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INDUSTRIAL COMPETITIVENESS AND PROTECTION OF THE ENVIRONMENT

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to the Council and to the European Parliament*

TABLE OF CONTENTS

I. INTRODUCTION	1
II. INDUSTRIAL COMPETITIVENESS AND PROTECTION OF THE ENVIRONMENT: THE BASIC RELATIONSHIP	1
III. THE RESPONSIBILITIES OF INDUSTRY, CONSUMERS AND PUBLIC AUTHORITIES FOR PROTECTION OF THE ENVIRONMENT	3
A. Industry	3
B. Consumers	4
C. Public authorities	4
D. The Community dimension	5
IV. IMPLICATIONS FOR A COMMUNITY APPROACH	5
A. Community Environment Policy	6
B. Internal Market and the Environment	7
C. International Trade and Cooperation and the Environment	8
D. Competition Policy and the Environment	9
E. Technology and the Environment	9
F. Human Resources	9
G. Small and medium sized enterprises	10
H. Social and Economic Cohesion	11
I. Consumer Policy	11
V. CONCLUSIONS	11
A. Environment Policy	12
B. Internal Market	13
C. International Trade and Cooperation Policies	14
D. Competition Policy	14
E. Technology Policy	15
F. Human Resources	15
G. Small and Medium Sized Enterprises	15
H. Social and Economic Cohesion	16
I. Consumer Policy	16
J. Dialogue with Industry	17

INDUSTRIAL COMPETITIVENESS AND PROTECTION OF THE ENVIRONMENT

I. INTRODUCTION

The relationship between industrial performance and protection of the environment represents an important issue for the Community because the ability of Community industry to maintain its position on open and competitive markets and to achieve a high, balanced and, in the longer term, environmentally sustainable degree of development within the Community will depend to a large degree on the successful integration of requirements for industrial competitiveness and protection of the environment. A high level of environmental protection has increasingly become not only a policy objective of its own but also a precondition for industrial expansion. In this respect, a new impetus towards a better integration of policies aiming at consolidating industrial competitiveness and at achieving a high level of protection of the environment is necessary in order to make the two objectives fully mutually supportive. This Communication does not therefore deal with the general principles of the Community's environmental policy - as defined in the Single European Act and developed most recently in the Fifth Action Programme on the Environment - or of those of the Community's industrial policy set out in the Commission's Communication on "Industrial Policy in an Open and Competitive Environment", but concentrates on the interface between these two sets of policies. The Communication thus sets out to develop a Community approach towards :

- industry's fulfilment of its responsibilities towards protection of the environment;
- the potential of environment policy as a stimulus to the competitiveness of industry.

II. INDUSTRIAL COMPETITIVENESS AND PROTECTION OF THE ENVIRONMENT: THE BASIC RELATIONSHIP

Increasingly today factors of competition such as innovation, high product quality, speed to market, flexibility in production systems and the exploitation of economies of scale are seen as the most important sources of competitiveness. They depend on high quality and adaptability of human resources, organisational skills, rapid diffusion of technology and ever higher development expenditures. Environment considerations themselves can improve the sources of or underlying requirements for competitiveness. In practice, environmental considerations can promote competitiveness in a number of ways: either through so-called "first mover" advantages at the time of the creation of substantial markets for environmental protection technologies, goods and services or for ecologically sound consumer products or through improvements to the organisation and management of the productive system, in particular as a result of the introduction of clean technologies.

- (i) While industry has often in the past considered the costs of complying with environmental regulatory requirements as a handicap rather than a factor of competitiveness, it has progressively come to the recognition that such requirements can procure significant competitive advantages. Initial reactions tended to concentrate on the immediate costs compared with the less tangible benefits and a partial view of the situation privileging real losses in competitiveness. However industrial advantages have progressively emerged: meeting the highest requirements increases the ability to trade freely, the development of technologies and products enables industry to licence or market nationally and internationally subsequently; a high level of environmental protection produces gains in image which support industry's integration in local society and induce a positive purchasing attitude on the part of consumers. Germany and Japan, in particular, have derived competitive advantage from the early adoption of severe regulatory

requirements. The first mover advantages, although powerful, do not however flow inevitably. They depend crucially on international competitors following the path of the innovators and on the technologies developed and investments made not being overtaken by better performing alternatives available to competitors.

- (ii) **The significance of the environmental protection industry as a quickly-expanding industrial market can no longer be denied, even though considerable doubt surrounds its exact level of development.** The environmental protection industry (eco-industry) covers the supply of goods and services to firms for the purpose of pollution control or abatement. It does not include the very considerable expenditures made for the environment in the general context of improved production methods or products, which can not be evaluated separately from process and product development as a whole. Nor does it include the markets for specifically environmentally-sound products such as those developed in compliance with official labelling schemes (green products). According to a study for the OECD, the environmental protection markets reached \$200 billion (157 billion ECU) in 1990, of which 85% was accounted for by the developed countries which make up OECD's membership. At the same date the Community market had reached some \$50 billion (39 billion ECU), with Germany accounting for one third of the total equivalent to the combined markets of France and the UK. A recent study undertaken by CEST put the Community market over the next ten years at £860 billion (1200 billion ECU). These markets are also expected to continue to grow extremely fast, by, according to the author, between 50% and 100% up to the year 2000. In terms of employment, approximately 1.7 million jobs are believed to be linked to eco-industries in OECD countries, of which 600,000 in Europe.
- (iii) **In the present context of global competition, the technologies employed in and the organisational requirements for the successful introduction of clean technologies are often similar to those associated with the new manufacturing paradigm.** The concept of lean production (less energy, less raw materials, less labour, less capital and less time) constitutes a significant improvement with regard to the environmental friendliness of production processes. Results from case study evidence of the application of these techniques in Europe indicate that significant improvements in productive performance derive from reorganisation for group technology, enhancement of shopfloor skills - including a significance degree of maintenance, scheduling and quality control - and the removal of barriers between white and blue collar work. These have been quantified by studies undertaken for the Commission in the context of the FAST programme on new manufacturing systems as an increase of 25% in turnover per capital employed and decreases of 10% in cost of plant, 40% in production space, 50% in total space, 15% in energy costs, 30% in total costs, 30% in tied up capital, 60% in throughput time, 28% in indirect labour and 71% in the waste rate.
- (iv) **Moving beyond production processes to product markets provides an additional dimension for industrial competitiveness.** Markets for ecologically sound products provide an incentive for firms since they represent in any case a source of potential profit. Certain products, such as phosphate-free detergents, have already become established in this way. Crucially their emergence requires on the part of consumers not only to adopt environmental considerations as a purchase criterion but also to be able to distinguish effectively products with genuinely sound environmental characteristics from those which are only claimed. In turn this requires an adequate level of consumer information and sound eco-labelling schemes. It has also been the case that additional incentives have sometimes been required to achieve a major shift in consumer behaviour, in particular the fiscal advantage applied to lead free petrol.

In total, the exploitation of positive synergies between industrial competitiveness and protection of the environment is increasingly seen to lie in the introduction of environmentally sound industrial processes and products rather than through remedying unwanted side-effects of existing patterns of activity. They also respond much better to the requirements of international competitiveness by providing a permanent boost to fundamental factors of competitiveness instead of temporary advantage. In addition, by improving the all-round performance of European industry and through developing markets for new products that the most favourable impacts from the environment on employment can be achieved.

III. THE RESPONSIBILITIES OF INDUSTRY, CONSUMERS AND PUBLIC AUTHORITIES FOR PROTECTION OF THE ENVIRONMENT

Environmental policy thus represents an emerging important determinant of international competitiveness. Yet this positive effect is by no means automatic and can only materialise if the main actors - industry, consumers and public authorities - all play a positive part and share their responsibilities with respect to the environment and if environmental policy is conducted in such a way that competitiveness is enhanced.

A. Industry

The main responsibility for changing current patterns of industrial activity with regard to the environment and for exploiting the potential benefits of environmental policies lies with industry itself.

- (i) Ensuring a high level of environmental protection is increasingly becoming the basis for doing business in future and all firms will have to meet that objective - just as they are obliged already to meet similar requirements with regard to safety and health. By adopting an active approach, identifying areas for improvement and incorporating these into its future product design and investment plans rather than waiting for public authorities to impose regulatory requirements on it, industry can identify the most efficient solutions and incorporate them with least disruption to operations.
- (ii) Industry should also take the responsibility for informing the consumers, the financial sector, public authorities and other interested parties about its efforts to meet environmental challenges.
- (iii) Finally, in order to contribute effectively to the development of environmental policy, industry must be prepared to come forward and to engage in an active dialogue with public authorities on environmental issues. For instance, particularly knowledgeable individual industrialists are likely to prove most useful when examining long-term perspectives and identifying priorities for future research. Industrial organisations with a general vocation might best assist at the level of general principles and the development of medium term environmental programmes. Specific organisations representing small and medium sized enterprises and individual sectoral federations will be able to assist with the evaluation of the feasibility and industrial effectiveness of individual proposals. European standardisation bodies with which industry is intensely involved can provide much technical information and knowledge.

B. Consumers

Consumers can play a major rôle in sharing the responsibility for the protection of the environment.

- (i) By incorporating in their purchasing requirement environmental concerns, consumers can transform environmental protection from a cost into a source of profit for industry and punish poor environmental performance through losses in market share, provided the environmental claims in respect of the product are sound and verifiable and that the performance and durability of the product meet with the expectations of consumers.
- (ii) **The market for green products, incorporating a life-cycle approach to production, use and disposal, has experienced high growth but is as yet relatively undeveloped.** In part, this can be attributed to the difficulty of establishing products that are genuinely environmentally friendly; in part, this derives from a higher level of user skill required for some green products. However, experience has shown that the level of consumer awareness though growing rapidly is not yet sufficient to ensure the take-off from niche to mass markets. Evidence on the level of awareness derived from a survey carried out in the spring of 1992 shows that although a record 85% of the European population considers that the safeguard of the environment is an immediate and urgent problem, there is still some way to go before such concern is adequately reflected in an understanding of the causes of the problem - and therefore of the action that consumers themselves can take.
- (iii) To assist consumers in performing their rôle it will be necessary to establish ways of actively involving them in relevant developments and of adequately informing them about the characteristics of marketed products.

C. Public authorities

Public authorities have the prime responsibility to put in place the required framework for environmental issues within which business operates. This framework must be predictable, demanding and implemented in a flexible manner - so that industry can plan ahead and can respond in the most effective way.

- (i) **The meaning of a high level of protection will vary according to the nature and severity of the problem and the differing capacities of the environment to absorb pollution within the Community.** In the light of such requirements, specific measures should be examined and established on the basis of cost effectiveness and implemented in such a way that industry can fulfil its responsibilities in a competitive manner. An appropriate mix of policy measures will be required in order to reply effectively to these two requirements.
- (ii) **The creation of suitable conditions for the development of markets and industrial development falls within the responsibilities of public authorities.** The growth of eco-industries has, in practice, followed the establishment of a regulatory framework. Transparency and adequate levels of information represent important items for market development. Public authorities should exercise special care to ensure that information is presented to consumers in a clear, understandable way, avoiding possible confusion between different aspects of environmental protection such as differing distinguishing marks relating to production processes employed and recycle-ability.
- (iii) **Public authorities also have major responsibilities when accomplishing their activities as purchasers and producers of goods and services.**

D. The Community dimension

In principle, in areas which do not fall within its exclusive competence, the Community shall take action only if and in so far as the objectives of the proposed action cannot, by reason of its effects or scale, be sufficiently achieved by the Member States. And where the Community does take action, that action should not go beyond what is necessary to achieve the objectives of the Treaty. The Treaty defines the responsibilities, objectives and rationale for Community action in the field of the environment. The objective of shared responsibility is set out in the Fifth Action Programme. This definition and objective are equally valid for measures that the Community may be required to take in the field of industrial competitiveness and protection of the environment. The ultimate goal of sustainable development can only be achieved by concerted action on the part of all the relevant actors working together in partnership.

- (i) **Member States should be able to continue to develop the requisite framework for the promotion of world-class positions relating to specific areas of the treatment of pollution through their ability to produce innovative solutions to problems of particular importance to them, providing that this does not result in distortion of competition or the free movement of goods.** For instance, Denmark in the field of water pollution, Germany in that of air pollution and the Netherlands in that of heavily polluted sites have been able to develop such positions. Subsequently, these solutions have formed the basis for wider adoption. Developing similar leading positions in other environmental fields would be a desirable outcome of national policies relating to the environment, which will continue to play an essential rôle.
- (ii) **In all cases, and in particular at European level, the creation of new bureaucratic procedures should be avoided.** The European Environment Agency is an example of an organisation that could function in a non-bureaucratic way to meet the common needs of policy makers, industry and consumers for objective, timely and accurate information concerning the environment. Useful information can be generated within Member States by the National Statistical Offices, using the existing structures of the European Statistical System. Action in the field of industrial standardisation and in the implementation of voluntary agreements essentially falls on industry's shoulders. Environmental audits can best be undertaken by specialised consultants and eco-labelling by the appropriate standardisation bodies.

IV. IMPLICATIONS FOR A COMMUNITY APPROACH

Community policy on the environment aims at a high level of protection taking into account the diversity of situations in the various regions of the Community. It is based 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. Environmental protection requirements must be integrated into the definition and implementation of other Community policies. In preparing its policy on the environment, the Community takes into account available scientific and technical data, environmental conditions in the various regions of the Community, the potential benefits and costs of action or lack of action and the economic and social development of the Community as a whole and the balanced development of its regions. Environmental objectives should be pursued by policy measures articulated in such a way as to allow for their effective and flexible implementation at the most appropriate level. **The development of a Community approach to achieving integration of the requirements for competitiveness and the environment requires the implementation of a strategy based on the coordinated recourse to a wide variety of instruments, within the fields of both environmental and industrial policy.** Wherever possible, this strategy should be built around solutions based on the competitive functioning of markets. This implies particular

emphasis on market-related instruments of environmental policy - of which there are a number -, in combination with those industrial policy instruments that can promote the positive adjustment of industry.

A. Community Environment Policy

- (i) **Subject to the constraints outlined in the previous section, there will still be a need for legislative measures at Community level to ensure that fundamental levels of environmental care and protection are met everywhere, to implement Community commitments to international agreements, and to set common product standards required for the preservation of the Internal Market. Increasingly, such legislation will need to be based around integrated pollution control in order to avoid converting one form of emission into another and to achieve more far-reaching improvements than are possible under individual regulatory requirements. Industry will benefit by avoiding piece-meal changes as a result of the unrelated introduction of differing forms of environmental regulatory requirements.**
- (ii) **Environmental regulatory requirements alone, nevertheless, don't provide the incentive to continue to improve environmental performance. Thus other means than legislation will be required in order to go beyond requirements proposed based on increasingly market-oriented approaches. A separate issue concerns the introduction of the required degree of flexibility in the implementation of regulatory requirements. Specification of the means by which a requirement should be met in addition to the level to be achieved slows down innovation and prevents the development of more cost effective solutions. For these reasons, in the environmental field, the Commission only proposes requirements to be achieved, but leaves the means by which such requirements should be met for industry to decide.**
- (iii) **Setting of environmental regulatory requirements which are cost effective in terms of industrial competitiveness should also prevail for Community action. Applying cost effectiveness, however, requires adequate information and evaluation procedures, including systematic cost-benefit analysis. Predictability which avoids frequent changes in environmental regulatory requirements to be made is another important principle to be applied with regard to competitiveness. The Commission understands the need to adopt suitable time frames for implementation in order to allow industry to match productive investment cycles and pollution control. Predictability also requires that a long-term vision of environmental policy is adopted for industry to meet the challenge of an increasingly ambitious environmental policy.**
- (iv) **As a complement rather than as a substitute to legislative action a number of other approaches are currently being used. Voluntary agreements can achieve similar results to legislation by implementing the desired objectives more speedily and with more flexibility provided they can be effectively enforced. However, effective agreements suffer from many of the same drawbacks as legislation. They can present in addition certain dangers with regard to anti-competitive behaviour by participating firms. Difficulties with policing arrangements and avoidance of the so-called "free rider" problem in which non-participants benefit from the efforts expended by participants will often require the introduction of supporting legislation.**
- (v) **Market or economic instruments have significant advantages in applying the polluter pays principle by internalising the costs for environmental protection into the production and consumption system. A number of such instruments exist, including civil liability on which the Commission intends to issue a Green Paper, in addition to taxes and incentives. They also encourage firms to go beyond meeting minimum regulatory requirements towards those that are economically**

justifiable, and work with the market rather than against it. As a result, economic instruments are set to play an increasingly important rôle in the overall approach. Nevertheless, in order to apply fiscal instruments effectively, the specific issues which the use of such policy instruments usually imply must be appropriately dealt with on a case by case basis, in particular: setting adequate rates in order to achieve the desired environmental objectives; specific and proportionate allocation of the tax burden to the various sources relevant for the environmental problem being dealt with; choice of parameters to which the tax must be referred; determining the most appropriate level of the production-consumption process at which the tax should be imposed, etc..

- (vi) **Another set of environmental policy instruments of a market based orientation concern environmental audits and eco-labelling.** The former concern operating performance and, in order to yield benefits for industrial competitiveness, they should be used as a management tool for more effective use of resources and not just as an instrument for verifying compliance with regulatory measures adopted. Eco-labelling when correctly conceived on the basis of a life-cycle approach and effectively applied should enable the future development of ecologically sound products to be accelerated and to become the basis of industry's positive adjustment to the requirements of sustainable development.

B. Internal Market and the Environment

The Internal Market can contribute to the solution of environmental problems through a more efficient use of existing capacity or by accelerating industrial investment. But such a contribution depends on a number of conditions:

- (i) **The first is that environmental solutions adopted by Member States do not threaten the Internal Market.** Article 100a of the Treaty sets out the basic conditions for ensuring coherence between the Internal Market and Environment Policy, including the requirement for the Commission when formulating its proposals to take as its base a high level of protection. In order to resolve potential conflicts, the Commission has made proposals, amongst others, for a two stage process for European legislation relating to products to ensure both a realistically high level for current protection and the realisation of improvements in the future through the setting of indicative objectives. Such an approach is required to avoid fragmentation of the market.
- (ii) **The second is that the current mechanism for completing the Internal Market in the field of industrial standards reflects a coordinated approach to more environment-related preoccupations by incorporating environmental requirements into standards.** Industrial standards and certification systems can indeed complement legislation on emissions and voluntary agreements by incorporating voluntary objectives of environmental policy into standards generally in use by industry. European standards setting procedures cover three distinct areas: product standards, standards for certification and standards integrated into management and production processes which demonstrate the conformity of output with designated levels of quality. This last form of standards (EN 29000 series) and the standards that control the technical organisations which verify the application of such standards (EN 45000) are of particular importance for the environment when they incorporate clean technologies in Total Quality Management.

C. International Trade and Cooperation and the Environment

An open and multilateral trading system offers opportunities to expand the growing international market for environmentally sound products and technologies. At the same time, international trade rules are not and should not be an obstacle for the right of countries to apply appropriate policies to ensure a high level of environmental protection. The Community fully supports the basic rule according to which a country should not unilaterally restrict imports on the basis of environmental damage which does not impact on a country's territory. On the basis of these considerations, the Community approach to the international aspects of environmental policies and competitiveness is based on the following elements:

- (i) **The Community has placed great attention to the development of a positive multilateral approach to dealing with global environmental problems through the negotiation of multilateral conventions and its commitment to implementing Agenda 21 of the Rio Conference.** The Community will continue to put particular emphasis in ensuring that trade and environment related issues become a major focus of GATT work.
- (ii) **In the absence of multilateral agreements for the protection of the global environment, or if there are serious concerns about the short term competitive impact of certain environmental requirements, a number of different measures can be envisaged.** These could include a growing recourse to those instruments of environment policy which allow full conformity with existing rules such as the introduction of appropriate economic instruments and recourse to voluntary labelling systems, environmental regulatory requirements which leave industry free to achieve such regulatory requirements through the most cost-effective means and greater reliance on European non-regulatory industrial standards.
- (iii) **Industrial and economic cooperation with third countries offers considerable opportunities to enhance the economic and environmental effectiveness of measures to protect the environment.** For developing countries and the countries of Eastern and Central Europe, such cooperation could include action to encourage technology transfers and the formation of joint ventures in the context of industrial cooperation, as well as positive incentives to promote the adoption of higher requirements of environmental protection and the sustainable management of natural resources.
- (iv) **The need for a vigorous handling of trade-related environment issues representing major challenges in terms of industrial competitiveness will demand a growing attention on the part of the Community.** A particular problem concerning international trade and the environment arises when major trading partners of the Community with similar industrial structures and levels of economic development adopt divergent paths in their approach to the environment to that of the Community. Here the possibilities for substantial trade flows to take advantage of lower levels of protection can be considered a realistic possibility. Therefore, in its treatment of the implications for international competitiveness of its approach to global environmental problems, the Commission has announced its willingness to address the issue through applying specific arrangements compatible with international obligations.

D. Competition Policy and the Environment

- (i) As is the case with the Internal Market, it will be important to maintain consistency between competition and environment policies. The objectives of competition and environment policies are complementary and not conflicting. However, certain forms or types of solutions that public authorities may choose to implement could give rise to conflict. By paying attention to the principle of proportionality, the full definition of property rights over environmental resources, to the application of the polluter pays principle and the implementation of measures based on market mechanisms, the scope for potential conflicts can be minimised.
- (ii) State aids for environmental protection fall under the scope of article 92.1 of the Treaty. The present framework for state aids for the environment expires at the end of 1992. Future public policy measures should be in accordance with the new framework for state aids currently under discussion. According to the polluter pays principle, gradual tightening of environmental regulatory requirements should, as much as possible, be achieved without State Aids. However, to facilitate and speed adjustment to regulatory requirements or help with improving on them, state aids may be allowed under certain conditions to be determined by the new framework.
- (iii) Particular attention should be paid to the resolution of potential problems that might arise with respect to Articles 85 and 86 of the Treaty. These often result from the behaviour of private operators, contrary to those Articles, but can also be the result of State measures promoting private conduct contrary to competition rules for the resolution of environmental problems. In both cases, it is necessary to bear in mind that there is no absolute discretion for the consideration of those cases and that environmental benefits will have to be considered in the context of Article 85(3) only.

E. Technology and the Environment

- (i) Existing technologies will continue to provide the main basis both for achieving environmental goals and improving competitiveness over the short to medium term. They should therefore lie at the centre of an integrated strategy for the adoption of clean technologies. The Community nevertheless suffers from deficiencies in the field of the diffusion of technology, because current efforts are inadequate for the task, insufficiently focused and spread out amongst competing programmes.
- (ii) The Fourth Framework Programme provides the basis for integrating Community requirements for both industrial competitiveness and environmental protection in the field of R & D. It lays particular emphasis on the incorporation of environmental research into general programmes of interest to industry and on the development of the required scientific base for setting regulatory requirements.

F. Human Resources

- (i) There is a great need for increasing environmental literacy in the workforce. Education and vocational training policies will therefore need to promote a greater awareness by workers at all levels concerning environmental issues.
- (ii) Increasingly, the management of human resources must reply to the following challenges, which are also very relevant for the successful introduction of clean technologies: adaptability, decentralisation, the breaking down of traditional functional divisions within the firm and the reintegration of tasks at shopfloor level, and development of team work to better integrate functions and tasks. New training techniques and the development of new profiles to work with environmental

technologies are being developed in the framework of the FORCE and EUROTECNET programmes, giving special emphasis to SMEs needs especially in the waste recycling sector.

- (iii) **Early adoption of the proposed Objective Four for Structural Fund financing for skill development throughout the Community will be required if the Community is to play a rôle in addressing the issue of skill requirements for clean technology.**
- (iv) Special emphasis will need to be given to first level qualifications where there is at present a severe shortage of diplomas. The Community's programmes ERASMUS and PETRA are powerful means of disseminating know-how in this area and fostering collaboration on new qualifications. Higher education institutes also have a major rôle to play in the provision of benefits of their past experience to industry in the field of the environment and in the generation of new knowledge.

G. Small and medium sized enterprises

Small and medium sized enterprises must be given a more active rôle in environment policy.

- (i) **First, it is not in the interests of SMEs to cut themselves off from developing markets by being unable to meet environmental requirements. In particular, industrial clients are increasingly demanding that their suppliers and sub-contractors also meet equally high levels of environmental performance in order to demonstrate their own environmental commitment.**
- (ii) **At the same time, it must be recognised that SMEs face particular problems with regard to the implementation of environmental measures which must be overcome if they are to play a proper part in achieving environmental objectives. The installation of specific pollution control equipment and other compliance costs of meeting environmental regulations will often prove more greater related to turnover for SMEs, and finding out about and implementing measures in a wide variety of different fields at different times is a challenging task for SMEs with their severe limitations on the availability of managerial time. Training of key personnel in pollution control also often poses problems since replacements are not readily available. Finally, they are often faced in acute form with problems of financing investments since their access to capital markets is restricted compared with and interest rates charged higher than those for large firms.**
- (iii) **In order to reply to the specific requirements of SMEs, an innovative approach will be required. First, it is indispensable that an integrated approach be adopted to pollution control so that SMEs can deal with several problems at the same time. Second, specially tailored solutions for human resource development should be introduced. In order to address the problem of releasing key staff for training, greater use will have to be made of "on the job" and distance learning techniques. Third, ensuring that SMEs have access to properly qualified environmental technicians able to propose practical, low cost solutions in the field of clean technologies will also be of great importance. This includes ensuring that small steps which bring immediate financial and environmental gains - such as the proper maintenance and adjustment of machinery - are taken first in order to help smooth the path to the introduction of sounder environmental performance by SMEs. Fourth, environmental audits may need to be adapted to take account for the greater simplification of SME production systems. Finally, encouraging large firms to take an active interest in providing their SME suppliers with information and techniques**

for replying to environmental considerations through programmes for sub-contractors should also be attempted. Pilot projects could play a useful rôle in demonstrating the advantages of this approach.

H. Social and Economic Cohesion

The importance of the environment to the achievement of economic cohesion in the case of the less developed of the Community's Member States and regions and those undergoing reconversion cannot be overstated. Environmental factors constitute both assets in the sense of basic natural resources and constraints/liabilities in the form of deficiencies (pollution, waste, degradation).

- (i) **The future economic progress and the competitiveness of these regions of the Community will be undermined if their industry is not able to reap the benefits in terms of efficiency that environmental protection can bring or if they find themselves cut off from markets elsewhere in the Community because they are not able to meet the required performance.**
- (ii) Community policies for economic and social cohesion allow in a privileged way for the coordinated recourse to Structural Funds for environmental needs related to economic development in less developed regions and regions undergoing reconversion of the Community. Moreover, article 130b of the Treaty requires that Community environmental policy has to contribute to the strengthening of economic and social cohesion. The proposed Cohesion Fund will further add to the possibilities for Community financing in Member States with a per capita GDP of less than 90% of the Community average.

I. Consumer Policy

An important area for future action concerns consumer information and awareness in the field of the environment. Such action is essential if market based instruments, in particular eco-labelling, are to be effective. Since the level of consumer awareness of environmental issues varies within the Community, particularly with regard to which environmental issues are most important, how consumers can assist in resolving environmental problems and awareness of the existence and usefulness of eco-labelling, coordinated action will be required.

V. CONCLUSIONS

Community action in the field of the interface between competitiveness and the environment should be based around three axes:

- **a qualitative improvement in the degree of integration of environment and industrial policies in order to derive positive benefits for both policies;**
- **constructive dialogue with industry to improve the effectiveness of environment policy;**
- **the maintenance of the integrity of the Internal Market whilst promoting protection of the environment at a high level.**

The promotion of industrial competitiveness and an ever higher level of environmental protection require the passage, wherever possible, from curative solutions based around the treatment of environmental nuisances to preventive ones based around the adoption of clean technologies and the development of markets for environmentally sound products. In order to encourage this process, the Community approach should be based around a coordinated recourse to the specific instruments of Community environment policy and the general

instruments of industrial policy, relying, wherever possible, on market-oriented solutions. It is through the proper integration of environmental considerations into existing Community policies that the most effective action can be taken. In order to ensure that this integration takes place in a manner that is supportive of industrial competitiveness, dialogue with industry throughout the policy making process will be required.

Notwithstanding the comprehensive nature of the approach developed in this Communication, a number of issues warrant further exploration. These include the strategic implications of environmental industries, the situation with regard to industry and the environment amongst the Community's major competitors, the potential markets for pollution control in Eastern Europe, the relationship between financial markets and firms' environmental performance, the relationship between fiscal structures and environmental requirements and appropriate valuation and alternative measurements of GDP taking into consideration the environmental dimension.

A. Environment Policy

In accordance with the Fifth Action Programme for the environment, the Commission will have recourse to a wide range of environmental policy instruments when formulating proposals in order to achieve the most effective results. Within an increasingly market-oriented approach to environment policy, particular attention will be paid to the development of environmental audits and eco-labelling as a means of accelerating the adoption respectively of clean technologies and the development of markets for environmentally sound products.

When developing proposals relating to environmental protection and industrial competitiveness, the Commission will ensure that the following general principles are applied:

- predictability, to allow industry to plan ahead. Although environmental regulatory requirements can not be static, it is important that industry be aware sufficiently in advance of the targets that will need to be met. A long term approach is also required to enable industry to develop preventive solutions based around innovatory technology, and to match development, investment and productive cycles with the requirement for ever more demanding levels of environmental protection;
- flexibility, to ensure that implementation can follow the most efficient path.
- integration, in order to ensure that the most effective policy mix is being applied for any particular issue. Particular regard will be paid to integrated pollution control in the legislative process and the recourse to best available technology.
- cost effectiveness, in order to ensure that measures incorporate the least cost solution for any particular environmental problem and that, subject to basic requirements relating to safety and health, the optimal combination of level of protection and additional costs is arrived at.

In order to arrive at cost effective solutions, the Commission will pay particular attention to the following elements, which require further development:

- **an adequate information base for decision making.** While general data on the state of the environment in the Community is available, evaluation of the potential impacts of policy on industry requires more linkage between detailed environmental data and economic data. Such linkages should operate both at the macroeconomic and microeconomic level, and will require that the information output of the European Environment Agency is fully harmonized with the economic and environmental statistics produced via the European Statistical System. The existing statistical system, in the areas of economic and industrial statistics, should be

encouraged to take account of the environmental dimension and to adapt its programme to this demand. Wherever possible, decisions should be based on ecological balance sheets. An urgent requirement for such sheets is an overall environmental index based on valuing of environmental damages to allow comparisons of different environmental effects. To evaluate more accurately the growth potential of environmental industries, it will be necessary to improve statistics on the markets for environmental protection and on industry's investment in clean technologies. The Commission insists on the importance of an early decision on the site of the European Environment Agency to complete the necessary organisational framework for the harmonization of environmental and economic data.

- **the improvement of methodologies for policy evaluation.** These methodologies will need to integrate both qualitative and quantitative aspects both with regard to the environmental improvements expected from proposals and with regard to the effect on industry. It will be particularly important for methodologies to deal effectively with the full range of potential benefits as well as the probable costs of implementation;

- **the implementation of effective procedures for policy evaluation.** Adequate information and proper methodologies should be integrated into effective procedures in order to take into account different requirements at different stages of the policy development process. These should include early evaluation of a mainly qualitative nature of the broad industry impacts of the main policy areas in order to concentrate on those with the most significant implications, an evaluation of the effects on international competitiveness of different options for dealing with a problem at an intermediary stage, and the establishment of levels of environmental performance to be attained by proposals before adoption in the light of the analysis of different performance/cost profiles. It will be imperative to integrate dialogue with industry in an adequate way into these procedures.

B. Internal Market

In order to maintain the integrity of the internal market whilst promoting protection of the environment at a high level, the Community should:

- strengthen the standstill clause under the notification procedure to avoid the creation of new trade barriers by national rules;
- favour the two stage process for European legislation proposed by the Commission whereby the Commission would set regulatory requirements at a high level based on best available existing technology to be applied by all Member States as quickly as possible. In a second stage, the Council would set a target, corresponding to the highest level of protection which can be reasonably envisaged to be obtainable in the future in the light of the latest scientific and technical findings;
- ensure that the two-stage approach provides the Community with environmental regulatory requirements permitting leadership compared with other countries, provide all Community countries with increasingly high regulatory requirements, create the conditions for long-term perspectives and predictability needed by European industry, avoid the proliferation of exceptions and maintain the unity of the single European market;
- further develop the European standards setting and certification procedures in order to permit the speedy introduction of eco-labelling through more work over a number of years to integrate environmental protection in the setting of industrial standards. Particular attention will also be placed on the evaluation of future needs for the introduction of general Community standards relating to quality control (EN29000)

in firms and associated certification procedures (EN45000) as well as addressing the particular problems that quality assurance poses for many SMEs;

- pay particular attention in the field of trans-European networks to the development of proposals which promote economic integration and environmental protection such as the combined road-rail facilities.

C. International Trade and Cooperation Policies

In order to ensure compatibility between an open trade policy and the protection of the environment the Community will:

- take the appropriate steps to promote the implementation of Agenda 21 of the Rio Conference and will press for a full consideration in the GATT of trade and the environment related issues. In different international fora, action will be based on the need to actively promote multilateral cooperation to address global environmental problems and to avoid unilateral trade restrictions of an extrajurisdictional nature.
- further develop industrial and economic cooperation through actions to encourage the transfer of technology and the formation of joint ventures and reflect on other positive incentives to encourage developing and Eastern and Central European countries to adopt higher requirements of environmental protection and the sustainable management of natural resources.
- apply specific arrangements compatible with international obligations in those cases in which the effect of environmental measures on competitiveness depends on whether or not industry can pass on to the consumer costs which are not ultimately compensated for by either efficiency savings or other intangible benefits. In the case of the CO₂/Energy tax proposal, the Commission has proposed an element of conditionality as well as the possibility for exemptions in exchange for efforts relating to the objectives of improving energy efficiency or reducing CO₂ emissions.

D. Competition Policy

In order to ensure consistency between environment and competition policies, the Commission will:

- adopt a new framework for state aids for the environment. This new framework will develop paths for the application of Treaty provisions on state aids based on the "polluter pays" principle and in line with the sustainable development strategy. This new framework will facilitate the process of adjustment to environmental goals and will support those firms making an extra effort to attain levels of environmental protection above the minimum legal requirements;
- ensure that public measures in the field of the environment and the behaviour of private operators comply with the Community's competition policy, in particular with regard to practices under Articles 85 and 86. Restrictions to competition due to conduct falling under Article 85(1) can be allowed only if the conditions required by Article 85(3) of the Treaty are fulfilled.

E. Technology Policy

In order to apply and further develop preventive solutions to the problems of the environment the Commission will:

- place particular emphasis on remedying deficiencies in the field of the diffusion of existing clean technologies to industry, through better coordination of its programmes, more focus on the specific needs of small and medium sized enterprises, monitoring developments in the field of clean technologies; ensuring the supply of suitably qualified personnel in the field of the environment and ensuring that adequate infrastructure for technology transfer within the Community is put in place.
- use the fourth framework programme for R & D to incorporate suitable programmes and projects for the development of environmentally sound solutions to industrial problems within the main areas of research applicable to industry. Especial regard will be given to the environmental aspects of generic technologies applicable across industry in the fields of information technologies, new materials, bio-technology and advanced manufacturing systems, and to the development of the scientific basis required for the second stage of the proposed two-stage approach to environmental legislation. The Commission will develop specific criteria for evaluating programmes and projects to ensure that requirements in the field of clean technologies are met.

F. Human Resources

In order to ensure the speedy take-up of clean technologies, particular emphasis will be placed on the acquisition of necessary skills by the Community labour force through:

- developing suitable qualifications for and ensuring that training schemes are implemented with regard to the installation, maintenance and operation of manufacturing systems incorporating clean technology and organisational techniques. When formulating programmes, special attention will be given to the specific training requirements of SMEs. Early adoption of the proposed Objective Four of the European Social Fund will be required in order to implement such action.
- encouraging closer cooperation between Institutes of higher education and enterprises in the field of clean technologies through existing programmes such as COMETT II.

G. Small and Medium Sized Enterprises

In order to ensure that SMEs are able to play their full part in the protection of the environment, specific action within the field of policy for small and medium sized enterprises will be required with regard to:

- identifying actual and potential problems faced by SMES related to the introduction of environmentally sound procedures and the implementation of environmental legislation and setting out possible solutions to these problems;
- the demonstration of best practice with regard to specifically SME oriented clean technologies to SMEs throughout the Community;
- identify pilot projects to establish requirements for and transfer of knowledge about environmental issues to SMEs by large firms;

- the consideration of training and information programmes and carrying out studies as to how SMEs may best be made aware and helped to prepare to meet their new environmental responsibilities.

H. Social and Economic Cohesion

The Community's Structural Funds will continue and reinforce their action to enable the less developed regions and regions undergoing reconversion of the Community both to exploit fully possibilities related to completion of the internal market and improve their competitiveness when achieving a high level of protection of the environment. The creation of the Cohesion Fund will allow to considerably strengthen this effort with regard to projects concerning the environment. In particular, this will allow the Community to intervene more through co-financing national regimes and beyond those of an essentially exploratory nature currently financed under the LIFE programme in the following areas:

- alleviation of environmental protection costs in application of the rules applying to the Structural Funds and in the framework of dispositions adopted on the Cohesion Fund;
- improved, sustainable, mobility incorporating infrastructure, and traffic management;
- infrastructure for the training of consultants in the field of environmental technologies as well as further improvements in the basic training provision for managers, specialists and operatives within the manufacturing process;
- establishment of suitable networks and institutions for the diffusion of clean technologies;
- technical and financial assistance for SMEs geared towards improvement of both their environmental and industrial performance;

I. Consumer Policy

In order to ensure the transparency of markets and sufficient public awareness of new environment policy instruments such as eco-labelling, specific measures will be required in the field of consumer information. Such measures to include:

- adequate market research on differences in perception with regard to environmental issues and the means to resolve them between Member States, social and professional groups and different age categories;
- implementation of a series of specific consumer awareness campaigns to move target audiences quickly through the phases from general awareness of environmental issues to specific causes and the means of their resolution finishing with comprehensive information with regard to Community eco-labelling;
- ensuring that consumers are fully consulted with regard to proposed measures;
- provision of adequate information concerning all the characteristics of marketed products to enable consumers to make rational purchasing decisions.

J. Dialogue with Industry

The Commission has identified the need for an effective dialogue with industry in addition to that with the social partners and other interested parties in its Fifth Action Programme on the Environment. In order to reply to that need the objectives, specific requirements for and characteristics of the dialogue will need to be defined. **The quality of dialogue will to great extent depend on proper focus and on its timeliness.** When developing its approach to dialogue with industry, the Commission will examine all the different aspects with a view to developing a structured approach.

The essential message of this Communication is that what is good for the environment can also be good for business. There is competitive advantage to be gained by EC industry if the environmental dimension is integrated in a progressive, responsible and constructive manner. Over time, this will be derived from improved internal performance and increased competition, the development of a sound, progressive, technological base, more sustainably managed economic activity leading to positive trade effects.