voluntary basis.

The EMAS Regulation (93/1836/EEC) is currently being revised, and as a result the ISO 14001 standards will also be included in EMAS. ISO 14001 will thus represent a standard for the design of environmental management systems. The EMAS Regulation also requires external environmental audits, continuous improvement of environmental performance, compliance with the law and active participation on the part of employees. The revised Regulation will also place greater emphasis on the environmental impact caused by products and services.

The industrial research institutes in Sweden have evaluated the environmental and economic effectiveness of ISO 14001 and EMAS (see Report 99830 from the Swedish Institute of Production Engineering Research, *Environmental Management Systems – Paper Tigers or Powerful Tools?*). This study shows that environmental management does yield useful environmental effects. Most of the companies that were interviewed consider that their market position has improved, and about one-third have increased their earnings thanks to environmental management.

There is also an important international dimension to environmental management systems. They are one of the few tools that represent a standard for companies all over the world and thus represent a form of international harmonization.

Enterprises the world over have shown keen interest in applying the standards in the ISO 14000 series. In May 2000 ISO 14001 certifications totalled about 15,800 and EMAS registrations about 3,300. The corresponding figures for Sweden are about 1,060 and 182, respectively.

Environmental management systems have been criticized for not laying down absolute requirements but recognizing legal compliance as the only compulsory standard of environmental performance. The system is based on management by objectives, and the objectives and the level of ambition are decided by the operator, although the system provides for continuous improvement. It is thus the operator's own commitment to environmental action that is the decisive factor. In other words, objectives can vary from one company to another. Furthermore, environmental legislation can vary between different countries. All in all, this means that the environmental performance of companies which are registered or certified under the same system may differ. In international trade, therefore, the demand for certification/registration may give a competitive advantage to countries where environmental standards are less strict.

In addition, it has proved difficult for administrative reasons for small companies to implement environmental management systems. The Swedish EMAS Council has undertaken the programme 'Towards EMAS with ISO 14000' in order to enable small enterprises to introduce environmental management systems. Since 1996, NUTEK has also provided support activities for small enterprises. The purpose of these activities is to raise awareness among small and medium-sized enterprises of environmental management systems and to make it easier for them to set up such a system.

Since 1996 the central government administration has been introducing environmental management systems in government agencies and the Government Offices. So far about 140 agencies have started introducing the systems.

3.2.3 Public procurement

The Government's assessment: By making certain environmental standards a condition for tenders the public sector can help to improve the environmental standard of products and services. Sweden will press for clarifications or amendments of the EC Directives to make it quite clear exactly what environmental demands may be required in connection with procurement.

The Committee for Ecologically Sustainable Procurement (M 1998:01) should complete its work on an Internet-based tool. This tool is expected to make it easier for Swedish municipalities, county councils and government agencies to make environmental standards a condition for tenders.

The Swedish Environmental Protection Agency's Assessment: Concurs by and large with the Government's assessment.

Review bodies: The City of Malmö considers public procurement an important instrument for promoting environmentally sound products. The Public Procurement Committee agrees, provided that Community law is complied with. The Board of Swedish Industry and Commerce for Better Regulations and The Swedish Federation of Trade considers that public procurement should take place on a commercial basis to meet the demand for a product or service. Other objectives should be met by legislative or political measures.

Reasons for the Government's assessment: The value in monetary terms of public procurement in Sweden, i.e. purchases made by central and local government, amounts to about SEK 400 billion a year. The corresponding figure for the EU is about SEK 8,000 billion. By making certain environmental standards a condition for tenders the public sector can help to improve the environmental standard of products and services. It may, however, be difficult for small enterprises to meet the standards for environmentally sound products and services. In May 1998 the Government appointed a Committee for Ecologically Sustainable Procurement (M 1998:01). The Committee's task is to promote the role of public procurement as a driving force for the achievement of ecologically sustainable development.

Sweden must comply with the EC public procurement directives. The possibility of making environmental standards a condition for tenders is thus regulated by Community rules and by the practice that develops in the course of their application. There is general agreement that the rules are not sufficiently precise as regards certain types of environmental requirements in connection with procurement. In order to clarify the legal position, the Commission has promised to issue an interpretative Communication on the environmental requirements that are permissible under the current rules. The Nordic ministers for the environment sent a letter to the Commission in February 2000 urging it to emphasize in the coming interpretative Communication the possibility of using environmental management systems as a measure of a tenderer's technical capacity and to allow criteria for official ecolabels to be applied in the evaluation of tenders.

The procurement directives represent an implementation of World Trade Organization (WTO) rules and agreements on public procurement. Any amendment of the directives might therefore necessitate amendments to the WTO's Government Procurement Agreement (GPA) and the Technical Barriers to Trade Agreement (TBTA). The aim should be to find coordinated international solutions.

3.2.4 Producer responsibility

The Government's assessment: The system of producer responsibility needs to be reviewed. The Government has therefore appointed a special investigator to carry out a comprehensive review of producer responsibility (Dir. 2000:28). The investigator will review both the environmental and socio-economic effects of the system of producer responsibility that has been introduced and investigate whether the system could be extended to further categories of products.

The Swedish Environmental Protection Agency's Assessment: The Swedish Environmental Protection Agency does not consider it appropriate at present to introduce general statutory producer responsibility for all products. Extension of producer responsibility to other products should take place gradually.

Review bodies: Most of the review bodies agree with the Swedish Environmental Protection Agency that it is not appropriate at the moment to introduce general producer responsibility and recommend gradual development of the system, in which case producer responsibility should primarily apply to products that cause a particularly large environmental impact. Several bodies mention the need of an analysis and evaluation of producer responsibility, including a study of the environmental effects and the socio-economic costs. According to the *City of Malmö* producer responsibility could, theoretically at least, apply to both products and services. Most of the bodies also think that producer responsibility should be developed at the EU level. According to *the Federation of Swedish Industries*, the aims of producer responsibility have not been sufficiently clearly defined so far.

Reasons for the Government's assessment: The aim of statutory producer responsibility is to create an incentive for producers to develop products that make less environmental impact and at the same time to achieve environmentally sound product management. Recyclable products, recycling technologies and markets for recycled materials are emerging, but are as yet in their infancy.

The Swedish Environmental Protection Agency concludes in its report (Report 5043) that the existing system of producer responsibility is an important tool for increasing the collection of end-of-life products and encouraging more recycling and a reduction in the landfilling of waste. The producer responsibility ordinances have also helped to reduce the quantities of waste. In the Agency's view, the environmental effects are, generally speaking, difficult to quantify. The Agency concludes, however, that the legislation has made a major contribution to achieving the objectives of environmentally sound disposal of waste for the identified product categories.

As regards producer responsibility for more complex product categories with a longer service life, such as cars and electronic products, no experience has been gained so far since the producer responsibility legislation has only been in force for a short time or has not yet entered

into force. It is thus too early to draw any definite conclusions about whether the system will be effective as a means of achieving the long-term objective of environmental sound products or about its effects on the economy and competition. Comm. 1999/2000:114

The Swedish Environmental Protection Agency proposes in its report that a common objective for the existing system of producer responsibility for various product categories should be incorporated into the Environmental Code. The Agency intends to return to this proposal later and to the question of proposing new aims or requirements for insertion in the existing ordinances. It will do so in its report on the monitoring of the recycling objectives under the present producer responsibility legislation, which will be presented by June 1 2000.

The Government recently appointed a special investigator (Dir. 2000:28) to carry out a comprehensive review of the producer responsibility system. The investigator will review both the environmental and socio-economic consequences of statutory producer responsibility with respect to the following product categories: packaging, waste paper, tyres and motor vehicles, with special reference to packaging. In the light of this review the investigator will also examine whether statutory producer responsibility should be introduced for other product categories and will present proposals concerning such product categories. The investigator will report to the Government by July 31 2001.

3.2.5 Knowledge building measures

The Government's assessment: The Government intends to take measures to raise awareness of the impacts of products on human health and on the environment.

Implementation of an integrated product policy will require detailed knowledge and development in several areas. Examples of such areas are:

- environmentally sound design with a view to dismantling, repair, recycling, the separation of materials, etc.,
- environmentally sound use of materials and new environmentally sound materials,
- economic instruments, obstacles and incentives,
- evaluation tools, e.g. lifecycle analyses, weighting and evaluation methods and behavioural research and lifestyle research.

The Swedish Environmental Protection Agency's Assessment: Concurs by and large with the Government's assessment.

Review bodies: The Swedish Environmental Protection Agency's assessment of the need to improve knowledge in view of the work ahead is endorsed by many review bodies. *The National Board of Occupational Safety and Health* calls for new methods for environmentally sound dismantling and sorting of materials etc. Several bodies mention behavioural research and the need to develop evaluation tools as important areas.

Reasons for the Government's assessment: One element of the efforts to achieve sustainable development will be the need for society as a whole to improve management of natural resources and energy. Knowledge will have to be improved in many areas to make it possible to adopt appropriate measures and convince people of what needs to be done to work towards sustainable development. Technologies and systems will have to be adapted to human needs, and people will have to adapt their lifestyles to meet environmental requirements.

Research on a resource-efficient and sustainable society should concentrate on laying the foundation for a new way of thinking, new behaviour and new strategies. The principal aim should be to indicate ways and means of achieving change, identifying obstacles and developing the necessary tools and methods. Research that focuses on an integrated approach and systemic thinking must build on interaction between technological, scientific, social science and humanistic research. Closer collaboration needs to be encouraged between researchers. Attention must be paid to areas that do not fall within the traditional disciplines and established patterns, and traditional thinking must be questioned. It is also important that research, and an active dialogue with the community as a whole, draws on and develops existing know-how and experience in various sectors of industry and society. The research findings must also be disseminated, tested and evaluated in practical trials or demonstrations before they can be applied generally.

Many factors and players play a part in the processing, use and consumption of materials and products. We need to know more about the interaction between factors that facilitate or obstruct a changeover to increased sustainability. We need to know more about systems as a basis for the strategic choices that must be made. Systemic knowledge is also necessary as a basis for assessments of the effects and risks associated with various options. Resource consumption, environmental impacts and the possibility of closing loops are determined by product design, the choice of materials and the mode of use of products.

In many product fields ecocycle management has not yet made much impact. We still need to know much more about what happens to materials when they are used, how they age or degenerate and about how to close the loop for various metals and plastics. It is important not only to look ahead, but also to find ways of improving our management of products and materials that are already in use and find out about both risks and opportunities in connection with the use of recycled materials.

There are large quantities of more or less hazardous substances in circulation, in many cases built into products and difficult to separate from them. Even if the production and use of products is organized on an environmentally sounder basis, it will still be necessary to dump some materials in landfill sites. We know little or nothing, moreover, about the content of many existing and disused landfill sites and there is a risk of leakage from such sites sooner or later. Action therefore needs to be taken to improve knowledge about the processes at work in landfill sites and in particular about long-term processes. Research is also needed on risk assessment methods for landfill sites and methods of rendering pollutants harmless, to make it possible both to design safe landfill sites

in future and to reduce the risks associated with today's and yesterday's sites.

Research policy can make a substantial contribution to an integrated product policy. The need of research that will help to achieve the objectives of an integrated product policy should be taken into account in connection with the preparations for the Research Policy Bill in the autumn of this year and for the next Community programme for research and development.

3.2.6 Standardization

The Government's assessment: Standardization activities should focus on optimizing the function of products and minimizing adverse environmental impacts by integrating environmental concerns into product and material standards.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: Some bodies, including the *City of Malmö* and SIS Ecolabelling, consider it important to integrate environmental concerns into EU standardization activities. *The Swedish Recycling Industries'* Association sees a need for standardization in the recycling sector.

Reasons for the Government's assessment

The aims of standardization are to promote free trade, rational production and efficient work practices, limitation of variants, substitutability, quality, security for the person and property and protection of the external environment. The work of preparing standards is carried out by recognized standardization bodies.

Integration of environmental concerns at the national level

A special investigator (SOU 1997:173) was appointed by the Government to submit proposals for a method of integrating environmental concerns into standardization activities in Sweden. The investigator proposed measures to raise the level of environmental expertise in standardization activities, the establishment of a network of environmental coordinators in Sweden's standardization organizations and environmental reviews of proposed new standards by the competent authorities. Like the investigator, the review bodies emphasized that environmental concerns must be introduced into the process at an early stage and therefore endorsed the proposal for measures to raise the level of expertise. Most of the review bodies were not in favour of the proposal that an environmental review should be conducted in the final phase of the standardization process, especially since about 95% of all new Swedish standards are prepared by international or European organizations. The review bodies were also doubtful about the proposal to set up a special environmental structure in Sweden's standardization

bodies. The Government's view was (Gov. Bill 1998/99:1) that some measures to raise the level of environmental expertise might be appropriate, and it announced its intention to allow part of the government grant for this purpose to be used for standardization activities on a transitional basis. Since discussions were in progress at the European Committee for Standardization (CEN) on the establishment of a network of environmental coordinators, the Government found that the best course was to await the outcome of these discussions.

Under a government decision on government grants to the Swedish standardization bodies for 1999 and 2000, the basic government grant can be used to provide training for standardization experts. Furthermore, SEK 1 million of this grant will be allocated to work done on behalf of the Commission with respect to the external environment, since the financing contributed by industry in this area is insufficient.

Integration of environmental considerations at the EU level

For several years the CEN has discussed ways and means of integrating environmental aspects into standardization activities. At the proposal of the CEN group that is responsible for coordinating environmental issues, the CEN has decided to set up an Environmental Help Desk (EHD). Its main purpose is to provide support for the technical committees and working groups on issues relating to the environment. The EHD came into operation in September 1999 and will function for a two-year trial period. After that the project will be evaluated.

3.3 Transboundary trade - the EU and worldwide

The Government's assessment: The Government intends to urge the EU to establish an integrated product policy that will create the conditions for an efficient single market with effective safeguards for human health and the environment. Such a policy should also contribute to sustainable development in the international trade system.

Reasons for the Government's assessment

Sustainable development is an increasingly important issue in transboundary trade. The expansion of international trade involves the risk of increased pressure on the environment. Most environmental problems are transboundary by nature, since they are spread by water, air or in products. In the same way, market economy systems are becoming increasingly international, and enterprises work freely across national boundaries. Globalization and technological developments call for more international cooperation.

There is a risk that measures taken by Sweden alone, without the support of international cooperation or rules, may become an obstacle to the establishment of new enterprises in the country and may also induce the enterprises that are already established here to move their investments

and product development operations to other countries. The free movement, inter alia, of products and services is one of the main horizontal and interrelated EU objectives, and the same applies to the global trade system (WTO). An efficient trade system is essential to economic growth and thus to increased prosperity.

Other arguments for free trade are also put forward, for example the argument that it can be an effective means of increasing prosperity in poor countries and promoting the transfer of knowledge and technology to them, and that it can thereby help to pave the way for greater integration of environmental considerations into the growth process.

Following the UN Conference on Environment and Development in 1992 and the adoption of Agenda 21, sustainable development has become one of the horizontal and interrelated objectives both of the single market and of the WTO. The development of an integrated product policy should be regarded as a contribution to efforts to achieve this objective, but also as an important condition for achieving sustainable development. It is therefore important that the platform for efforts to establish an integrated product policy should be as international as possible.

Adaptation on an international scale to an environmentally sounder product policy would also open up opportunities for Swedish exports to countries where individual national rules make it too costly for individual exporters to modify their products. By the same token this would also extend the range of products available to Swedish importers, which would bring socio-economic gains.

The single market

The main objective of the single market is to ensure the free movement of goods, persons, services and capital. In its 1999 strategy for the single market the European Commission sets four strategic objectives with a view to improving the functioning of the single market. One of these objectives is "to ensure that the single market benefits all citizens". The strategy emphasizes that, apart from increasing individual freedom and giving consumers more freedom of choice, the single market must also assure effective protection of health, safety and the environment.

A closer economic integration in Europe would lead to an expansion of trade and thus also to increased pressure on the environment. One of the reasons for this is the increasing number of products that contain potentially hazardous substances and the increase in transport per se. The single market and the environment are often perceived as incompatible. At present there are individual national rules relating to the environment that are liable to hamper trade, as well as measures that promote trade but make it more difficult to pursue an appropriate environmental policy. It is important to find an appropriate balance that would generate synergies. In several areas Sweden has shown that it is quite possible to strike such a balance. This view has also been adopted by the Commission, as can be seen from its Communication (COM(99) 263 fin) on the single market and the environment.

Many of the environmental problems in Europe go beyond the single market and therefore action needs to be taken in international fora too.

An integrated product policy could resolve many environmental problems associated with expanding trade and at the same time ensure the future efficiency and development of the single market. Examples of means that could be used to integrate environmental thinking into the single market are public procurement and ecolabels. An integrated product policy would make it possible to coordinate these instruments in order to effectively integrate environmental concerns, which would support the single market, in particular, by increasing its international competitiveness and enhancing the quality of life of its citizens.

Under the EC Treaty, the Member States can impose more stringent environmental requirements in the harmonized area if they deem it necessary for reasons of health or the environment and if the requirements are associated with a specific problem in that country, which must be demonstrable.

Member States differ in their application of the legislation in the harmonized area. This has caused problems both for the environment and for trade. Up to now, dispute settlement procedures, interpretative communications and administrative cooperation etc. have been used to solve these problems.

The non-harmonized area is an important element of integrated product policy. The principle of mutual recognition is very important in this area. The Member States' rules on the non-harmonized area often differ. The principle of mutual recognition has often proved difficult to apply in practice, which can be an obstacle to free movement in the Union. An integrated product policy could facilitate application of the principle of mutual recognition and thereby promote increased mobility in the single market. The main aim in the non-harmonized area should be to design national measures in such a way that a smoothly functioning single market assures effective environmental protection.

An important element of the elaboration of an integrated product policy will thus be to design and apply the policy in the harmonized area and to tighten control of the non-harmonized area. An appropriate balance must be struck between the two areas, and both areas must be developed with the same objective in view.

The World Trade Organization (WTO)

One of the purposes of the WTO is to establish common rules for world trade and thereby create open and fair trade that will contribute to sustainable development. Today, 135 countries are members of the WTO, which has now adopted more than 60 agreements. The WTO administers systems of rules for products, services and intellectual property, which together constitute the multilateral trade system.

The trade system is based on the principle of non-discrimination, i.e. equal treatment of imported and domestic products.

The Government considers it important to ensure that the WTO supports global efforts on behalf of sustainable development, which includes countries' sustainable management of their own natural

resources. This is also established in the WTO Agreement. For example, countries are free to prohibit imports if they involve risks to health or the environment in the importing country. However, this principle does not allow countries to influence the production and process methods of other countries by means of trade measures.

The EU and Sweden have for a long time pointed out that one way of altering many of the unsustainable consumption and production patterns in industrial countries would be to use voluntary labelling and certification systems based on the environmental impact of products in a lifecycle perspective. Most developing countries are opposed to such systems since they discourage exports. Sweden has consistently emphasized that labelling and certification systems must be transparent, so that both domestic and foreign enterprises have access to them.

Sweden should therefore use its influence to ensure that the WTO and its agreements support environment-related labelling and certification systems and an integrated product policy. Attention should be drawn to the importance of and advantages to developing countries of adopting the idea of an integrated product policy to improve their competitive position. In many Western markets today there is a great demand for environmentally sound products and products that are produced by environmentally sound production methods.

Sweden should contribute to the transfer of environmental know-how and technologies, for example in the form of technical assistance, to other regions and countries, in particular developing countries. The environmental technology sector itself should also have an interest in selling its technologies and its know-how. The companies that operate outside Sweden and the EU should also be keen to disseminate the environmental expertise that they have built up in-house and thus contribute to both technology transfer and capacity-building on a global scale.

Multilateral environmental agreements

More than 200 environmental conventions and agreements have now been adopted at the regional and global levels. About 20 of these include rules that affect trade. The most well-known international environmental agreements that affect trade are the Montreal Protocol on Substances that Deplete the Ozone Layer, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Rotterdam Convention on Certain Hazardous Chemicals and Pesticides in International Trade, the Cartagena Protocol on Biosafety (focusing on transboundary movement of genetically modified organisms) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

International environmental conventions significantly affect our production and consumption patterns in various ways, since they can prohibit products and production methods that are considered environmentally harmful. In this way, international environmental instruments can be closely linked to an integrated product policy.

Furthermore, with a developed integrated product policy, the aims of and compliance with many existing environmental agreements could be achieved more effectively by encouraging environmentally preferable alternatives when it comes to product choices, methods and manufacturing processes.

Within the framework of an integrated product policy, Sweden should in international fora use its influence to ensure that trade rules and the international environmental conventions are mutually supportive and that conflicts of objectives are avoided.

4 All stakeholders have a responsibility for an integrated product policy

4.1 Joint responsibility

The Government's assessment: Each and every one of us must accept responsibility for improving the environment. All sectors of society – the public sector, industry, non-profit organizations and individual citizens – must therefore do their share.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: Most of the review bodies concur with this assessment.

Reasons for the Government's assessment: Broad commitment and participation in environmental work will be necessary in order to achieve an ecologically sustainable society. The principle of sectoral responsibility and sectoral integration was first presented in A Good Living Environment (Gov. Bill 1990/91:90).

It is therefore the common responsibility of each and every one of us to seek to achieve the objectives of ecologically sustainable development, the general environmental policy goals and the new national environmental quality objectives.

A heavy burden of responsibility rests on the government agencies. Several agencies have been given sectoral responsibility for sustainable development, and all agencies have been instructed to contribute to the achievement of national environmental quality objectives.

Consumers and households can influence the production of products by demanding and choosing products and services that are environmentally preferable to otherwise similar products.

The professional buyers in public administration and enterprises have an important role. Since they purchase large volumes, the environmental standards they require with respect to products and services have a great impact.

However, it is the producers who have direct control over the design and environmental impact of products. Their choices of raw materials, chemicals, manufacturing processes, transportation, energy use etc. affect

the environment not only at the raw materials and manufacturing stages, but also during the use and waste stages.

The importance of distributors and the financial and insurance sectors has increasingly been recognized in recent years. There is growing realization among the latter that environmental risks and companies' environmental performance must be taken into account in connection with credit ratings and insurance assessments.

In 1998 the Government instructed the Environmental Advisory Council (Dir. 1998:65) to contribute to the elaboration of strategies for the development of an ecologically sustainable industrial sector. The Council will prepare and open a dialogue with certain industrial partners concerning their work on behalf of sustainable development and will make proposals for ways to support and implement such a development in Sweden. Enterprises will be encouraged to go further than the statutory requirements in this respect. The Council will report to the Government in December 2000.

4.2 Central and local government and other public bodies

The Government's assessment: The task of public bodies in this context is to establish an appropriate framework for the changeover to ecologically sustainable development. This may be done by drafting strategies, legislation and other relevant instruments.

The Government intends, within the framework of an integrated product policy, to continue to encourage the development of voluntary, market-driven instruments and to adopt transparent rules and establish suitable conditions for operators to engage actively in environmental work.

The Swedish Environmental Protection Agency's Assessment: Concurs by and large with the Government's assessment.

Review bodies: Many review bodies consider it important to create incentives for environmentally sound product development. The *Federation of Swedish Industries*, as well as several other bodies, advocates voluntary and market-driven incentives rather than statutory requirements. Several bodies mention that an integrated product policy should be developed in parallel with efforts to achieve the adopted environmental objectives. *Borås* and *Olofström municipalities* and the City of Malmö consider that the municipalities' waste disposal obligation should be clarified. The Västerbotten and *Stockholm County* Administrative Boards assume that public authorities will play an important part owing to their supervisory role. *Lund University* considers that more attention should be paid to the role of consumers and customers.

Reasons for the Government's assessment: Central and local government authorities have overall responsibility for establishing the institutional framework for sustainable development. This framework should be established through a process that ensures the participation of

various stakeholders, such as industry, consumers and non-profit organizations. This task will involve drafting an effective body of rules, developing appropriate means of control and encouraging, supporting and expediting the development of sustainable product strategies for various product categories and sectors.

It will therefore be important to communicate with players who can contribute solutions that will eliminate structural obstacles to environmentally sound behaviour. Policy-making will be crucial in this respect. Environmental considerations must therefore be taken into account in all policy areas.

Legislation lays down a minimum level, while market-driven incentives encourage enterprises to go further in their environmental efforts. Coordinating rules and other controls will create suitable conditions for a changeover to ecological sustainability. In order to facilitate this changeover, policy decisions, whether short-term or long-term, must be consistent and coherent.

Globalization and technological development have brought great changes as regards competitive conditions and the establishment of industrial structures. Legislators and regulatory authorities, both at the national level and in the EU, should adapt the legal basis for economic activities to these new conditions.

Central and local government authorities are responsible for taking environmental factors into consideration and limiting their direct and indirect environmental impact in their role as operators. A case in point in this context is public procurement, which accounts for 15% of GDP. Public procurement can be used as a means of speeding up the development of environmentally sound products and services.

The role of the Government in the international arena is also to ensure that the country fulfils its obligations under international agreements and to help to create harmonized international rules on environmental protection. The Government, in collaboration with industry, also helps to disseminate Swedish technology and Swedish environmental expertise all over the world.

A major factor facilitating the ongoing development of environmentally sound products is the comparatively high level of environmental know-how in Sweden. This is probably one of the most important issues that must be recognized by a European integrated product policy, i.e. the need to raise the level of expertise through the education system, research, information measures etc. If the market players do not know enough about environmental issues, an integrated product policy will not be a feasible proposition.

For example, we need schools that can educate citizens so that they know enough in their consumer role to be able to choose "the right products".

As environmental awareness is raised and companies can meet the higher market demand for sustainable development thanks to their environmental activities, the need for legislation is likely to diminish. It will nevertheless be necessary to take measures in areas where market forces alone cannot guarantee sufficient progress.

The Government's assessment: The Government intends to take measures to ensure that manufacturers continue to assume responsibility for reducing the adverse effects on health and the environment of the products they put on the market. This responsibility should relate to the products' lifecycle as a whole. It involves the duty to find out about the environmental impact and health risks associated with their products and to pass on this knowledge and information to other operators in the product chain.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: Most of the review bodies agree with the Swedish Environmental Protection Agency's assessment of producer responsibility. However, *the Federation of Swedish Industries* considers that all operators are equally responsible. Several bodies, including *the Swedish Insurance Federation*, consider that the stage that knows most about the product should be responsible for its environmental soundness.

Reasons for the Government's assessment: The business sector can further global sustainable development by transferring know-how and technology to less developed countries. The increasingly international face of business facilitates the dissemination of technologies that meet Swedish environmental standards.

The scope for the business sector's contribution to integrated product policy depends largely on the extent to which environmentally preferable products can take the place of inferior alternatives. Environmentally efficient products are ones that consume a minimum of resources and give rise to as little pollution as possible throughout their lifecycle. The main role of industry is to produce the products and services demanded by customers as efficiently as possible in compliance with the existing legislation. Competition is now global. Over the years, the environmental profile of companies has become increasingly important for their competitiveness. There is growing customer demand for environmentally sound products. However, the first duty of the individual company is to survive and develop. This means that the production and sale of products and services must primarily be geared to meeting the needs of markets that are becoming increasingly competitive and global.

Market-driven action on the companies' own initiative is therefore ever more important. This is a desirable development, since the companies themselves are often the best judges of how to put their operations on an environmentally sound footing. One challenge for environmental policy is to support this development and strengthen the positive correlation between environmental performance and economic growth.

Manufacturers should save energy and resources and use environmentally sound technologies in their production processes. Environmentally appropriate designs are to be preferred in order to reduce the environmental impact of products during use and to promote reuse and recycling. Waste must be avoided as far as possible by

measures taken in connection with product development and manufacture. Manufacturers of end products are key players, since they are often in the best position to influence the environmental profile of the product. They, together with importers, therefore have a responsibility for research and the dissemination of information. Information about a product's content, environmental impact and potential for reuse and recycling should be passed on to the operator immediately upstream, and direct to the consumer and the waste disposal operators. As regards imported products, importers are often the first players in the national market to see a product and are therefore in a position to import environmentally preferable products. Information about the content, manufacture and environmental impact of foreign products is necessary in making such choices, although it may be difficult to obtain. Comm. 1999/2000:114

According to the Ecocycle Commission (Report 1998:23 *Ecocycle Management in Enterprises*), companies in the Swedish market are taking ever greater interest in environmental and ecocycle management. This trend originated in large companies. The managements of such companies now consider it essential to address environmental and ecocycle concerns in order to inspire confidence in and meet the demands made by their employees, owners and customers and by environmental organizations, politicians and public authorities.

The Ecocycle Commission concludes that companies have made efforts in the last few years to adapt their operations in accordance with cyclical principles. These efforts have often been successful. Companies have shown that change is possible.

The environmental awareness of companies is being raised at all levels. It is no longer only a matter for the chief environmental officer, but also for product developers, buyers and marketers. Nevertheless, the Ecocycle Commission's report Ecocycle Management in Enterprises shows that ecocycle management has not yet made much impact on products, and the step-by-step progress being made in industry is not sufficient to ensure achievement of the long-term objectives for resource management and sustainable development. New thinking and new strategies are needed.

The Government considers it important that manufacturers should continue to assume responsibility for reducing the adverse effects on health and the environment of the products that they put on the market. It therefore intends to promote achievement of this objective within the framework of an integrated product policy, in particular by continuing to encourage the development of market-driven incentives and introducing transparent rules and establishing conditions that will encourage all players to improve their environmental performance

4.4 Trade - importers, exporters and distributors

The Government's assessment: The Government intends to take measures to ensure that importers, exporters and distributors pass on information about their the environmental impact of products to consumers, waste disposal operators and other operators in the product chain.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: The review bodies agree with the Swedish Environmental Protection Agency's assessment. *The ICA Association/ICAHandlarnas AB* consider that distributors and sellers should accept special responsibility for providing customers with environmental information and that importers also have an important role in this context.

Reasons for the Government's assessment: Operators at the marketing stage are in a very good position to influence developments within the framework of an integrated product policy. They should see to it that customers are offered environmentally sound products, but also that customers' demands are passed on to the manufacturers. This would enable the marketing stage to exert a significant influence on product design.

The players at the marketing stage have special responsibility for environmental information since they are often in direct contact with the end users, whether in the private or the public sector. The information supplied by the producer must be passed on to consumers at the marketing stage. Consumers must be familiar with the environmental properties of a product or service in order to be able to make an informed choice on environmental grounds.

The Government considers it important that players at the marketing stage pass on information about the environmental impact of products to other operators in the product chain. The Government therefore intends to take measures to this end within the framework of an integrated product policy, in particular by continuing to encourage the development of market-driven incentives and by adopting transparent rules and establishing conditions that will encourage all players to improve their environmental performance.

4.5 Consumers

The Government's assessment: The Government intends to ensure that consumers are encouraged and given opportunities for environmentally sound behaviour within the framework of an integrated product policy. Consumers should be given information about the environmental impact of products and the most appropriate mode of use from an environmental point of view, as well as appropriate disposal at the end of their lives.

The Government will also take measures to ensure that consumer concerns are taken into account in the design of systems for pre-separation of waste at source and that households are given better information about the results of their efforts in this connection.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: According to several review bodies, the task of separating and handing in waste must be made simple for consumers, and the environmental information that is supplied must be adapted to different consumer groups. In the view of *the Swedish Consumer Agency*, information should be supplied to consumers without their having to ask for it.

Reasons for the Government's assessment: One of the four objectives of consumer policy is to develop consumption and production patterns that reduce the pressure on the environment and contribute to sustainable development. Furthermore, the Swedish Consumer Agency has the task, within the framework of its sectoral responsibility for consumer affairs, of ensuring that:

- products and services, apart from being functional and safe, meet high environmental requirements and are supplied with accurate and relevant information;
- consumers are encouraged to adopt environmentally appropriate lifestyles;
- the systems for disposing of end-of-life products are simple for households to use.

The consumer sector is a major field of activity and in practice the behaviour of households has an impact on all the general environmental quality objectives.

One effect of consumer demand for environmentally sound alternatives would be to persuade producers to manufacture environmentally sound products and services to a greater extent. Sustainable production patterns could thus be achieved if pressure were applied by consumers and their representatives. The influential consumer organizations are particularly well-placed to influence producers.

The first condition for environmentally appropriate behaviour on the part of consumers is that there must be environmentally acceptable alternatives on the market. The second condition is that they must have access to easily understandable, accurate and relevant information. 'Relevant information' in this context means information about the

method of production, the product's content and use and how it should be disposed of at the end of its life.

Households have a key role in ecocycle management due to the facilities for waste separation that are provided by producers and municipalities.

Information about this system varies from one part of the country to another. Producers and municipalities share the responsibility for informing citizens about the disposal of end-of-life packaging and waste paper, as well as other waste. The Government considers it important that households should be given simple and coherent information about local waste disposal systems, regardless of who is responsible. The information supplied to households should be improved so as to ensure that they do not lose interest in issues related to ecocycle management. It is essential that consumer considerations be taken into account when systems for the pre-separation of waste are designed.

Conflicts of objectives between environmental considerations and other considerations can sometimes make it difficult for consumers to act appropriately. Organic foods are often more expensive than foods produced by conventional methods. Furthermore, conflicts may arise between environmental and safety interests, for example where the material in bedclothes and furnishings has to be treated with flame retardants. Integrated product policy must therefore recognize the conflict between environmental sustainability, product safety, costs and functionality.

In March 1999 the Government instructed the Swedish Consumer Agency to set up a website containing environmental information for households in order to make it easier for them to take more responsibility for the environment. The website, which will open in 2000, will contain environmental information about products and services for households.

The Government has initiated an information and collection campaign for hazardous waste generated by households, which will be implemented by the municipalities. The objective of the campaign is to raise public awareness about hazardous waste and hazardous substances in products. The public needs to know more about hazardous waste and what products contain hazardous substances. It also needs to know how to go about separating and handing in waste. The campaign will be launched in the spring of 2000.

4.6 Waste disposal operators

The Government's assessment: The Government will continue to take measures to ensure that waste disposal operators dispose of end-of-life products in an environmentally acceptable manner.

The Swedish Environmental Protection Agency's Assessment: Concurs with the Government's assessment.

Review bodies: Concur with the Swedish Environmental Protection Agency's assessment.

Reasons for the Government's assessment: Under the Environmental Code, municipalities are responsible for collection, transportation and disposal of household waste unless products are covered by the producer responsibility system. Statutory producer responsibility is already in place for packaging, wastepaper, tyres and motor vehicles. The Producer Responsibility for Electrical and Electronic Products Ordinance will enter into force on July 1 2001.

One of the overall objectives of waste policy is to reduce the hazardousness of waste. This will only be possible if hazardous materials can be sorted out and disposed of in an environmentally appropriate manner.

Many of today's products contain dangerous materials and components and therefore cause environmental problems at the waste stage. Those who hand in or deal with waste often know too little about the composition or design of the products. As a result, end-of-life products are not disposed of in an environmentally appropriate manner. The person who knows most about the design of a product is the producer. The producer's knowledge of the product's materials and content should be passed on to those who dispose of waste. The latter should in turn pass on the information they possess about the recycled materials to producers.

At present only a small proportion of household waste is reused or recycled. A large percentage of the waste that is currently dumped could be recycled or treated more appropriately from an environmental point of view. Each waste category should be treated with reference to its intrinsic properties and potential usefulness. If waste is to be utilized, it must be sorted and separated. The Government has therefore taken various measures to improve waste disposal practices, for example by imposing a tax on waste that is dumped and prohibiting the dumping of certain waste categories.

The Government considers that waste disposal operators have an important role to play within the framework of an integrated product policy by disposing of end-of-life products in an environmentally sound manner. The Government will therefore continue to issue transparent rules and ensure conditions that will encourage waste disposal operators to make active environmental efforts.

The Government has instructed the Swedish Environmental Protection Agency to report on the levels of reuse and recycling that have been achieved by producers with respect to packaging, tyres, wastepaper and motor vehicles. Where necessary, the Agency is to propose amendments of the rules. The Agency will report to the Government by June 1 2000.

The Government has also instructed the Swedish Environmental Protection Agency to study the municipalities' waste disposal plans. Its terms of reference include assessments of the need of further measures to improve waste disposal practices by increasing material recycling and composting. The Agency will report to the Government by June 30 2000.

In addition to the above investigations a special investigator has been appointed to carry out a comprehensive review of producer responsibility and the handling of end-of-life products (Dir. 2000:28). The investigator will report to the Government by July 31 2000.

Successful environmental protection activities with respect to products are often achieved by a progressive and visionary management. Several large Swedish companies have already integrated environmental concerns into their company's business plan. One example of a comparatively new way of doing business is 'function selling', i.e. the selling of a function rather than a product. The possibility of selling functions rather than products might help to reduce environmental impacts and resource consumption. In the financial sector too, players such as banks and insurance companies are devoting more and more effort to environmental issues and offering their customers environmentally sound products.

The growing public interest in environmentally sound investment has, inter alia, led to the establishment of environmental mutual funds. In January 2000 Swedes had invested about SEK 2.84 billion in Swedish environmental mutual funds, which corresponds to about 0.4% of all mutual fund savings in Sweden (according to Swedish Mutual Fund Statistics). Five new environmental mutual funds have been set up in the last 18 months, and the assets in such funds have increased by SEK 640 million (Swedish Environmental Protection Agency Report 5055, Nordic Environmental Mutual Funds 1999).

Another factor that may influence the financial sector is that the sector's great opportunities for influencing societal developments are now internationally recognized. By linking environmental requirements to financial streams it is possible for banks and insurance companies to bring about positive changes in society.

Banks and insurance companies need ready access to information about companies' environmental activities in order to promote sustainable development. As insurers, insurance companies must assess the risks that arise in the absence of forward-looking environmental activities. Some insurance companies have tried to encourage environmental activities in companies and have set up indices in which companies are rated according to their efforts on behalf of the environment, quality, health and safety.

Apart from the demand for environmental information in banks and insurance companies, there is also a demand among accountants, estate agents, the media, information companies, county administrative boards, municipalities, financial analysts, investors and the public, and also customers of and suppliers to companies.

5 A strategy for and continuing efforts to achieve the objectives of an integrated product policy

It is the Government's view that an integrated product policy should be formulated in order to provide guidance for the work of realizing environmental objectives at both the national level, in the EU and worldwide.

The aim of an integrated product policy is to produce products and services that make the smallest possible impact on human health or the environment at each stage of their lifecycle. Products should be materials- and energy-efficient, at the same time as they should not contain or require the use of substances that may involve adverse effects on the environment or human health. An internationally established integrated product policy would, moreover, help to improve the function of the single market, give Europe competitive advantages and lower barriers to trade worldwide.

The starting-point when it comes to achieving the objectives of an integrated product policy should be a body of nationally and internationally recognized principles. It is also very important that the guidelines adopted for chemicals in products are implemented. This also applies to the guidelines adopted for waste disposal and efficient and sustainable use of materials and energy. The Government will continue to make every effort to ensure that this approach is also accepted by the EU and worldwide.

The Government intends, for example within the framework of the Sixth Community Environmental Action Programme, to advocate the general principle of minimization of the environmental impact of products and producer responsibility for the environmental impact of products in a lifecycle perspective. The programme should be designed in such a way as to support the formulation of an integrated product policy.

The Government continues to encourage the development of voluntary, market-driven incentives and to issue transparent rules. Measures should be taken, within the framework of an integrated product policy, to ensure that existing and new policy instruments relating to products are coordinated in order to take advantage of potential synergies.

The Government will continue to take measures to promote the introduction of environmental management systems in both the private and the public sector. Corporate and public procurement should be a driving force in efforts to achieve an ecologically sustainable society. Sweden will press for clarification and amendment of the EC procurement directives to make it plain that stringent environmental requirements are permissible.

A guiding principle of integrated product policy should be that operators are responsible for providing environmental information.

Ecolabels and certified environmental product profiles are important instruments that need to be further developed. In the case of products that are not suitable for a certification system it is important that companies should continue to develop environmental product profiles.

The Government intends, within the framework of Nordic and European cooperation, to facilitate coordination between the Community ecolabelling scheme and the Nordic Swan ecolabel in accordance with the provisions of the revised EC Regulation on a Community ecolabel award scheme.

The Government intends to ensure that consumers are encouraged and given opportunities for environmentally sound behaviour within the framework of an integrated product policy. The Government will also take measures to ensure that consumer concerns are taken into account in

the design of systems for pre-separation of waste at source and that households are given better information about the results of their efforts in this connection.

We must learn more about the environmental impact of products so that the parties concerned can prevent and solve environmental problems linked to the design, production, use and disposal of products. An integrated approach to the environmental impact of products is necessary to make it possible to set appropriate priorities between alternative measures.

More detailed knowledge and new instruments will be needed in several areas in order to implement an integrated product policy. Such areas include product design and methods and tools for environmental evaluation at all stages. In connection with the coming preparation of the Research Policy Bill attention should be given to the need of research when it comes to achieving the objectives of an integrated product policy. This must also be taken into account in the drafting of the next Community programme for research and development.

Standardization bodies should focus on optimizing the function of products and minimizing adverse environmental impacts by integrating environmental concerns into product and material standards.

The Government intends to use its best endeavours to ensure that an integrated product policy is established that will create the conditions for an efficient single market with effective safeguards for human health and the environment. Such a policy should also contribute to sustainable development in the international trade system.

An integrated product policy is an important instrument for achieving a balance between trade rules and many of the international environmental conventions, and Sweden should use its influence in international forums to ensure that these rules and conventions are mutually supportive and that conflicts of objectives are avoided. Sweden should therefore seek to ensure that the WTO and its agreements support environment-related labelling and certification systems, and consequently an integrated product policy, thus contributing to sustainable development. Sweden should in this connection support the establishment of stable investment rules at the regional or international level which would make it impossible for countries to compete for foreign direct investment by lowering their environmental standards.

Each and every one of us must accept responsibility for improving the environment. All sectors of society – the public sector, industry, non-profit organizations and individual citizens – must therefore do their share. This also includes responsibility for the work environment and for ensuring that the handling of products throughout their lifecycle does not involve any risks for workers. The Government intends to continue the ongoing dialogue with business and other stakeholders in order to ensure that responsibility is shared on a broad basis, which is essential.

At the meeting of ministers for the environment in Weimar in the spring of 1999 the ministers agreed that a common strategy for reducing the environmental impact of products throughout their lifecycle is needed in the EU. The Commission plans to present a Green Paper on Integrated Product Policy (IPP) in 2000. The Government will continue to urge that

the EU intensify its work on IPP by urging it forward and giving it concrete form in accordance with the measures described in this Communication. The conclusions of the Weimar meeting support these efforts. The Government intends to take up this matter during Sweden's presidency of the European Council in the spring of 2001. Comm. 1999/2000:114

There should be a similar development in the global context. There, it is necessary to improve the negotiating climate between industrial and developing countries and to strengthen regional and bilateral cooperation on sustainable consumption and production patterns.

It is also the Government's intention to make sure that the question of establishing an integrated product policy is clearly reflected in the drafting of strategies for the integration of environmental protection and sustainable development that are under way in the EU and will be reported to the European Council in Gothenburg in 2001.