



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 18.11.1997
COM(97) 592 final

COMMUNICATION FROM THE COMMISSION
on environment and employment
(Building a sustainable Europe)

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1. Introduction	3
1.1. The resources problem	3
1.2. The political mandate	4
2. The links between environment and employment	4
2.1. Economic growth and sustainable development	4
2.2. Towards a job-intensive and sustainable Europe	5
2.3. Managing the transition	8
3. Supportive policies for jobs and environment	9
3.1. Urgent tasks	9
3.1.1. Manufacturing industry	9
3.1.2. Transportation	9
3.1.3. Energy generation	10
3.1.4. Agricultural practices	10
3.1.5. Consumption patterns and households	10
3.2. Territorial aspects	11
3.2.1. Urban development	11
3.2.2. Rural development	11
3.3. Supportive policies	12
3.3.1. Implement the environmental <i>acquis</i>	12
3.3.2. Make taxation more employment-environmentally friendly	13
3.3.3. Technology assessment and development	13
3.3.4. Dissemination of information	14
3.3.5. Domestic and external markets	15
3.4. Reviewing labour market policies	15
3.5. Financial support	16
3.5.1. Community expenditure	16
3.5.2. The European Investment Bank	17
3.5.3. User charges	17
4. The way forward- Key actions	18
4.1. Environmental and social benchmarking	18
4.2. Technology assessment and development	18
4.3. Building upon Agenda 2000	18
4.4. Taxation and prices	19
4.5. Environmental training and education	19
Annexes: 1. Eco-businesses, 2. Examples of good business practice, 3. Member States actions	

Executive Summary

The purpose of this Communication. The Amsterdam Treaty includes a new objective on employment and a stronger commitment on the environment. Both employment and environment are matters of common concern, and the Treaty requires these two areas to be integrated in all other policies. In its proposal for Guidelines for Member States' employment policies the Commission is advising Member States to harness new technology and innovation for the creation and development of businesses and the promotion of (environmentally) sustainable production and consumption patterns.

This communication, drawing on these political mandates, seeks to outline a strategy through which environment and employment policies can be made mutually beneficial.

The resources problem. The EU economies are still characterised by "underuse" of labour resources and, at the same time, "overuse" of environmental resources. The EU employment rate is low while the unemployment rate is high, at an average of over 10%. On a separate front, the industrialised world is responsible for a significant part of global environmental problems. The main problems arise in a number of specific sectors of the economy (industry, transport, energy, agriculture), and in the pattern of consumption. As a whole, our patterns of production and consumption are far from sustainable.

The links between employment and environment. The way we presently produce goods and services is still based on investment and price relations of the past, when environmental concerns had much less importance. Analogously, the way we provide and finance public goods and the welfare state stems from a period in which a decline in the activity ratio, combined with an increase in unemployment, was less problematic. Today, Member States are called upon to accelerate the shift from old, polluting technologies and end-of-the-pipe measures to new clean technologies. At the same time, they are faced with the need to reconsider ways for financing the provision of public goods and the welfare state.

A shift in technology can best be done when old capital is replaced with new investment, integrating high environment standards from the beginning, supported by a combination of economic incentives and disincentives. This brings dual benefit: investment creates jobs and business opportunities and new technology leads to a better environment. The faster such new technologies and methods are developed and introduced, the faster Europe will get a sustainable economy and more jobs. Environmental policy, if well designed, should be seen as a strong driving force for investment and the building of a sustainable Europe, creating both growth and employment.

The way forward- Key actions. Employment and environment policies can be made mutually reinforcing. The rate of progress will among other things, depend on the speed with which new technologies are introduced into the capital stock. The Commission will support and stimulate initiatives to develop Member States long term investment strategies. The Commission proposes the following key actions:

1. Benchmarking of employment and environmental achievements of companies and economic sectors, so as to encourage public authorities and private and public enterprises in their reorientation towards cleaner and eco-efficient production and consumption.
2. Promoting technology assessment and development, including the new emerging sectors and technologies, and broadening the scope of existing Best Available Technologies screening exercises so as to include employment effects as well as a detailed assessment of energy and resource use.
3. Building upon Agenda 2000, continue and increase the efforts to ensure that Community Funds and Instruments support in an integrated way employment and sustainable development. A focus on urban renovation and rural development looks promising.
4. Continue the gradual restructuring of tax systems by reducing non-wage labour costs on the one hand and on the other, by incorporating environmental and resource costs into market prices of goods and services.
5. Promoting education and training to support the implementation of new environmentally friendly technologies and working practices.

1. Introduction

1.1. *The resources problem*

Our EU economies are not developing in a sustainable way. They are still characterised by “underuse” of labour resources and “overuse” of environmental resources.

The “underuse” of labour resources can be described in the following way. For two decades, the EU has had rates of economic growth of the order of 2.5% a year, including a productivity growth of 2 per cent. The number of jobs has grown but so has the number of people looking for a job. This has resulted in a decline in the employment rate to around 60.4% of the working age population and in an increase in unemployment, to over 10% of the workforce on average in the EU. Long term unemployment represents half of the unemployed or 5% of the whole workforce. This problem of “underuse” of labour resources results mainly from a lack of jobs (too few entrepreneurs taking too few initiatives and hiring too few people), a lack of supportive policies and from a skills gap (too many people have old skills or no skills at all) when enterprises need people with new, adapted skills. Basically, the unemployment problem in Europe is, to a considerable extent, a consequence of a slow down of job creating long term investment.

As regards the “overuse” of natural resources the problem has been analysed by the OECD, the 5th Environmental Action Programme and its Review, as well as by assessments undertaken by the European Environment Agency. EU Member States, as part of the industrialised world, are responsible for a significant part of global environmental problems. The main problems arise in a number of specific sectors of the economy and in the pattern of consumption, with serious impact on the quality of water, soil and air, which represent the basic elements necessary for human life.

- While progress has been made, manufacturing industry continues to be responsible for a considerable part of environmental pollution in particular through the use of energy and raw materials and the generation of hazardous waste.
- In the transport sector, the overall negative environmental trend has continued due to traffic growth and in spite of technological improvements in engines and fuels.
- In the energy sector, the fossil fuel cycle has significant negative environmental impact, mainly on the atmosphere.
- In overall terms, present agricultural practices have negative impacts on water levels and quality, and on soil erosion. Although the CAP reform of 1992 had some positive effect, further efforts are necessary.
- Consumers, including households, represent 70% of final demand for goods and services and play a fundamental role both through their influence on industry and as end users.

1.2. The political mandate

The European Council in Amsterdam paved the way for significant progress in the employment and environmental dimension of the European Union. The European Council took several decisions of great importance for these policies: the introduction of sustainable development as a Union's objective, the introduction of a new Employment Title in the Treaty, the resolution on Growth and Employment, and the Presidency conclusions on "Employment, Competitiveness and Growth".

The newly signed Treaty lays down two new objectives for the European Union: "a balanced and sustainable development" and "a high level of employment". Besides the present requirement to integrate environmental considerations into the development of other policies, there is now a new explicit obligation to do so with employment aspects also.

The European Council Resolution of June 1997 on Growth and Employment placed employment at the core of the economic co-ordination process with immediate effect, in advance of formal ratification of the Treaty. Based on this mandate from the Amsterdam Summit the Commission has proposed Guidelines for Member States employment policies based on four lines of action: entrepreneurship, employability, adaptability and equal opportunities. In this context the Commission has advised Member States to harness new technology and innovation for the creation and development of enterprises and the promotion of environmentally sustainable production and consumption patterns.

2. The links between environment and employment

A comprehensive analysis of the links between environment and employment has been undertaken by the OECD. Moreover at the Conference on Environment and Employment, organised jointly by the Commission and the European Parliament in May 1997, all stakeholders were brought together to exchange views on policy experiences. The following conclusions emerge from these and other analyses:

2.1. Economic growth and sustainable development

A basic distinction is to be made between economic growth and development. While growth generally refers to increases in the level and scale of economic activities, development also implies a qualitative improvement and unfolding of further potential. Environmental and social considerations are obviously at the heart of any such improvement.

The most common definition of sustainable development is: development which meets the needs of the present generation without compromising the ability of future generations to meet their own needs¹. Critical in this concept is the notion of natural capital: (1) the natural environment is a source of energy and materials which are

¹ As used in the 5th Community Action Programme for the Environment, JO C 138 of 17.5.93 and in "Towards Sustainability", the Programme's Progress Report, 1997.

transformed into goods and services to meet human needs; (2) it is a sink for the wastes and emissions generated by producers and consumers; (3) the environment also provides a number of basic elements necessary for human life and the economy, such as air, soil and water.

Empirical evidence suggest that there is no simple linear relationship between economic growth and the use of this natural capital. While it is true that the emissions of some pollutants broadly grow in line with economic activity, there are many types of pressure on the environment that actually decrease as economies prosper.² Thanks to economic growth and accompanying policies, the Community has succeeded in curbing several forms of environmental pollution in the field of air, water and waste.

However, one of the major remaining challenges for the coming decades concerns exceedances of the carrying capacity of the planet and the continued intensive use of non-renewable natural resources. The move towards a sustainable form of development thus demands increases in the efficiency of primary energy and raw material use, maximum rates of recycling products and waste, designing products for their durability, as well as a more intensive reliance on renewable energies and raw materials. The Commission will shortly publish a White Paper on a Community Strategy and Action Plan in respect of renewable sources of energy.

2.2. Towards a job-intensive and sustainable Europe

The availability of sufficient jobs of high quality, for the present as well as for the future generations, is a critical aspect impinging very much upon the quality of life of the citizen. The challenge of a sustainable Europe therefore consists of achieving a competitive economy combined with less environmental pollution, improved resource efficiency of energy and raw materials and higher employment rates.

Before translating this challenge into policies, an analysis is required of the many different relationships between policies related to those three elements. A comprehensive analysis has been undertaken by the OECD³. It concluded that while there will be various job gains and losses in different regions and sectors, the net impact on the over-all number of jobs will be positive. The OECD report also concluded that it is desirable to co-ordinate environmental and employment policies.

The main factors which OECD identified as critical for a positive environment and employment outcome are set out in the box which follows:

² Communication on "Economic Growth and the Environment", COM(94)465.

³ OECD, "Environmental Policies and Employment", 1997, p.10.

Factors determining net employment effects of environmental policies

Factor 1: The level and sustainability of environmental expenditure —Green jobs will be sustained only if environmental expenditure continue over time.

Factor 2: The economic context in which the environmental measure is implemented —The employment impact of environmental measures is affected by the business cycle. When the economy operates at full capacity, the impact will be largely a shift of employment rather than an absolute increase. On the other hand, when the economy is depressed, there is normally direct and fairly instantaneous change in the number of people employed.

Factor 3: The level and the sectoral, regional and structural patterns of unemployment —If environmental expenditure cannot be targeted well, it may be of little value for reducing unemployment in certain depressed regions, industries or occupational groups and skills.

Factor 4: The availability of human resources —The employment effect also depends on the availability of adequately prepared and skilled human resources at all levels (management, operation, etc.)

Factor 5: The nature of environmental policy strategies to be pursued —Pollution control, and obviously "end-of-pipe" strategies have had and will have different effects on the level and composition of employment than pollution prevention. The same applies to a switch from throughput economy to an economy focusing on reuse and recycling.

Factor 6: The pattern of environmental spending —Investment expenditure induced by environmental regulation is likely to have different employment effects than an increase of operational costs or pollution charges.

Factor 7: The type of environmental investment or technology —Investment in control or "add-on" technologies will have different employment impacts than investment in "clean technologies".

Factor 8: The means of financing and the impact of borrowing and taxes —The employment effect is likely to be different if all the financing is from private sources as compared to a situation in which the funds come from governmental borrowing or taxes.

Factor 9: The significance of import leakage —If a substantial proportion of the environmental expenditure spills over into buying imported equipment, employment will be generated in the foreign, not in the home economy.

Factor 10: The incidence of the environmental measures —It also makes a difference to the effects on competitiveness and employment of environmental measures whether they are introduced domestically or internationally.

Factor 11: The competitive situation of the target industries —The net employment effect of environmental policies also depend heavily on the competitiveness of the target industries.

The Commission would highlight the following aspects:

- The policy instruments:

Because of the flexibility they offer to economic operators, economic instruments in environmental policy are generally less costly than detailed technical regulation. They also provide a permanent incentive to reduce pollution, thus giving incentives for the production and application of innovative less-polluting technologies.

- The nature of the environmental investment:

Until now, much of manufacturing industry's efforts to meet environmental requirements have focused on implementing end-of-pipe solutions such as wastewater treatment, dust filters, solid waste treatment, etc. End-of-pipe solutions, however, do not usually result in efficiency or productivity gains, therefore representing a pure cost to the firm. Clean technology, on the other hand, improves process efficiency. Although initial investment costs are typically higher than those for end-of-pipe solutions, there is often a short pay back period. Furthermore, clean technology usually reduces polluting emissions to all media instead of shunting them from one to

the other. Investments in clean technology will help maintain a competitive advantage, thus creating and maintaining employment.

c The competitiveness of the businesses involved:

The new demands for pollution control equipment, clean technology and environmentally-friendly products will not generate new jobs within the Community if they are produced abroad and imported. Moreover, the net employment effect will also depend on the competitive position of the companies involved. As outlined in the Report on the Competitiveness of European Industry, there is little empirical evidence, at the aggregate level, that existing environmental policies have had significant negative or positive competitive impacts, but in specific sectors these can be important.⁴

There are also a number of well-documented case studies of sectors and firms which have been able to turn the imposition of strict standards into first-mover advantages through innovation, efficiency and productivity gains.⁵ The innovations resulted in cost reductions, yield improvements, market share increases or the development of new markets and products.⁶ The companies involved claim that, in particular in a longer time perspective, these changes were more often than not keeping companies in business.⁷ As a consequence, it has to be concluded that businesses that systematically disregard their environment and resource questions tend to put themselves into a more vulnerable market position.

Environment related jobs in Europe currently amount to at least 3.5 million.⁸ About 2 million of these jobs are related to activities in the area of clean technologies, renewable energy, waste recycling, nature and landscape protection, and ecological renovation of urban areas. In the so called "eco-businesses" there are about 1.5 million people at work.⁹ These companies produce technologies, goods and services "to measure, prevent, limit or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems".¹⁰

There is a large potential for domestic employment creation in this sector. By way of example, according to one study, a half million jobs could be created in the European Union in the field of renewable energies as a result of an intensified investment programme of up to 180 billion ECU by the year 2020.¹¹ Demand is rapidly expanding in markets abroad. While the European market for pollution control services and equipment represented in 1994 some 90 billion ECUs, at world level it is currently estimated to be worth around 280 billion US\$ and is expected to grow to

⁴ The competitiveness of European Industry, European Commission, 1997, p. 101.

⁵ See for some examples Boxes 1, 2 and 3 in Annex 2.

⁶ The competitiveness of European Industry, European Commission, 1997, p. 103.

⁷ "Attitude and strategy of business regarding protection of the environment" by Eurostrategy for DG III, 1995.

⁸ Eurostat for the EU Employment Report 1997.

⁹ "An estimate of eco-industries in the EU", Ecotec-Eurostat- DG XI, 1997. See also Annex I.

¹⁰ The definition of eco-business has been agreed on in the OECD, see OCDE/GD(96)117.

¹¹ "TERES II - The European Renewable Energy Study - The Prospects for Renewable Energy in 30 European Countries from 1995-2020", ESD, for Altener.

640 billion US\$ in 2010, giving an annual growth rate of some 8%.¹² In addition to pollution control, the UNEP estimates that the market for energy efficient equipment amounts to some 200 billion US\$ while sales of new and renovated "cleaner" manufacturing processes have not yet been quantified.¹³

2.3. Managing the transition

Environmental policies are compatible with higher employment as long as they are consistent and take advantage of the co-ordination mechanisms upon which a modern market economy is based. Indeed, if it is envisaged to tackle the twin problems of "underuse of labour" and "overuse of natural resources", the most promising strategy would be to adjust relative prices accordingly.

Such a strategy would have to be carefully designed and implemented. The following considerations are essential for a smooth managing of the transition towards a sustainable Europe:

- a gradual implementation facilitates the necessary adjustments in the structure of the economy
- a significant degree of international co-ordination eases the safeguarding of the international competitiveness of vulnerable industrial sectors
- environmental expenditure needs to be well targeted regionally as well as sectorally.

The timing of policy measures within the business cycle may also have a certain impact. When the economy operates at full capacity, the impact will be largely a shift of employment rather than an absolute increase. On the other hand, when the economy is depressed, there is normally a direct and fairly rapid positive change in the number of people employed. This is particularly the case when labour markets function smoothly and skilled human resources are available at all levels.

In view of keeping distributional impacts on certain economic sectors and regions manageable, pragmatic solutions are to be found to facilitate the transition towards sustainable production patterns for all economic operators involved. The extent to which funds raised through e.g. higher energy taxes are entirely used to reduce labour costs or for other forms of incentive measures, will have to be judged on a case by case basis.

Policies incorporating those constraints are likely to set the framework for making domestic, labour-intensive and sustainable investment more attractive. They should be supported by a stability-oriented macro-economic policy as well as by the phasing out of subsidies to unsustainable technologies and activities.

¹² "Global Environmental Markets- An update", for JEMU (Joint Environmental Markets Unit) and DTI (Department of Trade and Industry), by Ecotec, 1997.

¹³ "Private Sector Investment Flows and the Environment: Defining the Opportunities and Issues", UNEP Round-Table Meeting on "Investing in the Environment", October 1995

3. Supportive policies for jobs and environment

During the last 25 years, after the UN Conference on the Human Environment in 1972, that served as a political turning point, all Member States have developed environmental policies. However, it is a matter of fact that the pace in the shift of technology is too slow, that there is too little investment in clean technologies and systems. It is time for Europe to mobilise all policies, on local, national and European levels, in a well co-ordinated and sustained action for jobs and environment.

3.1. Urgent tasks

Building a sustainable Europe will require important modifications in the following major sectors: industry, transport, energy, agriculture and consumption.

3.1.1. Manufacturing industry

Building a sustainable Europe will offer new business opportunities for manufacturing and related service industries and some sectors can be expected to grow strongly.¹⁴ As a consequence of a new organisation of work and of enterprises in the form of subcontracting, the employment effect will be seen mainly in SMEs, especially in the service sector. The use of information technologies has changed and will continue to change production, consumption and employment patterns with a beneficial impact on the environment (e.g. teleshopping and teleworking). Enterprises will also face a market of much more environmentally concerned consumers and investment in more sustainable products and production systems will be good for business.

3.1.2. Transportation

The uncompleted internal market in rail and the existing barriers to intermodal transport have led to transport inefficiencies. Liberalisation and revitalisation of the railway systems in Europe has the highest priority in tackling this, and could remove the growing pressure on roads and diminish the use of motor fuels. Also the use of intelligent transport support systems may contribute to this effect. A further substantial improvement of energy efficiency in road traffic, especially passenger transport, must be achieved in the next few years together with the preparation of a new concept for the car of the future. The success of these initiatives will be crucial for employment both in the European car industry and for the survival of railways. Key elements of such a forward looking environmental strategy for the industries concerned are likely to be fiscal incentives, road pricing, fuel economy labelling¹⁵, and improved fuel quality.

¹⁴ See in particular Boxes 1 and 2 in Annex 2.

¹⁵ Commission Green Paper on Fair and Efficient Pricing for Transport.

3.1.3. Energy generation

The potential for job creation in energy conservation could be substantial while considerable environmental benefits can be realised in particular in the field of climate change and acidification.¹⁶ The Commission has already indicated concrete ways of stimulating renewable energy¹⁷ and some Member States, like Denmark and Germany, are particularly active in this field. Also, combined heat and power generation schemes contribute to the increased competitiveness of industrial and commercial sectors and at the same time generate jobs.¹⁸

3.1.4. Agricultural practices

The continued reform of the CAP, as announced in Agenda 2000, should lead to a new balance between ensuring a sufficient supply of agricultural products of high quality and the protection of the natural environment including its resources such as water and soil. Four areas seem particularly important for the creation of jobs: (i) the maintenance of landscapes, the protection of high value nature areas and habitats such as wetlands, rivers and protected areas, (ii) forestry which is sustainable, maintains biodiversity and offers other (e.g. recreational) functions, (iii) development and use of new crops in the non-food sector (e.g. for industrial purposes or biomass energy), (iv) and finally, organic farming.

3.1.5. Consumption patterns and households

Consumer demand is already changing towards more environmentally friendly choices. This trend can be expected to intensify as more information becomes available, through eco-labelling for example, and as environmental and resource costs become increasingly integrated in the market prices.

The recycling of household waste will be significantly intensified provided that separate collection and sorting schemes treat waste in such a way that it becomes an economically attractive secondary raw material to industry. Moreover, waste recycling has shown to be capable of creating a significant number of jobs.

¹⁶ Communication on Climate Change-The EU Approach to Kyoto, October 1997. See Box 4 in Annex 2 for examples of job creation.

¹⁷ See Communication on Renewable energy sources, 1997.

¹⁸ Communication for a "Combined Heat and Power Promotion Strategy", COM(97)514.

3.2. Territorial aspects

The building of a sustainable Europe has a strong territorial dimension, with different implications in urban and rural areas.

3.2.1. Urban development

Urban environmental stress is an increasing concern for the majority of European people. European cities have already adopted various environmental strategies, based on different geographic profiles, demographic trends and economic assets. The need for a common European framework has been recognised through the Charter of European cities and towns towards sustainability (1994).

The Communication "Towards an urban agenda in the European Union"¹⁹ sets the appropriate framework for action. The Urban Forum with representatives from Member States, cities, towns and regions, to be held in 1998, will elaborate further on the Communication. Also the Commission initiative for a Sustainable Cities and Towns Campaign (in which around 320 local authorities representing some 100 million inhabitants take part) will be an important vehicle for consultation and further action.

From the employment point of view the renewal of the urban environment offers important opportunities, not only through the more traditional environmental investments in waste and water treatment but also in a larger sense.²⁰ Construction activities such as renovation of private and commercial buildings, conservation of the cultural heritage, renewal of urban centres and of city infrastructures (including the construction of pedestrian and cycle lanes and the expansion of public transport facilities) have the merit of creating jobs, increasing economic activity at the local level (including in the tourism sector), conserving energy sources, improving environmental quality and upgrading housing and transport infrastructure to modern standards. Most of the construction jobs will be in SMEs, which comprise 97% of the 1.8 million companies in the construction sector.

3.2.2. Rural development

The Commission's proposals in Agenda 2000 envisage the setting up of a support scheme for rural development policy in the Union as a whole. In view of maximising economic, social and environmental benefits in rural areas, agricultural, forestry, tourism, nature conservation and energy policies have to be addressed in an integrated way. The development of new services (e.g. green tourism), the up-keeping of the assets of semi-natural habitats and rural diversity, the management of natural and patrimonial resources (waters, forests) are important tasks for rural communities and have a large potential for job creation. As local communities can benefit financially

¹⁹ COM (97), 197.

²⁰ See Box 5 in Annex 2 for successful urban projects and Commission Communication "A European Strategy for Encouraging Local Development and Employment Initiatives", COM(95)273 of 13.6.95.

from these projects, they have an incentive to protect and manage the natural assets carefully.

Another key aspect of a more integrated approach is that, in the context of the Structural Funds, the development of rural areas should also build better links between the countryside and local towns. This will contribute to economic diversification and a living countryside, which will be to the benefit of both the environment and employment.

Exploiting the available opportunities in rural areas has to involve regional and local authorities, farmers, business, the financial sector and the NGOs. Developing farmers' role in environmental management can support the creation of complementary or alternative income and employment opportunities for rural communities. Local initiatives and territorial employment pacts should be used further to boost environmentally sound employment generation and to provide for better living conditions.

3.3. Supportive policies

There are different ways to create incentives leading to investments in new clean technologies and to new patterns of production and consumption which are less resource intensive.²¹

3.3.1. Implement the environmental *acquis*

The Commission has already indicated how to improve the implementation and enforcement of environmental legislation in the Member States.²² Further action is foreseen to put into place mechanisms not only to guarantee legal compliance but also the effective application in the field. There is an implementation gap in terms of investments, in particular in the areas of water, waste and nature conservation. Efforts will have to be pursued, within the context of Agenda 2000, towards an optimal use of the Community Funds in favour of regions and Member States catching up economically, in order to improve the integration of environment and employment.

The preparation of the candidate Member States to comply with the environmental *acquis* of the Community is of major importance. First estimates indicate that the investments required could be up to 120 billion ECU. The bulk of the investment is likely to take place for air pollution control (40%) and for water and waste water treatment (40%).

²¹ It should be stressed that such incentives will have to comply with the existing EU rules on state aid as laid down in Articles 92-93 of the Treaty.

²² Communication on "Implementing Community Environmental Law", COM(96) 500 of 22.10.96.

3.3.2. Make taxation more employment-environmentally friendly

In the EU as a whole over 42% of the implicit tax rate falls on labour as against 30% two decades ago.²³ There is now widespread agreement on the need to *reverse* the trend in taxation structures by reducing the burden on labour as compared to other factors. It is an important question for each Member State to define how such a change could be inserted into its overall tax policy. The choice for alternative funding includes indirect taxes, environmental or energy taxes and capital or real estate taxation. Any such tax reform should as much as possible simultaneously correct the above mentioned bias.

In this context, the Commission adopted a proposal for a Council Directive restructuring the Community framework for the taxation of energy products.²⁴ The main objectives of this proposal are to eliminate tax distortions between types of fuels and between Member States. The Directive provides that "Member States will endeavour to avoid any increase in their overall tax burden (when implementing the Directive). In order to attain this objective Member States shall endeavour, in particular, to reduce at the same time statutory charges on labour". According to estimates, the implementation of the Directive on the taxation of energy products would create a significant number of jobs.²⁵

The Commission has recently come forward with a proposal which would give Member States the choice to apply, on an experimental basis, a reduced VAT rate (instead of the standard rate) to supplies of certain labour intensive services.

Several Member States have also undertaken a broad range of specific measures, including fiscal measures, to stimulate environment investment and employment.²⁶ Accelerated depreciation schemes for certain types of investments, tax exemptions for interest received from green investment funds, and the introduction of specific environmental taxes and earmarked levies have proved to be particularly successful. The Commission presented a Communication in order to support the use of environmental taxes and charges and to ensure that they are used in a way compatible with Community legislation.²⁷

3.3.3. Technology assessment and development

Research and development of new, cleaner and energy efficient, technologies is essential for the building of a sustainable Europe. Past Community Research, Technology and Development programmes, in particular the Environment

²³ Implicit tax rate: tax revenues plus social security revenues divided by the sum of employee compensations.

²⁴ COM (97) 30, adopted on 12 March 1997.

²⁵ The Commission working document "Evaluation of the impact of the Proposal" Addendum dated 30.07.97 to SEC (97)1026 of 23.05.1997 gives estimates between 155 000 and 457 000 jobs by 2005.

²⁶ See Box 1 in Annex 3.

²⁷ Communication from the Commission on "Environmental Taxes and Charges in the Single Market", COM(97) 9 of 26.03.1997.

Programme, have provided important contributions to the development of knowledge and tools for building a sustainable Europe. The Commission's proposal for the 5th Framework Programme puts a reinforced emphasis on environmental and on employment issues.

For decision makers, in both the public and private sectors, interested in integrating considerations related to employment and sustainable development into their investment decisions, it is often too costly to investigate and assess different alternatives, beyond the question of whether their plans are in conformity with strictly legal provisions. Similarly, public authorities, wishing to set up a support scheme to promote the use of new and environmentally friendly solutions, need a good information system, since emerging technologies are characterised by rapid evolution and some are more attractive than others from an environmental and employment perspective.

A flexible information system appears to be necessary in view of disseminating the results of available technology assessment according to environmental and social criteria. Such information needs to be designed for the needs of entrepreneurs, bankers, local authorities, consultants, engineering offices, and others involved in investment decisions. The collection and assessment of these data will need to involve technical experts, producers and users of environmental technologies, engineers and researchers in the private and in the public sectors. Given the social dimensions which are to be included, other stakeholders also have to be involved such as trade unions, social and environmental NGOs, financial institutions, and officials from the Member States.

The EU has already recognised the need for highly specialised and technical data as an aid for those complying with environmental regulations by creating the European Bureau for Integrated Pollution Prevention and Control at the Institute for Prospective Technological Studies (IPTS).²⁸ The scope of the assessment currently undertaken by the Bureau could be broadened to include employment and sectors not covered by the IPPC directive, in particular emerging (often highly technology intensive) sectors.

3.3.4. Dissemination of information

Many initiatives have been undertaken for the production and dissemination of information in the form of workbooks, data bases, help-lines, conferences, eco-labels, etc. as investors and consumers of greener methods, products and services need an exchange of information and best practice concerning environmental management.²⁹ More effort is needed to spread the information more systematically. The building of a sustainable Europe will require new active information initiatives to reach the millions of decision makers in private and public bodies throughout the Community.

²⁸ Communication concerning the establishment of a European Bureau for Integrated Pollution Prevention and Control at the Institute for Prospective Technological Studies of the Joint Research Centre, COM ()1997.

²⁹ See Box 1 in Annex 3 for Member States initiatives.

3.3.5. Domestic and external markets

An effective public procurement policy is fundamental to the success of the Single Market in achieving its objectives: to generate sustainable, long-term growth and create jobs, to foster development of business capable of exploiting the opportunities generated by the Single Market and competitive in global markets, to provide taxpayers and users of public services with best value for money.³⁰ EU public procurement policies offer a number of possibilities to contracting authorities to integrate social and environmental considerations into their public procurement practices. The Commission will elaborate this issue in a forthcoming Communication.

A strong internal demand for environmentally sound products, services and technologies is the basis for exploiting the opportunities on world markets. Export promotion initiatives are being undertaken by the Union's main competitors such as Japan, USA, Canada. Current EU initiatives such as the Community's Regional Institute of Environmental Technology (RIET) in Singapore seem promising as they promote European know-how in a context of international co-operation. In this respect, integration should also be strengthened in the Community's programmes such as its Development Fund.

3.4. *Reviewing labour market policies*

The Commission has in the Guidelines for Member States' Employment Policy 1998 outlined a new employment strategy, based on a stability and growth oriented macro-economic policy and an activation of labour market and other structural policies. The Guidelines include four priorities: entrepreneurship, employability, adaptability and equal opportunities. Following these guidelines, the employment policies of Member States will facilitate the ongoing restructuring of the economy, regardless of whether the causes are new technology, global trade or the building of a sustainable Europe.

However, in Member States' policies, more attention will have to be paid to the job creating opportunities and the need for new skills, linked to the building of a sustainable Europe. New patterns of training and education are required in order to build and to use the new environmentally friendly technologies and infrastructures. Moreover, the move towards sustainability will also require a motivated workforce with special skills and a highly developed environmental awareness, and thus a good level of educational training. However the existing provision of education and training for managers and workers is far from living up to such requirements.

The data on environment-related skills shortages show a broad range of different needs.³¹ In terms of occupations, the needs include biologists and chemists, geologists and land surveyors, architects and land-use planners, civil, mechanical, electrical and production engineers, and environmental technicians, operative and training specialists.

³⁰ Commissions' Green Paper on Public Procurement in the European Union, 1996.

³¹ FAST for instance.

Evidence is available that a large variety of labour market measures and initiatives concerning environmental services are successfully being promoted in the Member States.³² The primary concerns are conservation of the cultural heritage, environmental protection, and sanitation. Many promising policies and measures have been undertaken at local or regional level, such as the Ecological Rehabilitation Programme in Berlin.³³ Exchange of such information could be improved through networks of local actors. With increasing numbers of projects they will also become interesting in the framework of the Member States Multiannual Programmes.

3.5. Financial support

3.5.1. Community expenditure

The European Parliament has expressed the wish for a further greening of the EU budget. The Commission shares this preoccupation and wishes also to improve mechanisms for taking appropriate account of environmental impacts of Community spending.³⁴ Moreover, in the context of Agenda 2000, the Commission has indicated the broad framework within which environmental and employment objectives are to be specified in the proposals for the new Funds regulations.

Through the Structural Funds and several Community Initiatives, already an important part of the EU budget is already spent on environment related projects such as: waste water treatment, waste management, soil decontamination, air pollution control, support for clean technology, cleaner production and industrial waste recycling, environmental management.³⁵ The Cohesion Fund spends half of its funds on environmental infrastructures and half on transport structures, sometimes related to public transport.³⁶ Jobs have been generated in construction, production of machines and other equipment by the capital investments and, later on, in operation and maintenance.³⁷ Moreover, Environmental Impact Assessments are required when considering the funding of major projects by the Structural Funds.

The Common Agricultural Policy (CAP) has also contributed to the maintenance of jobs in rural areas and, in certain respects, to the protection of the environment. In this latter context, particularly important have been the accompanying measures (the agri-environmental measures, afforestation of farm land) which support protection of the environment and the maintenance of the countryside. Included are crop extensification and organic farming, livestock extensification, rearing of endangered breeds, upkeep of abandoned land, long-term set-aside and training.³⁸

³² See Box 2 in Annex 3 for Member States labour market actions. See also the Commission Employment Observatory, "Tableau de Bord" 1996.

³³ See Box 5 in Annex 2.

³⁴ EP Resolution on Guidelines for the 1997 Budget, 23 March 1996, paragraph 28.

³⁵ Approximately 6 billion ECU of the total EU budget.

³⁶ Communication "Cohesion Policy and the Environment", COM (95) 509.

³⁷ Communication on Structural Interventions and Employment, 1996. An example: the Regional Funds' programmes for rail development in Italy and in Greece created or maintained 64,000 jobs.

³⁸ Working Notes on the CAP, "Agriculture and Environment", 1997.

Furthermore, the funds made available through the Community Framework Programmes for Research, Technology and Development have partly been devoted to RTD related to the environment.³⁹

The availability of finance for environmental investments clearly has had a positive effect on job creation. Many EU programmes and initiatives have been instrumental: the "Growth and Environment" pilot project (with loan guarantees for SMEs), the European Investment Fund (EIF), URBAN, LEADER, the proposed European Loan Insurance Scheme for Employment (ELISE), LIFE.⁴⁰ These and other experiences will have to be incorporated in the operational follow-up of Agenda 2000.

3.5.2. The European Investment Bank

The European Investment Bank, already investing around one third of its assets in environmental projects, is planning in the follow-up of the Amsterdam Summit, to play a bigger role in support of environmental projects by:

- extending its activities in the fields of education, health, urban environment and environmental protection,
- strengthening its activities in the fields of TENs and SMEs, allowing a temporary increase in the funding ceiling to 75% of the cost of TENs and environmental projects,
- using part of the 1996 surplus for financial instruments (including venture capital) for innovative SMEs.

The Commission looks forward to a timely adoption of these plans by the governing board of the EIB so that an increased effort in favour of the environmental projects can take place.

3.5.3. User charges

As public funds financed out of general taxation become scarcer, new financing arrangements such as charging for environmental services have developed. These arrangements not only reduce the reliance of environmental expenditure on public budgets, but also offer opportunities to increase overall economic efficiency through a more general implementation of the polluter pays principle. Finally, user charges generate income to public or private companies and, by extension, facilitate financing through the banking system.

³⁹ For instance the 4th Framework Programme, with a budget of 12.3 BECU, had subprogrammes for clean and efficient technologies, environment and climate and socio-economic research.

⁴⁰ See Box 6 in Annex 2.

4. The way forward- Key actions

The building of a sustainable Europe demands new technologies and new investment. This will require the use of different policy instruments and the co-operation of all partners, at EU, Member State, business, and local level, including the private sector, public authorities and NGOs. The Commission will support and stimulate initiatives to improve data collection and analysis geared towards development of Member States long term strategies. The Commission proposes the following key actions:

4.1. Environmental and social benchmarking

The development of environmental and/or social "benchmarking" for industrial sectors can be instrumental in guiding investments towards cleaner and energy efficient products and processes. The European Commission will take initiatives to promote the establishment of reference criteria and to collect the necessary information in partnership with all relevant stakeholders and in particular the Member States and the industrial sectors.

4.2. Technology assessment and development

The Commission will enlarge the existing screening schemes for Best Available Technologies by including employment effects and a more detailed assessment of energy and resource use. Appropriate initiatives will be taken in order to organise that the list of sectors that are presently assessed is enlarged to incorporate new emerging technologies.

4.3. Building upon Agenda 2000

Continuing and increasing efforts are to be made in order to ensure that the European financial instruments (Structural Funds, Cohesion Fund, Community initiatives) promote economic growth, employment and sustainable development simultaneously. The proposals presented in Agenda 2000 are a first step in that direction. They will have to be further developed through an active partnership with Member States, for example by identifying appropriate criteria. Regional/local actors should take the initiative in proposing programmes and projects which have a strong emphasis on employment and environment and ensure the success of their action by building partnerships which include not just the public authorities but all other interested parties.

In this context, urban renovation and rural development projects and programmes are of particular importance:

Member States should strengthen the link between urban development, environmental protection and job creation by developing urban renovation plans which focus on areas with particular potential for environmental employment. Regional/local actors should undertake concrete action to implement these plans within an agreed timeframe. The European Commission will support this action in its follow-up of the

Communication on Urban Issues and, in its preparation of the 'Urban Forum' 1998, will ensure that its action supports that orientation.

In its proposal for Agenda 2000, the European Commission has outlined that the review of the CAP must be continued in view of achieving a better balance between agricultural production, environmental protection and job creation. By responding to the environmental demands, rural communities can benefit from new activities. A further promotion of quality production offers new market perspectives for European farmers. The promotion of low-input farming systems and targeted agri-environmental measures, will increasingly represent new employment opportunities while improving environmental quality in rural areas.

Through the development of new services like tourism and natural resource management, rural communities will find new land-related employment opportunities. In addition, the Structural Funds will promote economic diversification more generally in eligible rural areas, providing further incentives for people to stay on the countryside and thereby counter land abandonment.

4.4. Taxation and prices

The tendency towards increasing tax burdens on labour must be reversed. The Commission proposal for an energy products tax has to be seen as a first step towards integration in fiscal policy of the new Treaty objectives.

As part of its overall policy to use a combination of cost-effective instruments in environmental policy, the Commission will continue to pursue the correction of existing distortions in the current tax system, and to give a high priority to the use of market based instruments, including those of a fiscal nature.

4.5. Environmental training and education

There is a major need for developing specific vocational qualifications corresponding to new and updated job profiles. The Commission intends to present specific orientations on environmental training and education.

The preparation of human resources for "greener" production methods will depend on active labour market policies targeted at the whole labour force and with an additional focus on reintegration of the unemployed. Member States will pursue such labour market policies within the context of the Employment Guidelines (entrepreneurship, adaptability, employability and equal opportunities) on which they will report regularly.

Progress in the use of policies such as taxation and training/education for the mutual reinforcement of environment and employment will be incorporated in the Joint Employment Report 1998.

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ANNEX 1- Eco-businesses in the EU, 1994

The most important activities of eco-industries are: water and waste water treatment (42% of total EU output); waste management and recycling (29%); air pollution control (19%); noise and vibration control; contaminated land and water remediation works; environmental research and development and environmental services/ consultancy. Some 20 to 30,000 companies, small and large, employ one million people, while another half million is employed in related activities. The output was worth 90 billion ECUs 1994 and this includes both public and private buyers.

The largest markets for these new activities and jobs are: Germany (35% of the EU output), followed by France (20%), UK (12%), Italy (10%), Netherlands (8%), Austria (4%). In national terms, eco-businesses are the most important in Austria (turnover of industry equals 2.3% of GDP), the Netherlands (2.3%), Germany (2%), France (1.5%), Sweden (1.5%).

A broader definition of environmental jobs gives us a total nearer 3.5 million, that is if we include renewable energy, recycling, nature and landscape protection and eco-renovation of urban areas.

Sources: "An estimate of eco-industries in the European Union 1994", Ecotec/ BIPE/ IFO for DG XI and Eurostat, 1997 and Eurostat for the EU Employment Report 1997.

ANNEX 2- Examples of good business practice

BOX 1- Waste minimisation project in the Aire and Calder region- UK

The objective of the Aire and Calder Project was to show that cost savings achieved through waste minimization initiatives can produce a wide range of benefits to the companies involved. These include increased profitability and competitive advantage, improved regulatory compliance, and a reduction in risk to the business.

Aire and Calder acted as a demonstration project to other companies and industrial sectors in the UK. The intention was to widely disseminate the results of the project in order to promote the benefits of waste minimization. The scheme aimed to show that however small the company, a fundamentally different approach to pollution control will give long-term dividends.

The objectives of the project included:

- * the encouragement of a systematic approach to waste minimization which could be used by large and small companies without assistance from consultants or other agencies.
- * the identification and quantification of waste minimization opportunities and methods. As assessment of costs, payback periods and waste reduction potential.
- * a shift of the waste management hierarchy from collection and disposal to prevention and minimization.
- * the creation of a partnership between industry, regulators and support agencies for addressing waste minimization issues.

The Outputs: The scheme ran for 18 months. At the end of this period, for the 11 participating companies there were: 2.5 MECU per year cost savings from 542 different actions identified to improve efficiency. One year after the end of the project, in September 1994, savings had increased to 4.1 MECU per year from 671 efficiency measures. Ten percent of the adopted measures were cost neutral

with a further 60% having payback periods of less than 1 year. The identified savings totalled 0.3% of the participating companies turnover. These savings have assisted the companies involved become more competitive and efficient. As a result, the long-term employment capability of these industries has been improved.

Environmental savings were also significant, by September 1994 there was:

- * 600,000m³ per year reduction in effluent discharges to sewers
- * 36,000m³ annual reduction in discharges to rivers.
- * 15% fall in water usage.

Source: Ecotec (for the European Commission): Encouraging Sustainable Development through Objective 2 Programmes: Guidance for Programme Managers, Final Report, Brussels 1997.

BOX 2- The introduction of a cleaner technology in a Dutch tannery

The case: A tannery producing leather for furniture and automotive industries, employing 107 people, with a turnover of 40 million fl. in 1993, facing increasing competitive pressure, but nevertheless adopting a pro-active approach to environmental issues.

The investments: Between 1985 and 1993, the company invested 5 million fl. in the development and introduction of a new clean epilation technology, costs of 1.5 million in 1990-1991, equal to the company's net result for 1990. The company received a subsidy of 300,000 fl. from a technology government programme.

The benefits: * improved living environment in the neighbourhood due to reduced use of chemicals for destruction of hairs, less production of waste, better quality of waste water,

* for the business: lower environmental costs (from 3.5% to 2% of turnover), lower costs with chemicals, profits from selling the epilated hairs from the hides, improved image, less absenteeism, internal rate of return of the investment is calculated to be 40%,

* Employment effects: one environmental co-ordinator was nominated, increase in the level of qualifications needed from staff (engineers, chemists), fewer lower qualified staff needed (up to 30% less!). The latter have not been fired as an increase in output is expected.

* Social effects: better air quality for employees and neighbours.

Source: "Case study Three: Cleaner Technology", Arthur D. Little for Forward Studies Unit, E. Commission, 1995.

BOX 3- The re-manufacturing of driveshafts in France

A French producer of driveshafts for the automotive industry started, in 1976, a parallel production of re-manufactured driveshafts. This line now employs 100 people (80 full-time). In 10 years, production grew from 50,000 units to more than 427,000 and the number of models went from 50 to 275. Sales in 1996 totalled MECU 18. For comparison, the company also produces 3.5 million new driveshafts per year.

Competitiveness: The re-manufactured driveshafts are of high quality and are 50% cheaper than new ones. The production costs are lower than for new driveshafts (18.5 and 38 respectively) and the production is profit making. Re-manufacturing, although marginal to the production of new driveshafts, is good for the company's image.

Environment: The environmental impact of re-manufacturing is lower than for new driveshafts: less resource use and 24% less energy use. Even though waste production per unit is lower, waste disposal costs are nevertheless 6 times higher than for new driveshafts and have increased by a factor 5 since 1994. Solid waste disposal costs (of scrap metals, greases and sanding waste) per unit are 26 times higher.

Labour: Re-manufacturing is twice as labour intensive than new manufacture and the jobs are at a higher skills level.

Results: good for competitiveness, employment and environment; somewhat tempered by higher costs of waste treatment.

Source: "Case Study Six: Effect of Extending Product Service Life on Competitiveness, Employment and Environment", Arthur D. Little for Forward Studies Unit, E. Commission, 1997.

Box 4- Examples of job creation related to energy conservation and renewables:

* Applying 26 BATS for energy saving and energy efficiency: net cost = 19 billion ECU for EU-12, creates 690,000 jobs. (Source: Ecotec for the European Foundation for the Improvement of Living and Working Conditions, 1994).

* Upgrading of all single-glazed windows of the EU housing stock to high-performance double-glazing. Results: Investments of ECU 84 billion (over 10 years) and creation of 127,000 jobs lasting 10 years. (Source: Industries du Verre and DG XVII- Thermie, 1995)

* Applying the best policies of support for renewables from individual countries into all other EU countries leads to: extra investment of 180 billion ECU by 2020 and 500,000 extra jobs. (Source: Teres II/ Altener, DG XVII, 1966)

* Some 3.4 million job-years could be created directly through the installation of energy conservation equipment and materials. In the initial stages, the vast majority of the jobs will come from distributing and installing (rather than manufacturing) the goods and equipment. Source: EuroACE.

Box 5- Examples of successful environmental projects in cities

* With recently unemployed: (i) Berlin, where a project was set up involving urban planning, urban renewal, greening the city, introducing clean technologies to SMEs and water saving measures, and (ii) Tampere, Finland, where young people are engaged in a variety of activities: recycling, vehicle renovation, waste management).

* With several generations of unemployed: Glasgow, Scotland, where temporary jobs and training, some dealing with the environment, help the social problem of the unemployed, without there being a real perspective on first class jobs).

* With young unemployed: (i) Baix Llobregat, Spain, where young people work in the recuperation and promotion of the artistic natural or cultural heritage, the recuperation of urban surroundings or the environment and (ii) Strasbourg, France where companies have been set up to employ young (with social problems) in the collection and recycling of household goods)* With high skilled unemployed: Stockholm, Sweden, where people with an environment-related qualification are helped to find jobs in enterprises).

* With socially handicapped unemployed: Graz, Austria, where projects in recycling have been set up in partnership with local industries and municipal waste services, with a high transfer rate to the first labour market).

Source: "Job Creation in the Environmental Sector", European Academy of the Urban Environment for DG V, 1997.

Box 6- Employment effect of LIFE-Nature projects

The 63 projects of LIFE-Nature in 1996 had a value of 45 MECU and created approximately 500 full time equivalent jobs (involving 1300 workers), 300 of which are directly the result of EU funds and 200 are related to Member States finances. As projects have an average duration of 3.3 years, around 1,500 FTE jobs are created with the 1996 LIFE funds. The cost for the EU of one full time job per year is around 30,000 ECUs.

Source: "Life-Nature 1996 & L'Emploi", Ecosphère for DG XI, 1997.

ANNEX 3- Examples of Member States actions

BOX 1- Member States direct and indirect support to environmental jobs

- Measures to provide information so that markets can function better: information on best available technologies through data bases, help lines, guidebooks, fact sheets, fairs, conferences, infocentres, "observatoires". Also information on export markets, on products (eco-labeling) and on firms (Eco-auditing scheme, guidelines for environmental reporting).
- Voluntary agreements with certain sectors (producers of hazardous waste, on recycling of products), co-operation agreements between different levels of public administration for environmental infrastructures, co-operation between regions for the exchange of information on environmental projects, support to networking/partnerships/clubs of companies.
- Financial support for investments, construction or training in cleaner technologies or energy saving (often through a technology support programme and sometimes through pilot projects), aid to environmental job creation schemes (for nature conservation projects, reduction of noise from roads, for temporary hiring of environmental auditors/advisors, through urban eco-renovation programmes, etc.)
- Fiscal measures such as allowing accelerated rates of depreciation for environmental investments or construction; tax relief on interest perceived from investments in "green funds"; lower VAT on renewable resources. Charges for waste production and water use and the carbon/energy tax that exist in several EU Member States should also be seen as an incentive for investing in cleaner production and energy saving.
- Support to R&D and innovation.

BOX 2- Examples of Member States labour market actions :

- Improvement of the living environment through subsidies amounting to 50% of wage costs payable by private households or flatowners for repair work (effect: approximately 5000 jobs created); adoption in 1993 of an order on waste disposal and recycling, involving subsidies for projects, etc. (Denmark);
- Schools-workshops (Programa de Escuelas-Taller), a programme offering sandwich training for unemployed young people; both theoretical training and work experience relate to the safeguarding of the cultural heritage (Spain);
- Financial support to organisations of the unemployed; an increasing amount of attention is being devoted to environmental questions in relation to all activities in society and in companies, with development of the necessary know-how and technology (Finland);
- Residential buildings programme (renovation); Law no.451/94 introduced new provisions on work in the public interest in fields such as cultural heritage, protection of the environment, urban regeneration, and support for SMEs (Italy);
- System of incentives for young entrepreneurs, i.a. for projects aiming to safeguard the environment (Portugal);
- Subsidies for urban and rural regeneration through the Single Regeneration Budget (SRB). Partnerships in Enterprise Zones help promote job creation and investment by clearing and using waste land and vacant sites (UK).
- Creation of new, permanent jobs in waste management and environmental consultancy (Austria).

ISSN 0254-1475

COM(97) 592 final

DOCUMENTS

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14 04 05

Catalogue number : CB-CO-97-642-EN-C

ISBN 92-78-28048-8

Office for Official Publications of the European Communities

L-2985 Luxembourg