Phare

Environmental protection expenditure

in accession countries

Data 1996-2000

8

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Yves Franchet
Director-General

Preface

The European Union is facing one of the biggest challenges of its history: the forthcoming enlargement. The European Commission has recommended the accession of ten countries in 2004. The European Council will take position before the end of 2002. The aim is that they take part in the elections to the European Parliament in 2004 as full members.

Enlargement of the European Union will also lead to an expansion of environmental protection. As part of the accession process, applicants will have to adopt EU environmental legislation. These stricter environmental rules and standards will improve the quality of air and water and have a positive effect on public health in the Accession Countries. They will render the management of waste more efficient and protect areas of special natural value. Less transboundary pollution in the air and in waterways means a cleaner environment not only for the Accession Countries, but also for the current Member States. Therefore, in a very direct way, implementing EU environmental directives in the Accession Countries will benefit all Europeans.

Upgrading environmental facilities in the Accession Countries will require substantial resources. The European Community provides financial support to institution building and environmental investments through the Phare programme and the other pre-accession instruments of ISPA and Sapard. The Commission also gives technical and legal advice to the Accession Countries and is closely monitoring their progress towards accession.

It is important that Accession Countries are also fully integrated into the European Statistical System so that information which is needed by policy makers and the general public is available in a harmonised form, and is comparable among countries. For a number of years the Accession Countries have been fully integrated into the environment statistics data collection activities of Eurostat. The availability of data has increased substantially in the last few years and is, with a few exceptions, comparable to that provided by the Member States. Timeliness and freshness of the data reported are often superior to data from the Member States.

In this context a specific project, financed within the framework of the overall Phare multi-country statistical co-operation programme, began in 2001. Its objective was to secure full harmonisation in the field of environmental protection expenditure statistics. The project was managed by the grouping Land Statistical Information Systems g.e.i.e. (Landsis). This publication was produced under the Phare multi-country project on environmental protection expenditure. The publication presents the latest information on the amounts of money spent on environmental protection in the Accession Countries, as reported to Eurostat in the Joint OECD/Eurostat Questionnaire 2002.

Yves Franchet
Director-General

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Introduction

Environmental protection is now being integrated into all policy fields with the general aim of ensuring sustainable development. All activities inevitably affect the environment to some degree, which means that all sectors of the economy have their specific role to play in the overall efforts to minimise the negative consequences: government agencies and local authorities, enterprises involved in industrial or other business activities, enterprises which provide environmental services (such as collection and treatment of waste, sewage treatment, or environmental consultancy) and households as consumers.

Much of the pressure on the environment is a direct result of the production of goods and services. To encourage enterprises to protect the environment, governments can use regulatory measures, levy taxes directly linked to pollution, or in other ways provide economic incentives. The polluter pays principle is another weapon in the fight against pollution. Measures to protect the environment are also increasingly being taken on a voluntary basis e.g. to meet expectations of consumers or stakeholders, to increase market shares, or improve company image. Environmental protection also results in cost-savings and creates new markets for the producers of environmental goods or services, with benefits for exports and employment. Statistics on environmental protection describe the different economic implications of these efforts. The statistics could be used for different purposes e.g.:

- To follow up and monitor the economic effects of environmental policy and as a basis for a cost/benefit analysis of new environmental policy proposals.
- To follow up and monitor specific support and investment programs and the costs of compliance with environmental regulations.
- To show the efforts made by companies to reduce environmental pressure and increase eco-efficiency and to analyse possible effects on company competitiveness.
- To use as a basis for descriptions of the market for environmental goods and services.

These statistics are an indicator of the response from society to reduce environmental pressure and move towards sustainability. However, it should be remembered that improvements are also made as part of normal day-to-day activities, where no specific expenditure to protect the environment can be identified. This includes in particular replacement of old production equipment with new equipment which is often more efficient than the old both economically and in terms of environmental performance.

The legal framework for statistics on environmental protection expenditure is the Council Regulation 58/97 concerning Structural Business Statistics (SBS) and the Regulations later adopted amending the SBS Regulation. In the future the SBS Regulation will provide regular data from the Member States on the most important sectors and variables. The SBS data reporting system is currently being expanded to cover also the Accession Countries, but so far not the variables related to environmental protection.

The Joint OECD/Eurostat Questionnaire on Environmental Protection Expenditure and Revenues has been established as the main framework and tool for harmonised international data reporting in this field. The questionnaire is comprehensive in its coverage, encompassing all sectors of the economy (government, industry, specialised producers of environmental services and households), variables describing both expenditure and financial flows, broken down into a number of environmental domains.

However, statistics on environmental protection are under development and the coverage and quality of the data still varies across countries. In general, data quality is best for the most recent years. There is more data available on the expenditure side (investments and current expenditure) than on the financing flows; and more data is available for the public sector and industry (mining and quarrying, manufacturing, energy and water supply) than for other parts of the business sector (agriculture, services sector) or households. This means that it is not yet possible to get a complete picture of the size and structure of environmental protection expenditure in the countries.

The data presented here are those reported by the countries in the Joint Questionnaire 2002, without any adjustments for possible differences in coverage (see footnotes to tables and graphs). However, only those sectors and variables where data availability and comparability are best are presented.

The publication only presents data for the public sector (central and local government), industry (mining and quarrying, manufacturing, energy and water supply) and specialised producers of environmental services involved in waste collection and treatment and sewage treatment. Furthermore, only data on the expenditure side are presented. The total spending any given year is calculated as the sum of total investments and total current expenditure (environmental protection expenditure - EPE).

Total investments in environmental protection is the sum of two categories:

- Pollution treatment investments (End-of-pipe): Investments which do not affect the production process itself, and the amount of pollution generated, instead they serve to treat pollution already generated (e.g. sewage treatment plants, filters).

- Pollution prevention investments (Process-integrated): Investments which lead to a modified or adapted production process. They serve to reduce the amount of pollution generated at the source.

Current expenditure includes:

- Outlays for own production of environmental services: wages and salaries, rents, energy, maintenance expenditure and other intermediate inputs; and

- Environmental services bought in from the market (e.g. payments to a specialised enterprise for waste collection and treatment).

The structure of environmental protection expenditure in the countries reflects to a large extent the structure of the economy and the organisation of the basic environmental protection activities. The size of public sector expenditure and the expenditure by specialised producers depends e.g. on the degree of privatisation of the basic environmental protection activities of waste collection, waste treatment and sewage treatment. These activities are often financed directly by user fees paid by enterprises and households.

An aggregation of total gross expenditure across the three sectors is presented to give an indication of the size of the total spending in the different countries. However, this includes some double counting which is unavoidable due to limitations in data availability. The reason for this double counting is that both the costs to produce an environmental service and the payments by industry for that service are included.

Organisation

Chapter 1 presents a summary of the main results including a comparison with the estimated costs of compliance with environmental regulations produced by the Environment DG.

Chapter 2 includes country profiles for each of the Accession Countries. The profiles include a one page summary followed by a selection of detailed tables which include more detailed breakdowns or additional variables than presented in the country comparison tables.

Chapter 3 includes definitions of the variables, sectors and breakdowns presented in this publication, based on the Joint OECD/Eurostat 2002 Questionnaire.

Chapter 4 includes a brief description of the current state and future plans as regards data collection on environmental protection expenditure in each country, including the specific pilot projects conducted within the framework of the Phare multi-country co-operation program.

Finally, the annex includes background information such as GDP, population and exchange rates used for presenting the data in Chapters 1 and 2.

During 2001 and the first half of 2002, all Accession Countries (Bulgaria, Czech Republic, Cyprus, Estonia, Hungary, Lithuania, Latvia, Malta, Poland, Romania, Slovenia and Slovak Republic) have worked in close co-operation with Eurostat and Landsis in order to improve their data collection methodology and data availability for environmental protection expenditure by industry. The work involved visiting all Accession Countries, writing state-of-play reports and giving methodological support. Three seminars were held in which methods were presented and discussed. A second country visit was made to countries requiring extra assistance.

Data availability is relatively good in Accession Countries as can be seen on page 26 and 27. All countries except Cyprus and Malta reported data for the reference year 2000 in the JQ 2002. Cyprus and Malta are making great efforts for establishing new data collection systems during Autumn 2002. The activities within the project have helped to improve harmonisation and comparability of the data reported in the Joint Questionnaire 2002 and presented in this publication. However, many countries which already provide data have expanded or revised their data collection systems during the course of the project. Due to legal reasons (laws for conducting surveys), there is a time lag of a year or two before new results are available from these revised data collection systems. For the next Joint Questionnaire 2004 even better coverage and data availability in many of the Accession Countries is forecasted. Some examples:

- Slovak Republic has changed their questionnaire so that expenditure in the future can be allocated by environmental domains.

- The Czech Republic will start to collect data on current expenditure.

- Poland will also cover current expenditure for the manufacturing industry in the future.

- Slovenia has set up a new independent survey that is expected to lead to substantial improvements in data quality and coverage.

- Latvia has restructured the questionnaire and will in the next survey coordinate the sampling with the Statistical Business Register .

1. Summary of results

Tables

The total amount of money spent on environmental protection (investments and current expenditure) by the public sector, specialised producers (mainly involved in waste management and wastewater treatment) and by industry (mining, manufacturing, energy and water supply) in 2000 varies from 0.5 percent of GDP in Latvia to 2.2 percent in Hungary.

On average, the Central and East European Accession Countries spend 1.6 percent of GDP on environmental protection, which is higher than in many of the EU Member States. However, GDP per capita is considerably lower in the Accession Countries than in the EU. This also affects per capita spending, which is relatively low compared to the EU. The average among Accession Countries is 37 euros per capita spent on environmental protection, compared to 243 euros per capita in the UK and 272 euros in Germany.

It is estimated that around 40 percent of the total spending in the Accession Countries is on new machinery and equipment and other investments, while the rest is cost of staff and material needed to operate environmental facilities and other current expenditure.

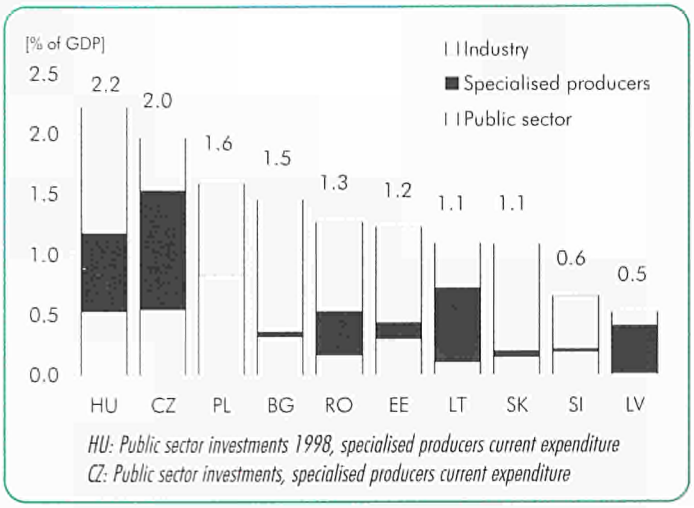
Many Accession Countries are now in the process of improving infrastructure e.g. for waste management and wastewater treatment and it is predicted that future spending will continue to be high in order to reach the standards set for accession. To achieve full implementation the Environment DG estimates that the Accession Countries would have to spend on average between 2 and 3 percent of GDP on environmental protection in the coming years.

Cost of compliance

The Environment DG published a first detailed compliance cost study in 1997, with estimates of the total cost for approximation of EU environmental legislation in the Accession Countries (Compliance costing for approximation of EU environmental legislation in the CEEC, April 1997).

It was estimated that the Accession Countries would need to invest more than 108 billion euros or 1 000 euros per capita to upgrade the systems for water supply, wastewater treatment, waste management and reduction of air pollution from combustion plants. Total investments excluding water supply, which is not part of the statistics on environmental protection expenditure, were estimated at 91 billion euros (see table 1.1).

Figure 1.1: Environmental protection expenditure by public sector, specialised producers and industry in 2000, share of GDP (%)



HU: Public sector investments 1998, specialised producers current expenditure
CZ: Public sector investments, specialised producers current expenditure

In addition, it was estimated that the Accession Countries needed to spend between 8 to 12 billion euros per year (80 to 120 euros per capita) for the operation of facilities related to municipal wastewater, air pollution and waste management.

As pointed out by the Environment DG, these estimates relate to the total cost for the Accession Countries of upgrading their environmental legislation to 'western European standards, technologies and approaches', irrespective of whether this is required for EU legislation, local legislation or to meet other international obligations.

The estimated costs depend also on a number of assumptions (economic growth, policies selected) so that no single exact number indicating 'the costs of approximation' can be defined. The best estimates given vary depending on the assumptions used.

In addition, not all economic sectors and environmental issues were adequately covered by the studies on which the estimations are based. The area of municipal waste water and air pollution was best covered. Less information was available for water supply, industrial pollution control, waste and nature protection.

Finally, the cost figures also overestimate the true economic costs to society because they do not take the economic benefits of related environmental improvements into account. The successful implementation of the environmental acquis will lead to considerable benefits for human health and the environment both in the Accession Countries and in the EU as a whole. Environmental investments and more modern technology will also improve economic efficiency in the Accession Countries and could con-

tribute to strengthening agricultural and industrial competitiveness and economic growth in Accession Countries. Concretely, the estimated value of the benefits of compliance with EU environmental directives to Accession Countries ranges from 134 to 681 billion euros. For the EU, the benefits of lower cross-border air pollution from the Accession Countries has been estimated to around 6.5 billion euros annually (The benefits of compliance with the environmental acquis for the Accession Countries, ECOTEC et al., 2001

http://www.europa.eu.int/comm/environment/enlarg/benefit.htm).

In the annual environment policy review 2002, the Environment DG estimates the cost of compliance with the environment acquis for the ten front-runner Accession Countries to be approximately 50 to 80 bn euros. The Urban Waste Water Treatment Directive will require major investments of around 15 bn euros and the new Landfill Directive more than 8 bn euros, as 80% of the Accession Countries' landfills need upgrading.

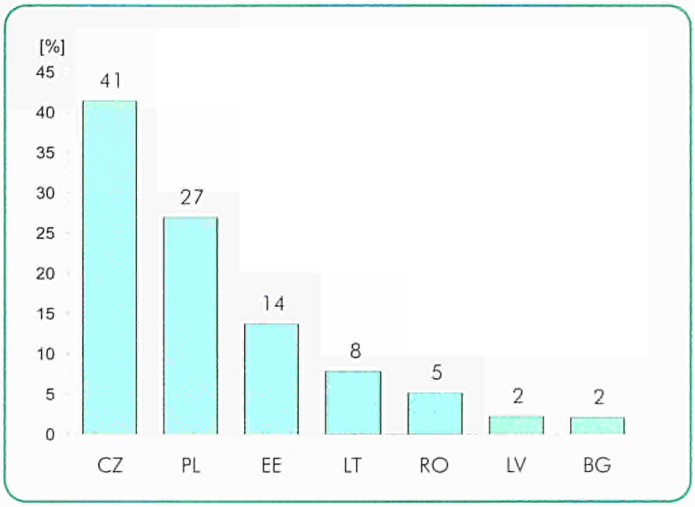
In some of the Accession Countries, a considerable part of environmental protection expenditure is financed by international institutions, environmental funds, or foreign-owned enterprises. The EU's new financial instruments make sure that Accession Countries are not left alone facing these costs. Community assistance of 500 million euros a year between 2000 and 2006 is available through the Instrument for Structural Policies for Pre-Accession (ISPA), which was designed to fund environmental investments. The total annual pre-accession aid from EU has doubled from 1.5 to 3 bn euros, of which 20% finances environmental investments.

The European Commission has recommended Accession Countries to develop coherent and prioritised investment strategies. Investment strategies are also tools for the countries themselves to clearly show the scale and timing of the expenditure needed for accession in terms of administration, staff, monitoring equipment as well as infrastructure.

Actual investments compared to the cost of compliance estimates

Available data show that the total environmental protection investments between 1996 and 2000 represent in most Accession Countries a minor share of the total investment needs as estimated by the Environment DG, with the exception of the Czech Republic and Poland. The data reported show also that the amounts actually invested in environmental protection machinery and equipment have decreased in recent years in several Accession Countries. It should be stressed that low amounts could to some degree be a reflection of limitations in data availability or possible underestimations inherent in the data produced. On the other hand, the data include not only investments in entirely new machinery and equipment, but also e.g. replacement of worn out parts.

Figure 1.2: Total EP investments during 1996-2000 in relation to estimated investment needs made by DG Environment (%)



Environmental protection investment in the Czech Republic between 1996 and 2000 is equal to around 40 percent of the estimated total resources needed for upgrading the different types of environment machinery and equipment. Investment in wastewater treatment was even larger than the original estimated total cost of compliance (114%), while investments to reduce air pollution are equal to 40 percent of the estimated total needs. These environmental protection measures have e.g. contributed to reduce sulphur oxides emissions from stationary sources: from 1.87 million tonnes in 1990, to 1.08 in 1995, to 0.43 in 1998. Total environmental protection investment by public sector, specialised producers and industry has decreased from the relatively high 2.3 percent of GDP in 1996 to 1.0 percent of GDP in 2000. It is mainly investments to reduce air emissions that have decreased: from 0.5 bn euros in 1996 to 0.1 bn euros in 2000.

In Poland, total environmental protection investments between 1996 and 2000 represent around one third of the total estimated investments needs with similar ratios in all environmental areas: wastewater, air and waste.

In the other countries, total environmental protection investments constitute only a small part of what the Environment DG estimated was needed to adapt to EU environmental standards.

Table 1.1: Estimated total investments for approximation for the accession countries, (bn ECU), Source: DG Environment, April 1997

	Water			Air	Waste		Total investments		Total capita
	Supply	Waste-water	Total		min. (a)	max. (a)	Total min.	Total max.	(ECU)
Poland	4.40	13.70	18.10	13.90	2.20	3.30	34.10	35.20	882
Czech R.	2.20	1.10	3.30	6.40	8 (b)	3.8 (b)	10.40	14.40	1012
Bulgaria	2.20	2.70	4.90	5.10	1.80	5.10	11.70	15.00	1428
Romania	3.80	6.30	10.10	9.10	1.00	2.70	20.20	22.00	900
Baltic total	0.35	5.25	5.59	8.45	0.45	0.85	8.90	9.30	1195
Estonia	0.13	1.38	1.50	:	:	:	1.50	1.50	1093
Latvia	0.11	1.60	1.71	:	:	:	1.71	1.71	719
Lithuania	0.11	2.27	2.38	:	:	:	2.38	2.38	644
Total (c)	17.50	33.10	50.50	48.20	9.70	22.70	108.40	121.50	1038
% of total max.	14%	27%	42%	40%	:	19%	:	100%	:

a) Total min. includes the minimum estimate for landfill, total max. includes the maximum estimate for waste management.
b) 70% of the total estimate of ifo Institute for Czech and Slovak Republic can be attributed to Czech Republic
c) Total also includes Slovak Republic, Slovenia and Hungary

Table 1.2: Total EP investments during 1996-2000, billion euro; Source: Eurostat

	Waste-water	Air	Waste	Total investments	Per capita
Poland	3.78	4.59	0.70	9.20	238
Czech R.	1.25	2.35	0.46	4.31	419
Bulgaria	0.10	0.07	0.05	0.24	29
Romania	0.37	0.14	0.10	1.03	46
Baltic total	0.28	0.07	0.03	0.43	58
Estonia	0.12	0.04	0.02	0.20	149
Latvia	0.03	0.01	0.00	0.04	16
Lithuania	0.13	0.02	0.01	0.19	51
Total (a)	6.17	7.62	1.46	16.93	162

a) Total also includes Slovak Republic, Slovenia and Hungary
Data for all sectors and years are not available in four countries. However, available data suggests that the effects this has on the totals presented are negligible.
These data are missing:
Bulgaria: specialised producers 96-98; Lithuania: specialised producers 96-97 and industry 96;
Latvia: data for 1996 for all sectors; Poland: specialised producers 96-99

Table 1.3: Total EP investments during 1996-2000 in relation to estimated investment needs made by DG Environment (%)

	Waste-water	Air	Waste	Total investments	Per capita
Poland	28	33	32	27	27
Czech R.	114	37	:	41	41
Bulgaria	4	1	3	2	2
Romania	6	2	10	5	5
Baltic total	5	1	7	5	5
Estonia	8	:	:	14	14
Latvia	2	:	:	2	2
Lithuania	6	:	:	8	8
Total (a)	19	16	15	16	16

a) Total also includes Slovak Republic, Slovenia and Hungary

EP expenditure by the public sector

In the Accession Countries, total public sector expenditure on environmental protection equals on average 0.55 percent of GDP. The order of magnitude is similar for many of the EU Member States, such as Germany (0.54%) and the UK (0.49%). However, here also the per capita spending is much lower: on average 19 euros, compared with nearly 130 in Germany and the UK. Poland has the highest share of GDP of the Accession Countries, 0.8%. The low share of GDP for Latvia could partly be explained by the relatively high expenditure reported by specialised producers, see Figure 1.1.

Around two fifths of public sector spending on environmental protection in Accession Countries is in the form of current expenditure: i.e. cost of personnel, material and other inputs used for environmental protection purposes. About three fifths of total spending is in the form of investments in environmental protection equipment and facilities mainly in capital intensive activities such as wastewater treatment.

How much money the public sector spends on environmental protection depends a lot on how the activity is organised in the country. Local government has traditionally been responsible for waste collection and treatment and sewage treatment, although in recent years there has been a tendency to privatise these activities. There is a gradual privatisation process in many countries with the coexistence of separate local government units, independent but governmentally owned enterprises, and purely privately owned enterprises. This means that varying degrees of privatisation is a major explanation for variances in public sector expenditure across countries. Traditional responsibilities of the central government include regulation and control, surveillance and preservation of protected areas and species.

EP expenditure by industry

Total expenditure on environmental protection by industry in the Accession Countries equals on average 0.8% of GDP, double the EU average, but still much lower in terms of per capita spending. As a comparison, German industry spent an amount equal to 0.48% of GDP in 1998, while in the UK spending amounted to 0.44% of GDP in 2000. Among the Accession Countries, in Bulgaria (1.1%), Hungary (1.0%) and Slovak Republic (0.9%) industry spends most on environmental protection, measured as a percentage of GDP.

Figure 1.3: Environmental protection expenditure by public sector as percent of GDP in 2000

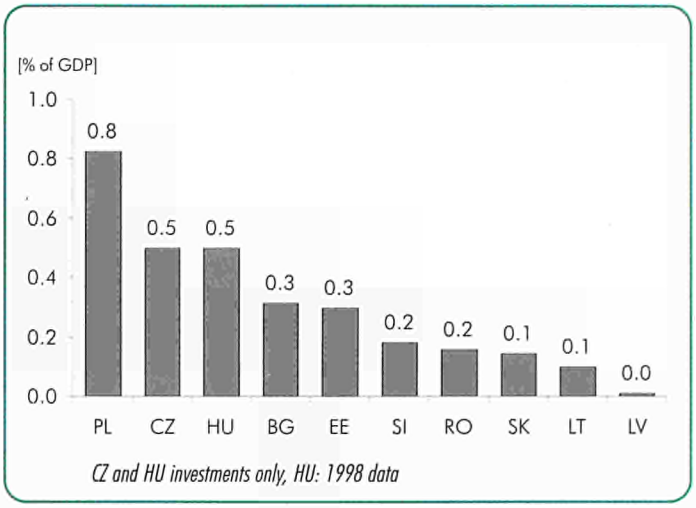


Figure 1.4: Environmental protection expenditure by public sector per capita in 2000

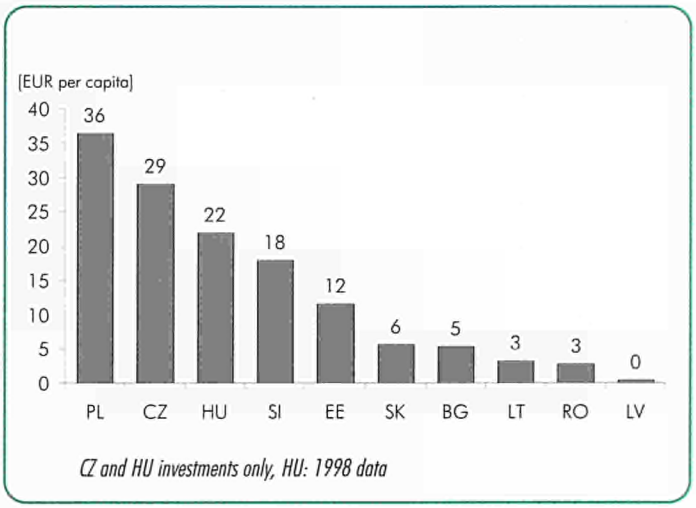
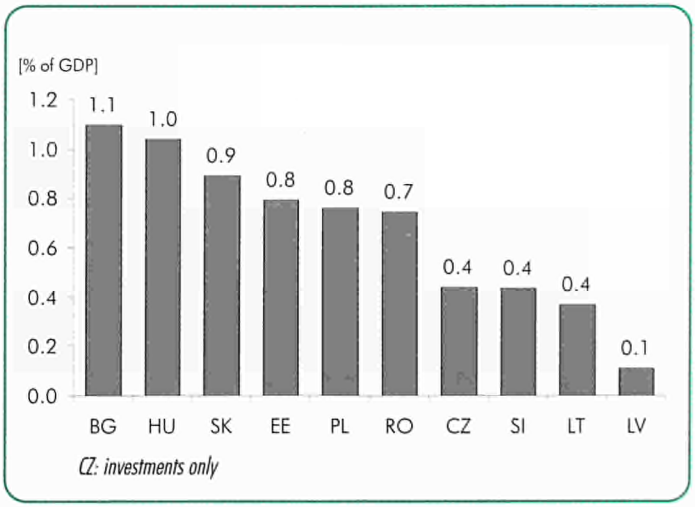


Figure 1.5: Environmental protection expenditure by industry as percent of GDP in 2000



A considerable part of the expenditure by industrial enterprises (mining, manufacturing, energy and water supply) is also spent on waste collection, waste treatment and sewage treatment; either on activities performed in-house or in the form of payments to specialised companies or local government which perform some of these activities. However, the largest part is spent to combat air pollution, in particular in the form of investments in machinery and equipment. By far the largest part of the total air pollution control expenditure is spent by industry, both in the Accession Countries and in the EU Member States. In addition, many enterprises also have more general administrative expenditure which would lead to current expenditure (domain 'Other'). This includes expenditure linked to environmental information systems and certification activities.

Eurostat estimates that nearly three fifths of total expenditure on environmental protection by industry in the Accession Countries consists of current expenditure. Current expenditure includes cost of personnel and material, as well as environmental services bought in from the market, from environmental consultants or enterprises which specialise in waste collection or sewage treatment. Around two fifths of total expenditure by industry in the Accession Countries consists of investments.

As can be seen in Figure 1.7, by far the greatest part of environmental protection investments is aimed at taking care of and treating pollution (including waste) which has been generated by production activities. With the exception of Hungary, only a relatively small part of the total investment on environmental protection is spent on cleaner technologies and other measures to reduce the pollution that is generated at the source. However, it should be stressed that pollution prevention investments are sometimes difficult to measure correctly which may lead to some underestimation. In addition, pollution prevention may occur as a positive side-effect from e.g. normal replacement of worn-out machinery where no expenditure specifically linked to environmental protection can be identified.

Time series

In many countries the ongoing trend to privatise former public sector responsibilities, such as waste collection and treatment and sewage treatment as well as the trend to outsource environmental protection activities to specialised enterprises and to environmental consultants, has led to a shift in the expenditure structure from public sector and industry (to a lesser degree), to enterprises which specialise in

Figure 1.6: Environmental protection expenditure by industry per capita in 2000

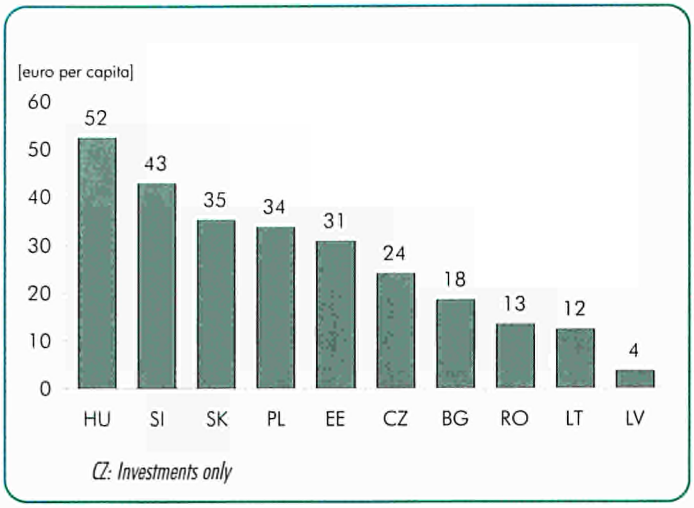


Figure 1.7: Share of pollution prevention and pollution treatment investments by industry in 2000

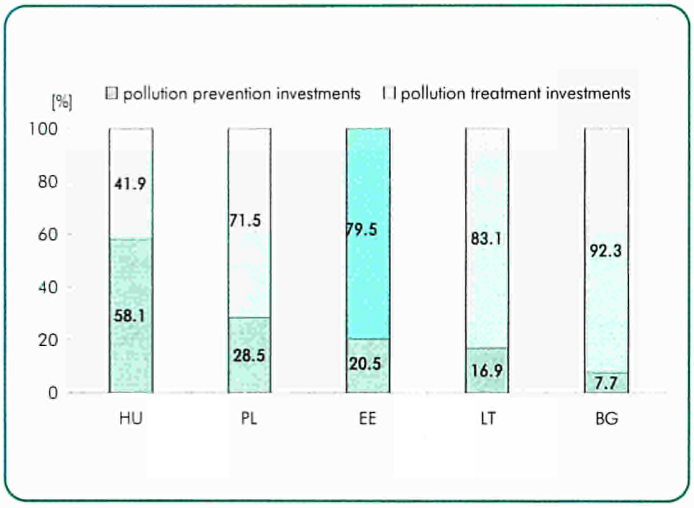
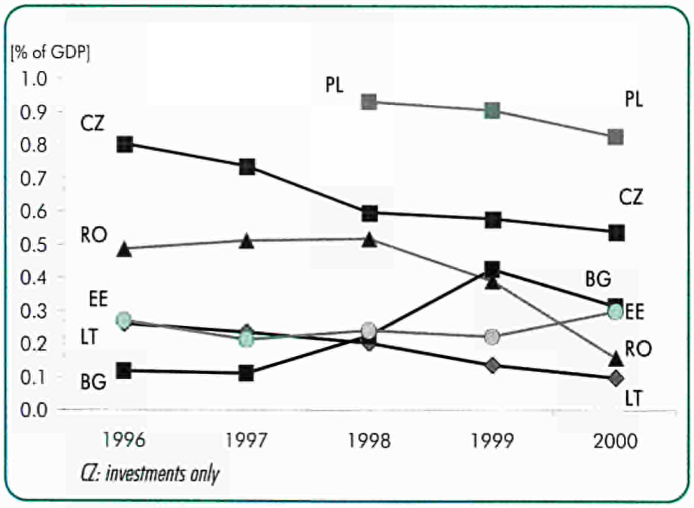


Figure 1.8: *Public sector environmental protection expenditure, 1996 - 2000, selected countries*



producing environmental services.

The lack of long time series with consistent and complete data sets on environmental protection expenditure in the Accession Countries makes it difficult to draw any definitive conclusions about trends or shifts in expenditure patterns.

The graph to the right shows the development of public sector expenditure on environmental protection as a proportion of GDP in the period 1996-2000. Total public sector expenditure shows a tendency to decline in some countries, in particular in the Czech Republic, Romania and Lithuania.

The same time series for industry expenditure shows a more divergent pattern. Spending on environmental protection as a proportion of GDP has declined in the Czech Republic and Estonia while there was a significant increase in Bulgaria between 1996 and 1999.

Figure 1.9: *Industry environmental protection expenditure 1996 - 2000, selected countries*

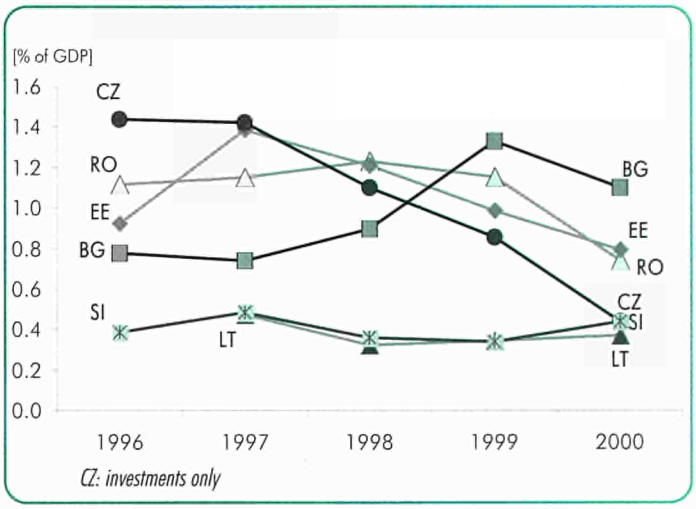
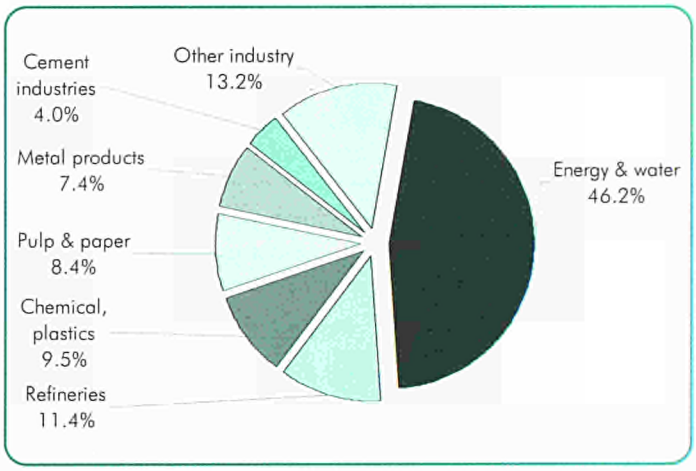


Figure 1.10: *EP investments by industry in Accession Countries in 2000 by branches of industries (%)*



Detailed industries

There are often a few specific industries in a country, with potentially high environmental impact, which account for the majority of spending on environmental protection. However, the relative importance of different industries varies according to the industry structure in the respective countries.

Figures 1.10 and 1.11 show the average distribution of total industry sector environmental protection expenditure, by specific industries. The four industries - Energy and water supply, Refineries, Chemicals and Pulp & paper - account for around three quarters of total industry capital expenditure on environmental protection in the Accession Countries in 2000. Nearly half of total capital expenditure is spent by the 'Energy and water supply' industry, despite the fact that expenditure for taking care of radioactive waste and other spending linked to nuclear energy has up to now traditionally been excluded from what is reported as environmental expenditure. In most EU countries, Manufacturing industry accounts for at least 80% of total industry investment, while Energy and water supply account for a much smaller share.

In most countries two or three industries account for around three fourths of the spending, but the industries differ somewhat across countries as can be seen in Figure 1.12, reflecting differences in the economic structure. The most important industries in terms of environmental protection investments are:

- Energy and water supply, which is the industry which spends most in all countries except Hungary, Latvia and Romania.
- Pulp & paper industry, which is the industry with the highest spending in Hungary and the second highest in Estonia and Slovenia, but accounts for only around 8% of total environmental protection capital expenditure in the Accession Countries.
- Metal products, which is the industry with the highest spending in Latvia and Romania, but accounts for only around 7% of total capital expenditure.
- Chemicals, rubber & plastics, which is the second largest spender in the Czech Republic and the third largest in another six countries.

- Refineries which is important in particular in Poland.

The relative distribution of current expenditure on environmental protection shows a rather similar pattern: the main exceptions being that 'Pulp and paper' account for a smaller share while industries such as food and beverages and basic metals become relatively more important.

- 'Energy and water' is relatively less important in terms of current expenditure, but still accounts for nearly 40% of all current expenditure for environmental protection in Accession Countries. In Bulgaria, Estonia, Hungary and Slovak Republic it was the industry that accounted for most of the current expenditure for environmental protection.

- 'Chemicals, Rubber & plastics' accounted for about 15 % of total current expenditure for environmental protection in Accession Countries. In Romania and Slovenia it was the industry that accounted for most of the current expenditure for environmental protection.

- 'Metal products' was the industry of highest importance with regard to current expenditure in Hungary, Slovenia, Estonia and Lithuania and accounted for about 13% of the total current expenditure for environmental protection in Accession Countries.

- 'Food, beverages & tobacco' accounted for most of the current expenditure for environmental protection in Latvia and was the second most important industry in terms of current expenditure for environmental protection in Estonia. It accounted for around 9% of total current expenditure for environmental protection in Accession Countries.

Figure 1.11: *EP current expenditure by industry in Accession Countries in 2000 by branches of industries (%)*

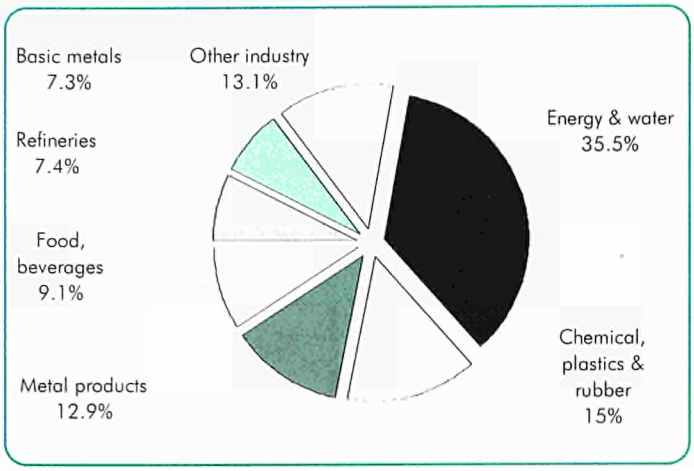
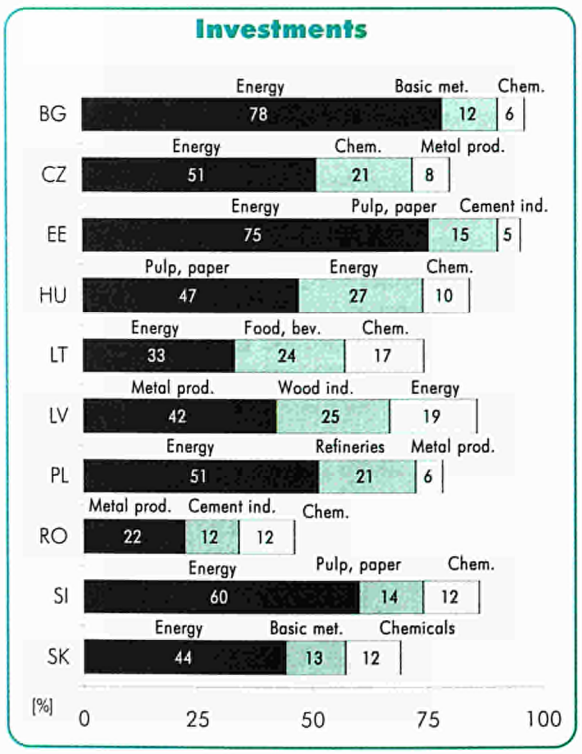
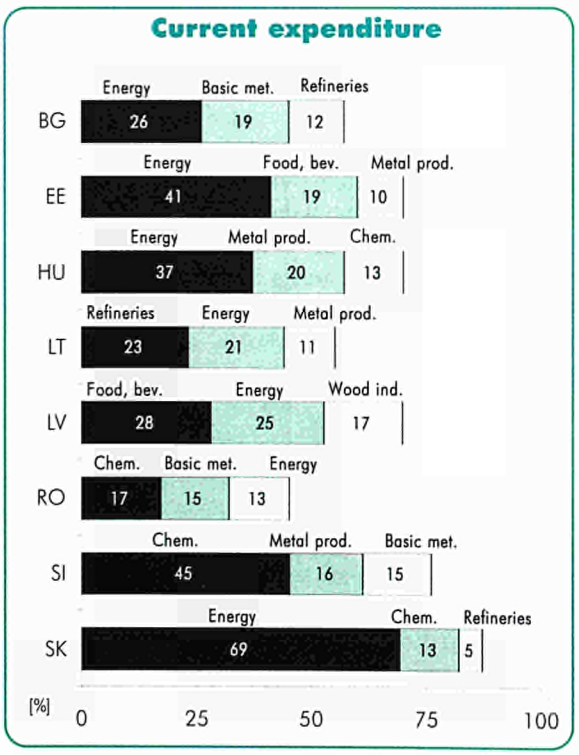


Figure 1.12: *EP investments and current expenditure by industry in 2000: three largest branches of industries*





Environmental domains

The distribution of public sector expenditure by environmental domain also depends on the degree to which the public sector remains responsible for waste collection, waste treatment and sewage treatment. There are also inherent differences in the capital intensity between the environmental domains.

Wastewater treatment is a capital intensive activity since it depends on a system of pipes and sewage treatment plants. In most Accession Countries, the majority of the environmental protection investments by the public sector and by specialised producers are within the wastewater domain - more than 49% in 7 of 8 countries.

Waste collection and waste treatment on the other hand is much more dependent on manual labour. The waste domain accordingly accounts for a small share of environmental protection investments, but more than half the current expenditure in 5 of 7 countries. Wastewater is also important in terms of current expenditure, but the percentage is much lower (between 3% and 33%), except in Latvia, Lithuania and Hungary, where wastewater accounts also for the majority of current expenditure.

For industry, also the relative importance of different domains is highly dependent on the industry structure in the countries e.g. a large energy sector based on fossil fuels could be a basis for high expenditure in the air domain, while a large pulp and paper industry affects the size of expenditure in the wastewater domain. Industry expenditure on environmental protection in the Accession Countries are more equally divided among the three core environmental domains. However, investments focused on air pollution are predominant in all Accession Countries (over 45% in 7 of 8 countries), while the wastewater domain was most important in terms of current expenditure in 6 of 7 countries.

Figure 1.13: EP investments and current expenditure in the Accession Countries in 2000, by environmental domains (%)

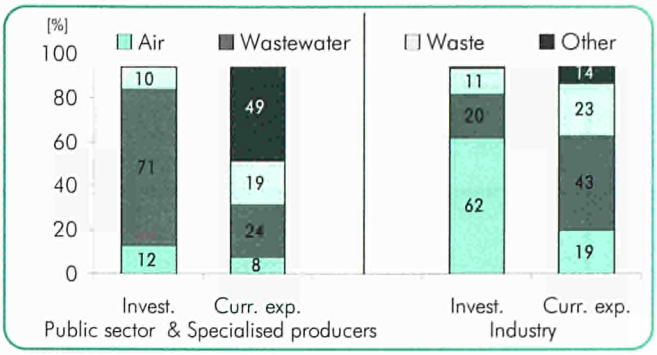


Figure 1.14: EP investments by Public sector and specialised producers in 2000, by environmental domains (%)

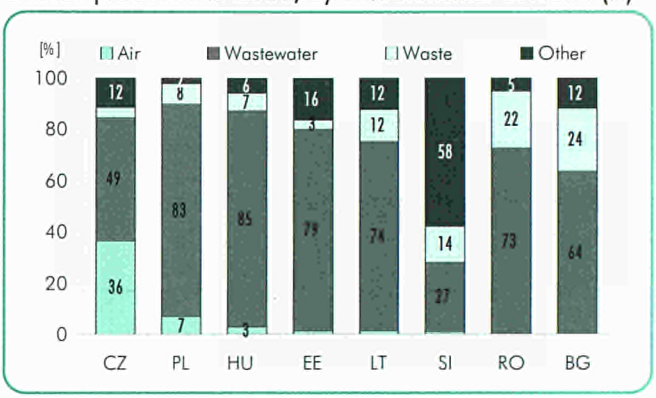
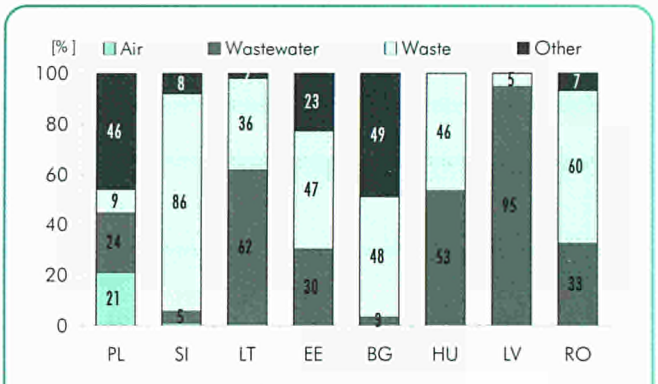


Figure 1.15: EP current expenditure by Public sector and specialised producers in 2000, by environmental domains (%)



CZ: only public sector; HU: only specialised producers

Figure 1.16: EP investments by Industry in 2000, by environmental domains (%)

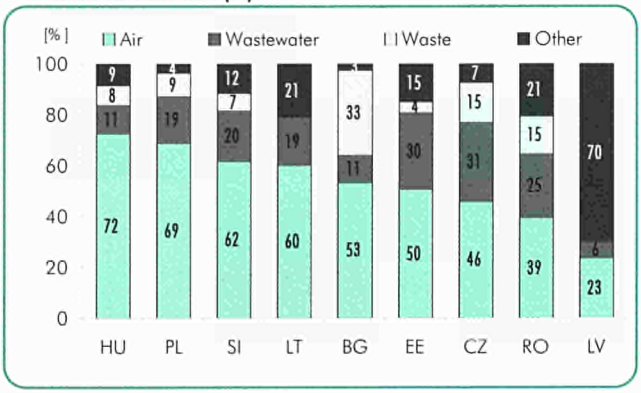


Figure 1.17: EP current expenditure by Industry in 2000, by environmental domains (%)

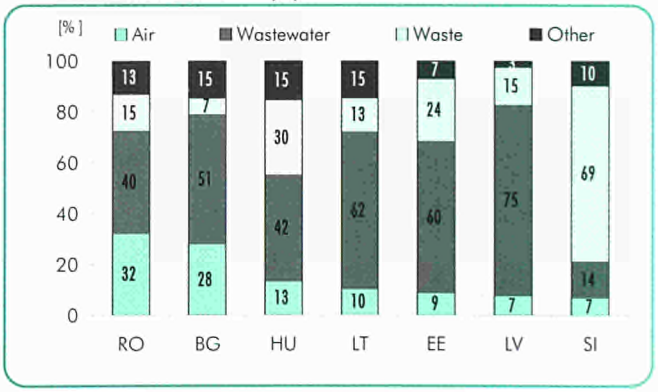


Table 1.4: Environmental protection expenditure by public sector, industry and specialised producers (public and private)

	Millions of euro (ECU 1996-1998)					% of GDP					Per capita euro (ECU 1996-1998)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Environmental protection expenditure															
D	36 705	37 091	36 555	:	:	2.0	2.0	1.9	:	:	449	452	446	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	216	200	:	:	:	1.8	1.5	:	:	:	26	24
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	75	75	80	65	68	2.2	1.8	1.7	1.3	1.2	51	51	55	45	47
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	115	101	133	:	:	1.2	1.0	1.1	:	:	31	27	36
LV	:	:	:	:	40	:	:	:	:	0.5	:	:	:	:	17
PL	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	472	563	709	569	510	1.7	1.8	1.9	1.7	1.3	21	25	31	25	23
SI	:	:	:	:	126	:	:	:	:	0.6	:	:	:	:	64
SK	:	:	:	390	231	:	:	:	2.1	1.1	:	:	:	72	43
Investments															
D	13 155	11 388	11 965	:	:	0.7	0.6	0.6	:	:	161	139	146	:	:
F	4 124	4 254	4 366	4 594	5 141	0.3	0.3	0.3	0.3	0.4	71	73	74	78	87
UK	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	51	91	:	:	:	0.4	0.7	:	:	:	6	11
CZ	1 041	1 051	910	749	559	2.3	2.2	1.8	1.5	1.0	101	102	88	73	54
EE	39	41	41	37	46	1.1	1.0	0.9	0.8	0.8	27	28	28	26	32
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	51	37	53	:	:	0.5	0.4	0.4	:	:	14	10	14
LV	:	7	9	11	11	:	0.1	0.2	0.2	0.1	:	3	3	4	4
PL	:	:	:	:	1 539	:	:	:	:	0.9	:	:	:	:	40
RO	152	202	275	217	180	0.5	0.6	0.7	0.6	0.4	7	9	12	10	8
SI	:	:	:	:	97	:	:	:	:	0.5	:	:	:	:	49
SK	:	:	:	195	82	:	:	:	1.0	0.4	:	:	:	36	15
Current expenditure															
D	23 550	25 703	24 590	:	:	1.3	1.4	1.3	:	:	288	313	300	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	166	109	:	:	:	1.4	0.8	:	:	:	20	13
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	36	34	39	28	22	1.0	0.8	0.8	0.6	0.4	24	23	27	19	15
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	64	64	80	:	:	0.7	0.6	0.7	:	:	17	17	22
LV	:	:	:	:	29	:	:	:	:	0.4	:	:	:	:	12
PL	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	320	360	435	352	329	1.2	1.2	1.2	1.1	0.8	14	16	19	16	15
SI	:	:	:	:	29	:	:	:	:	0.2	:	:	:	:	15
SK	:	:	:	195	149	:	:	:	1.0	0.7	:	:	:	36	28

Table 1.5: Environmental protection expenditure by public sector and industry

	Millions of euro (ECU 1996-1998)					% of GDP					Per capita euro (ECU 1996-1998)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Environmental protection expenditure															
D	22 225	22 302	19 369	:	:	1.2	1.2	1.0	:	:	272	272	236	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	11 701	:	12 555	14 512	:	1.0	:	0.9	0.9	:	199	:	211	243
BG	70	78	128	213	194	0.9	0.8	1.1	1.8	1.4	8	9	15	26	24
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	41	65	68	59	61	1.2	1.6	1.5	1.2	1.1	28	45	47	41	42
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	60	50	48	58	:	0.7	0.5	0.5	0.5	:	16	14	13	16
LV	:	:	:	:	10	:	:	:	:	0.1	:	:	:	:	4
PL	:	:	:	:	2 710	:	:	:	:	1.6	:	:	:	:	70
RO	444	518	654	515	361	1.6	1.7	1.7	1.5	0.9	20	23	29	23	16
SI	:	:	:	:	121	:	:	:	:	0.6	:	:	:	:	61
SK	:	:	:	386	220	:	:	:	2.0	1.0	:	:	:	72	41
Investments															
D	7 703	6 058	5 332	:	:	0.4	0.3	0.3	:	:	94	74	65	:	:
F	3 875	3 987	4 091	4 298	4 809	0.3	0.3	0.3	0.3	0.3	67	68	70	73	81
UK	:	2 032	:	2 306	2 667	:	0.2	:	0.2	0.2	:	34	:	39	45
BG	20	33	46	51	90	0.3	0.4	0.4	0.4	0.7	2	4	6	6	11
CZ	1 019	1 010	859	738	546	2.2	2.2	1.7	1.4	1.0	99	98	83	72	53
EE	18	35	34	33	41	0.5	0.9	0.7	0.7	0.7	13	24	23	23	29
HU	:	152	300	:	:	:	0.4	0.7	:	:	:	15	30	:	:
LT	:	32	23	20	24	:	0.4	0.2	0.2	0.2	:	9	6	6	6
LV	:	3	7	3	2	:	0.1	0.1	0.1	0.0	:	1	3	1	1
PL	1 750	1 874	2 166	1 873	1 498	1.5	1.5	1.5	1.3	0.9	45	48	56	48	39
RO	151	193	271	213	141	0.5	0.6	0.7	0.6	0.4	7	9	12	9	6
SI	:	:	:	:	94	:	:	:	:	0.5	:	:	:	:	47
SK	:	:	:	193	74	:	:	:	1.0	0.3	:	:	:	36	14
Current expenditure															
D	14 522	16 244	14 037	:	:	0.8	0.9	0.7	:	:	177	198	171	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	9 669	:	10 250	11 845	:	0.8	:	0.7	0.8	:	164	:	173	199
BG	50	44	81	163	104	0.6	0.5	0.7	1.3	0.8	6	5	10	20	13
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	22	30	34	26	19	0.7	0.7	0.7	0.5	0.3	15	21	23	18	13
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	28	28	28	34	:	0.3	0.3	0.3	0.3	:	7	7	7	9
LV	:	:	:	:	8	:	:	:	:	0.1	:	:	:	:	3
PL	:	:	:	:	1 212	:	:	:	:	0.7	:	:	:	:	31
RO	293	325	384	302	221	1.1	1.0	1.0	0.9	0.5	13	14	17	13	10
SI	:	:	:	:	27	:	:	:	:	0.1	:	:	:	:	13
SK	:	:	:	193	147	:	:	:	1.0	0.7	:	:	:	36	27

Table 1.6: Environmental protection expenditure by sectors and by environmental domains in 2000, [%]

	Environmental protection expenditure				Investments				Current expenditure			
	Air	Waste-water	Waste	Other	Air	Waste-water	Waste	Other	Air	Waste-water	Waste	Other
Public sector												
D	0	55	43	2	0	85	9	6	0	38	62	0
F	:	47	40	13	:	81	6	13	:	31	56	13
UK	2	4	72	22	4	3	26	67	2	4	74	20
BG	0	25	35	40	0	64	24	12	0	0	41	59
CZ	:	:	:	:	36	49	4	12	:	:	:	:
EE	1	71	9	19	1	79	3	16	0	18	44	38
HU	:	:	:	:	3	85	7	6	:	:	:	:
LT	2	57	23	18	1	74	12	12	5	12	50	32
LV	:	77	:	23	:	100	:	:	:	63	25	13
PL	13	56	9	22	7	83	8	2	21	24	9	46
RO	0	40	42	18	0	73	22	5	0	25	51	24
SI	1	27	16	57	1	27	14	58	3	7	65	26
SK	:	:	:	:	:	:	:	:	:	:	:	:
Specialised producers (public and private)												
D	:	56	44	0	:	83	17	0	:	40	60	0
F	:	58	42	0	:	55	45	0	:	58	42	0
UK	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	82	18	:	:	100	:	:	20	80	0
CZ	:	:	:	:	:	2	92	6	:	:	:	:
EE	:	30	53	17	:	24	54	21	:	41	50	10
HU	:	:	:	:	:	:	:	:	:	53	46	0
LT	:	72	27	0	:	84	15	1	:	65	35	0
LV	:	97	:	3	:	100	:	:	:	96	4	0
PL	:	:	:	:	:	57	36	7	:	:	:	:
RO	:	49	50	1	:	86	13	1	:	36	64	1
SI	:	16	80	4	:	28	66	6	:	4	95	1
SK	:	:	:	:	:	:	:	:	:	:	:	:
Industry												
D	:	:	:	:	41	35	19	5	:	:	:	:
F	:	:	:	:	36	46	15	4	:	:	:	:
UK	24	25	27	24	46	15	13	26	13	29	35	23
BG	40	32	19	9	53	11	33	3	28	51	7	15
CZ	:	:	:	:	46	31	15	7	:	:	:	:
EE	34	42	12	12	50	30	4	15	9	60	24	7
HU	36	30	21	13	72	11	8	9	26	48	14	12
LT	27	48	:	26	60	19	:	21	10	62	13	15
LV	9	67	:	24	23	6	:	70	13	77	6	4
PL	:	:	:	:	69	19	9	4	:	:	:	:
RO	35	34	15	16	39	25	15	21	32	40	15	13
SI	45	18	25	11	62	20	7	12	7	14	69	10
SK	:	:	:	:	:	:	:	:	:	:	:	:

D: Public sector and specialised producers 1998; Industry, end-of-pipe investments 1999

F: End of pipe investments for industry

SK: No environmental domains reported, only total for all domains

H: Public sector 1998

Table 1.7: Environmental protection expenditure by sectors and by environmental domains in 2000, [%]

	Environmental protection expenditure				Investments				Current expenditure			
	Air	Waste-water	Waste	Other	Air	Waste-water	Waste	Other	Air	Waste-water	Waste	Other
Mining and quarrying												
D	:	:	:	:	:	:	:	:	:	:	:	:
F	:	:	:	:	30	40	28	2	:	:	:	:
UK	21	8	27	44	40	7	23	30	7	9	30	54
BG	0	67	0	33	0	50	0	50	0	69	0	31
CZ	:	:	:	:	55	33	1	11	:	:	:	:
EE	10	16	49	25	:	:	:	:	10	16	49	25
HU	5	5	40	50	10	5	55	30	5	1	23	72
LT	1	4	75	20	1	4	79	16	1	4	69	26
LV	:	:	:	:	:	:	:	:	100	0	0	0
PL	6	24	22	48	41	41	12	7	3	22	23	52
RO	24	25	21	30	40	7	16	37	7	45	26	22
SI	:	:	:	:	:	:	39	61	6	10	:	84
SK	:	:	:	:	:	:	:	:	:	:	:	:
Manufacturing												
D	:	:	:	:	:	:	:	:	:	:	:	:
F	:	:	:	:	40	41	16	3	:	:	:	:
UK	23	30	28	19	45	19	12	24	13	35	36	17
BG	40	32	14	14	37	27	33	3	41	34	8	17
CZ	:	:	:	:	52	17	26	5	:	:	:	:
EE	44	36	18	3	84	7	6	3	12	58	27	3
HU	35	21	29	16	74	9	9	8	15	33	30	22
LT	26	57	15	1	57	28	14	2	13	70	16	1
LV	8	66	12	13	6	8	4	83	15	74	7	3
PL	:	:	:	:	64	15	14	7	:	:	:	:
RO	37	35	15	13	42	27	15	16	33	41	14	11
SI	14	31	42	12	23	45	15	17	4	16	72	7
SK	:	:	:	:	:	:	:	:	:	:	:	:
Energy and water												
D	:	:	:	:	:	:	:	:	:	:	:	:
F	:	:	:	:	13	75	6	6	:	:	:	:
UK	40	4	21	35	59	4	7	30	26	4	31	38
BG	45	27	26	2	59	6	33	2	8	85	5	3
CZ	:	:	:	:	39	44	8	9	:	:	:	:
EE	30	47	7	17	39	38	3	19	4	70	17	10
HU	41	47	6	6	68	18	4	10	34	57	4	6
LT	31	20	:	49	69	3	:	28	0	34	3	63
LV	13	67	:	20	100	0	:	:	5	84	4	7
PL	65	18	12	5	75	20	4	1	53	16	22	9
RO	23	29	13	34	15	22	12	52	28	33	14	24
SI	81	4	7	7	87	4	1	8	23	4	73	0
SK	:	:	:	:	:	:	:	:	:	:	:	:

D: End-of-pipe investments 1999

F: End of pipe investments

SK: No environmental domains reported, only total for all domains

Table 1.8: Environmental protection expenditure by public sector

	Millions of euro (ECU 1996-1998)					% of GDP					Per capita euro (ECU 1996-1998)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Environmental protection expenditure															
D	13 003	11 220	10 395	:	:	0.7	0.6	0.5	:	:	159	137	127	:	:
F	10 071	10 428	10 901	11 650	12 617	0.8	0.8	0.8	0.9	0.9	173	178	186	198	213
UK	:	5 542	5 967	6 624	7 576	:	0.5	0.5	0.5	0.5	:	94	101	112	127
BG	9	10	25	52	43	0.1	0.1	0.2	0.4	0.3	1	1	3	6	5
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	9	9	11	11	17	0.3	0.2	0.2	0.2	0.3	6	6	8	7	12
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	16	20	19	14	12	0.3	0.2	0.2	0.1	0.1	4	5	5	4	3
LV	:	:	:	:	1	:	:	:	:	0.0	:	:	:	:	0
PL	:	:	1 314	1 315	1 409	:	:	0.9	0.9	0.8	:	:	34	34	36
RO	135	159	194	131	63	0.5	0.5	0.5	0.4	0.2	6	7	9	6	3
SI	:	:	:	:	36	:	:	:	:	0.2	:	:	:	:	18
SK	:	:	:	137	31	:	:	:	0.7	0.1	:	:	:	25	6
Investments															
D	5 095	4 251	3 712	:	:	0.3	0.2	0.2	:	:	62	52	45	:	:
F	2 984	3 037	3 141	3 373	3 932	0.2	0.2	0.2	0.2	0.3	51	52	53	57	66
UK	:	355	324	331	335	:	0.0	0.0	0.0	0.0	:	6	5	6	6
BG	5	5	14	22	17	0.1	0.1	0.1	0.2	0.1	1	1	2	3	2
CZ	365	344	303	298	301	0.8	0.7	0.6	0.6	0.5	35	33	29	29	29
EE	7	7	9	9	14	0.2	0.2	0.2	0.2	0.3	5	5	6	6	10
HU	:	92	219	:	:	:	0.2	0.5	:	:	:	9	22	:	:
LT	14	16	16	9	9	0.2	0.2	0.2	0.1	0.1	4	4	4	2	2
LV	:	2	2	2	0	:	0.0	0.0	0.0	0.0	:	1	1	1	0
PL	654	744	759	763	768	0.6	0.6	0.5	0.5	0.4	17	19	20	20	20
RO	52	76	107	85	19	0.2	0.2	0.3	0.3	0.0	2	3	5	4	1
SI	:	:	:	:	34	:	:	:	:	0.2	:	:	:	:	17
SK	:	:	:	51	22	:	:	:	0.3	0.1	:	:	:	9	4
Current expenditure															
D	7 908	6 969	6 683	:	:	0.4	0.4	0.3	:	:	97	85	81	:	:
F	7 087	7 391	7 760	8 277	8 686	0.6	0.6	0.6	0.6	0.6	122	126	132	140	147
UK	:	5 187	5 643	6 294	7 241	:	0.4	0.4	0.5	0.5	:	88	96	106	121
BG	4	5	12	30	26	0.1	0.1	0.1	0.2	0.2	1	1	1	4	3
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	2	1	2	2	2	0.1	0.0	0.0	0.0	0.0	1	1	2	1	2
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	2	3	3	5	3	0.0	0.0	0.0	0.0	0.0	1	1	1	1	1
LV	:	:	:	:	1	:	:	:	:	0.0	:	:	:	:	0
PL	:	:	555	552	641	:	:	0.4	0.4	0.4	:	:	14	14	17
RO	83	83	87	45	44	0.3	0.3	0.2	0.1	0.1	4	4	4	2	2
SI	:	:	:	:	1	:	:	:	:	0.0	:	:	:	:	1
SK	:	:	:	86	9	:	:	:	0.5	0.0	:	:	:	16	2

Table 1.9: Environmental protection expenditure by specialised producers (public and private)

	Millions of euro (ECU 1996-1998)					% of GDP					Per capita euro (ECU 1996-1998)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Environmental protection expenditure															
D	14 480	14 788	17 185	:	:	0.8	0.8	0.9	:	:	177	180	209	:	:
F	7 975	8 395	8 940	9 875	10 588	0.7	0.7	0.7	0.7	0.7	137	144	152	167	179
UK	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	3	6	:	:	:	0.0	0.0	:	:	:	0	1
CZ	:	401	428	430	550	:	0.9	0.8	0.8	1.0	:	39	42	42	54
EE	34	10	12	6	7	1.0	0.2	0.3	0.1	0.1	23	7	8	4	5
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	65	53	75	:	:	0.7	0.5	0.6	:	:	18	14	20
LV	:	:	:	:	30	:	:	:	:	0.4	:	:	:	:	13
PL	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	28	45	55	54	148	0.1	0.1	0.1	0.2	0.4	1	2	2	2	7
SI	:	:	:	:	6	:	:	:	:	0.0	:	:	:	:	3
SK	:	:	3	5	11	:	:	0.0	0.0	0.1	:	:	1	1	2
Investments															
D	5 452	5 330	6 632	:	:	0.3	0.3	0.3	:	:	67	65	81	:	:
F	249	267	275	296	332	0.0	0.0	0.0	0.0	0.0	4	5	5	5	6
UK	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	0	1	:	:	:	0.0	0.0	:	:	:	0	0
CZ	22	41	51	11	12	0.0	0.1	0.1	0.0	0.0	2	4	5	1	1
EE	21	6	7	4	5	0.6	0.1	0.2	0.1	0.1	14	4	5	3	3
HU	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	28	17	29	:	:	0.3	0.2	0.2	:	:	8	5	8
LV	:	5	2	7	9	:	0.1	0.0	0.1	0.1	:	2	1	3	4
PL	:	:	:	:	41	:	:	:	:	0.0	:	:	:	:	1
RO	2	9	4	4	40	0.0	0.0	0.0	0.0	0.1	0	0	0	0	2
SI	:	:	:	:	3	:	:	:	:	0.0	:	:	:	:	2
SK	:	:	1	2	9	:	:	0.0	0.0	0.0	:	:	0	0	2
Current expenditure															
D	9 028	9 458	10 553	:	:	0.5	0.5	0.6	:	:	110	115	129	:	:
F	7 726	8 128	8 665	9 579	10 256	0.6	0.7	0.7	0.7	0.7	133	139	148	162	173
UK	:	:	10 827	:	:	:	:	0.9	:	:	:	:	183	:	:
BG	:	:	:	3	5	:	:	:	0.0	0.0	:	:	:	0	1
CZ	:	360	377	418	538	:	0.8	0.7	0.8	1.0	:	35	37	41	52
EE	13	4	5	2	3	0.4	0.1	0.1	0.0	0.0	9	3	3	2	2
HU	:	207	248	279	331	:	0.5	0.6	0.6	0.7	:	20	24	28	33
LT	:	:	36	37	46	:	:	0.4	0.4	0.4	:	:	10	10	13
LV	:	:	:	:	21	:	:	:	:	0.3	:	:	:	:	9
PL	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	27	35	51	50	109	0.1	0.1	0.1	0.2	0.3	1	2	2	2	5
SI	:	:	:	:	3	:	:	:	:	0.0	:	:	:	:	1
SK	:	:	2	3	2	:	:	0.0	0.0	0.0	:	:	0	0	0

Table 1.10: Environmental protection expenditure by industry

	Millions of euro (ECU 1996-1998)					% of GDP					Per capita euro (ECU 1996-1998)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Environmental protection expenditure															
D	9 222	11 082	8 974	:	:	0.5	0.6	0.5	:	:	113	135	110	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	6 159	:	5 931	6 935	:	0.5	:	0.4	0.4	:	105	:	100	116
BG	61	68	102	162	151	0.8	0.7	0.9	1.3	1.1	7	8	12	20	18
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	32	57	57	48	44	0.9	1.4	1.2	1.0	0.8	21	39	39	33	31
HU	:	:	:	524	527	:	:	:	1.2	1.0	:	:	:	52	52
LT	:	40	31	34	45	:	0.5	0.3	0.3	0.4	:	11	8	9	12
LV	:	:	:	:	9	:	:	:	:	0.1	:	:	:	:	4
PL	:	:	:	:	1 301	:	:	:	:	0.8	:	:	:	:	34
RO	309	359	461	384	298	1.1	1.2	1.2	1.2	0.7	14	16	20	17	13
SI	58	78	63	64	85	0.4	0.5	0.4	0.3	0.4	29	39	32	32	43
SK	:	:	505	249	190	:	:	2.6	1.3	0.9	:	:	94	46	35
Investments															
D	2 608	1 807	1 620	1 759	1 559	0.1	0.1	0.1	0.1	:	32	22	20	21	:
F	891	950	950	925	877	0.1	0.1	0.1	0.1	0.1	15	16	16	16	15
UK	:	1 677	:	1 975	2 332	:	0.1	:	0.1	0.1	:	28	:	33	39
BG	15	28	32	29	73	0.2	0.3	0.3	0.2	0.5	2	3	4	3	9
CZ	654	666	556	440	245	1.4	1.4	1.1	0.9	0.4	63	65	54	43	24
EE	11	28	25	24	27	0.3	0.7	0.5	0.5	0.5	8	19	17	17	19
HU	:	60	81	162	207	:	0.1	0.2	0.4	0.4	:	6	8	16	21
LT	:	16	7	12	15	:	0.2	0.1	0.1	0.1	:	4	2	3	4
LV	:	1	5	1	1	:	0.0	0.1	0.0	0.0	:	0	2	0	0
PL	1 097	1 130	1 407	1 110	729	1.0	0.9	1.0	0.8	0.4	28	29	36	29	19
RO	99	117	164	128	121	0.4	0.4	0.4	0.4	0.3	4	5	7	6	5
SI	38	48	33	35	60	0.3	0.3	0.2	0.2	0.3	19	24	17	17	30
SK	:	:	374	142	52	:	:	1.9	0.7	0.2	:	:	69	26	10
Current expenditure															
D	6 614	9 275	7 354	:	:	0.4	0.5	0.4	:	:	81	113	90	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	4 482	:	3 956	4 604	:	0.4	:	0.3	0.3	:	76	:	67	77
BG	46	39	70	133	78	0.6	0.4	0.6	1.1	0.6	5	5	8	16	9
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	21	29	32	24	17	0.6	0.7	0.7	0.5	0.3	14	20	22	16	12
HU	:	:	:	362	320	:	:	:	0.8	0.6	:	:	:	36	32
LT	:	24	24	23	30	:	0.3	0.3	0.2	0.2	:	6	7	6	8
LV	:	:	:	:	8	:	:	:	:	0.1	:	:	:	:	3
PL	:	:	:	:	572	:	:	:	:	0.3	:	:	:	:	15
RO	210	242	297	256	177	0.8	0.8	0.8	0.8	0.4	9	11	13	11	8
SI	20	30	29	29	25	0.1	0.2	0.2	0.2	0.1	10	15	15	15	13
SK	:	:	130	107	138	:	:	0.7	0.6	0.6	:	:	24	20	26

D: Excluding pollution prevention investments. Only in-house current expenditure in 1996

PL: Excluding manufacturing for current expenditure

Table 1.11: Environmental protection expenditure by mining and quarrying

	Millions of euro (ECU 1996-1998)					% of GDP					Per capita euro (ECU 1996-1998)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Environmental protection expenditure															
D	367	336	320	:	:	0.0	0.0	0.0	:	:	4	4	4	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	84	:	469	811	:	0.0	:	0.0	0.1	:	1	:	8	14
BG	4	12	13	13	9	0.1	0.1	0.1	0.1	0.1	1	1	2	2	1
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	2	1	2	2	1	0.0	0.0	0.0	0.0	0.0	1	1	1	1	1
HU	:	:	:	16	3	:	:	:	0.0	0.0	:	:	:	2	0
LT	:	0	0	0	0	:	0.0	0.0	0.0	0.0	:	0	0	0	0
LV	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
PL	:	:	:	:	268	:	:	:	:	0.2	:	:	:	:	7
RO	32	33	36	28	9	0.1	0.1	0.1	0.1	0.0	1	1	2	1	0
SI	0	3	3	2	1	0.0	0.0	0.0	0.0	0.0	0	2	2	1	1
SK	:	:	2	1	1	:	:	0.0	0.0	0.0	:	:	0	0	0
Investments															
D	79	46	66	46	:	0.0	0.0	0.0	0.0	:	1	1	1	1	:
F	10	13	15	13	15	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
UK	:	22	:	172	351	:	0.0	:	0.0	0.0	:	0	:	3	6
BG	0	8	9	4	1	0.0	0.1	0.1	0.0	0.0	0	1	1	0	0
CZ	32	16	26	6	12	0.1	0.0	0.1	0.0	0.0	3	2	3	1	1
EE	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
HU	:	0	0	14	1	:	0.0	0.0	0.0	0.0	:	0	0	1	0
LT	:	0	0	0	0	:	0.0	0.0	0.0	0.0	:	0	0	0	0
LV	:	:	:	0	:	:	:	:	0.0	:	:	:	:	0	:
PL	58	71	40	35	23	0.1	0.1	0.0	0.0	0.0	2	2	1	1	1
RO	18	14	17	7	5	0.1	0.0	0.0	0.0	0.0	1	1	1	0	0
SI	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0
SK	:	:	1	0	0	:	:	0.0	0.0	0.0	:	:	0	0	0
Current expenditure															
D	288	290	254	:	:	0.0	0.0	0.0	:	:	4	4	3	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	62	:	298	459	:	0.0	:	0.0	0.0	:	1	:	5	8
BG	4	4	4	9	8	0.1	0.0	0.0	0.1	0.1	0	0	0	1	1
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	2	1	2	2	1	0.0	0.0	0.0	0.0	0.0	1	1	1	1	1
HU	:	:	:	2	2	:	:	:	0.0	0.0	:	:	:	0	0
LT	:	0	0	0	0	:	0.0	0.0	0.0	0.0	:	0	0	0	0
LV	:	:	:	:	0	:	:	:	:	0.0	:	:	:	:	0
PL	:	:	:	:	245	:	:	:	:	0.1	:	:	:	:	6
RO	14	19	18	21	4	0.1	0.1	0.0	0.1	0.0	1	1	1	1	0
SI	0	3	3	2	1	0.0	0.0	0.0	0.0	0.0	0	1	1	1	1
SK	:	:	1	1	1	:	:	0.0	0.0	0.0	:	:	0	0	0

D: Excluding pollution prevention investments

Table 1.12: Environmental protection expenditure by manufacturing

	Millions of euro (ECU 1996-1998)					% of GDP					Per capita euro (ECU 1996-1998)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Environmental protection expenditure															
D	6 724	8 654	8 506	:	:	0.4	0.5	0.4	:	:	82	106	104	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	5 500	:	4 985	5 383	:	0.5	:	0.4	0.3	:	93	:	84	90
BG	47	41	67	121	64	0.6	0.5	0.6	1.0	0.5	6	5	8	15	8
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	17	14	18	20	16	0.5	0.3	0.4	0.4	0.3	12	10	12	14	11
HU	:	:	:	313	350	:	:	:	0.7	0.7	:	:	:	31	35
LT	:	27	27	29	33	:	0.3	0.3	0.3	0.3	:	7	7	8	9
LV	:	:	:	:	7	:	:	:	:	0.1	:	:	:	:	3
PL	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	153	144	186	130	254	0.6	0.5	0.5	0.4	0.6	7	6	8	6	11
SI	25	37	33	45	44	0.2	0.2	0.2	0.2	0.2	13	19	17	23	22
SK	:	:	183	102	72	:	:	0.9	0.5	0.3	:	:	34	19	13
Investments															
D	2 042	1 430	1 407	1 442	:	0.1	0.1	0.1	0.1	:	25	17	17	18	:
F	660	735	783	779	765	0.1	0.1	0.1	0.1	0.1	11	13	13	13	13
UK	:	1 569	:	1 646	1 672	:	0.1	:	0.1	0.1	:	27	:	28	28
BG	12	15	17	14	15	0.2	0.2	0.1	0.1	0.1	1	2	2	2	2
CZ	232	243	216	179	109	0.5	0.5	0.4	0.3	0.2	22	24	21	17	11
EE	4	3	5	7	7	0.1	0.1	0.1	0.2	0.1	2	2	3	5	5
HU	:	41	46	105	150	:	0.1	0.1	0.2	0.3	:	4	5	10	15
LT	:	5	5	8	10	:	0.1	0.0	0.1	0.1	:	1	1	2	3
LV	:	1	4	1	1	:	0.0	0.1	0.0	0.0	:	0	2	0	0
PL	503	572	753	531	332	0.4	0.5	0.5	0.4	0.2	13	15	19	14	9
RO	30	29	50	38	104	0.1	0.1	0.1	0.1	0.3	1	1	2	2	5
SI	12	18	14	26	23	0.1	0.1	0.1	0.1	0.1	6	9	7	13	12
SK	:	:	128	61	29	:	:	0.7	0.3	0.1	:	:	24	11	5
Current expenditure															
D	4 682	7 224	7 100	:	:	0.2	0.4	0.4	:	:	57	88	87	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	3 932	:	3 340	3 711	:	0.3	:	0.2	0.2	:	67	:	56	62
BG	35	26	50	107	49	0.4	0.3	0.4	0.9	0.4	4	3	6	13	6
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	13	11	13	13	9	0.4	0.3	0.3	0.3	0.2	9	8	9	9	6
HU	:	:	:	209	200	:	:	:	0.5	0.4	:	:	:	21	20
LT	:	22	22	21	24	:	0.3	0.2	0.2	0.2	:	6	6	6	6
LV	:	:	:	:	6	:	:	:	:	0.1	:	:	:	:	2
PL	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	123	115	136	93	150	0.4	0.4	0.4	0.3	0.4	5	5	6	4	7
SI	13	20	19	19	21	0.1	0.1	0.1	0.1	0.1	7	10	9	10	11
SK	:	:	55	41	43	:	:	0.3	0.2	0.2	:	:	10	8	8

D: Excluding pollution prevention investments. Only in-house current expenditure in 1996

Table 1.13: Environmental protection expenditure by energy and water

	Millions of euro (ECU 1996-1998)					% of GDP					Per capita euro (ECU 1996-1998)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Environmental protection expenditure															
D	2 131	2 092	:	:	:	0.1	0.1	:	:	:	26	26	:	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	575	:	477	742	:	0.0	:	0.0	0.0	:	10	:	8	12
BG	10	14	23	28	78	0.1	0.2	0.2	0.2	0.6	1	2	3	3	9
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	13	42	37	26	27	0.4	1.0	0.8	0.5	0.5	9	28	26	18	19
HU	:	:	:	195	174	:	:	:	0.4	0.3	:	:	:	19	17
LT	:	13	4	5	12	:	0.2	0.0	0.0	0.1	:	4	1	1	3
LV	:	:	:	:	2	:	:	:	:	0.0	:	:	:	:	1
PL	:	:	:	:	701	:	:	:	:	0.4	:	:	:	:	18
RO	124	182	240	226	35	0.4	0.6	0.6	0.7	0.1	5	8	11	10	2
SI	32	38	27	17	39	0.2	0.2	0.2	0.1	0.2	16	19	14	9	20
SK	:	:	319	146	117	:	:	1.6	0.8	0.5	:	:	59	27	22
Investments															
D	487	331	147	266	:	0.0	0.0	0.0	0.0	:	6	4	2	3	:
F	221	202	152	133	97	0.0	0.0	0.0	0.0	0.0	4	3	3	2	2
UK	:	87	:	158	308	:	0.0	:	0.0	0.0	:	1	:	3	5
BG	3	5	7	11	57	0.0	0.1	0.1	0.1	0.4	0	1	1	1	7
CZ	391	408	315	255	124	0.9	0.9	0.6	0.5	0.2	38	40	31	25	12
EE	7	25	20	17	20	0.2	0.6	0.4	0.3	0.4	5	17	14	12	14
HU	:	19	35	43	55	:	0.0	0.1	0.1	0.1	:	2	3	4	6
LT	:	11	2	3	5	:	0.1	0.0	0.0	0.0	:	3	0	1	1
LV	:	0	1	0	0	:	0.0	0.0	0.0	0.0	:	0	0	0	0
PL	535	487	614	544	374	0.5	0.4	0.4	0.4	0.2	14	13	16	14	10
RO	51	74	97	84	12	0.2	0.2	0.3	0.3	0.0	2	3	4	4	1
SI	26	30	19	9	36	0.2	0.2	0.1	0.0	0.2	13	15	10	4	18
SK	:	:	246	81	23	:	:	1.3	0.4	0.1	:	:	46	15	4
Current expenditure															
D	1 644	1 761	:	:	:	0.1	0.1	:	:	:	20	21	:	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	:	488	:	319	433	:	0.0	:	0.0	0.0	:	8	:	5	7
BG	7	9	16	17	21	0.1	0.1	0.1	0.1	0.1	1	1	2	2	3
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	6	16	17	9	7	0.2	0.4	0.4	0.2	0.1	4	11	12	6	5
HU	:	:	:	152	118	:	:	:	0.3	0.2	:	:	:	15	12
LT	:	2	2	2	6	:	0.0	0.0	0.0	0.1	:	0	1	0	2
LV	:	:	:	:	2	:	:	:	:	0.0	:	:	:	:	1
PL	:	:	:	:	327	:	:	:	:	0.2	:	:	:	:	8
RO	73	107	143	142	22	0.3	0.3	0.4	0.4	0.1	3	5	6	6	1
SI	6	8	8	8	3	0.0	0.0	0.0	0.0	0.0	3	4	4	4	2
SK	:	:	74	65	95	:	:	0.4	0.3	0.4	:	:	14	12	18

D: Excluding pollution prevention investments

Table 1.14: Environmental protection expenditure by industry in 2000, distribution by branches of industries, share of total industry (%)

	Industry [Million euro]	Mining & quarrying	Energy & water	Manufacturing	Food, beverages & tobacco	Textiles & leather	Wood & wood products	Pulp, paper & printing	Refineries	Chemicals, plastics & rubber	Other non-metallic mineral	Basic metals	Metal products & other man.
Environmental protection expenditure (share of total industry %)													
D	:	:	:	:	:	:	:	:	:	:	:	:	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	6 935	12	11	78	12	3	1	8	1	20	4	4	25
BG	151	6	51	43	1	1	2	5	6	8	2	16	2
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	44	3	62	35	8	3	1	11	0	2	5	0	5
HU	527	0	33	66	8	1	1	19	:	12	2	2	15
LT	45	1	25	74	22	6	4	2	17	11	2	1	10
LV	9	:	25	75	25	8	18	:	:	:	1	:	15
PL	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	298	3	12	85	10	8	3	5	7	15	8	13	15
SI	85	2	46	52	1	0	1	11	:	22	2	6	10
SK	190	0	62	38	2	1	1	4	5	13	4	5	3
Investments (share of total industry %)													
D	:	:	:	:	:	:	:	:	:	:	:	:	:
F	877	2	11	87	11	1	3	6	6	30	5	9	17
UK	2 332	15	13	72	12	0	1	6	1	21	4	4	23
BG	73	1	78	21	1	1	0	0	1	6	1	12	0
CZ	245	5	51	45	1	1	0	0	5	21	4	4	8
EE	27	0	75	25	1	0	1	15	0	1	5	0	2
HU	207	0	27	73	3	1	1	47	:	10	2	2	7
LT	15	1	33	65	24	0	5	1	6	17	2	1	8
LV	1	:	19	81	6	3	25	:	:	:	3	:	42
PL	729	3	51	46	5	1	1	1	21	5	3	2	6
RO	121	4	10	86	7	8	5	7	3	12	12	11	22
SI	60	0	60	39	1	0	1	14	:	12	2	3	8
SK	52	1	44	56	1	2	4	5	5	12	10	13	5
Current expenditure (share of total industry %)													
D	4 555	5	:	95	:	1	0	4	9	36	3	22	:
F	:	:	:	:	:	:	:	:	:	:	:	:	:
UK	4 604	10	9	81	12	4	1	9	1	20	4	5	25
BG	78	11	26	63	1	1	3	9	12	11	3	19	3
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	17	7	41	51	19	7	3	3	1	4	4	0	10
HU	320	1	37	62	10	2	0	2	5	13	1	2	20
LT	30	1	21	78	20	9	3	2	23	8	2	1	11
LV	8	1	25	74	28	8	17	:	:	9	0	0	11
PL	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	177	3	13	85	13	8	2	5	10	17	5	15	11
SI	25	5	13	83	1	0	0	4	:	45	2	15	16
SK	138	0	69	31	2	1	0	3	5	13	1	2	2

D: 1998

Table 1.15: Environmental protection investments by industry in 2000 by investment type and branches of industries

	Industry [Million euro]	Mining & quarrying	Energy & water	Manufacturing	Food, beverages & tobacco	Textiles & leather	Wood & wood products	Pulp, paper & printing	Refineries	Chemicals, plastics & rubber	Other non-metallic mineral	Basic metals	Metal products & other man.
Pollution treatment investments (share of total industry %)													
D	1 620	4	9	87	8	3	3	5	8	22	6	11	22
F	564	2	13	84	12	1	2	8	6	26	6	11	13
UK	1 029	15	7	78	22	0	0	5	1	23	6	2	19
BG	68	2	81	17	0	1	0	0	1	2	2	13	0
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	21	0	88	12	1	0	1	0	0	1	6	0	3
HU	87	0	50	50	7	1	1	1	5	17	5	3	11
LT	13	0	36	63	27	0	5	1	8	15	1	0	6
LV	1	:	19	81	6	3	25	:	:	:	3	:	42
PL	521	3	47	50	4	1	1	1	26	6	4	1	6
RO	:	:	:	:	:	:	:	:	:	:	:	:	:
SI	60	0	60	39	1	0	1	14	:	12	2	3	8
SK	:	:	:	:	:	:	:	:	:	:	:	:	:
Pollution prevention investments (share of total industry %)													
D	:	:	:	:	:	:	:	:	:	:	:	:	:
F	313	1	7	93	8	1	4	3	6	35	5	5	25
UK	1 303	15	18	67	4	1	2	6	1	19	3	5	26
BG	6	0	36	64	9	0	0	0	0	55	0	0	0
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	6	0	21	79	0	0	0	73	1	4	0	0	0
HU	120	0	10	89	1	0	0	81	:	4	1	1	4
LT	3	7	19	74	8	0	5	2	0	28	8	3	20
LV	0	:	:	:	:	:	:	:	:	:	:	:	:
PL	208	4	61	35	8	1	2	2	8	3	2	5	4
RO	:	:	:	:	:	:	:	:	:	:	:	:	:
SI	0	:	:	:	:	:	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:	:	:	:	:	:	:
Share of pollution prevention investments (%)													
D	:	:	:	:	:	:	:	:	:	:	:	:	:
F	36	10	23	38	28	46	51	19	35	43	34	19	53
UK	56	56	77	52	18	67	83	59	67	51	37	72	64
BG	8	0	4	23	100	0	:	:	0	75	0	0	:
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	20	:	6	64	12	0	8	98	100	52	2	:	0
HU	58	57	22	71	17	11	42	99	:	25	14	40	35
LT	17	78	10	19	6	0	17	28	0	28	64	73	41
LV	0	:	0	0	0	0	0	:	:	:	0	:	0
PL	29	32	34	22	46	37	44	58	11	16	20	61	21
RO	:	:	:	:	:	:	:	:	:	:	:	:	:
SI	0	0	0	0	0	0	0	0	:	0	0	0	0
SK	:	:	:	:	:	:	:	:	:	:	:	:	:

D: 1998

2. Country profiles

This chapter contains more detailed information than that given in the country comparisons in the previous chapter. The information is presented in the form of country profiles for each of the Accession Countries except Cyprus and Malta. Data collections for Cyprus and Malta, which began in 2002, are expected to produce results available to Eurostat in 2004.

All the profiles have the same standard structure and begin with a one-page summary of the results (text and standard graphs), which includes some background information on economic activity, energy production and environmental pressure. This is followed by selected standard detailed data tables.

Some variations in the standard structure are needed due to lack of data. An overview of data availability reported in the Joint Eurostat and OECD Questionnaire (JQ) 2002 is given in Tables 2.1 and 2.2 as an introduction to the country profiles.

Table 2.1: Data availability in accession countries by sectors

	Environmental protection expenditure					Investments					Current expenditure				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Public sector															
BG	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CZ						x	x	x	x	x					
EE	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
HU							x	x							
LT	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
LV					x		x	x	x	x					x
PL			x	x	x	x	x	x	x	x			x	x	x
RO	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
SI					x					x					x
SK				x	x				x	x				x	x
Specialised producers (public and private)															
BG				x	x				x	x				x	x
CZ		x	x	x	x	x	x	x	x	x		x	x	x	x
EE	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
HU												x	x	x	x
LT			x	x	x			x	x	x			x	x	x
LV					x		x	x	x	x					x
PL										x					
RO	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
SI					x					x					x
SK			x	x	x			x	x	x			x	x	x
Industry															
BG	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CZ						x	x	x	x	x					
EE	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
HU				x	x		x	x	x	x				x	x
LT		x	x	x	x		x	x	x	x		x	x	x	x
LV					x		x	x	x	x					x
PL					x	x	x	x	x	x					x
RO	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
SI	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
SK			x	x	x			x	x	x			x	x	x

Table 2.2: Data availability in accession countries by environmental domains

	Environmental protection expenditure				Investments				Current expenditure			
	Air	Waste-water	Waste	Other	Air	Waste-water	Waste	Other	Air	Waste-water	Waste	Other
Public sector												
BG	x	x	x	x	x	x	x	x	x	x	x	x
CZ					x	x	x	x				
EE	x	x	x	x	x	x	x	x	x	x	x	x
HU												
LT	x	x	x	x	x	x	x	x	x	x	x	x
LV		x				x				x	x	
PL	x	x	x	x	x	x	x	x	x	x	x	x
RO	x	x	x	x	x	x	x	x	x	x	x	x
SI	x	x	x	x	x	x	x	x	x	x	x	x
SK												
Specialised producers (public and private)												
BG			x				x			x	x	
CZ						x	x					
EE		x	x			x	x			x	x	
HU										x	x	
LT		x	x			x	x			x	x	
LV		x				x				x	x	
PL						x	x					
RO		x	x			x	x			x	x	
SI		x	x			x	x			x	x	
SK												
Industry												
BG	x	x	x	x	x	x	x	x	x	x	x	x
CZ					x	x	x	x				
EE	x	x	x	x	x	x	x	x	x	x	x	x
HU	x	x	x	x	x	x	x	x	x	x	x	x
LT	x	x			x	x			x	x	x	x
LV	x	x			x	x			x	x	x	x
PL					x	x	x	x				
RO	x	x	x	x	x	x	x	x	x	x	x	x
SI	x	x	x	x	x	x	x	x	x	x	x	x
SK												

Bulgaria

Structure of gross value-added in 1999 (% of total economy): Agriculture, hunting, forestry and fishing: 21%; Mining and quarrying: 1.5%; Manufacturing: 19.1%; Electricity, gas and water supply: 4.3%.

Electricity - production by source, 1998: fossil fuel: 52%; hydro: 7%; nuclear: 40%

Environmental pressures: air pollution from industrial emissions; rivers polluted from raw sewage, heavy metals, detergents; deforestation; forest damage from air pollution and acid rain; soil contamination from heavy metals from metallurgical plants and industrial wastes.

Total environmental protection (EP) expenditure by the public sector amounted to 43 million euros or 0.31% of GDP in 2000. The domain 'Other' accounted for the largest proportion of total EP expenditure with 40%, followed by waste management with 35% and wastewater management with 25%. Current expenditure accounted for 60% of EP expenditure, of which about 40% was spent on waste management. The main part of investment (64%) was in wastewater management, while waste management accounted for 24%.

Total EP expenditure by industry amounted to 151 million euros in 2000 or 1.10% of GDP. Most of the spending was on air protection (40%), followed by wastewater management (32%). About half of EP expenditure was in the form of current expenditure. The breakdown by branches of industries shows that 'Energy & water' and 'Basic metals' industry accounted for most of the expenditure (51% and 16% respectively). In 2000, less than 8 % of total EP investments by industry was of the preventive type.

Public and private firms specialised in producing environmental services spent 5.6 million euros in environmental protection in 2000, most of which was in the form of current expenditure: 5.1 million euro. 82% of total expenditure was spent on waste management and the remainder on wastewater treatment.

Figure 2.1: Environmental protection expenditure in Public sector and Industry (1996-2000)

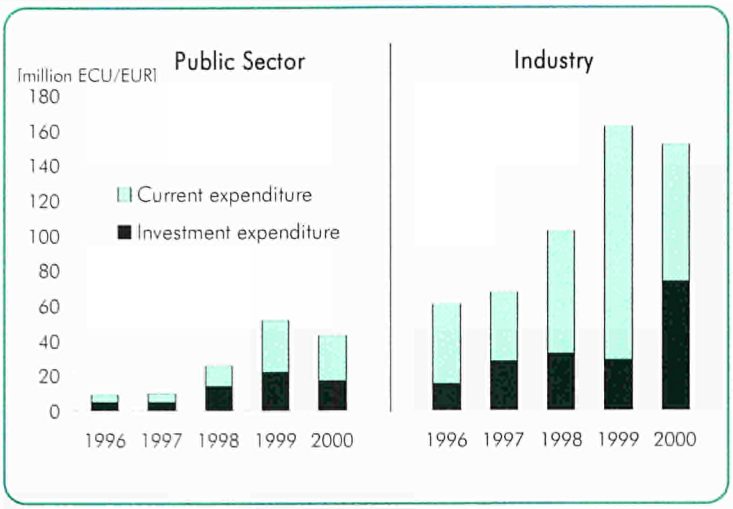


Figure 2.2: Environmental protection expenditure by environmental domain, (1996-2000)

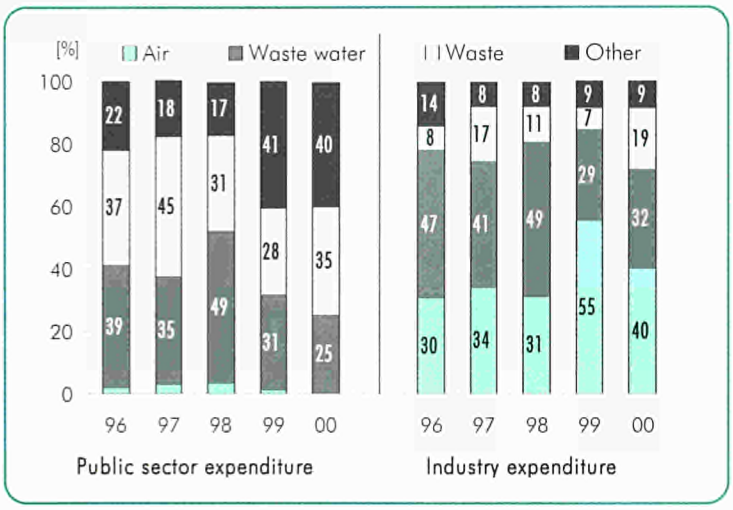


Figure 2.3: Environmental protection expenditure by branches of industries in 2000

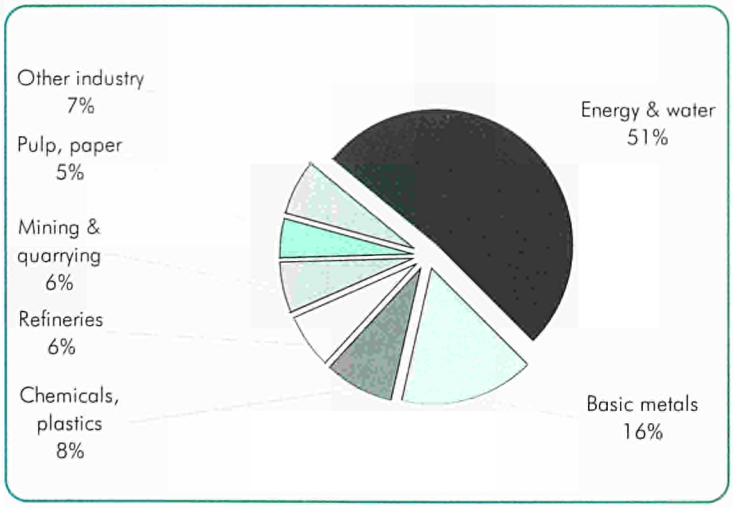


Table 2.3:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	160	3 580	3 322	:	71	:	1 928	9 065
1997	291	3 478	4 514	:	32	23	1 720	10 057
1998	793	12 429	7 831	:	176	112	4 151	25 492
1999	511	15 850	14 316	3 068	0	511	17 384	51 640
2000	0	10 781	14 888	2 567	:	0	14 888	43 123
Investments								
1996	160	3 225	240	:	71	:	986	4 681
1997	291	3 055	769	:	31	17	884	5 046
1998	790	10 096	1 138	:	176	14	1 612	13 826
1999	0	15 339	2 556	1 023	0	0	3 068	21 985
2000	0	10 781	4 107	513	:	0	1 540	16 941
Current expenditure								
1996	0	355	3 082	:	0	4	942	4 384
1997	0	423	3 745	:	1	6	836	5 011
1998	4	2 333	6 693	:	0	99	2 538	11 667
1999	511	511	11 760	2 045	0	511	14 316	29 655
2000	0	0	10 781	2 053	0	0	13 348	26 182

Table 2.4:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	18 543	28 892	4 650	:	:	:	8 537	60 831
1997	22 806	27 469	11 616	:	:	:	5 515	67 608
1998	31 705	50 473	11 379	:	:	:	8 484	102 071
1999	89 476	47 039	10 737	:	:	:	12 271	161 567
2000	60 577	47 743	29 262	:	:	:	11 294	150 930
Investments								
1996	6 356	5 894	311	:	4	:	2 669	15 234
1997	9 010	8 353	9 262	:	:	:	1 492	28 211
1998	8 529	16 525	5 260	:	20	:	1 913	32 246
1999	8 181	14 316	3 579	:	:	:	1 534	28 632
2000	39 016	8 214	24 128	:	:	:	2 053	73 412
Pollution treatment investments								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	8 181	13 805	3 579	:	:	:	511	26 587
2000	38 503	4 107	24 128	:	:	:	1 027	67 765
Current expenditure								
1996	12 187	22 998	4 517	:	:	:	5 867	45 596
1997	13 795	19 116	2 353	:	:	:	4 100	39 397
1998	23 176	33 947	6 119	:	:	:	6 571	69 825
1999	81 295	32 723	7 158	1 023	0	:	10 737	132 935
2000	21 561	39 529	5 134	:	0	:	9 241	77 519

Table 2.5:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	608	3 571	:	:	:	:	76	4 433	7
1997	349	3 934	7 372	:	:	:	:	11 732	17
1998	1 244	11 342	136	:	:	:	103	12 824	13
1999	2 556	6 647	0	1 534	:	:	2 045	12 782	8
2000	0	6 160	0	:	0	:	1 027	9 241	6
Manufacturing									
1996	16 518	19 494	3 877	:	27	:	6 640	46 556	77
1997	20 562	13 841	2 595	:	101	:	4 311	41 434	61
1998	27 206	24 411	7 869	:	27	:	7 135	66 648	65
1999	83 340	21 474	7 158	511	0	:	8 692	121 176	75
2000	25 668	20 535	9 241	0	:	:	8 727	64 171	43
Energy and water									
1996	1 417	5 827	773	:	:	:	1 821	9 842	16
1997	1 895	9 695	1 649	:	:	:	1 204	14 442	21
1998	3 255	14 720	3 375	:	:	:	1 246	22 599	22
1999	3 579	18 918	3 579	:	:	:	1 534	27 610	17
2000	34 909	21 048	20 021	:	:	:	1 540	77 519	51

Table 2.6:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	1 027	:	:	:
Waste						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	3 068	0	3 068	:	:	:
2000	4 620	513	4 107	:	:	:
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	3 068	0	3 068	:	:	:
2000	5 647	513	5 134	:	:	:

Table 2.7:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	0	6 160	0	:	0	:	1 027	9 241
Food, beverages & tobacco	0	1 027	513	0	:	:	:	1 540
Textiles & leather	:	1 027	:	:	:	:	:	1 027
Wood & wood products	0	:	:	:	:	:	:	2 567
Pulp, paper & printing	5 647	1 027	:	:	:	:	513	7 187
Refineries	2 567	2 567	:	:	:	:	4 107	9 754
Chemicals, rubber & plastics	2 567	5 134	1 027	0	:	:	3 594	12 321
Cement industries, etc	3 594	0	0	:	:	:	0	3 594
Basic metals	11 294	7 187	4 620	:	:	:	513	23 615
Metal products, etc	0	2 567	0	:	:	:	0	2 567
Energy & water	34 909	21 048	20 021	:	:	:	1 540	77 519
Investments								
Mining & quarrying	0	513	0	:	0	:	513	1 027
Food, beverages & tobacco	0	513	0	0	:	:	:	513
Textiles & leather	:	513	:	:	:	:	:	513
Wood & wood products	0	:	:	:	:	:	:	0
Pulp, paper & printing	0	0	:	:	:	:	0	0
Refineries	0	0	:	:	:	:	513	513
Chemicals, rubber & plastics	1 027	2 567	513	0	:	:	0	4 107
Cement industries, etc	1 027	0	0	:	:	:	0	1 027
Basic metals	3 594	513	4 620	:	:	:	0	8 727
Metal products, etc	0	0	0	:	:	:	0	0
Energy & water	33 369	3 594	18 995	:	:	:	1 027	56 984
Pollution treatment investments								
Mining & quarrying	0	513	0	:	0	:	513	1 027
Food, beverages & tobacco	0	0	0	:	:	:	:	0
Textiles & leather	:	513	0	:	:	:	:	513
Wood & wood products	0	:	:	:	:	:	:	0
Pulp, paper & printing	0	0	:	:	:	:	0	0
Refineries	0	513	:	:	:	:	:	513
Chemicals, rubber & plastics	513	0	513	:	:	:	0	1 027
Cement industries, etc	1 027	0	0	:	:	:	:	1 027
Basic metals	3 594	513	4 620	:	:	:	0	8 727
Metal products, etc	0	0	:	0	:	:	:	0
Energy & water	33 369	2 053	18 995	:	:	:	513	54 930
Current expenditure								
Mining & quarrying	0	5 647	0	2 053	0	:	513	8 214
Food, beverages & tobacco	0	513	513	0	:	:	0	1 027
Textiles & leather	0	513	0	:	:	:	0	513
Wood & wood products	0	0	2 567	:	:	:	0	2 567
Pulp, paper & printing	5 647	1 027	0	:	:	:	513	7 187
Refineries	2 567	2 567	513	0	:	:	3 594	9 241
Chemicals, rubber & plastics	1 540	2 567	513	0	0	:	3 594	8 214
Cement industries, etc	2 567	0	0	0	:	:	0	2 567
Basic metals	7 701	6 674	0	0	:	:	513	14 888
Metal products, etc	0	2 567	0	0	0	:	0	2 567
Energy & water	1 540	17 455	1 027	:	0	:	513	20 535

Czech Republic

Structure of gross value added in 2000 (% of total economy): Agriculture, hunting, forestry and fishing: 3.7%; Mining and quarrying: 1.5%; Manufacturing: 29.3%; Electricity, gas and water supply: 4.0%.

Top five manufacturing industries (Ordered by gross value added): Basic metals & fabricated metal products, Food & beverages, Machinery & equipment, Electrical & optical equipment and Transport equipment.

Electricity - production by source, 1998: fossil fuel: 76%; hydro: 3%; nuclear: 20%

Environmental pressures: air and water pollution in areas of northwest Bohemia and in northern Moravia around Ostrava present health risks; acid rain damages forests.

Total environmental protection (EP) investment by the public sector amounted to 301 million euros or 0.54% of GDP in 2000. In the period 1996-2000, investment in environmental protection has decreased by about 18%. Most public sector investment is within the wastewater domain: about 49%. Air protection was also important and accounted for 36% of EP investment in 2000.

Total EP investment by industry amounted to 245 million euros or 0.44% of GDP in 2000. Air protection accounted for 46% and wastewater was the second most important domain with 31% of total investment. Energy & water, which generates most of the air pollution in the Czech Republic, accounted for the highest proportion of EP investment: 51%. Chemical industry came next with 21%, followed by metal products with 8%.

Public and private firms specialised in producing environmental services spent 550 million euros in environmental protection in 2000, of which 98% was spent as current expenditure. 92% of investment was aimed at waste management.

Figure 2.4: Environmental protection investments in Public sector and Industry (1996-2000)

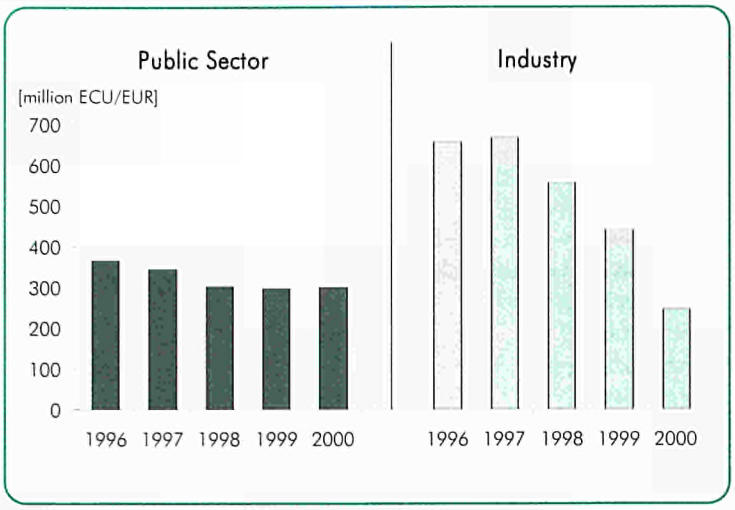


Figure 2.5: Environmental protection investments by environmental domain, (1996-2000)

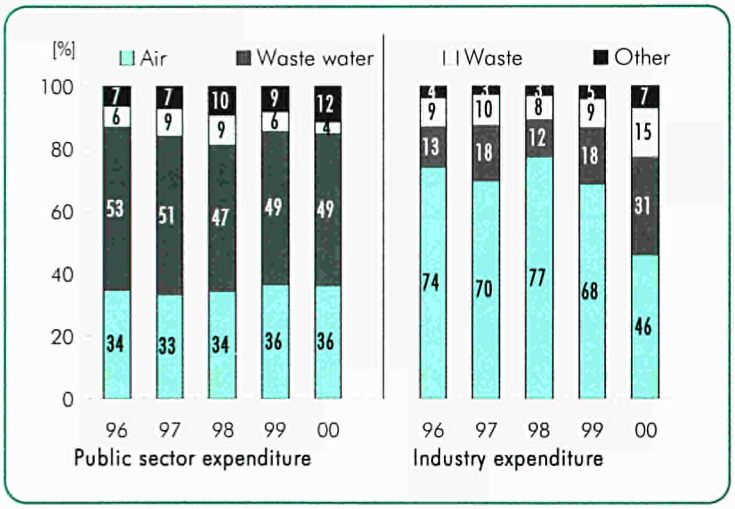


Figure 2.6: Environmental protection investments by branches of industries in 2000

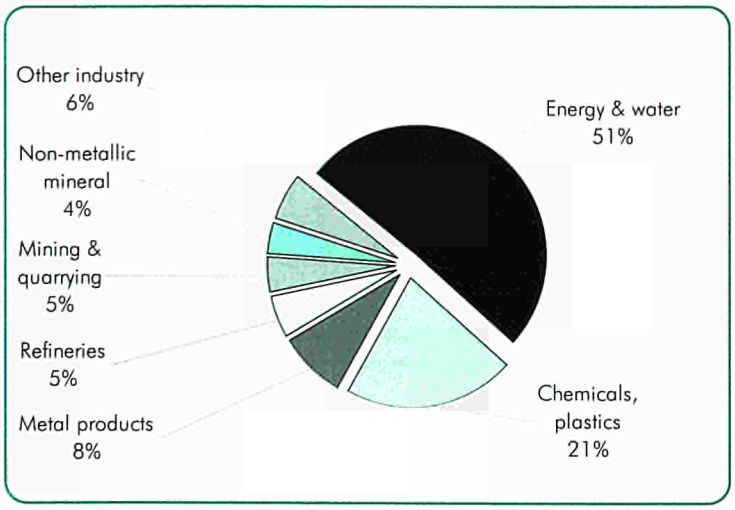


Table 2.8:
Environmental protection investment expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
				Investments				
1996	125 707	191 500	23 419	8 839	5 419	9 811	:	364 696
1997	113 718	175 204	30 626	3 360	2 561	18 623	:	344 092
1998	103 591	142 388	27 868	3 422	2 365	23 166	:	302 799
1999	108 074	146 473	18 121	3 886	3 655	17 824	:	298 032
2000	108 781	145 964	10 754	2 552	4 528	28 240	:	300 819

Table 2.9:
Environmental protection investment expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
				Investments				
1996	482 474	85 874	59 586	9 366	10 696	6 044	:	654 039
1997	463 688	117 903	64 288	8 638	6 941	4 936	:	666 394
1998	428 426	67 847	41 941	7 181	5 762	5 205	:	556 362
1999	300 089	80 308	39 414	6 686	2 715	10 429	:	439 641
2000	112 306	77 017	37 925	3 932	3 128	11 191	:	245 499

Table 2.10:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
			Wastewater			
1996	:	10 812	:	:	:	:
1997	:	11 387	:	:	:	:
1998	:	449	:	:	:	:
1999	:	850	:	:	:	:
2000	:	231	:	:	:	:
			Waste			
1996	:	10 458	:	:	:	:
1997	:	27 463	:	:	:	:
1998	:	49 676	:	:	:	:
1999	:	10 079	:	:	:	:
2000	:	11 183	:	:	:	:
			Other domains			
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
			Total domains			
1996	:	22 194	:	:	:	:
1997	400 873	40 521	360 352	125 390	:	:
1998	427 793	50 940	376 852	127 006	:	:
1999	429 882	11 447	418 435	165 430	:	:
2000	550 274	12 196	538 078	193 597	:	:

Table 2.11:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	8 260	12 931	6 644	3 310	745	0	:	31 889	5
1997	5 102	5 976	1 714	2 949	24	264	:	16 030	2
1998	6 115	17 831	272	1 551	12	19	:	25 800	5
1999	1 427	2 725	329	1 644	123	20	:	6 268	1
2000	6 452	3 903	160	633	356	265	:	11 770	5
Manufacturing									
1996	149 375	49 221	24 275	5 046	2 370	1 305	:	231 590	35
1997	152 736	54 341	25 556	5 074	3 811	1 279	:	242 796	36
1998	157 446	20 440	29 163	4 700	1 991	1 771	:	215 513	39
1999	117 064	34 641	17 159	4 778	2 472	2 604	:	178 719	41
2000	56 973	18 618	28 131	2 749	2 288	501	:	109 260	45
Energy and water									
1996	324 840	23 723	28 667	1 010	7 581	4 740	:	390 560	60
1997	305 850	57 586	37 017	614	3 106	3 394	:	407 568	61
1998	264 865	29 576	12 506	930	3 758	3 414	:	315 049	57
1999	181 598	42 942	21 926	264	120	7 805	:	254 654	58
2000	48 882	54 495	9 634	549	485	10 425	:	124 470	51

Table 2.12:
Environmental protection investment expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Investments								
Mining & quarrying	6 452	3 903	160	633	356	265	:	11 770
Food, beverages & tobacco	1 056	2 101	241	0	225	2	:	3 624
Textiles & leather	971	562	77	61	0	0	:	1 671
Wood & wood products	866	1	6	0	19	24	:	915
Pulp, paper & printing	398	138	66	11	0	0	:	612
Refineries	6 484	6 351	0	84	0	0	:	12 920
Chemicals, rubber & plastics	20 209	4 405	24 627	875	857	288	:	51 261
Cement industries, etc	7 928	532	1 046	35	106	147	:	9 794
Basic metals	6 819	1 173	622	0	1	1	:	8 616
Metal products, etc	12 243	3 355	1 446	1 683	1 080	41	:	19 848
Energy & water	48 882	54 495	9 634	549	485	10 425	:	124 470

Estonia

Structure of gross value added in 2000 (% of total economy): Agriculture, hunting, forestry and fishing: 5.2%; Mining and quarrying: 1.2%; Manufacturing: 16.6%; Electricity, gas and water supply: 3.4%.

Top five manufacturing industries (ordered by gross value added): Food & beverages, Textiles, Wood, Pulp, paper, publishing & printing and Chemicals (Refineries not available data).

Electricity - production by source, 1998: fossil fuel: 100%; hydro: 0%; nuclear: 0%

Environmental pressures: Estonia has a special problem with solid waste, arising from oil-shale mining and processing, and previous uranium mining and military activities. Hundreds of millions of tonnes of waste are estimated to be stored in fills, ash hills and dumps, most of which do not meet environmental protection or maintenance requirements. The chief causes of air pollution are the chemical compounds and particulate matter released by manufacturing and the burning of oil-shale in north-eastern Estonia. Industrial and municipal wastewater, discharged into surface water without sufficient treatment, is the main source of water pollution.

Total environmental protection (EP) expenditure by the public sector amounted to 17 million euros or 0.30% of GDP in 2000. The wastewater domain accounted for 71% of expenditure, followed by the domain 'Other' with 19% and waste management with 9%. 88% of expenditure was in the form of investment. The receipts from by-products amounted to 0.3 million euros.

Total EP expenditure by industry amounted to 44 million euros or 0.79% of GDP in 2000. The highest expenditure was devoted to the wastewater domain (42%), followed by air protection (34%). Waste management and the domain 'Other' each represented 12% of EP expenditure. Energy & water accounted for the highest share of EP expenditures with about 62%, followed by pulp and paper with 11% and food & beverages with 8%. In 2000, 21% of total EP investment by industry was of the preventive type.

Public and private firms specialised in producing environmental services spent 7.5 million euros in environmental protection in 2000, most of which was in the form of investment expenditure (65%). 50% of investment was aimed at waste management and 31% at wastewater management. Receipts from by-products accounted for 0.8 million euros.

Figure 2.7: Environmental protection expenditure in Public sector and Industry (1996-2000)

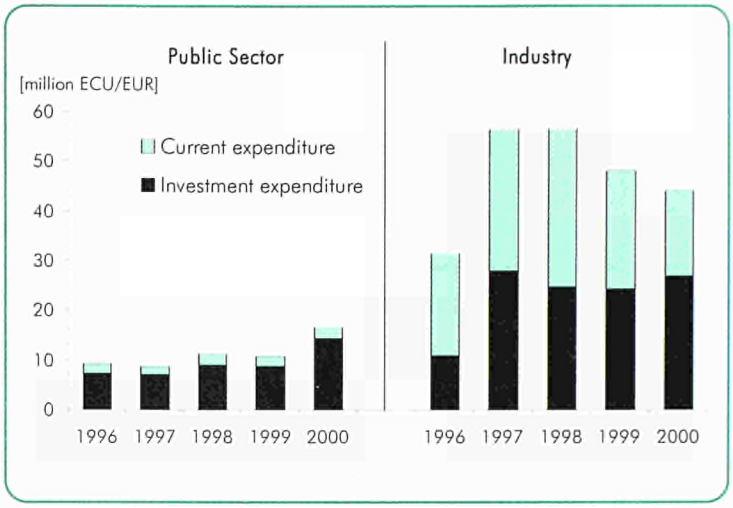


Figure 2.8: Environmental protection expenditure by environmental domain, (1996-2000)

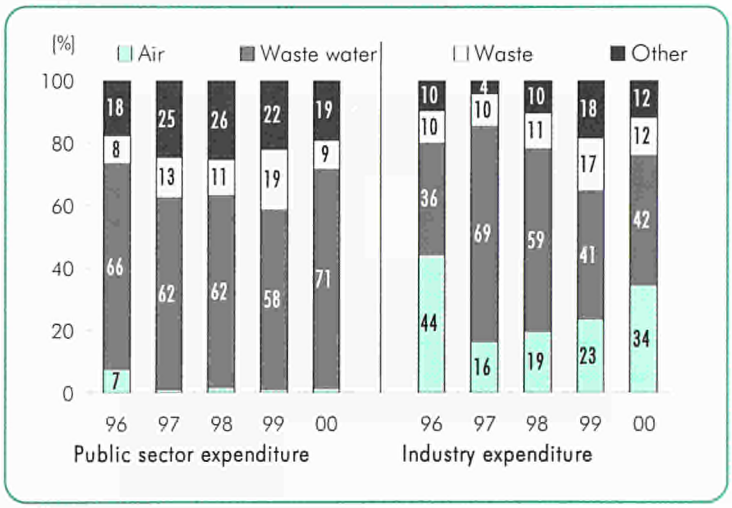


Figure 2.9: Environmental protection expenditure by branches of industries in 2000

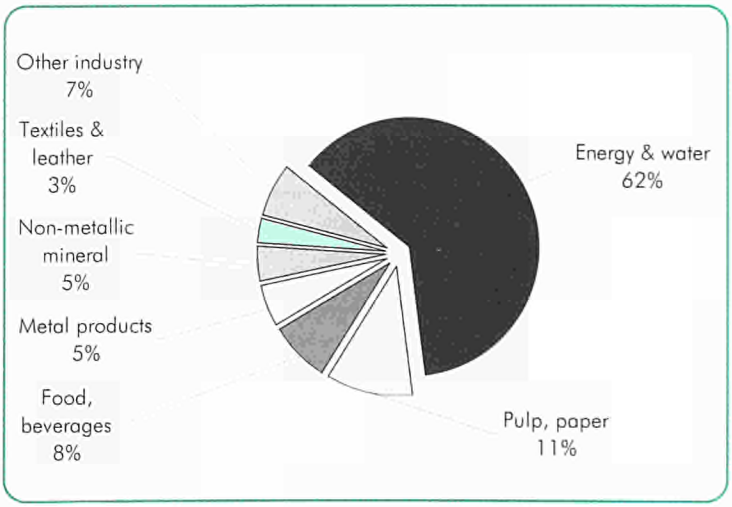


Table 2.13:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	671	6 183	785	389	2	630	653	9 313
1997	61	5 356	1 103	277	19	1 305	542	8 663
1998	178	6 971	1 253	425	6	1 724	724	11 281
1999	70	6 244	2 095	600	122	1 099	588	10 819
2000	174	11 817	1 469	1 592	89	970	590	16 700
Investments								
1996	619	5 426	224	355	1	493	305	7 423
1997	48	4 874	707	226	16	1 237	105	7 212
1998	173	6 303	756	137	3	1 609	87	9 067
1999	35	5 742	1 198	539	67	1 075	131	8 788
2000	170	11 411	479	1 500	30	786	50	14 425
Current expenditure								
1996	52	758	561	34	1	137	348	1 890
1997	13	483	396	52	3	68	436	1 451
1998	5	668	497	288	2	116	637	2 214
1999	35	502	897	61	55	24	457	2 031
2000	3	406	990	92	59	185	540	2 275

Table 2.14:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	13 928	11 388	3 171	2 547	88	20	443	31 584
1997	9 017	39 258	5 818	1 823	73	83	443	56 515
1998	10 921	33 342	6 358	4 555	698	107	562	56 543
1999	11 212	19 943	8 128	3 279	493	32	5 080	48 167
2000	15 117	18 416	5 301	2 255	8	71	2 965	44 133
Investments								
1996	8 731	1 250	333	669	75	1	19	11 077
1997	3 897	23 028	223	752	58	0	0	27 958
1998	5 660	14 465	1 909	2 025	687	53	51	24 850
1999	9 413	5 284	2 110	2 568	483	2	4 517	24 377
2000	13 602	8 191	1 119	1 795	1	3	2 275	26 985
Pollution treatment investments								
1996	6 878	1 239	160	648	75	1	19	9 019
1997	1 694	23 016	223	752	50	0	0	25 736
1998	4 909	14 440	1 622	2 025	568	53	51	23 668
1999	8 672	5 284	1 749	2 568	476	2	4 517	23 268
2000	8 179	8 178	1 049	1 780	1	3	2 275	21 465
Current expenditure								
1996	5 196	10 138	2 837	1 879	13	19	424	20 507
1997	5 120	16 230	5 595	1 070	15	83	443	28 557
1998	5 261	18 877	4 449	2 530	11	54	512	31 693
1999	1 799	14 659	6 018	711	9	30	563	23 789
2000	1 515	10 225	4 182	461	7	68	690	17 148

Table 2.15:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	108	552	765	208	0	4	5	1 642	5
1997	75	412	239	203	0	5	0	935	2
1998	115	399	824	458	0	4	0	1 800	3
1999	87	355	949	297	3	4	11	1 706	4
2000	121	200	628	309	0	2	11	1 271	3
Manufacturing									
1996	6 388	7 681	2 157	366	81	15	332	17 021	54
1997	2 032	6 611	4 687	332	31	39	217	13 949	25
1998	3 100	8 781	4 130	710	591	25	311	17 648	31
1999	5 667	8 263	4 735	548	479	29	649	20 368	42
2000	6 837	5 553	2 801	239	7	7	198	15 642	35
Energy and water									
1996	7 432	3 154	249	1 974	6	0	106	12 921	41
1997	6 911	32 235	891	1 287	42	38	226	41 630	74
1998	7 706	24 161	1 405	3 386	107	79	251	37 095	66
1999	5 458	11 325	2 443	2 434	11	0	4 421	26 092	54
2000	8 159	12 663	1 872	1 707	1	61	2 756	27 220	62

Table 2.16:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	29 888	19 168	10 720	:	302	:
1997	5 207	2 674	2 533	:	641	:
1998	8 257	4 728	3 529	:	138	:
1999	2 990	1 569	1 421	:	220	:
2000	2 252	1 182	1 070	:	203	:
Waste						
1996	3 271	949	2 322	:	334	:
1997	2 364	1 227	1 137	:	2 747	:
1998	2 568	1 719	849	:	451	:
1999	2 247	1 510	737	:	383	:
2000	3 934	2 633	1 301	:	605	:
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	34 088	20 960	13 128	:	636	:
1997	9 627	5 927	3 700	:	3 399	:
1998	11 802	7 034	4 768	:	643	:
1999	6 264	4 002	2 262	:	607	:
2000	7 463	4 840	2 623	:	811	:

Table 2.17:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	121	200	628	309	0	2	11	1 271
Food, beverages & tobacco	51	2 747	576	10	1	0	7	3 393
Textiles & leather	720	294	274	1	0	1	1	1 291
Wood & wood products	19	212	388	15	0	0	5	638
Pulp, paper & printing	4 133	419	74	0	0	0	9	4 635
Refineries	0	115	69	0	0	0	2	186
Chemicals, rubber & plastics	293	526	85	167	0	0	29	1 101
Cement industries, etc	1 238	125	564	12	5	2	113	2 060
Basic metals	0	3	19	0	0	0	0	23
Metal products, etc	383	1 112	752	34	0	4	31	2 315
Energy & water	8 159	12 663	1 872	1 707	1	61	2 756	27 220
Investments								
Mining & quarrying	0	0	0	0	0	0	0	0
Food, beverages & tobacco	31	140	0	0	1	0	0	172
Textiles & leather	0	15	0	0	0	0	0	15
Wood & wood products	19	36	129	15	0	0	0	200
Pulp, paper & printing	4 116	0	0	0	0	0	0	4 116
Refineries	0	0	69	0	0	0	0	69
Chemicals, rubber & plastics	211	26	0	155	0	0	0	392
Cement industries, etc	1 076	12	204	5	0	0	27	1 325
Basic metals	0	0	0	0	0	0	0	0
Metal products, etc	293	222	15	19	0	0	0	549
Energy & water	7 856	7 739	701	1 601	0	3	2 248	20 147
Pollution treatment investments								
Mining & quarrying	0	0	0	0	0	0	0	0
Food, beverages & tobacco	9	140	0	0	1	0	0	150
Textiles & leather	0	15	0	0	0	0	0	15
Wood & wood products	19	36	128	0	0	0	0	184
Pulp, paper & printing	78	0	0	0	0	0	0	78
Refineries	0	0	0	0	0	0	0	0
Chemicals, rubber & plastics	8	26	0	155	0	0	0	189
Cement industries, etc	1 067	0	204	5	0	0	27	1 303
Basic metals	0	0	0	0	0	0	0	0
Metal products, etc	293	222	15	19	0	0	0	549
Energy & water	6 704	7 739	701	1 601	0	3	2 248	18 995
Current expenditure								
Mining & quarrying	121	200	628	309	0	2	11	1 271
Food, beverages & tobacco	20	2 607	576	10	0	0	7	3 221
Textiles & leather	720	279	274	1	0	1	1	1 276
Wood & wood products	0	175	259	0	0	0	5	439
Pulp, paper & printing	17	419	74	0	0	0	9	518
Refineries	0	115	0	0	0	0	2	117
Chemicals, rubber & plastics	82	500	85	12	0	0	29	709
Cement industries, etc	162	113	360	7	5	2	86	735
Basic metals	0	3	19	0	0	0	0	23
Metal products, etc	90	890	736	14	0	4	31	1 766
Energy & water	304	4 924	1 171	106	1	59	509	7 073

Hungary

Structure of gross value added in 1999 (% of total economy): Agriculture, hunting, forestry and fishing: 4.8%; Mining and quarrying: 0.3%; Manufacturing: 23.5%; Electricity, gas and water supply: 3.9%.

Top five manufacturing industries (ordered by gross value added): Electrical & optical equipment, Food & beverages, Transport equipment, Refineries and Chemicals

Electricity - production by source, 1999: fossil fuel: 61%; hydro: 1%; nuclear: 38%

Environmental pressures: waste management, energy efficiency, and air, soil, and water pollution.

Environmental protection (EP) investment by the public sector amounted to 219 million ECU or 0.52% of GDP in 1998. Wastewater management accounted for the largest proportion of EP investment (85%), followed by waste management (7%). Only 2% of investment was spent on air protection.

Total EP expenditure by industry amounted to 527 million euros or 1.04% of GDP in 2000. Most of EP expenditure was spent in the air domain (36%), followed by wastewater management with 30%. 60% of EP expenditure was in the form of current expenditure. Energy & water had the highest share of EP investment at 33%, followed by the pulp and paper industry with 19% and metal products and chemical industry with 15% and 12%, respectively.

The proportion of pollution prevention investment in total EP investment increased from 25% in 1997 to 58% in 2000.

In 2000, public and private firms specialised in producing environmental services spent about 331 million euros in the form of current expenditure, mainly in wastewater treatment and waste management; this represents an increase of 19% compared to the year before. Revenues from environmental activities accounted for 356 million euros.

Figure 2.10: Environmental protection expenditure in Public sector and Industry (1996-2000)

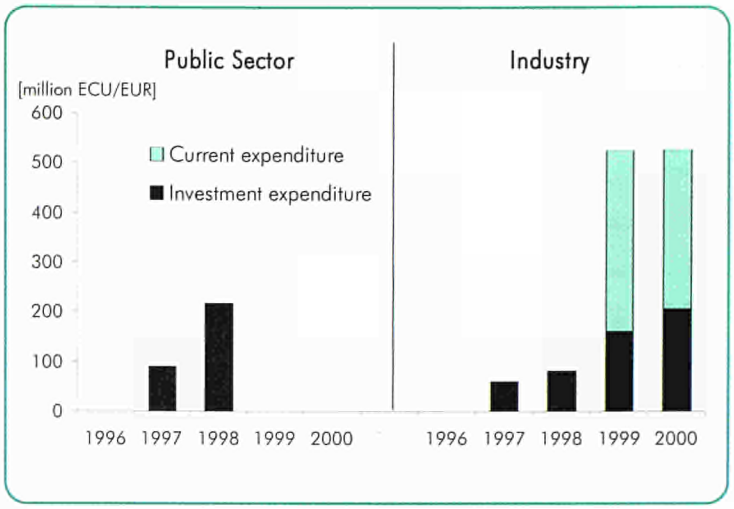


Figure 2.11: Environmental protection expenditure by environmental domain, (1996-2000)

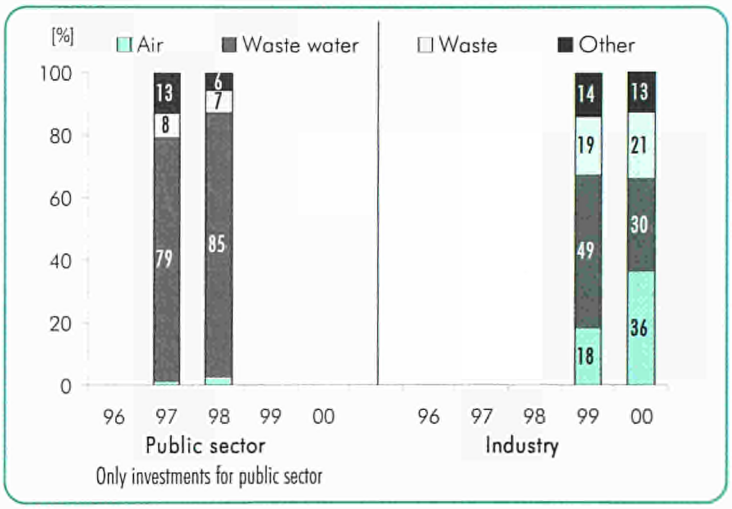


Figure 2.12: Environmental protection expenditure by branches of industries in 2000

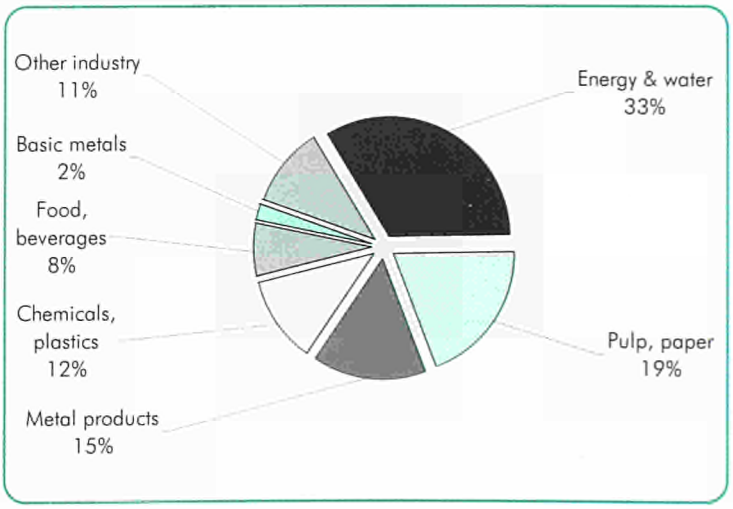


Table 2.18:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Investments								
1996	:	:	:	:	:	:	:	:
1997	846	72 004	7 026	3 945	52	6 941	912	91 725
1998	5 790	185 574	14 416	8 787	154	1 854	2 265	218 840
1999	:	:	:	:	:	:	:	:
2000	:	:	:	:	:	:	:	:

Table 2.19:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	95 210	258 242	97 144	32 516	8 692	4 767	18 062	524 342
2000	192 090	156 651	111 052	15 847	4 655	1 942	24 978	526 593
Investments								
1996	:	:	:	:	:	:	:	:
1997	11 764	16 560	16 721	6 383	3 577	:	5 344	60 348
1998	33 304	15 359	14 050	10 458	5 221	108	2 536	81 036
1999	66 096	37 616	16 979	27 852	6 654	1 950	4 929	162 077
2000	149 759	23 245	15 850	9 746	2 141	823	5 041	206 604
Pollution treatment investments								
1996	13 203	12 976	18 101	3 680	1 275	:	5 574	55 006
1997	9 379	8 802	16 560	5 896	3 435	:	1 323	45 395
1998	7 075	10 878	11 764	8 725	2 465	17	1 243	42 166
1999	45 730	28 490	10 731	10 475	1 238	1 737	4 510	102 911
2000	45 105	20 772	10 928	4 814	1 364	712	2 860	86 556
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	220 626	80 165	:	:	:	13 133	362 265
2000	:	133 407	95 202	:	:	:	19 937	319 988

Table 2.20:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	:	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:	:
1999	3 161	293	4 387	4 922	946	1 757	578	16 046	3
2000	135	127	1 050	546	:	485	265	2 619	0
Manufacturing									
1996	:	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:	:
1999	49 943	128 498	80 156	23 876	5 392	1 100	14 688	313 349	60
2000	120 991	74 896	99 889	8 602	3 670	746	21 986	350 135	66
Energy and water									
1996	:	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:	:
1999	42 106	129 451	12 601	3 719	2 354	1 911	2 797	194 946	37
2000	70 965	81 628	10 114	6 699	984	711	2 726	173 839	33

Table 2.21:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	:	:	:	:	:	:
1997	:	:	118 187	:	:	:
1998	:	:	133 197	:	:	:
1999	:	:	148 417	:	:	153 519
2000	:	:	176 355	:	:	179 007
Waste						
1996	:	:	:	:	:	:
1997	:	:	89 063	:	:	:
1998	:	:	114 908	:	:	:
1999	:	:	129 643	:	:	152 483
2000	:	:	152 854	:	:	177 115
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	:	:	:	:	:	:
1997	:	:	207 250	:	:	:
1998	:	:	248 104	:	:	:
1999	:	:	278 624	:	:	306 002
2000	:	:	330 717	:	:	356 122

Table 2.22:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	135	127	1 050	546	:	485	265	2 619
Food, beverages & tobacco	1 757	20 900	14 244	600	600	135	1 534	39 770
Textiles & leather	396	3 338	2 792	19	42	:	335	6 926
Wood & wood products	1 054	604	877	4	42	:	146	2 730
Pulp, paper & printing	91 453	2 365	4 022	3 503	81	:	1 146	102 571
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	10 821	19 074	19 116	1 354	642	281	9 964	61 251
Cement industries, etc	3 453	1 511	4 065	254	69	123	258	9 733
Basic metals	1 523	3 753	6 014	204	315	38	250	12 098
Metal products, etc	8 630	20 525	40 653	1 638	1 878	162	5 931	79 416
Energy & water	70 965	81 628	10 114	6 699	984	711	2 726	173 839
Investments								
Mining & quarrying	69	31	373	38	:	31	135	677
Food, beverages & tobacco	1 354	2 850	1 730	396	438	46	404	7 218
Textiles & leather	158	858	12	8	27	:	12	1 073
Wood & wood products	977	0	123	0	19	:	123	1 242
Pulp, paper & printing	91 227	1 092	900	3 499	62	:	915	97 695
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	8 664	5 511	3 426	934	496	35	588	19 654
Cement industries, etc	2 776	127	1 927	146	46	65	31	5 118
Basic metals	588	396	3 026	135	235	4	12	4 395
Metal products, etc	6 184	2 233	2 126	655	291	69	2 546	14 103
Energy & water	37 763	10 148	2 207	3 934	527	573	277	55 429
Pollution treatment investments								
Mining & quarrying	23	8	162	27	:	31	38	288
Food, beverages & tobacco	761	2 778	1 588	381	300	48	169	6 026
Textiles & leather	62	858	9	7	13	0	10	958
Wood & wood products	493	0	96	2	8	0	123	721
Pulp, paper & printing	190	33	266	0	61	0	19	569
Refineries	71	520	601	2 021	0	0	759	3 973
Chemicals, rubber & plastics	5 515	5 353	2 324	604	329	0	551	14 677
Cement industries, etc	2 473	127	1 518	144	45	65	30	4 402
Basic metals	301	149	1 878	110	198	3	11	2 649
Metal products, etc	3 168	2 166	2 056	630	158	12	969	9 158
Energy & water	32 048	8 779	431	888	254	554	181	43 135
Current expenditure								
Mining & quarrying	65	96	677	508	4	454	131	1 942
Food, beverages & tobacco	404	18 051	12 513	204	162	88	1 131	32 552
Textiles & leather	238	2 480	2 780	12	15	4	323	5 853
Wood & wood products	77	604	754	4	23	4	23	1 488
Pulp, paper & printing	227	1 273	3 123	4	19	0	231	4 876
Refineries	1 904	2 826	8 106	1 027	:	:	2 423	16 286
Chemicals, rubber & plastics	2 157	13 563	15 690	419	146	246	9 375	41 597
Cement industries, etc	677	1 384	2 138	108	23	58	227	4 615
Basic metals	934	3 357	2 988	69	81	35	238	7 703
Metal products, etc	2 446	18 292	38 527	983	1 587	92	3 386	65 313
Energy & water	33 202	71 480	7 906	2 765	458	138	2 450	118 410

Only internal current expenditure for air, soil & groundwater, noise and biodiversity & landscape.

Lithuania

Structure of gross value added in 2000 (% of total economy): Agriculture, hunting, forestry and fishing: 7.5%; Mining and quarrying: 1.1%; Manufacturing: 21.0%; Electricity, gas and water supply: 4.2%.

Top five manufacturing industries (ordered by gross value added): Food & beverages, Textiles, Pulp, paper, publishing & printing, Refineries and Electrical & optical equipment.

Electricity - production by source, 1999: fossil fuel: 13%; hydro: 4%; nuclear: 83%

Environmental pressures: contamination of soil and groundwater with petroleum products and chemicals at military bases.

Total environmental protection (EP) expenditure by the public sector amounted to 12 million euros or 0.10% of GDP in 2000. Most of the spending was on wastewater treatment, about 57%, followed by waste management with 23%. 72% of EP expenditure was in the form of investment. Since 1998, investment in environmental protection has decreased by 46%.

Total EP expenditure by industry amounted to 45 million euros in 2000 or 0.37% of GDP. Wastewater management accounted for the largest proportion of EP expenditure at 48%, followed by air protection (27%). Most of EP expenditure was in the form of current expenditure (66%). Energy & water represented the highest proportion of EP investment with 25%, followed by food & beverages (22%) and refineries (17%). In 2000, about 17% of total EP investment by industry was of the preventive type.

Public and private firms specialised in producing environmental services spent 75 million euros on environmental protection in 2000, most of which was in the form of current expenditure: 46 million euros. 73% of EP expenditure was aimed at wastewater treatment and the remainder on waste management.

Figure 2.13: Environmental protection expenditure in Public sector and Industry (1996-2000)

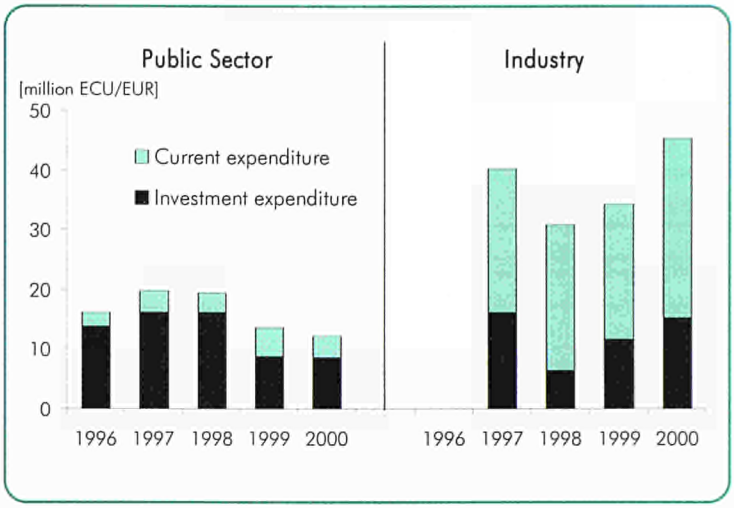


Figure 2.14: Environmental protection expenditure by environmental domain, (1996-2000)

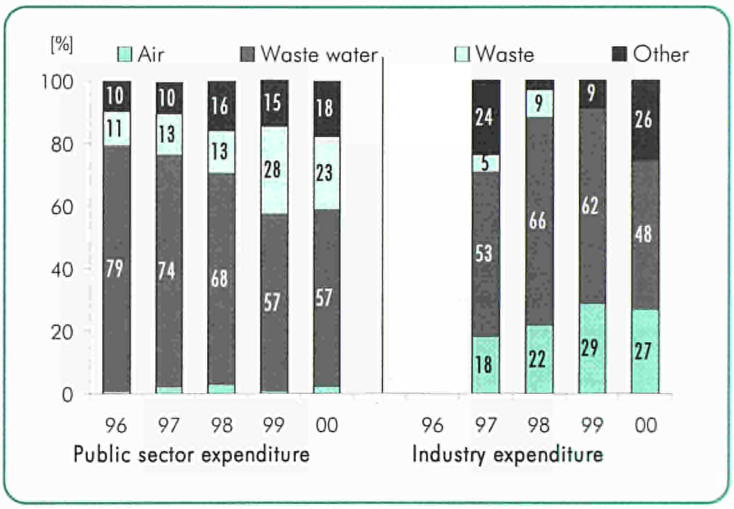


Figure 2.15: Environmental protection expenditure by branches of industries in 2000

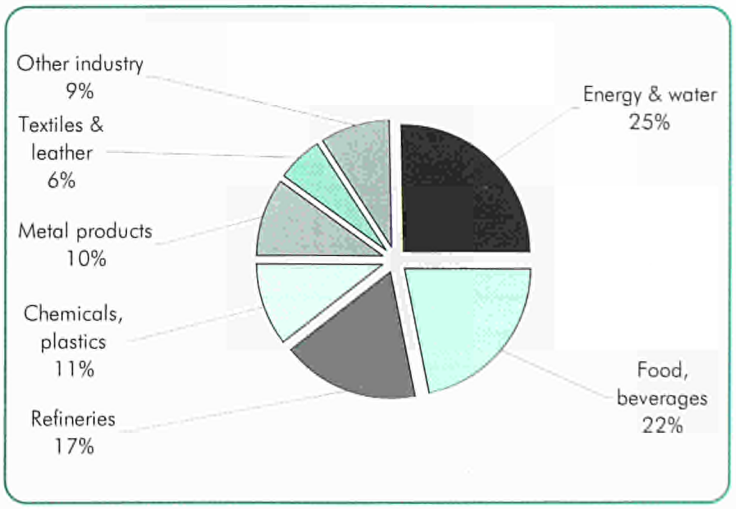


Table 2.23:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	107	12 771	1 779	273	69	:	1 257	16 255
1997	438	14 640	2 579	490	:	:	1 511	19 726
1998	584	13 156	2 566	383	:	:	2 760	19 450
1999	82	7 749	3 811	115	:	956	931	13 647
2000	286	6 881	2 804	103	:	757	1 315	12 146
Investments								
1996	74	12 203	739	112	52	:	628	13 808
1997	260	13 807	1 269	323	68	:	517	16 244
1998	414	12 714	1 038	251	:	:	1 814	16 231
1999	75	6 875	1 023	41	4	462	323	8 803
2000	101	6 473	1 075	35	:	488	546	8 719
Current expenditure								
1996	33	568	1 040	160	17	:	629	2 447
1997	178	833	1 310	167	:	:	995	3 482
1998	170	443	1 528	132	:	:	946	3 219
1999	7	874	2 788	74	:	494	608	4 844
2000	185	408	1 729	68	1	268	769	3 427

Table 2.24:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	7 264	21 244	2 132	:	:	:	:	40 213
1998	6 796	20 525	2 770	405	:	:	250	30 952
1999	9 889	21 398	:	:	:	:	:	34 286
2000	12 235	21 567	:	178	:	:	5 680	45 392
Investments								
1996	:	:	:	:	:	:	:	:
1997	3 500	2 942	541	:	:	:	9 181	16 187
1998	3 597	1 720	999	121	:	:	107	6 546
1999	7 476	3 723	:	:	:	:	:	11 616
2000	9 147	2 931	:	99	:	:	1 490	15 281
Pollution treatment investments								
1996	:	:	:	:	:	:	:	:
1997	876	2 364	175	:	:	:	9 181	12 611
1998	2 361	1 633	920	121	:	:	107	5 144
1999	3 006	3 697	:	:	:	:	:	7 077
2000	7 060	2 824	:	95	:	:	1 490	12 706
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	3 763	18 302	1 592	157	:	:	:	24 026
1998	3 199	18 880	1 772	348	:	:	205	24 406
1999	2 413	17 676	2 343	62	:	41	:	22 669
2000	3 088	18 636	4 010	103	:	75	4 190	30 111

Table 2.25:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	:	:	:	:	:	:	:	:	:
1997	19	13	17	:	:	:	:	121	0
1998	46	:	:	:	:	:	:	247	1
1999	25	11	:	:	:	119	:	383	1
2000	3	16	290	:	:	54	:	388	1
Manufacturing									
1996	:	:	:	:	:	:	:	:	:
1997	5 359	19 338	1 997	80	:	:	178	26 953	67
1998	5 490	18 954	2 441	71	4	:	128	27 087	88
1999	7 062	19 576	2 113	119	4	:	141	29 022	85
2000	8 696	19 222	5 109	156	12	60	204	33 458	74
Energy and water									
1996	:	:	:	:	:	:	:	:	:
1997	1 886	1 894	118	:	:	:	:	13 139	33
1998	1 261	1 571	329	334	:	:	123	3 617	12
1999	2 802	1 812	:	:	:	68	:	4 880	14
2000	3 535	2 329	:	22	:	:	5 476	11 546	25

Table 2.26:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	51 027	26 863	24 164	:	:	11 414
1999	40 082	15 868	24 213	:	:	27 148
2000	54 558	24 281	30 277	:	:	19 378
Waste						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	13 581	1 249	12 332	:	:	11 500
1999	13 135	838	12 297	:	:	11 202
2000	20 466	4 323	16 143	:	:	17 958
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	64 855	28 359	36 496	:	:	22 915
1999	53 254	16 743	36 510	:	:	38 350
2000	75 294	28 875	46 419	:	:	37 336

Table 2.27:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	3	16	290	:	:	54	:	388
Food, beverages & tobacco	1 907	7 202	637	1	:	:	:	9 762
Textiles & leather	447	2 019	250	:	:	:	48	2 764
Wood & wood products	1 089	150	345	:	:	:	5	1 589
Pulp, paper & printing	:	646	:	:	4	:	:	750
Refineries	268	4 791	2 669	59	:	:	:	7 787
Chemicals, rubber & plastics	2 493	2 280	83	:	:	:	83	5 016
Cement industries, etc	427	319	247	:	:	:	:	1 016
Basic metals	99	109	96	:	:	:	:	304
Metal products, etc	1 935	1 707	715	43	:	:	:	4 469
Energy & water	3 535	2 329	:	22	:	:	5 476	11 546
Investments								
Mining & quarrying	2	9	177	:	:	37	:	224
Food, beverages & tobacco	1 695	1 943	10	0	:	:	:	3 648
Textiles & leather	8	25	9	:	:	:	14	57
Wood & wood products	542	19	273	:	:	1	1	836
Pulp, paper & printing	:	148	:	:	3	3	:	153
Refineries	113	11	866	2	:	:	:	992
Chemicals, rubber & plastics	1 826	605	36	52	:	:	38	2 558
Cement industries, etc	209	9	87	:	:	:	:	306
Basic metals	28	2	84	:	:	:	:	115
Metal products, etc	1 218	2	30	37	:	:	:	1 286
Energy & water	3 504	157	:	9	:	:	1 436	5 106
Pollution treatment investments								
Mining & quarrying	2	9	1	:	:	37	:	48
Food, beverages & tobacco	1 485	1 943	10	0	:	:	:	3 438
Textiles & leather	8	25	9	:	:	:	14	57
Wood & wood products	522	19	155	:	:	1	1	698
Pulp, paper & printing	:	105	:	:	3	3	:	111
Refineries	113	11	866	2	:	:	:	992
Chemicals, rubber & plastics	1 178	541	36	52	:	:	38	1 845
Cement industries, etc	15	9	87	:	:	:	:	112
Basic metals	28	2	:	:	:	:	:	30
Metal products, etc	701	2	30	33	:	:	:	765
Energy & water	3 007	157	:	9	:	:	1 436	4 608
Current expenditure								
Mining & quarrying	1	7	114	25	:	17	:	164
Food, beverages & tobacco	212	5 259	627	1	:	:	148	6 114
Textiles & leather	438	1 993	241	:	:	9	34	2 707
Wood & wood products	546	131	71	:	:	:	4	753
Pulp, paper & printing	30	498	67	1	1	:	:	597
Refineries	156	4 780	1 802	57	:	:	0	6 795
Chemicals, rubber & plastics	667	1 674	46	:	:	25	45	2 458
Cement industries, etc	218	309	160	:	8	9	6	710
Basic metals	71	107	12	:	:	:	:	190
Metal products, etc	718	1 705	686	6	:	22	46	3 183
Energy & water	31	2 172	183	14	:	1	4 040	6 440

Latvia

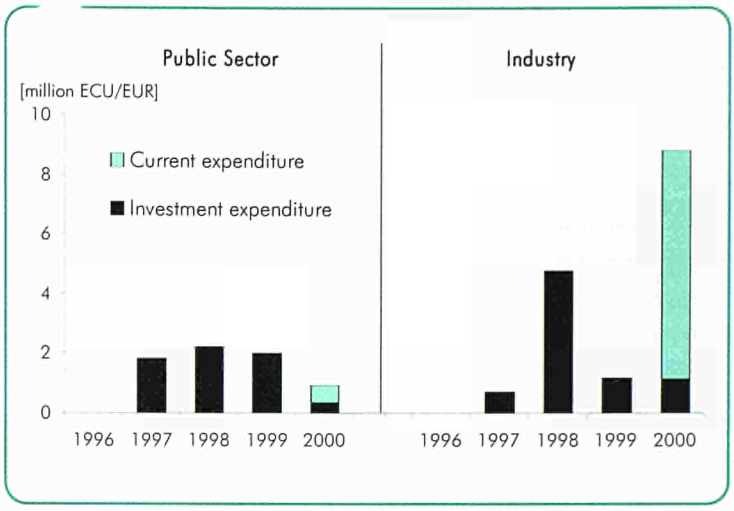
Structure of gross value added in 2000 (% of total economy): Agriculture, hunting, forestry and fishing: 4.5%; Mining and quarrying: 0.1%; Manufacturing: 14.5%; Electricity, gas and water supply: 3.9%.

Electricity - production by source, 1999: fossil fuel: 30%; hydro: 70%; nuclear: 0%

Environmental pressures: air and water pollution because of a lack of waste conversion equipment; Gulf of Riga and Daugava River heavily polluted; contamination of soil and groundwater with chemicals and petroleum products at military bases.

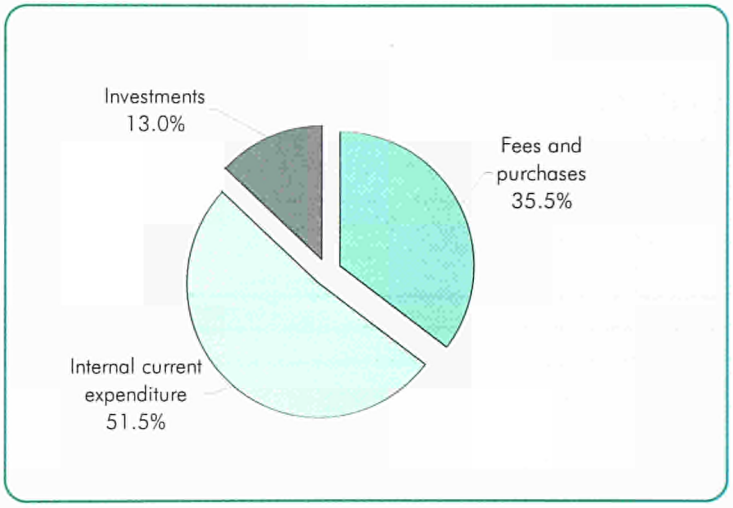
The majority of environmental problems are concentrated in the so called 'hot spots' - the largest industrial centres (Riga, Liepaja and Daugavpils), transportation crossroads or in territories abandoned by the Russian army.

Figure 2.16: Environmental protection expenditure in Public sector and Industry (1996-2000)



Total environmental protection (EP) expenditure by the public sector amounted to nearly 1 million euros or 0.01% of GDP in 2000. Wastewater management accounted for the largest proportion of EP expenditure (77%). Most of EP expenditure was in the form of current expenditure (62%). Compared to the year 1999, investment in environmental protection has decreased by 82%.

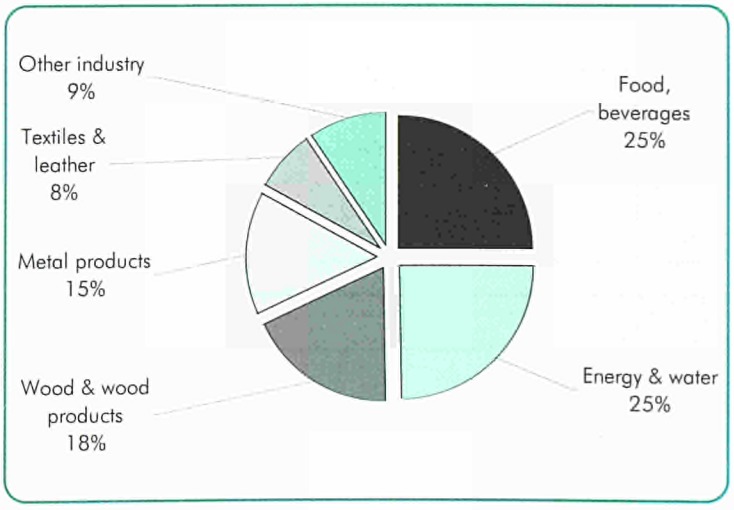
Figure 2.17: Structure of the environmental protection expenditure by Industry in 2000



Total EP expenditure by industry amounted to nearly 9 million euros or 0.11% of GDP in 2000. In Latvia, the total amount of money spent on EP by industry is 10 times higher than that spent by the public sector. Wastewater management accounted for the largest proportion of EP expenditure (67%). Only 13% of expenditure was in the form of investment.

Two industries accounted for 50% of total EP investments: food & tobacco and energy & water, 25% each, followed by wood and wood products with 18%.

Figure 2.18: Environmental protection expenditure by branches of industries in 2000



Public and private firms specialised in producing environmental services spent 30.4 million euros on environmental protection in 2000, most of which was in the form of current expenditure: 21.1 million euros. 97% of EP expenditure was aimed at wastewater management.

Table 2.28:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	:	715	:	:	:	:	:	930
Investments								
1996	0	:	0	0	:	:	:	:
1997	0	1 410	0	0	:	152	273	1 835
1998	15	2 166	0	0	:	:	61	2 242
1999	:	1 918	0	0	:	:	96	2 014
2000	:	358	:	:	:	:	:	358
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	:	358	143	:	:	:	:	572

Table 2.29:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	805	5 829	:	:	:	:	:	8 762
Investments								
1996	:	:	:	:	:	:	:	:
1997	121	500	:	:	:	:	91	713
1998	4 074	545	:	:	:	:	182	4 801
1999	863	112	:	:	:	:	:	1 199
2000	268	72	:	:	:	:	:	1 144
Pollution treatment investments								
1996	:	:	:	:	:	:	:	:
1997	121	500	:	:	:	:	91	713
1998	4 074	545	:	:	:	:	182	4 801
1999	863	112	:	:	:	:	:	1 199
2000	268	72	:	:	:	:	:	1 144
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	:	5 776	1 127	:	:	:	:	7 671

Table 2.30:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	:	:	:	:	:	:	:	0	:
1997	:	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:	:
1999	416	:	:	:	:	:	:	416	35
2000	:	:	:	:	:	:	:	:	:
Manufacturing									
1996	106	334	:	:	:	:	76	516	72
1997	3 832	121	:	:	:	:	91	4 044	84
1998	304	48	:	:	:	:	224	575	48
1999	54	72	36	125	:	:	644	930	81
2000	519	4 381	823	161	:	:	715	6 598	75
Energy and water									
1996	15	167	:	:	:	:	15	197	28
1997	242	424	:	:	:	:	91	757	16
1998	144	64	:	:	:	:	:	208	17
1999	215	0	:	:	:	:	:	215	19
2000	286	1 448	:	:	:	:	:	2 164	25

Table 2.31:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	:	:	:	:	:	:
1997	:	4 625	:	:	:	:
1998	:	1 530	:	:	:	:
1999	:	7 305	:	:	:	:
2000	29 541	9 370	20 171	:	:	:
Waste						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	876	:	:	:
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	:	:	:	:	:	:
1997	:	4 686	:	:	:	:
1998	:	1 560	:	:	:	:
1999	:	7 353	:	:	:	:
2000	30 435	9 370	21 065	:	:	:

Table 2.32:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	:	:	:	:	:	:	:	:
Food, beverages & tobacco	107	1 860	:	:	:	:	:	2 182
Textiles & leather	250	429	0	:	:	:	:	680
Wood & wood products	:	:	:	:	:	:	358	1 574
Pulp, paper & printing	:	:	:	:	:	:	:	:
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	:	:	:	:	:	:	:	:
Cement industries, etc	:	:	:	:	:	:	:	72
Basic metals	:	:	:	:	:	:	:	:
Metal products, etc	72	:	:	:	:	:	:	1 341
Energy & water	286	1 448	:	:	:	:	:	2 164
Investments								
Mining & quarrying	:	:	:	:	:	:	:	:
Food, beverages & tobacco	36	36	:	:	:	:	:	72
Textiles & leather	0	36	0	:	:	:	0	36
Wood & wood products	:	:	:	:	:	:	286	286
Pulp, paper & printing	:	:	:	:	:	:	:	:
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	:	:	:	:	:	:	:	:
Cement industries, etc	:	:	36	:	:	:	:	36
Basic metals	:	:	:	:	:	:	:	:
Metal products, etc	18	:	:	125	:	:	340	483
Energy & water	215	0	:	:	:	:	:	215
Pollution treatment investments								
Mining & quarrying	:	:	:	:	:	:	:	:
Food, beverages & tobacco	36	36	:	:	:	:	:	72
Textiles & leather	0	36	0	:	:	:	0	36
Wood & wood products	:	:	:	:	:	:	286	286
Pulp, paper & printing	:	:	:	:	:	:	:	:
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	:	:	:	:	:	:	:	:
Cement industries, etc	:	:	36	:	:	:	:	36
Basic metals	:	:	:	:	:	:	:	:
Metal products, etc	18	:	:	125	:	:	340	483
Energy & water	215	0	:	:	:	:	:	215
Current expenditure								
Mining & quarrying	36	18	0	:	:	:	:	54
Food, beverages & tobacco	72	1 824	197	18	:	:	:	2 110
Textiles & leather	250	393	0	:	:	:	:	644
Wood & wood products	54	948	215	:	:	:	72	1 287
Pulp, paper & printing	:	:	:	:	:	:	:	:
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	18	536	125	:	:	:	:	680
Cement industries, etc	0	18	:	18	:	:	:	36
Basic metals	18	:	:	:	:	:	:	36
Metal products, etc	54	572	232	:	:	:	:	858
Energy & water	72	1 448	340	:	:	:	89	1 949

Only internal current expenditure for air, soil & groundwater and other

Poland

Structure of gross value added in 2000 (% of total economy): Agriculture, hunting, forestry and fishing: 3.9%; Mining and quarrying: 2.6%; Manufacturing: 21.0%; Electricity, gas and water supply: 3.5%.

Electricity - production by source, 1999: fossil fuel: 96%; hydro: 3%; nuclear: 0%

Environmental pressures: air pollution from sulphur dioxide emissions from coal-fired power plants, and the resulting acid rain has caused forest damage; water pollution from industrial and municipal sources is also a problem, as is disposal of hazardous wastes.

Total environmental protection (EP) expenditure by the public sector amounted to 1.4 bn euros or 0.82% of GDP in 2000, of which 56% was spent on wastewater, 22% on the domain 'Other' and 13% on air protection. Investment accounted for 55% of EP expenditure, of which about 83% was spent on wastewater management. The main part of the current expenditure was in the domain 'Other' (34%), while wastewater management accounted for 24%.

Total EP expenditure by the business sector amounted to 1.3 bn euros or 0.8% of GDP in 2000. Most of the spending was on air protection (52%), followed by wastewater management (21%) and waste management (14%). More than half of EP expenditure was in the form of investment. The breakdown by branches of industries shows that energy & water industry and refineries accounted for most of the investment (51% and 21% respectively). Pollution prevention investment accounted for 29% of total EP investments in 2000, which is a decrease of two thirds compared to 1996.

Public and private firms specialised in producing environmental services spent 41 million euros in the form of investment in environmental protection in 2000. 57% of investment was spent on wastewater management and 36% on wastewater treatment.

Figure 2.19: Environmental protection expenditure in Public sector and Industry (1996-2000)

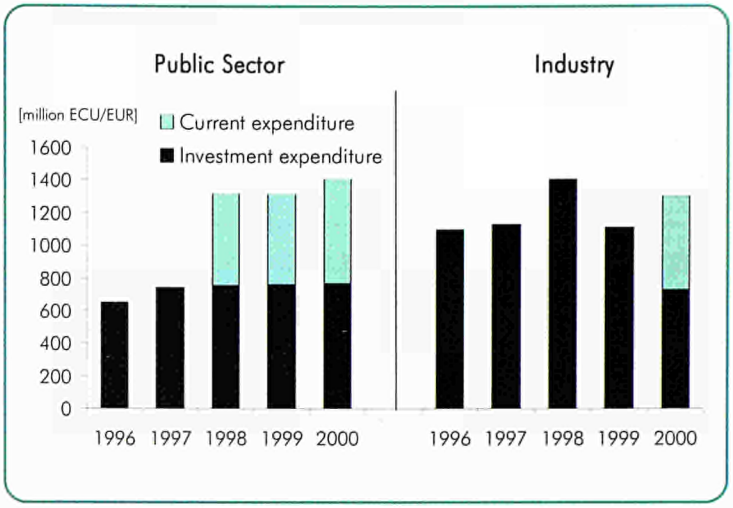


Figure 2.20: Environmental protection expenditure by environmental domain, (1996-2000)

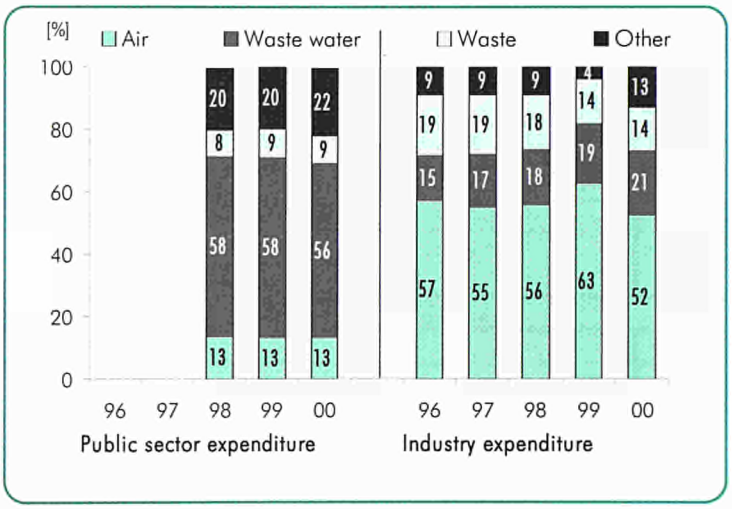


Figure 2.21: Environmental protection investments by branches of industries in 2000

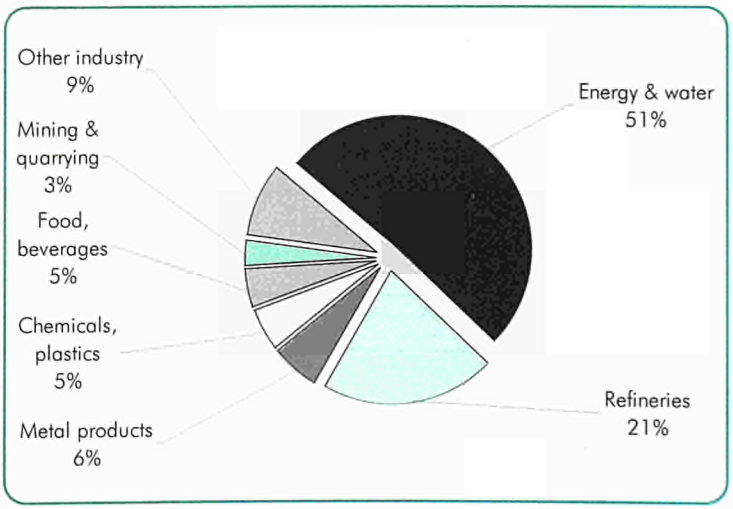


Table 2.33:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	177 032	758 854	109 350	5 684	783	64 657	197 403	1313 764
1999	169 822	762 843	120 480	5 863	703	63 700	191 278	1314 688
2000	186 809	788 109	120 723	6 928	9 464	73 065	223 835	1408 933
Investments								
1996	79 247	521 133	50 753	818	533	1 256	64	653 803
1997	52 235	623 861	54 225	21	22	665	12 721	743 750
1998	60 801	628 034	59 024	129	349	2 084	8 610	759 030
1999	54 239	632 752	70 434	339	271	1 475	3 537	763 046
2000	52 590	637 044	62 610	514	8 962	808	5 826	768 353
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	116 232	130 820	50 326	5 555	435	62 573	188 794	554 734
1999	115 584	130 091	50 045	5 524	432	62 225	187 741	551 642
2000	134 219	151 065	58 113	6 414	503	72 257	218 010	640 580

Table 2.34:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	683 651	240 218	193 233	58 977	4 285	11 444	109 412	1301 222
Investments								
1996	944 205	97 477	47 082	4 274	3 495	:	:	1096 544
1997	911 793	134 150	70 192	921	5 369	:	7 718	1130 149
1998	1081 232	171 810	136 193	1 200	8 948	:	7 544	1406 928
1999	856 757	172 172	65 854	7 062	3 464	53	4 654	1110 065
2000	501 546	135 334	64 795	7 744	2 522	82	17 394	729 420
Pollution treatment investments								
1996	514 945	94 117	47 014	:	:	:	:	657 313
1997	515 070	101 464	50 927	486	4 213	:	:	672 164
1998	526 145	128 316	91 831	329	6 399	:	:	753 020
1999	558 232	136 863	56 128	4 827	2 413	53	1 477	760 040
2000	337 204	114 915	61 739	4 853	1 981	47	753	521 485
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	182 105	104 885	128 438	51 233	1 762	11 362	92 017	571 802

Current expenditure only covers Mining & Quarrying and Energy & Water

Table 2.35:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	30 590	6 085	18 908	1 969	712	:	:	58 263	5
1997	40 653	15 518	13 426	:	934	:	7	70 538	6
1998	14 243	14 151	9 431	869	1 011	:	236	39 940	3
1999	4 221	11 275	19 464	58	112	46	145	35 368	3
2000	9 421	9 416	2 712	656	332	:	704	23 243	3
Manufacturing									
1996	427 810	46 464	24 718	1 441	2 521	11	:	502 965	46
1997	471 377	60 827	33 386	859	3 392	6	2 620	572 466	51
1998	581 095	77 635	83 496	313	7 390	:	2 861	752 788	54
1999	418 438	69 823	31 237	6 738	2 608	4	1 979	530 828	48
2000	212 980	50 943	46 310	5 873	1 689	2	14 580	332 376	46
Energy and water									
1996	485 806	44 928	3 456	864	262	:	:	535 316	49
1997	399 763	57 805	23 380	63	1 042	:	5 092	487 145	43
1998	485 895	80 024	43 267	19	547	:	4 448	614 200	44
1999	434 098	91 073	15 153	265	744	2	2 530	543 868	49
2000	279 145	74 974	15 773	1 215	501	80	2 111	373 802	51

Table 2.36:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	23 400	:	:	:	:
Waste						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	14 680	:	:	:	:
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	41 049	:	:	:	:

Table 2.37:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	17 108	63 341	59 846	41 228	1 633	:	81 211	268 154
Food, beverages & tobacco	:	:	:	:	:	:	:	:
Textiles & leather	:	:	:	:	:	:	:	:
Wood & wood products	:	:	:	:	:	:	:	:
Pulp, paper & printing	:	:	:	:	:	:	:	:
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	:	:	:	:	:	:	:	:
Cement industries, etc	:	:	:	:	:	:	:	:
Basic metals	:	:	:	:	:	:	:	:
Metal products, etc	:	:	:	:	:	:	:	:
Energy & water	453 563	125 934	87 077	11 876	963	7 658	13 620	700 692
Investments								
Mining & quarrying	9 421	9 416	2 712	656	332	:	704	23 243
Food, beverages & tobacco	8 251	19 657	6 656	249	32	2	302	35 148
Textiles & leather	579	3 937	150	10	5	:	12	4 690
Wood & wood products	6 679	928	1 851	62	25	:	:	9 543
Pulp, paper & printing	3 690	1 949	574	2	47	:	1 133	7 395
Refineries	132 559	5 174	576	2 118	893	:	12 178	153 499
Chemicals, rubber & plastics	16 252	8 126	12 220	1 901	112	:	217	38 826
Cement industries, etc	19 595	2 452	689	5	47	:	85	22 873
Basic metals	10 369	3 655	3 094	249	215	:	352	17 926
Metal products, etc	15 007	5 065	20 501	1 282	314	:	307	42 476
Energy & water	279 145	74 974	15 773	1 215	501	80	2 111	373 802
Pollution treatment investments								
Mining & quarrying	4 496	7 567	2 712	439	319	:	327	15 858
Food, beverages & tobacco	1 110	11 357	6 185	125	25	2	27	18 829
Textiles & leather	45	2 739	142	5	2	:	:	2 934
Wood & wood products	2 562	923	1 851	12	25	:	:	5 372
Pulp, paper & printing	873	1 624	564	0	22	:	:	3 079
Refineries	131 217	4 007	576	886	656	:	:	137 342
Chemicals, rubber & plastics	12 055	6 908	11 734	1 746	100	:	7	32 551
Cement industries, etc	15 695	1 956	561	5	40	:	2	18 258
Basic metals	3 942	434	2 068	235	215	:	165	7 056
Metal products, etc	8 061	4 698	19 580	826	132	:	60	33 357
Energy & water	157 147	72 706	15 770	574	447	45	162	246 846
Current expenditure								
Mining & quarrying	7 687	53 925	57 134	40 572	1 301	3 784	80 508	244 912
Food, beverages & tobacco	:	:	:	:	:	:	:	:
Textiles & leather	:	:	:	:	:	:	:	:
Wood & wood products	:	:	:	:	:	:	:	:
Pulp, paper & printing	:	:	:	:	:	:	:	:
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	:	:	:	:	:	:	:	:
Cement industries, etc	:	:	:	:	:	:	:	:
Basic metals	:	:	:	:	:	:	:	:
Metal products, etc	:	:	:	:	:	:	:	:
Energy & water	174 418	50 959	71 304	10 661	461	7 578	11 509	326 890

Romania

Structure of gross value added in 2000 (% of total economy): Agriculture, hunting, forestry and fishing: 12.6%; Mining and quarrying: 30.5%; Manufacturing: 25.1% (1998); Electricity, gas and water supply: 2.9% (1998).

Top five manufacturing industries (ordered by gross value added): Food & beverages, Basic metals & fabricated metal products, Textiles, Wood and Machinery & equipment.

Electricity - production by source, 1998: fossil fuel: 59%; hydro: 32%; nuclear: 9%

Environmental pressures: soil erosion and degradation; water pollution; air pollution in south from industrial effluents; contamination of Danube delta wetlands.

Total environmental protection (EP) expenditure by the public sector amounted to 63 million euros or 0.17% of GDP in 2000. Most of the spending was on waste management (42%) and wastewater treatment (40%). 31% of EP expenditure went for investment, the highest proportion of it (73%) being allocated to wastewater management. An important part of it went to waste (51%) and wastewater management (25%).

Total EP expenditure by industry amounted to 298 million euros or 0.74% of GDP in 2000. During the course of the nineties, EP expenditure increased steadily, at an average of 30% per year until 1998. Since 1998 there has been a slight decrease. Current expenditure accounted for 60% of EP expenditure in 2000, of which about 35% was spent on air protection and 34% on wastewater management. Compared to the other Accession Countries, the EP expenditures were more equally distributed among the branches of industries. With a 15% share each of EP investment, the chemical branch and metals products were the most important industries, followed by basic metals with 13% and energy & water with 12%.

Public and private firms specialised in producing environmental services spent 148 million euros in environmental protection in 2000, most of which was in the form of current expenditure: 109 million euros. Half of the investment was aimed at waste management and the other half was spent on wastewater treatment.

Figure 2.22: Environmental protection expenditure in Public sector and Industry (1996-2000)

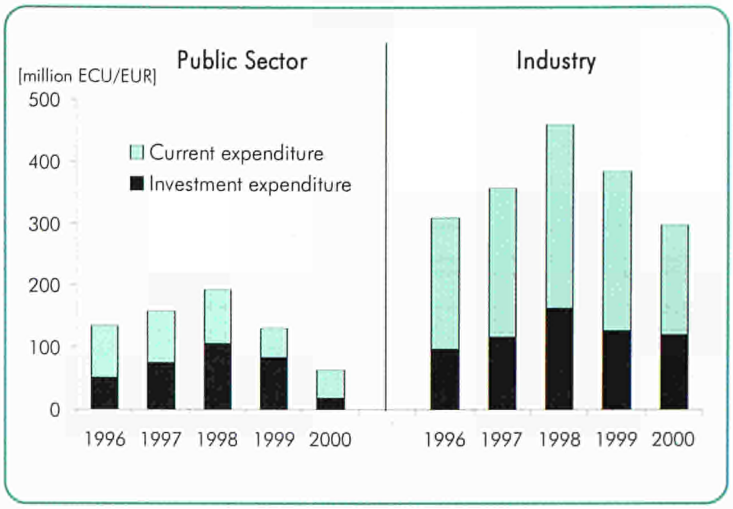


Figure 2.23: Environmental protection expenditure by environmental domain, (1996-2000)

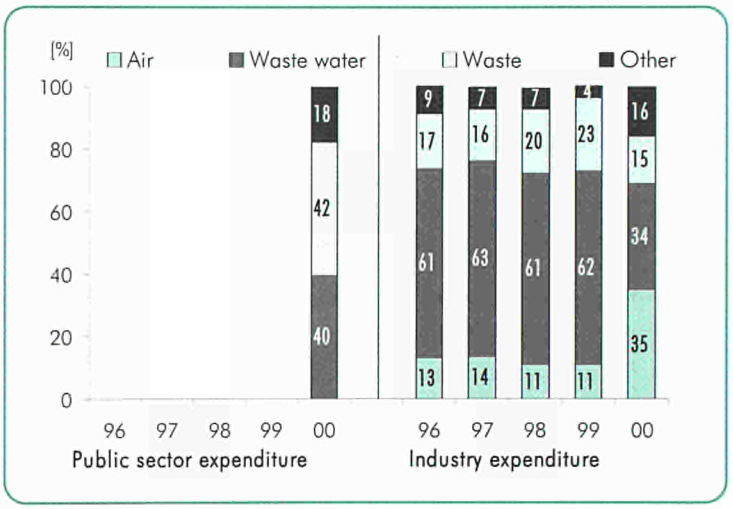


Figure 2.24: Environmental protection expenditure by branches of industries in 2000

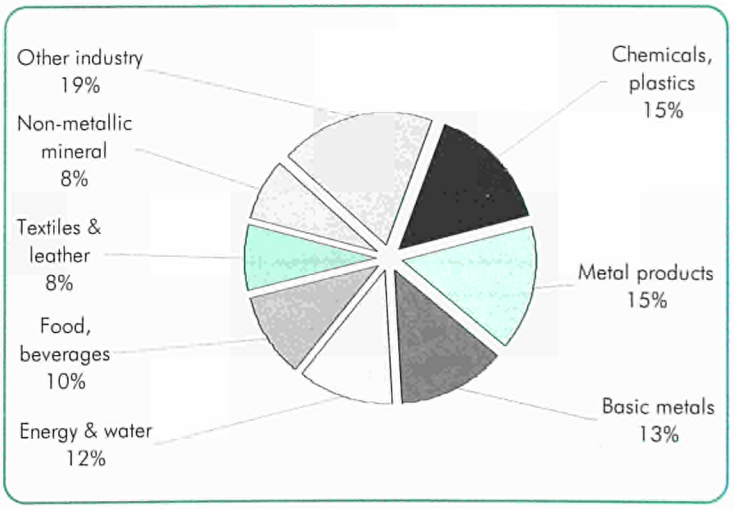


Table 2.38:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	135 198
1997	:	:	:	:	:	:	:	159 226
1998	:	:	:	:	:	:	:	193 618
1999	:	:	:	:	:	:	:	130 772
2000	0	25 130	26 742	99	200	1 898	9 184	63 252
Investments								
1996	:	:	:	:	:	:	:	51 711
1997	:	:	:	:	:	:	:	75 919
1998	:	:	:	:	:	:	:	107 029
1999	:	:	:	:	:	:	:	85 372
2000	0	14 130	4 258	27	0	17	987	19 419
Current expenditure								
1996	:	:	:	:	:	:	:	83 488
1997	:	:	:	:	:	:	:	83 306
1998	:	:	:	:	:	:	:	86 589
1999	:	:	:	:	:	:	:	45 400
2000	0	11 000	22 484	72	200	1 880	8 197	43 833

Table 2.39:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	40 661	187 769	53 419	:	:	20 793	6 459	309 101
1997	48 848	225 441	58 905	:	:	14 118	11 430	358 743
1998	50 873	282 853	93 424	:	:	18 757	14 950	460 857
1999	41 279	239 737	89 104	:	:	7 730	6 262	384 112
2000	104 475	101 872	43 627	22 942	11 133	9 564	4 454	298 068
Investments								
1996	20 705	52 950	6 461	:	:	17 492	1 569	99 177
1997	21 154	71 710	8 276	:	:	10 171	5 707	117 018
1998	29 504	97 839	12 747	:	:	15 509	7 995	163 595
1999	25 243	68 295	28 161	:	:	4 018	2 172	127 889
2000	47 795	30 753	17 861	13 195	7 147	3 411	1 214	121 377
Pollution treatment investments								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	:	:	:	:	:	:	:	:
Current expenditure								
1996	19 956	134 819	46 958	:	:	3 301	4 890	209 924
1997	27 694	153 731	50 630	:	:	3 947	5 722	241 724
1998	21 369	185 014	80 677	:	:	3 248	6 955	297 263
1999	16 036	171 442	60 943	:	:	3 712	4 090	256 223
2000	56 680	71 119	25 766	9 748	3 985	6 153	3 240	176 691

Table 2.40:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	461	21 782	2 699	:	:	5 768	1 312	32 022	10
1997	1 358	18 456	2 552	:	:	5 436	5 171	32 973	9
1998	588	22 257	2 692	:	:	3 137	6 834	35 507	8
1999	2 213	19 992	2 623	:	:	2 566	656	28 049	7
2000	2 204	2 336	1 921	2 253	265	162	50	9 192	3
Manufacturing									
1996	32 619	79 116	36 720	:	:	755	4 049	153 258	50
1997	39 337	62 263	37 906	:	:	227	4 323	144 056	40
1998	43 934	69 788	64 928	:	:	1 502	5 658	185 810	40
1999	29 247	51 722	44 479	:	:	315	4 452	130 214	34
2000	94 180	89 387	37 059	12 627	10 510	6 211	4 129	254 104	85
Energy and water									
1996	7 582	86 870	13 999	:	:	14 271	1 099	123 821	40
1997	8 153	144 722	18 447	:	:	8 455	1 936	181 713	51
1998	6 352	190 807	25 805	:	:	14 118	2 458	239 540	52
1999	9 820	168 023	42 001	:	:	4 850	1 154	225 848	59
2000	8 091	10 148	4 647	8 062	358	3 192	275	34 773	12

Table 2.41:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	5 106	216	4 890	:	:	:
1997	1 928	17	1 910	:	:	:
1998	676	33	643	:	:	:
1999	958	108	851	:	:	:
2000	72 844	34 032	38 812	:	:	:
Waste						
1996	22 881	1 307	21 574	:	:	:
1997	42 663	9 260	33 403	:	:	:
1998	53 833	3 801	50 032	:	:	:
1999	52 967	3 538	49 429	:	:	:
2000	74 170	4 953	69 217	:	:	:
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	28 034	1 530	26 504	:	:	:
1997	44 619	9 281	35 338	:	:	:
1998	54 615	3 884	50 731	:	:	:
1999	54 029	3 686	50 343	:	:	:
2000	148 404	39 523	108 880	:	:	:

Table 2.42:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	2 204	2 336	1 921	2 253	265	162	50	9 192
Food, beverages & tobacco	12 229	10 751	5 352	1 188	605	173	62	30 359
Textiles & leather	6 697	9 783	2 872	1 173	1 474	1 386	660	24 045
Wood & wood products	1 289	1 832	4 694	183	411	119	107	8 636
Pulp, paper & printing	5 259	6 309	1 563	1 861	395	425	327	16 140
Refineries	6 198	5 261	3 627	2 417	1 203	1 302	1 192	21 201
Chemicals, rubber & plastics	10 291	29 021	4 953	989	370	193	97	45 914
Cement industries, etc	13 363	5 912	735	481	2 088	79	73	22 731
Basic metals	23 738	9 458	3 737	1 252	409	442	341	39 376
Metal products, etc	15 115	11 060	9 526	3 083	3 555	2 091	1 271	45 700
Energy & water	8 091	10 148	4 647	8 062	358	3 192	275	34 773
Investments								
Mining & quarrying	1 889	312	761	1 484	193	67	0	4 707
Food, beverages & tobacco	3 813	2 220	768	805	410	29	19	8 064
Textiles & leather	2 329	6 105	319	42	600	390	2	9 788
Wood & wood products	697	255	4 250	144	389	115	104	5 955
Pulp, paper & printing	2 926	3 434	296	1 311	41	98	0	8 105
Refineries	1 412	730	814	506	11	108	0	3 581
Chemicals, rubber & plastics	4 046	6 808	3 309	537	231	135	23	15 089
Cement industries, etc	10 395	850	231	325	2 050	50	59	13 960
Basic metals	7 187	3 058	559	950	368	321	314	12 757
Metal products, etc	11 276	4 310	5 117	1 865	2 625	1 303	529	27 025
Energy & water	1 824	2 671	1 436	5 225	229	794	166	12 345
Pollution treatment investments								
Mining & quarrying	:	:	:	:	:	:	:	:
Food, beverages & tobacco	:	:	:	:	:	:	:	:
Textiles & leather	:	:	:	:	:	:	:	:
Wood & wood products	:	:	:	:	:	:	:	:
Pulp, paper & printing	:	:	:	:	:	:	:	:
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	:	:	:	:	:	:	:	:
Cement industries, etc	:	:	:	:	:	:	:	:
Basic metals	:	:	:	:	:	:	:	:
Metal products, etc	:	:	:	:	:	:	:	:
Energy & water	:	:	:	:	:	:	:	:
Current expenditure								
Mining & quarrying	315	2 024	1 160	769	72	95	50	4 485
Food, beverages & tobacco	8 417	8 531	4 583	382	195	144	43	22 296
Textiles & leather	4 368	3 678	2 553	1 130	874	996	658	14 257
Wood & wood products	592	1 577	444	39	22	4	4	2 682
Pulp, paper & printing	2 334	2 875	1 267	550	354	327	327	8 034
Refineries	4 787	4 531	2 813	1 912	1 192	1 193	1 192	17 620
Chemicals, rubber & plastics	6 245	22 213	1 644	452	139	58	73	30 825
Cement industries, etc	2 968	5 062	504	155	38	29	15	8 771
Basic metals	16 550	6 400	3 178	302	41	120	27	26 618
Metal products, etc	3 838	6 750	4 409	1 217	930	789	742	18 675
Energy & water	6 267	7 477	3 210	2 837	129	2 397	109	22 427

Slovenia

Structure of gross value added 1999 (% of total economy): Agriculture, hunting, forestry and fishing: 3.6%; Mining and quarrying: 1.1%; Manufacturing: 27.0%; Electricity, gas and water supply: 3.1%.

Electricity - production by source, 1998: fossil fuel: 37%; hydro: 25%; nuclear: 38%

Environmental pressures: Sava River polluted with domestic and industrial waste; pollution of coastal waters with heavy metals and toxic chemicals; forest damage near Koper from air pollution (originating at metallurgical and chemical plants) and acid rain.

Environmental protection (EP) expenditure amounted to 36 million euros or 0.2% of GDP in 2000, of which 57% was spent in the domain 'Other' (mainly for noise and nature protection), 27% on wastewater and 16% on waste. Nearly all EP expenditure consisted of investment (97%), the highest share of which was allocated to wastewater management (27%) and to noise protection (27%). An important part of current expenditure went to waste management (65%).

Total EP expenditure by industry amounted to 85 million euros or 0.44% of GDP in 2000. Most of the spending was on air protection (45%), followed by waste management (25%). More than two thirds of the total EP expenditure was in the form of investment, of which 62% was spent on air protection. The main part of current expenditure (70%) was in waste management.

The air pollution from SO2 emissions is the main concern in Slovenia. By far the largest share of SO2 emissions come from thermal power plants and district heating facilities. Total SO2 emissions decreased by more than 50% between 1980 and 1995 through investment in the energy sector.

Energy & water, which generates about 80% of the air pollution in Slovenia, accounted for the highest share of EP investment by industry: 46%. Next came the chemical industry with 22% and pulp & paper with 11%.

Public and private firms specialised in producing environmental services spent 5.8 million euros on environmental protection in 2000, more than half of which was in the form of investment expenditure: 3.0 million euros. 80% of the expenditure went to waste management and 16% went to wastewater treatment.

Figure 2.25: Environmental protection expenditure in Public sector and Industry (1996-2000)

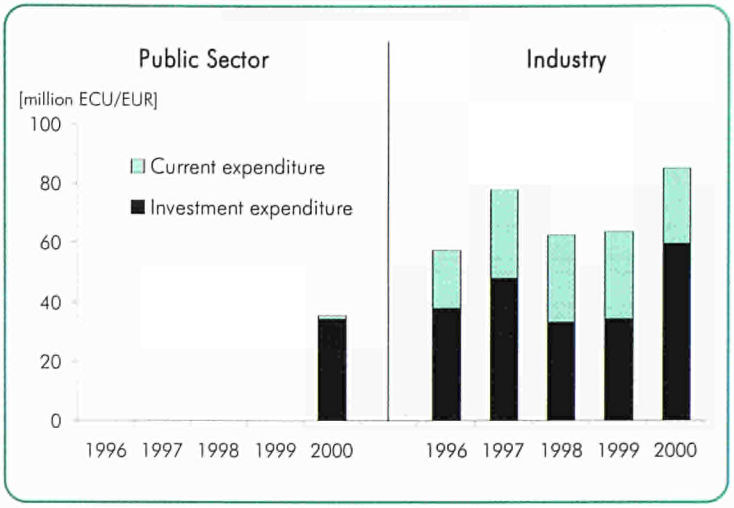


Figure 2.26: Environmental protection expenditure by environmental domain, (1996-2000)

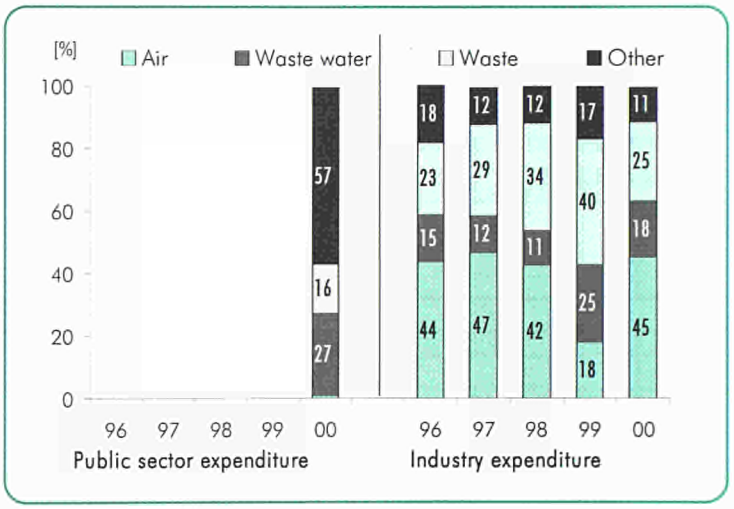


Figure 2.27: Environmental protection expenditure by branches of industries in 2000

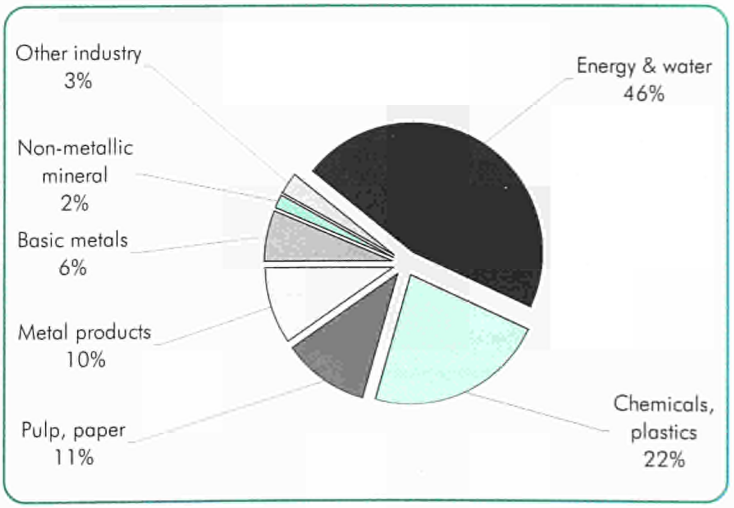


Table 2.43:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	290	9 422	5 553	3 525	:	7 345	168	35 506
Investments								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	257	9 342	4 794	3 465	9 202	7 172	100	34 332
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	33	80	759	60	:	172	68	1 173

Table 2.44:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	25 127	8 938	13 246	3 922	:	:	3 931	57 702
1997	36 362	9 450	22 600	3 737	:	:	504	78 058
1998	26 651	7 122	21 579	2 303	:	:	:	62 795
1999	11 452	15 879	25 672	5 336	:	1 965	:	63 860
2000	38 376	15 388	21 548	:	:	:	:	85 075
Investments								
1996	24 359	5 629	3 503	1 928	1 705	731	172	38 028
1997	30 722	6 268	6 673	1 925	1 220	948	331	48 088
1998	23 407	2 573	4 600	1 471	818	:	:	33 363
1999	8 604	11 306	7 873	4 078	1 144	1 154	371	34 530
2000	36 701	11 908	4 043	4 461	1 397	324	790	59 625
Pollution treatment investments								
1996	24 359	5 629	3 503	1 928	1 705	731	172	38 028
1997	30 722	6 268	6 673	1 925	1 220	948	331	48 088
1998	23 407	2 573	4 600	1 471	818	:	:	33 363
1999	8 604	11 306	7 873	4 078	1 144	1 154	371	34 530
2000	36 701	11 908	4 043	4 461	1 397	324	790	59 625
Current expenditure								
1996	767	3 313	9 743	1 994	:	:	3 759	19 675
1997	5 639	3 387	16 394	1 811	:	:	173	29 970
1998	3 244	4 709	17 115	848	:	2 982	373	29 432
1999	3 021	4 644	17 818	1 336	:	2 070	:	29 330
2000	1 750	3 596	17 579	:	:	:	:	25 450

Table 2.45:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	41	:	123	:	:	:	:	183	0
1997	:	:	:	:	:	:	:	3 107	4
1998	:	:	:	:	:	2 454	233	3 000	5
1999	:	:	:	:	:	:	:	1 600	3
2000	:	:	:	197	:	:	:	1 372	2
Manufacturing									
1996	5 220	3 410	8 552	2 345	1 700	282	3 930	25 440	44
1997	10 551	4 201	17 654	2 902	1 321	367	217	37 212	48
1998	8 053	5 778	15 486	1 550	902	730	429	32 929	52
1999	5 934	12 798	19 050	4 160	1 261	1 675	316	45 194	71
2000	6 420	13 810	18 734	2 746	1 307	898	561	44 476	52
Energy and water									
1996	19 865	5 528	4 570	1 577	:	:	1	32 080	56
1997	25 811	5 250	4 947	834	:	:	288	37 739	48
1998	18 598	1 344	6 092	753	:	:	:	26 866	43
1999	5 519	3 081	6 623	1 176	:	291	:	17 066	27
2000	31 956	1 578	2 815	:	:	:	:	39 226	46

Table 2.46:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	947	840	107	:	:	:
Waste						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	4 656	2 000	2 656	:	:	:
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	5 831	3 037	2 794	:	:	:

Table 2.47:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	:	:	:	197	:	:	:	1 372
Food, beverages & tobacco	:	274	169	:	:	:	:	520
Textiles & leather	:	46	52	30	:	:	:	204
Wood & wood products	141	14	348	:	:	:	:	619
Pulp, paper & printing	:	8 077	574	:	:	:	:	9 239
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	3 364	3 007	10 561	1 219	204	:	:	18 474
Cement industries, etc	484	159	522	328	:	:	:	1 541
Basic metals	819	111	3 373	945	125	:	:	5 391
Metal products, etc	1 475	2 122	3 133	132	463	:	504	8 489
Energy & water	31 956	1 578	2 815	:	:	:	:	39 226
Investments								
Mining & quarrying	:	:	74	113	:	:	:	187
Food, beverages & tobacco	61	271	19	:	7	:	:	359
Textiles & leather	75	4	15	17	:	:	:	111
Wood & wood products	136	6	316	37	57	:	:	551
Pulp, paper & printing	:	7 664	172		428	:	:	8 264
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	2 860	929	1 834	1 102	189	:	:	6 914
Cement industries, etc	475	4	334	299	:	26	:	1 138
Basic metals	538	2	49	892	121	:	:	1 603
Metal products, etc	1 353	1 574	751	41	445	:	318	4 482
Energy & water	31 203	1 454	479	1 959	149	298	472	36 014
Pollution treatment investments								
Mining & quarrying	:	:	74	113	:	:	:	187
Food, beverages & tobacco	61	271	19	:	7	:	:	359
Textiles & leather	75	4	15	17	:	:	:	111
Wood & wood products	136	6	316	37	57	:	:	551
Pulp, paper & printing	:	7 664	172		428	:	:	8 264
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	2 860	929	1 834	1 102	189	:	:	6 914
Cement industries, etc	475	4	334	299	:	26	:	1 138
Basic metals	538	2	49	892	121	:	:	1 603
Metal products, etc	1 353	1 574	751	41	445	:	318	4 482
Energy & water	31 203	1 454	479	1 959	149	298	472	36 014
Current expenditure								
Mining & quarrying	75	116		84	0	877	32	1 185
Food, beverages & tobacco	:	3	150	2	:	:	5	161
Textiles & leather		42	37	13	:	:		92
Wood & wood products	5	8	32		:	:	22	68
Pulp, paper & printing	1	413	402	53	:	78	27	974
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	504	2 078	8 727	117	15	117	2	11 559
Cement industries, etc	9	155	187	29	22		:	403
Basic metals	281	109	3 325	52	4	17	:	3 787
Metal products, etc	121	548	2 382	91	17	661	186	4 007
Energy & water	753	123	2 336	:	:	:	:	3 212

Slovak Republic

Structure of gross value added in 2000 (% of total economy): Agriculture, hunting, forestry and fishing: 4.5%; Mining and quarrying: 0.9%; Manufacturing: 24.0%; Electricity, gas and water supply: 4.1%.

Electricity - production by source, 1998: fossil fuel: 24%; hydro: 20%; nuclear: 56%

Environmental pressures: air pollution from metallurgical plants presents human health risks; acid rain damaging forests; 75-80 percent of the rivers are classified as heavily or very heavily polluted and insufficient coverage by waste water treatment with only 42 percent of discharges being treated.

Total environmental protection (EP) expenditure by the public sector amounted to 31 million euros or 0.14% of GDP in 2000. Compared to the year 1999, investment in environmental protection has decreased by 78%. 71% of EP expenditure was in the form of investment, 24% in the form of internal current expenditure and the remaining 5% for fees and purchases. The fees received by the public sector amounted to 1.6 million euros in 2000.

Total EP expenditure by industry amounted to 190 million euros in 2000 or 0.89% of GDP. Most of the EP expenditure was in the form of current expenditure (73%). Fees and purchases represented 47% of total current expenditure. Data for 2000 show that the Energy & water accounted for most of the expenditure by industry: 62% of the EP expenditure. The industry accounting for the second largest percentage of EP expenditure was chemicals & rubber with 13%.

Public and private firms specialised in producing environmental services spent 10.8 million euros on environmental protection in 2000, most of which was in the form of investment expenditure: 8.5 million euros. Revenues from environmental activities accounted for 3.2 million euros.

Figure 2.28: Environmental protection expenditure in Public sector and Industry (1996-2000)

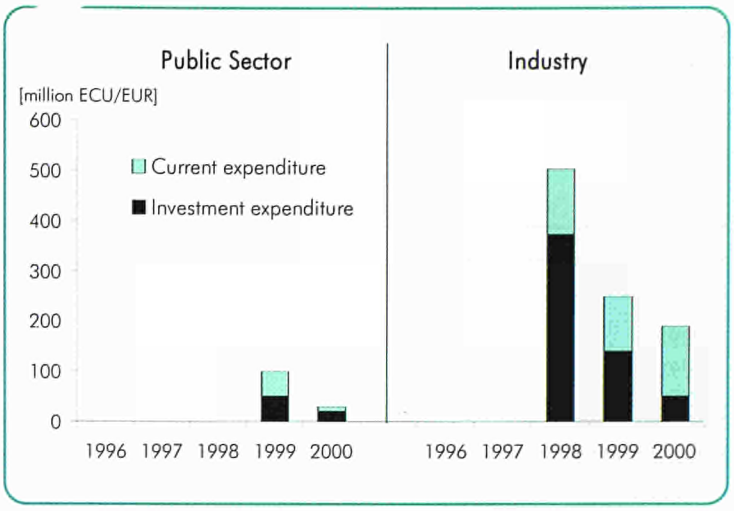


Figure 2.29: Environmental protection expenditure by Public sector and Industry as share of GDP

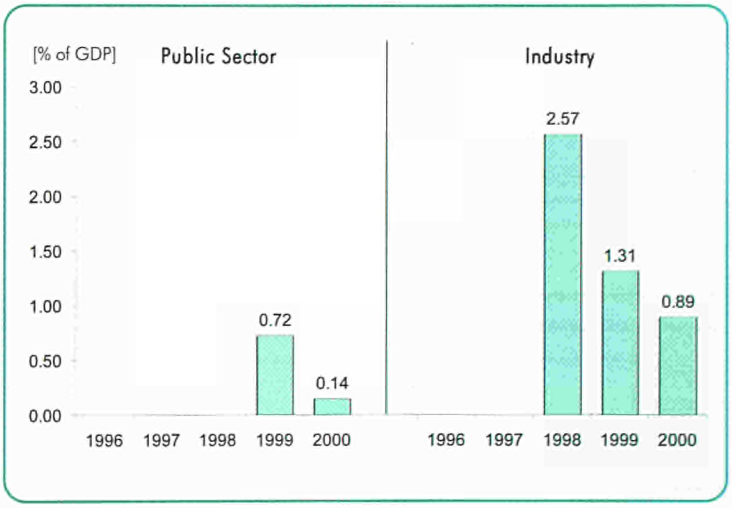


Figure 2.30: Environmental protection expenditure by branches of industry in 2000

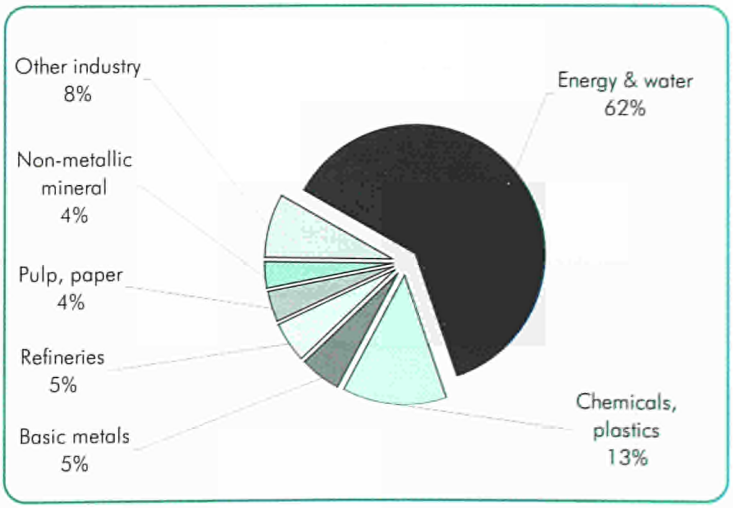


Table 2.48:
Environmental protection expenditure by public sector

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	136 847
2000	:	:	:	:	:	:	:	30 550
Investments								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	50 733
2000	:	:	:	:	:	:	:	21 733
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	50 462
2000	:	:	:	:	:	:	:	7 209

Table 2.49:
Environmental protection expenditure by industry

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains
Environmental protection expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	504 544
1999	:	:	:	:	:	:	:	248 784
2000	:	:	:	:	:	:	:	189 922
Investments								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	374 420
1999	:	:	:	:	:	:	:	141 958
2000	:	:	:	:	:	:	:	52 024
Pollution treatment investments								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	:
1999	:	:	:	:	:	:	:	:
2000	:	:	:	:	:	:	:	:
Current expenditure								
1996	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	130 123
1999	:	:	:	:	:	:	:	106 825
2000	:	:	:	:	:	:	:	137 898

Table 2.50:
Environmental protection expenditure by section of industry (NACE C, D and E)

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & land-scape	Others	Total domains	Share of total industry (%)
Mining and quarrying									
1996	:	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	1 773	0
1999	:	:	:	:	:	:	:	896	0
2000	:	:	:	:	:	:	:	831	0
Manufacturing									
1996	:	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	183 406	36
1999	:	:	:	:	:	:	:	102 235	41
2000	:	:	:	:	:	:	:	71 942	38
Energy and water									
1996	:	:	:	:	:	:	:	:	:
1997	:	:	:	:	:	:	:	:	:
1998	:	:	:	:	:	:	:	319 365	63
1999	:	:	:	:	:	:	:	145 652	59
2000	:	:	:	:	:	:	:	117 148	62

Table 2.51:
Public and private firms specialised in producing environmental services

1000 ECU/EUR

	Environmental protection expenditure	Investment expenditures	Current expenditure	Of which fees and purchases	Receipts from by-products	Revenues
Wastewater						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Waste						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Other domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	:	:	:	:	:	:
1999	:	:	:	:	:	:
2000	:	:	:	:	:	:
Total domains						
1996	:	:	:	:	:	:
1997	:	:	:	:	:	:
1998	3 292	932	2 361	1 694	:	3 194
1999	4 749	2 247	2 503	1 647	:	3 432
2000	10 769	8 507	2 262	1 412	:	3 165

Table 2.52:
Environmental protection expenditure of the manufacturing industries in 2000

1000 ECU/EUR

	Air	Waste water	Waste	Soil & ground-water	Noise	Biodiversity & landscape	Others	Total domains
Environmental protection expenditure								
Mining & quarrying	:	:	:	:	:	:	:	831
Food, beverages & tobacco	:	:	:	:	:	:	:	3 231
Textiles & leather	:	:	:	:	:	:	:	2 378
Wood & wood products	:	:	:	:	:	:	:	2 314
Pulp, paper & printing	:	:	:	:	:	:	:	7 356
Refineries	:	:	:	:	:	:	:	9 740
Chemicals, rubber & plastics	:	:	:	:	:	:	:	23 928
Cement industries, etc	:	:	:	:	:	:	:	7 077
Basic metals	:	:	:	:	:	:	:	10 030
Metal products, etc	:	:	:	:	:	:	:	5 887
Energy & water	:	:	:	:	:	:	:	117 148
Investments								
Mining & quarrying	:	:	:	:	:	:	:	266
Food, beverages & tobacco	:	:	:	:	:	:	:	599
Textiles & leather	:	:	:	:	:	:	:	835
Wood & wood products	:	:	:	:	:	:	:	1 906
Pulp, paper & printing	:	:	:	:	:	:	:	2 580
Refineries	:	:	:	:	:	:	:	2 639
Chemicals, rubber & plastics	:	:	:	:	:	:	:	5 984
Cement industries, etc	:	:	:	:	:	:	:	5 396
Basic metals	:	:	:	:	:	:	:	6 706
Metal products, etc	:	:	:	:	:	:	:	2 478
Energy & water	:	:	:	:	:	:	:	22 635
Pollution treatment investments								
Mining & quarrying	:	:	:	:	:	:	:	:
Food, beverages & tobacco	:	:	:	:	:	:	:	:
Textiles & leather	:	:	:	:	:	:	:	:
Wood & wood products	:	:	:	:	:	:	:	:
Pulp, paper & printing	:	:	:	:	:	:	:	:
Refineries	:	:	:	:	:	:	:	:
Chemicals, rubber & plastics	:	:	:	:	:	:	:	:
Cement industries, etc	:	:	:	:	:	:	:	:
Basic metals	:	:	:	:	:	:	:	:
Metal products, etc	:	:	:	:	:	:	:	:
Energy & water	:	:	:	:	:	:	:	:
Current expenditure								
Mining & quarrying	:	:	:	:	:	:	:	566
Food, beverages & tobacco	:	:	:	:	:	:	:	2 632
Textiles & leather	:	:	:	:	:	:	:	1 543
Wood & wood products	:	:	:	:	:	:	:	408
Pulp, paper & printing	:	:	:	:	:	:	:	4 776
Refineries	:	:	:	:	:	:	:	7 101
Chemicals, rubber & plastics	:	:	:	:	:	:	:	17 945
Cement industries, etc	:	:	:	:	:	:	:	1 680
Basic metals	:	:	:	:	:	:	:	3 324
Metal products, etc	:	:	:	:	:	:	:	3 409
Energy & water	:	:	:	:	:	:	:	94 513

3. Definitions of variables

The following chapter presents definitions of the concepts involved in collecting the data presented in this publication, based on the latest Eurostat and OECD Questionnaire 2002.

3. Definitions

Environmental protection expenditure (EPE)

EPE is the money spent on all purposeful activities directly aimed at the prevention, reduction and elimination of pollution or any other degradation of the environment. The data on environmental protection expenditure presented here do not include:

- Activities that, while beneficial to the environment, primarily satisfy technical needs or health and safety requirements.
- Expenditure linked to mobilisation of natural resources (e.g., water supply).
- Calculated cost items such as depreciation (consumption of fixed capital) or the cost of capital as this questionnaire only records actual outlays.
- Payments of interest, fines and penalties for non-compliance with environmental regulations or compensations to third parties etc, as they are not directly linked with an environmental protection activity.
- Activities such as energy and material saving are only included to the extent that they mainly aim at environmental protection. An important example is recycling which is included only to the extent that it constitutes a substitute for waste management.

The Classification of Environmental Protection Activities and Expenditure

Environmental protection expenditure is classified in different environmental domains according to the environmental media or type of pollution/degradation concerned.

The following domain breakdown is used when collecting data on environmental protection expenditure:

1. Protection of ambient air and climate
2. Wastewater management (includes prevention of emission to surface water)
3. Waste management (includes treatment of low-level radioactive waste, composting, street cleaning and sweeping, recycling)
4. Protection and remediation of soil, groundwater and surface water (includes all cleaning-up activities)
5. Noise and vibration abatement (excluding workplace protection)
6. Protection of biodiversity and landscape
7. Other: Sum of Protection against radiation (excluding external safety), Research and development, Other environmental protection activities

(Including general environmental administration and management, education, training and information, indivisible expenditure and expenditure not elsewhere classified).

Some countries can only provide more aggregated data, where some of the specific environmental domains are included in an extended category "other". Therefore, a more aggregate domain breakdown is used in the country comparisons in Chapter 2, where only the domains 1-3 are shown separately and all remaining domains are aggregated into the category 'Other'.

INSTITUTIONAL SECTORS

Public sector

The public sector includes central, regional and local governments, authorities, communities and government agencies. Data reported should be net of any transfers between these government bodies. The distinction between Public sector and Specialised producers is sometimes difficult and may still differ somewhat between countries. In principle, all NACE/ISIC 90 Waste collection, waste treatment, sewage treatment produced as market activities should be recorded in the sector Specialised producers . This includes the Public sector related parts such as publicly owned enterprises and waste and wastewater departments in large municipalities (which can be separately identified and are thus recorded under NACE/ISIC 90 in the business register). User fees finance a substantial part of the expenditures of both these categories. When existing data sources make this kind of separation impossible, the waste and wastewater departments are to be recorded under Public sector.

Industry

This publication only presents data for the part of the business sector related to Industry because of data availability reasons. This includes enterprises and other units whose main activity is in the following branches of industries according to NACE Rev. 1. (for more details see separate table on the Classification of economic activities):

10-14 MINING AND QUARRYING

15-37 MANUFACTURING

15-16 Food products, beverages and tobacco;

17-19 Textiles and textile products; Leather and leather products

20 Wood and wood products

21-22 Pulp, paper and paper products; publish ing and printing

23 Refineries: Coke, refined petroleum products and nuclear fuel

24-25 Chemicals, chemical products and man-made fibres; Rubber and plastic products

26 Other non-metallic mineral products

27 Basic metals

28-36 Metal products and other

40-41 ELECTRICITY, GAS AND WATER SUPPLY

Specialised producers of environmental services

Units which specialise in the provision of environmental protection services for the market (e.g. waste collection, waste treatment and sewage treatment). These are mainly found in NACE 90 (Sewage and refuse disposal, sanitation and similar activities).

FINANCIAL VARIABLES

The concept Total environmental protection expenditure used in this publication is the sum of investments and current expenditure.

1. Investment expenditure

Investment expenditures include all outlays in a given year (purchases and own-account production) for machinery, equipment and land used for Environmental Protection purposes. There are two fundamental types of environmental protection investments:

Pollution treatment (End-of-pipe)

Investments do not affect the production process itself, and the amount of pollution generated, instead they serve to treat pollution already generated.

Pollution prevention (Process-integrated)

Investments which lead to a modified or adapted production process. They serve to reduce the amount of pollution generated. When a new production process is introduced, the Environmental Protection expenditure consists of the outlays over and above what would have been paid for a cheaper, viable, but less environmentally benign equipment. Where an existing plant is modified, the environmental investment is equal to the total outlays for the environmental adaptation.

2. Current expenditure

Current expenditure presented in this publication is the sum of two categories:

Internal current expenditure:

own production of environmental services for own use: wages and salaries, rents, energy, maintenance expenditure and other intermediate inputs used for environmental protection purposes

Fees/Purchases

includes all purchases of environmental protection services bought in from the market (e.g. a firm has its waste collected by a specialised enterprise), both from public and private producers. These payments are clearly linked with an environmental protection activity done outside the enterprise and should exclude e.g. fines and penalties. The payments include:

- Payments to specialised producers (enterprises) for waste and wastewater collection and treatment and payments to environmental consultants linked e.g. with environmental management and education."

- Payments to Public sector for waste and wastewater collection and treatment (whatever the name of the payments - fees, charges etc) as well as permits and surveillance fees."
- Payments of taxes directly used for financing environmental protection expenditure - so called earmarked environmental taxes are excluded.

3. Receipts from by-products

Receipts from by-products are only presented for specialised producers of environmental services, where they relate mainly to income from possible non-environmental activities.

4. Revenues

Revenues are only presented for specialised producers of environmental service, where they relate to income from the sale of the environmental service. Comparisons with other economic variables

Comparisons with other economic variables

Comparisons have in this publication been made with GDP at current princes and Population. The data in national currency reported by the countries have been converted to euro using the average ECU/euro exchange rates for the year. See detailed tables on page 96 and 97.

COUNTRIES

This publication includes Accession Countries that have reported environmental protection expenditure in the Joint OECD/Eurostat Questionnaire 2002. The term "Accession Countries" in this publication include the following countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia. Data for other Accession Countries are not available. Comparisons are made with similar data reported by 3 EU countries: Germany, France and United Kingdom.

DATA QUALITY

The data presented in this publication is a selection of the data reported by the Statistical Services in the countries through the Joint Eurostat/OECD Questionnaire 2002. More detailed information is available in the Eurostat database New Cronos.

Environmental protection expenditure statistics are under development and the coverage and quality of the data still vary between countries, limiting data comparability and effective interpretation. The data presented here are those reported by the countries. No estimates have been made to compensate for variations in coverage. Although this has been minimised through the choice of sectors and variables, there is still some differences in coverage for some countries. For more information see footnotes to tables and graphs and the Eurostat database New Cronos.

Environmental protection expenditure is an indicator of the economic resources spent to reduce pollution, but the integration of environmental concerns in many policy areas and in many investment decisions does make it difficult to estimate all expenditure items exactly. It should also be noted that high levels of spending could be a result of new, stricter policies in a country where much already has been done to reduce pollution and where the marginal cost is high, or could be a result of long periods of no spending. As a complementary exercise, a further analysis focused on the links to physical data (size of emissions, amounts of waste etc) is recommended.

Classification of environmental protection activities (CEPA)

The CEPA classification can be found on the Internet:

http://europa.eu.int/comm/eurostat/ramon/

1. Protection of ambient air and climate

- 1.1 prevention of pollution through in-process modifications
  - 1.1.1 for the protection of ambient air
  - 1.1.2 for the protection of climate and ozone layer
- 1.2 treatment of exhaust gases and ventilation air
  - 1.2.1 for the protection of ambient air
  - 1.2.2 for the protection of climate and ozone layer
- 1.3 measurement, control, laboratories and the like
- 1.4 other activities

2. Wastewater management

- 2.1 prevention of pollution through in-process modifications
- 2.2 sewerage networks
- 2.3 wastewater treatment
- 2.4 treatment of cooling water
- 2.5 measurement, control, laboratories and the like
- 2.6 other activities

3. Waste management

- 3.1 prevention of pollution through in-process modifications
- 3.2 collection and transport
- 3.3 treatment and disposal of hazardous waste
  - 3.3.1 thermal treatment
  - 3.3.2 landfill
  - 3.3.3 other treatment and disposal
- 3.4 treatment and disposal of non-hazardous waste
  - 3.4.1 incineration
  - 3.4.2 landfill
  - 3.4.3 other treatment and disposal
- 3.5 measurement, control, laboratories and the like
- 3.6 other activities

4. Protection of soil and groundwater

- 4.1 prevention of pollutant infiltrations
- 4.2 decontamination of soils
- 4.3 measurement, control, laboratories and the like
- 4.4 other activities

5. Noise and vibration abatement (excluding workplace protection)

- 5.1 noise and vibration from road and rail traffic
  - 5.1.1 preventive in-process modifications at the source
  - 5.1.2 construction of anti noise/vibration facilities
- 5.2 air traffic noise
  - 5.2.1 preventive in-process modifications at the source
  - 5.2.2 construction of anti noise/vibration facilities
- 5.3 industrial process noise and vibrations
- 5.4 measurement, control, laboratories and the like
- 5.5 other activities

6. Protection of biodiversity and landscapes

- 6.1 protection of species
- 6.2 protection of landscapes and habitats
  - 6.2.1 protection of forest
- 6.3 rehabilitation of species populations and landscapes
- 6.4 restoration and cleaning of water bodies
- 6.5 measurement, control, laboratories and the like
- 6.6 other activities

7. Protection against radiation (excluding power stations and military installations)

- 7.1 protection of ambient media
- 7.2 measurement, control, laboratories and the like
- 7.3 other activities

8. Research and development

- 8.1 protection of ambient air and climate
  - 8.1.1 Protection of ambient air
  - 8.1.2 Protection of atmosphere and climate
- 8.2 protection of ambient water
- 8.3 waste
- 8.4 protection of soil and groundwater
- 8.5 abatement of noise and vibration
- 8.6 protection of species and habitats
- 8.7 protection against radiation
- 8.8 other research on the environment

9. Other environmental protection activities

- 9.1 general environmental administration and management
- 9.2 education, training and information
- 9.3 activities leading to indivisible expenditure
- 9.4 activities not elsewhere classified

NACE Rev. 1 classification of industry

Industry is the sum of sections C, D and E (except division 37) in Joint Questionnaire framework

Section C	Mining and quarrying
10	Mining of coal and lignite; extraction of peat
11	Extraction of crude petroleum and natural gas; service activities
12	Mining of uranium and thorium ores
13	Mining of metal ores
14	Other mining and quarrying (stone, sand, clay, chemical and fertilizer minerals and salt, etc)

Section D	Manufacturing (except division 37)
15	Manufacture of food products and beverages
16	Manufacture of tobacco products
17	Manufacture of textiles
18	Manufacture of wearing apparel; dressing and dyeing of fur
19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
21	Manufacture of pulp, paper and paper products
22	Publishing, printing and reproduction of recorded media
23	Manufacture of coke, refined petroleum products and nuclear fuel (refineries, etc)
24	Manufacture of chemicals and chemical products
25	Manufacture of rubber and plastic products
26	Manufacture of other non-metallic mineral products (cement industries, etc)
27	Manufacture of basic metals
28	Manufacture of fabricated metal products, except machinery and equipment
29	Manufacture of machinery and equipment n.e.c.
30	Manufacture of office machinery and computers
31	Manufacture of electrical machinery and apparatus n.e.c.
32	Manufacture of radio, television and communication equipment and apparatus
33	Manufacture of medical, precision and optical instruments, watches and clocks
34	Manufacture of motor vehicles, trailers and semi-trailers
35	Manufacture of other transport equipment
36	Manufacture of furniture; manufacturing n.e.c.

37	Recycling

Section E	Electricity, gas and water supply
40	Electricity, gas, steam and hot water supply
41	Collection, purification and distribution of water

4. Data Collection Methodology

The following chapter details the most recent information available about the data collection methodology in the Accession Countries. Each of the 12 countries are presented separately.

The following items are presented for all countries when possible:

- Survey
- Business register
- Sample
- Difficulties
- Publications

The section also includes a short description of a possible pilot project carried out in the course of the Phare multi-country support program.

Bulgaria

Environmental protection expenditure survey

The environmental protection expenditure survey has been carried out annually since 1980. Fundamental changes in the methodology were made in 1993. The expenditure questionnaires are sent out at the beginning of January and the answers are received in February.

The following variables are surveyed in the expenditure questionnaire:

- Environmental protection investment
- Current expenditure for environmental protection
- Expenditure on research and development work
- Data are broken down by environmental protection activity sector (air, water, soil, etc. protection) and by financing sources.

Business Register

The Register of the Bulgarian Statistical Office is used to determine reporting units. It doesn't contain information on all registered enterprises. The information is adapted for statistical purposes; only about 6 500 units are registered. The Public Business Register contains about 600 000 units.

The Environment Statistics Section selects the respondents from the register for data collection purposes. It is a knowledge-based list of enterprises for the expenditure survey. The local statistical offices have a good knowledge about the enterprises in the local area. Surveys on different environmental topics are used as a data source for identification of enterprises (the air emission questionnaire, for example).

Sample

All economic activity sectors causing the biggest burden to environment or expecting to make expenditures on environmental protection were surveyed. The total surveyed was about 6 500 enterprises, from which 2 000 had some environmental expenditure.

Difficulties

- In the Business Register the enterprises are classified according to the main activity (secondary activity(ies) are not available) therefore the identification of all enterprises with environment expenditure is difficult.
- Identification of specialised producers is a problem. At present this information is gathered from the Ministry of Environment.
- Identification of public and private enterprises
- Investment in integrated technology
- Sources by environmental domains
- The publishing of the regional data is not possible because of confidentiality reasons; even at national level the data for water supply are confidential.

Publications

The "Statistical Bulletin on Environment 1999" contains a Chapter VI on expenditure with tables on the following items:

- Expenditure on protection and restoration of the environment in 1999
- Expenditure on acquisition of tangible and intangible fixed assets with ecological use in 1999
- Expenditure on maintenance and exploitation of tangible fixed assets with ecological use and activities to protect and restore the environment in 1999
- Expenditure on acquisition of tangible and intangible fixed assets and maintenance of tangible fixed assets with ecological use by source in 1999
- Fines and sanctions referring to the environment in 1999
- Expenditure on protection and restoration of the environment by branch (without apparatuses for monitoring and control) in 1999

Czech Republic

Environmental protection expenditure survey

Environmental protection investments are measured in the Czech Republic every year by the Czech Statistical Office in compliance with the Programme of Statistical Surveys approved by the government.

Statistical measurement of investments in tangible and intangible fixed assets designed to protect the environment has been carried out since 1986. It constitutes part of the statistical questionnaire on investments (IV3-01), which is circulated to non-financial enterprises with 20+ employees and to financial institutions irrespective of their number of employees. The questionnaire is also filled in by central government, local government and non-profit institutions, irrespective of the number of employees and extent of invested amounts.

Business Register

The Business Register for statistical purposes is used to select the respondents. At the present stage there is no differentiation between legal units and enterprises. In the future three levels will be distinguished: legal unit, enterprise and local unit. The register stores information about main and secondary activities and about the form of the ownership: public, private, national and foreign (the information received from the national bank).

Sample

Currently, the questionnaire is circulated every year to about 32 500 respondents, of which approximately 2500 return the questionnaire with the section on "Environmental protection investments" filled in.

The basic population of reporting units is supplemented according to the list of INOs (identification numbers of organisation - ICO in Czech) of the units classified under sector 11, CZ-NACE 10 to 40, which reported EP investments in Questionnaire IV 3-01 from 1996 to 2000.

The questionnaire is circulated in early January and the deadline for return is usually fixed for the end of March. The questionnaires are processed by the specialised CZSO Nationwide Data Processing Department in the town of Brno. Verification with the respondents of incorrectly filled in questionnaires and inconsistencies is an important stage of the processing procedure.

Questionnaire design

A new EPE questionnaire was developed with regard to the requirement for the questionnaire to be simple to fill in by respondents and for saving labour needed for its processing. This is why it was decided to design it in a form appropriate for optical reading (OCR method).

The questionnaire relies on the original Section No. 175 of the cancelled questionnaire on investments (IV 3-01) as its basis and also takes account of the need to provide information for the EUROSTAT/OECD Joint Questionnaire (EP non-investment expenditure and economic benefit from EP by-products and services were included in the new questionnaire).

Accounting terminology, explanatory notes and comments used in the questionnaire, as well as links between the variables and the chart of accounts for businesses, were produced by the CZSO General Government and Non-profit Institutions Statistics Section.

Difficulties

- Differences between the present methodology, classifications, data collection and evaluation methods in the Czech Republic and in the EU;
- Identification of specialised producer;
- Investments in integrated technology are not surveyed ye;
- Survey on current expenditure will begin in 2004 and could not be evaluated.

Pilot projects on Environment Statistics in Czech Republic

The aim of the pilot project was the improvement of data collection by creation of a new questionnaire and new methodological explanations.

The questionnaire designed was incorporated into the Programme of Statistical Surveys approved by the Czech Government. Through this act, the units concerned are obliged to report.

As a rule, the Programme of Statistical Surveys for a given year is prepared two years in advance. Consequently, the first proper statistical survey on EPE can be made in the year 2004 for the reference year 2003. In the year 2003 (reference year 2002) a pilot

survey in the form of a simplified inquiry is supposed to be carried out on a small sample of respondents. However, the hitherto applied method of collecting regular EPE data only (through a special section on EPE inserted into another questionnaire) will still be used in parallel.

Strategies, Future plans

The Czech Statistical Office considers EPE statistics to be a priority in the field of environment statistics.

The CZSO has been developing a new questionnaire on environmental protection expenditure in the framework of the PHARE project. The pilot phase of new survey on EPE will be carried out in 2003. Regular annual surveys will start in 2004.

Publications

The "Selected information about the environment in the Czech Republic (1994-1999)" produced by Czech Statistical Office in 2000 contains a chapter on expenditure with tables on the following topics :

- Investment in environment pollution control projects: invoiced work, by programme orientation (1994-1998)
- Value of environmental protection tangible fixed assets in 1998 by SNA sector, 1998
- Shares of environmental protection investments in GDP and total investments (1994-1998)
- Environment pollution control projects: invoiced work and deliveries by programme orientation (1994-1999)
- Environment pollution control projects: invoiced work and deliveries by source of financing (1994-1999)
- Source of financing environment protection structures in 1999
- Environment pollution control projects: invoiced work by region in 1999
- Value of environmental protection tangible fixed assets in 1998 by CZ-NACE
- Environmental expenditure from central resources (1994-1999)
- Income and expenditure of National Environmental Fund (1994-1999)

"Environmental protection investment in the Czech Republic" - time series, Czech Statistical Office 2002

Cyprus

Environmental protection expenditure survey

The expenditure questionnaire is part of the industrial survey, which has been conducted since 1960. The environmental expenditure part was added in 1998. Only one row is included for environmental expenditure. The data on environmental protection investment in the business sector C, D and E is collected. Other variables are not covered.

Business Register

The Business Register is used to determine reporting units. It is an administrative register but used for statistical purposes. The register stores information about main activities and about several secondary activities. It is updated continuously; the last update was done in May 2001. The census is carried out every 5 years.

Sample used

The 1999 survey covered all enterprises classified in the mining and quarrying industry and in the electricity sectors because of their very small number. Manufacturing was covered on a sample basis. The sample covered 2 300 enterprises, representing about 32% of the total. About 75% of manufacturing enterprises are of small size employing up to four persons. The units for sample selection were addresses representing individual enterprises in the framework. Within each 4-digit level of classification, a sample of predetermined size was selected systematically with probability proportional to size from a list ordered by enterprise size.

Interviewers

The questionnaire is not sent out by mail but the interviewers (persons trained by Statistical Service) visit the reporting units and fill in the questionnaires together with representatives of the reporting units. Due to this procedure the non-response rate is very low.

Compliance with international reporting obligations and agreements

Cyprus replies on the Joint OECD/Eurostat Questionnaire on Environmental Protection Expenditure. Only environmental investments in the business sector are covered. The data are available for NACE C, D and E for the years 1998 and 1999.

Future plans

The Statistical Service of Cyprus is interested in developing a separate questionnaire for the environmental expenditure survey. The next survey should include business sector and specialised producers.

Publications

The Statistical Abstract of Cyprus from March 2001 presents statistics on the economic and social life of Cyprus. The publication doesn't include the chapter on environment.

Estonia

Environmental protection expenditure survey

The first survey on the environmental expenditure was made in 1993 and since then the expenditure data has been collected annually. The expenditure questionnaires are sent out at the beginning of January and the answers are received in February.

The following variables are surveyed in the expenditure questionnaire:

- Investments in environmental protection
- Operational costs for maintenance of environmental protection
- Expenditure on research and development work
- Income from the sale of characteristic services census
- Breakdown by environmental protection activity sectors (air water, soil, etc. protection) and by financing sources.

Business Register

In accordance with Council Regulation No 2186/93, the database of Statistical Profile includes all enterprises, the principal activity of which falls within Sections A to P of NACE Rev.1, excluding farms (the information about farms is included in a separate Farm Register).

The database of Statistical Profile also includes all NPIs and foundations and central government and local government institutions and their subordinate establishment units. The database of Statistical Profile is based on the databases of the Central Commercial Register, the State Register of central government and local government institutions and the Tax Office, which contains the data about all taxpayers.

The database of Statistical Profile was created in 1990. At present it is a Fox Pro database; in the future an Oracle database will be used. At present, one legal unit means an enterprise. It contains only 1 digit level of NACE and the information about one main and one secondary activity.

Sample used

The enterprises register is in use to prepare a sample survey.

According to the number of employees, enterprises in each sector were divided into five groups: 1-4 employees, 5-19 employees, 20-49 employees, 50-99 employees, more than 100 employees. (Response rate was 80%)

It is a census survey for enterprises with 50 or more employees. All economic activity sectors causing the biggest burden to environment or expecting to make expenditures on environmental protection were chosen as well.

The main economic activity was waste recycling, collection, purification and distribution of water, sewage and refuse disposal, botanical gardens, zoo and nature reservations, regardless of the number of employees.

Sub-samples were formed from all other enterprise size groups using the random choice technique.

Publication

In the publication "Environmental protection expenditures 1999", the chapter on economic aspects of environmental protection presents 17 tables on EPE. The EPE is split into investments in end-of-pipe, integrated technologies and current expenditure. The EPE is broken down by environmental domains or main economic activity, and by financing sources. Information is available concerning investments by size classes and receipts from environmental protection activities.

Hungary

Environmental protection expenditure survey

The first survey on environmental expenditure was made in 1990. From 1990 to 1996 the expenditure questionnaire collected data on end-of pipe investments in branches A-O, enterprises with more than 50 employees.

Since 1997 the units with more than 20 employees are surveyed and expenditure on integrated technologies are covered.

From 1999 to 2000 a new separate questionnaire was created, covering sectors C, D and E. The census is made for units with more than 20 employees and a sample survey for the units with 5-19 employees.

The regional statistical offices send out the questionnaires during February and March and the deadline for returning the questionnaire is end of May.

Since 1997 Hungarian Central Statistical Office has collected annually, in a separate survey, information on current expenditure and revenue of specialised producers (NACE 41 and 90) having more than 10 employees. In Hungary most of the companies providing waste water services are classified in NACE category 41 because their main activity is water supply.

Beginning in 2001, the Hungarian Central Statistical Office will collect information on the current expenditure and investment of the specialised producers belonging to NACE 90.

Business Register

The Register of the Hungarian Central Statistical Office is used for the determination of reporting units. It contains information on all registered enterprises. The Informatics Department selects the respondents from the register for data collection purposes according to instructions from the Environment Statistics Section.

Questionnaire design

The questionnaire is divided into 3 parts. Data on end-of-pipe and integrated investments are requested in the first part of the questionnaire. Table 1 splits the total amount in construction, machines and other kind of end-of-pipe investments. Table 2 shows the end-of-pipe investments in different environmental domains and Table 3 requests information on financing sources.

The same information is requested for integrated environmental investments as for end-of-pipe investments.

The second part of the questionnaire surveys current expenditure. In the first table information is given on external current expenditure for the treatment and disposal of solid waste and other current expenditure. In Table 2 internal current expenditure is split in different environmental domains. In Table 3 environmental penalties and charges are surveyed.

The third part of the questionnaire provides additional data on environmental employment and environmental management systems.

A separate questionnaire has been used since 1997 for data collection on the current expenditure of specialised producers. Different specialised activities, for example waste water treatment, collection treatment of municipal and hazardous waste, are broken down by material costs, services, compensation of employees, depreciation, fines, fees and return from sales.

Compliance with international reporting obligations and agreements

Hungary collects information according to the Joint OECD/Eurostat Questionnaire with regard to the national requirements. For the reference year 1998 Hungary provided data on the integrated and end-of-pipe investments in Tables 1, 2, 2A-2E of the questionnaire and current expenditure data for specialised producers in Table 4. For 1999 and 2000 Hungary will provide data on the two types of investments and the current expenditure of the enterprises in branches C, D and E and the data for Table 4. Starting in 2001 Hungary will be able to complete the investment and current expenditure part in Tables 1, 2, 2A-2E for the NACE branches A, B, C, D, E, F, G, H, I, L, N and O and the current expenditure part of Table 4.

Difficulties

- The main problem is that in Hungary 'NACE 41' includes, besides drinking water supply, also waste water collection; therefore the identification and distinction of specialised producers is difficult. Identification of specialised producers, especially in NACE 41
- Identification of public and private enterprises
- Sources by environmental domains
- Receipts from by-products, savings
- Small organisations

Publication

The KSH-Publication "Environmental Statistical Data of Hungary 1999" contains the following tables in Chapter V:

- Performance value of environmental protection investments (1995-1998)
- Put into operation value of environmental protection investments (1992-1997)
- Performance value of environmental protection investments by regions (1994-1998)
- Performance value of environmental protection investments of economic organisations with more than 50 employees, by purpose (1993-1998)
- Environmental protection investments by purpose and by industries, 1998
- Environmental protection investments in the industry by purpose, 1999
- Current expenditure of providers of environmental services (1997-1999)
- Revenues and expenditure of the Central Environmental Protection Fund (1993-1997)

Hungarian Central Statistical Office (KSH): "Environmental Statistical Data of Hungary 2000"; January 2002

"Environmental Protection Expenditure by Industry" 1999; Budapest, 2001

"Environmental Protection Expenditure by Industry" 2000; Budapest, 2002

Latvia

Environmental protection expenditure survey

In Latvia information on environmental expenditure is collected annually in the "Survey on use of money resources for protection of natural resources and environment" (modules 717-719); data is also collected on national parks and nature reserves (modules 718 and 719). The questionnaires are sent out in October, the answers are received in February.

At present the list of enterprises received from the Ministry of Environmental Protection and Regional Development is used as the basis for the census.

The following domains are covered: Protection of ambient air and climate, Wastewater management, Waste management, Protection of soil and groundwater, Protection of biodiversity and landscape. Integrated investments are not included.

Business Register

The Latvian Statistical Business Register includes all enterprises registered in the State Enterprise Register (legal register). At present more than 100 000 enterprises are registered but only 40 000 seem to be active and 14 000 dormant. Information about 3 main activities, turnover, number of employees, economic status of enterprise, legal and real address, etc can be found in the STBR. The Latvian register was developed with the help of FIN, NL and DK.

Information for updating the STBR is obtained from special register surveys and from different statistical reports. In order to comply with EU requirements, there are plans to add information about local kind of activity units; that began in February 2001.

Questionnaire design

The investments questionnaire consists of 4 tables. In the first table information is given about the investments, broken down by environmental domains.

In a separate table the investments are broken down by financing sources: enterprise, from state, local budget, credits and loans, others). Information about financing sources for construction and installation work is treated in a separate column.

In Table 3 the data on current expenditure broken down by environmental domains is generated. Table 4 provides data on capital expenditure for maintenance of environmental protection fixed assets.

Difficulties

- Partial lack of information due to absence of data collection system for waste, noise and some other environmental areas,
- Differences between the present methodology, classifications, data collection and evaluation methods in Latvia and in the EU.
- Partial lack of national legislation, classifications (Standard Statistical Classification of Environmental Protection Facilities and Expenditures is not officially translated and introduced in Latvia),
- Shortage of theoretical and practical knowledge for the development of this statistical sector (specially in the area of investments in integrated technologies).
- Use of the Business Register is a weak point, selection and identification of reporting units should be improved (new enterprises are not always included in the list).
- Lack of co-operation between the MEPRD and the CSB on Environmental Investment data collection (mainly due to different reporting regulations and practices).

Publication

The publication "Latvian Environment in Figures" has chapters on environmental protection expenditure which include the following tables:

- Expenditure for environmental protection (1995-1998)
- Expenditure for air protection (1995-1998)
- Expenditure for the protection and rational use of water resources (1995-1998)
- Capital investment in environmental protection by economic activity in 1998
- Current expenditure for environmental protection (1995-1998)

Pilot project on improvement of environmental protection expenditures data collection system in Latvia

Central Statistical Bureau of Latvia has been collecting data on environmental protection expenditures since the first half of the nineties; the first publication was in 1995 with 1994 data. This survey included data on end of pipe investments, current expenditures, capital expenditure for maintenance of environmental protection fixed assets and environmental protection equipment put into operation. Data collection was based on a list of enterprises received from the Ministry of Environmental Protection and Regional Development (mainly water users and air polluters).

The Joint Eurostat/OECD Questionnaire was filled in for the first time in 1998; at that time it was stated that it was not so easy to fill in because of lack of detailed data, differences in definitions, lack of knowledge about Eurostat methodology and data collection practices in the EU. NACE division (two digits level) was introduced for this survey in 1997. Unfortunately not all data at different levels of detail was divided by NACE branches and due to changes in technical equipment and programming it was not possible to achieve the division afterwards. When the JQ 2000 was filled it was found that in 1998 there was some misunderstanding and therefore some data divisions were changed. Nevertheless after that second exercise gaps (for example integrated investments, subsidies) and methodological problems (for example, definition of public sector) still remained.

The Eurostat pilot project lead by LANDSIS gave good theoretical background and practical examples from different countries on environmental protection expenditure data collection. Improvement was also made regarding Eurostat methodology. The project is a good base for future improvement of methodology and data collection system in this area.

Until 2001 the SBS regulation requirements for some environmental protection expenditure data was not taken into account in Latvia. As new amendments to this regulation, which are in the process of approval, will mean more requirements for environmental expenditure data, it is crucial to start data collection in the business sector.

Steps taken in 2001

To get a clear division of current expenditure into internal (mainly operating costs) and external (fees and purchases), separate lines for fees for wastewater collection and treatment and for collection, storage and incineration of waste were introduced. As there were problems to allocate Environmental protection investments in some specific cases, an additional row "Other investments for environmental quality improvement" was introduced.

To come more in line with requirements of the SBS regulation, it was decided that for NACE 10 - 41, the general sample used in the CSB of Latvia should be used as a base to get environmental expenditure data from these enterprises. Additional questions were not added to the SBS survey, but a separate existing environment protection expenditures survey form "1-VA" (environmental protection expenditures) was used. For other NACE branches list of enterprises was still used.

Future steps to be taken

- A final version of the new "1VA" survey form should be developed up to the end of September 2002. The main definitions should be included in it.
- New instructions should be worked out until the end of October, with fuller explanations and practical examples. Special attention should be paid to areas that are included in the new survey form for the first time.
- Final decision on sample frame and sample size should be taken up to middle of November to include survey "1VA" in the list of statistical surveys for respondents.
- Up to the end of 2002, the new survey form should be incorporated in the common system ISDAVS for data management.
- A separate survey should be worked out for enterprises providing environmental services in 2003 to start data collection in 2004. Final decision on sample frame and sample size should be worked out up to the middle of November 2003.
- After evaluation of survey results for 2002, necessary improvements should be made regarding survey form "1VA" and instructions.
- Co-operation on improvement of this area should be continued on a bilateral basis with some EU countries (probably Finland, Netherlands).

Lithuania

Environmental protection expenditure survey

The environmental expenditure survey has been carried out annually since 1996. The expenditure questionnaires are sent out in April and the answers are received in September.

Business register

The Business Register of Statistical Profile is used to determine reporting units. In the statistical business register 163 000 units are registered; only about 69 000 are active and two thirds of them are units with less than 10 employees.

The register contains the following information: number of employees, turnover, status of enterprise, form of ownership, activity according to NACE (Rev.1, four digit level) and source. It includes foreign-owned enterprises and partly foreign-owned enterprises as well.

The register is updated continuously. Information for updating the register is obtained from statistical questionnaires and from external sources as well (social security, customs, population and real estate registers). The local kind of activity should be available by the end of this year. The database is built in Oracle.

Sample

In 1998, 1 498 enterprises were surveyed. The population from which the sample was drawn consisted of 4 866 enterprises. It is a sample survey for enterprises with less than 99 employees and a census for 100 and more. The non-response rate among the small enterprises is higher (16%) than among the big enterprises (7%).

All enterprises dealing with recycling, wastewater collection, purification and distribution, sewage and refuse disposal and sanitation are included in the survey independent of the number of employees. The survey covers NACE sectors 10-37, 40, 41, 6312, 6322, 90.

In 1999 the survey population consisted of 4 699 enterprises. The stratified sample of 1 442 enterprises was used according to the enterprises' main economic activity and number of employees in the enterprises (5-99, 100 and more). 1 266 enterprises participated in the survey; 176 did not respond, therefore the non-response rate was 12.2%. Not every enterprise which participated in the survey gave information on environmental protection expenditure. In 1999, 511 enterprises made investments with an environmental purpose.

Questionnaire design

The questionnaire consists of two tables. The first table provides the data on end-of-pipe and integrated investments, on current expenditure and on income from environmental activities. Both kinds of investments are broken down by environmental domains and financing sources (columns 1-5). The expenditure for scientific research by financing sources is also surveyed. In the second table a short description of investments is requested.

Publications

In the publication "Natural resources and environment protection, 1999" tables and graphs on the following topics are presented:

- Environmental protection expenditure and income by economic activity of enterprises
- Environmental protection expenditure and income for protection of air by economic activity of enterprises
- Environmental protection expenditure and income for water protection by economic activity of enterprises
- Environmental protection expenditure and income for waste collection and treatment by economic activity of enterprises
- Environmental protection expenditure and income for other environment activities by economic activity of enterprises
- Sampling Design and Accuracy of Estimates of the Survey of Expenditure on Environmental Protection

Malta

Environmental expenditure statistics in Malta

Current situation

The work in this field has just started one year ago. As a first approximation some information for the total expenditures from the National Accounts is used. But until now, the statistical office could not submit any data to Eurostat. There is no separate survey on environmental expenditure. Only one question on investments is included in the industrial survey.

Problems

The available resources are low - only two persons are responsible for the whole field of environmental statistics.

Future work

A pilot project which shall start soon is foreseen in order to measure environmental expenditure in the country. First the design of the questionnaire will be prepared after discussions with Landsis. It will be a sample survey, which will include about 400 enterprises. There are 90 enterprises with more than 50 employees in the field of manufacturing industry and they will all be included in the survey.

Qualified interviewers will help the companies to fill in the questionnaires in order to increase response rate and data quality.

The project will mainly focus on the business sector. The public sector data can be gathered from administrative sources such as National Accounts. The Ministry of Environment can be used as another source of governmental environmental expenditure. Also information from the Statistical Register will be used, where some information about the expenditures made by enterprises can be found.

Malta has also applied for a grant from Unit B1 to start work on environmental accounts.

Expenditures for waste collection and treatment

Households do not pay the waste fees directly. The municipalities receive the payments from the central government, which collects the money from the household in the form of taxes.

Environment - current issues:

There are very limited natural fresh water resources; there is increasing reliance on desalination. There is only one wastewater treatment plant and one landfill. Relatively large expenditure [from the side of specialised producers] can be expected in the future in the waste and water domain.

Poland

Environmental protection expenditure survey

The survey on environment protection investments has been conducted annually by the Central Statistical Office since the 1970s. Since 1995 it has been carried out and supervised by the environment unit in the form of an enclosure to the surveys F-03, SP (business sector) and SG-01 - part 4 (communes).

A survey on total current expenditure was carried out twice under the supervision of the Ministry of Environment; it was first carried out as the pilot sample survey in 1997/98 and as a sample survey in 1999. In 2000 the next sample survey was conducted for sections A and B of NACE Rev. 1 and in 2001 for sections C and D. The survey on current expenditure was expected to be conducted every four years in accordance with the previous Council Regulation 58/97; estimations were made in the intervening years. Accordingly, some NACE sectors were surveyed and others estimated. In 2000 a sample survey was carried out under the supervision of the Ministry of Environment on environment expenditure in households.

In 2002 a sample survey for Section D is expected to be carried out (for data 2001). Also in 2002 discussions with the Ministry of Environment are planned concerning a new contract for a survey on total current expenditure (started in 2003) which would be conducted for all Sections of NACE Rev. 1 every three years and would fulfill the other requirements of the Council Regulation No 58/97 on Structural Business Statistics. Estimations would be made for each year that surveys were not conducted.

Register

Poland uses the special card index created purposely for the forms SP (only for enterprises employing 10 and more persons) on the basis of the national register of economic units (REGON). The source for determination and detection of reporting units for the investments survey is also a sort of business register, which covers the above mentioned card index but excludes physical units and civil companies of physical units conducting the proper book-keeping.

Questionnaire

The enclosure to the SP surveys on environment investments and tangible effects is sent out to the enterprises in the first part of February and responses are expected by the end of March.

The investments questionnaire consists of 2 big tables:

In the first three columns of the first table information about the location of investments (voivodeship, commune, city, village) is given. In the next columns the investments are broken down by environmental domains and by type (1-end-of-pipe, 2-integrated investments, 3-R&D, 4-water management). In the last columns the investments are broken down in a very detailed way by financing sources: enterprise, from budget (further differentiations), from abroad, ecological funds, credits and loans, others)

In the second table data is provided on tangible effects of environmental protection investments and water management.

In addition the special assumptions on survey were prepared in 2002 aiming at choosing the specialised producers from NACE Rev 1 (90 and 37) that made it possible to fill in Tables 4 and 4a of EPER 2002.

The questionnaires on current expenditure were sent out in August and received back (filled in) by the end of October.

Current expenditure questionnaire consists of 3 big tables (sections):

In the first column of section 1 the total current expenditure is split into environmental domains, which are broken down by fees connected to the specific domain (ex. current expenditure for waste water management of which fees for water abstraction and particular water use). The column includes information on expenditure for "end-of-pipe" equipment and integrated technologies.

The last part of this column generates the information on other costs split into management costs, education, laboratory activities, monitoring R&D, fees for research and exploitation of useful minerals.

The next three columns of Section 1 concern information on expenditures for activities undertaken by enterprises (in-house spending) and provided by specialised producers (paid to external bodies) divided by public and private enterprises.

The second section provides information about sources of financing current expenditures for environmental protection (own sources, of which credits and loans; subsidies - from central and local budgets, from environmental funds and foreign sources).

The third section generates information on revenues and savings from the operation of protective equipment.

Difficulties

Lack of data on subsidies, receipts from by-products, fees as well as data on current costs for some NACE classes hinders Poland from completing fully the following tables of the Joint Questionnaire: 2, 2A, 2B, 2C, 2C_add, 2D, and 2E.

Compliance with international reporting obligations

Poland replies on the OECD/Eurostat Questionnaire on Environmental Protection Expenditures. Both surveys (investments, current expenditures) are partly adapted to the European System for the Collection of Economic Information on the Environment (SERIEE) and fully adapted to Council Regulation No 58/97 in the scope of investments in environmental protection. In 2002 GUS is planning to discuss with the Ministry of Environment a new contract concerning a project for a survey on current expenditure in general (starting in 2003) which would be conducted every three years and would help to fulfill the requirements of Council Regulation No 58/97 (all Sections of NACE Rev. 1) resulting in data needed for this Regulation and EPER 2004. Estimations would be made for each year that surveys were not conducted.

As concerns investment expenditure, The Single Standard Classification for Environment Protection Activities and Facilities (CEPAF), which first had been adjusted to Polish conditions through a long process and then was adopted by the Council of Ministers in March 1999, has been introduced into the system of statistical surveys. The first results produced completely in accordance with CEPAF are available for 2000.

Publications

- The chapter on "Economic Aspects of Environment Protection" in "Environment 2001" contains several tables on Environmental Protection Expenditure (EPE). The EPEs are split into investments in end-of-pipe, integrated technologies and current expenditure. The EPEs are broken down by environmental or main economic activity, and by financing sources. Information about investments in water management activity and regional environmental protection expenditure is available. Most of the data are presented in times series.

- Statistical Yearbook of the Republic of Poland 2001 - Chapter II on Environmental Protection; GUS - Central Statistical Office of Poland, Warszawa November 2001

  Table 23: Waste generated by type (Total and further differentiation of 8 types especially from industry) and further utilisation and treatment for the year 2000

  Table 32: Investment Outlays on environmental Protection and Water Management 1999/2000

  Table 33: Tangible Effects of Investments in Environmental Protection and Water Management 1999/2000

  Table 34: Ecological Funds - Disposable Funds and Expenditures

- Quarterly Statistics 1999/No3 - Chapter III on Environmental Protection in Poland; GUS - Central Statistical Office of Poland

- Marian GRESIAK: Statistics of Environment Protection in Poland; Statistics in Transition; December 1998 Vol 3, No 5, pp. 913-928

Romania

Environmental protection expenditure survey

In Romania from 1993 till 2000 data on environmental expenditures was collected annually on a regular basis through the Structural Survey. The questionnaires used for this survey have a special chapter entitled "Environmental protection activities".

In the year 2001, through the Phare National project (RO9703-01), a special survey was performed for environmental expenditure. The final results of this survey were received in September 2001. The new classification and a new set of questionnaires was used.

The expenditure survey consists of three questionnaires: for industry, public administration and specialised producers. The industry questionnaire was sent to the enterprises belonging to the NACE classes 10-41. This consisted of about 30 000 units, but only 10 000 had performed some environmental activity. It was a census survey for enterprises causing the biggest burden to environment and a sample survey for the others according to size classes (A different threshold was used for each branch). All specialised producers were included. The information about EPE by environmental domain, type of expenditure and financing sources is collected.

Starting with the the year 2002, the National Institute of Statistics and Economic Studies intends to introduce this special survey for environmental expenditures as a regularly survey.

Register

From 1993 till 2000 the source for determination and detection of the reporting units was the "Statistical Register of Economic Units". In 2000, within the Phare National Programme RO9703-01-142, prior to the organisation of the survey for environmental expenditure, a census of the producers of environmental services was organised. This census included all enterprises (NACE codes 10-41), specialised producers (NACE codes 3710, 3720, 5157 and 9000) and public administration units (NACE code 75). A special Register of the Producers of Environmental Services" will be built with this data, which will be used as a sampling base for future surveys on environmental expenditures. The final processed data of this inventory will be available this year. The new "Register of the Producers of Environmental Services" is built based on inventory data and will be updated based on the data from the earlier survey and on the data from Statistical Register of Economic Units. The main information included in this Register refers to Name of the unit, Fiscal code, Commercial code, Address, Form of property, Legal form, Main activity (NACE code), Secondary activity (NACE code), Number of employees, Company turnover, and Environmental protection facilities existing in the unit. This Register will be used for establishing the sample for the survey on environmental expenditure.

After the inventory of the producers of environmental protection services, a list of the environmental protection facilities at the level of units, by CAEN classes and type of facility will be available.

Questionnaire

The expenditure questionnaire for 2001 survey consists of three separate questionnaires:

- Environmental protection expenditure by public administration
- Environmental protection expenditure by industry
- Environmental protection expenditure by specialised producers

Classification

Within the PHARE project RO9703-01-141 a system of classification for environmental protection domains was elaborated. It contains a classification of activities for environmental protection and a classification of the service producers of environmental protection and environmental protection facilities. It is established in accordance with SERIEE and CEPA.

Publications

In the publication "Environment in Romania 2000" the chapter on environment protection contains the following tables:

- Total expenditures on environmental protection, by activities
- Current expenditures on environmental protection, by activities
- Investment expenditures on environmental protection, by activities
- Expenditures on preventing and controlling pollution
- Expenditures on natural environment protection

Sample

The 2001 statistical survey on EPE complied with the specific European Community regulations. It was designed to collect EPE in the year 2000 on social and economic units covering the following sectors:

- Local public administration units, included in NACE class 75
- Enterprises, divided in two categories:
  - Specialised producers of environmental services and products, included in NACE codes 3700, 5157 and 4100/9000
  - Non-specialised producers included in NACE classes from 10 to 40.

In order to perform a comprehensive survey, three types of questionnaires have been designed and used.

The sample for the survey has been established using the results and conclusions of the:

- Census field operations performed in the second stage of the project "Improvement of compliance in the field of environmental statistics" for specialised producers and for public administration unit and
- Census field operation performed by PRODROM project for non-specialised producers on environmental protection services from the enterprises.

Response rate

During the survey, 7 554 questionnaires have been sent to the units investigated.

The total response number (received questionnaires) was 5 106 (total response rate 68%) of which:

- 1 622 CAP questionnaires (public administration units) - response rate 91%;
- 4 64 CPS questionnaires (specialised producers) - response rate 51%;
- 3 020 CI questionnaires (enterprises) - response rate 62%.

Besides the extraction accuracy and the selection of a survey (poll) plan according to the survey requirements, it was necessary to get a reply rate as high as possible to derive representative data from the sample. Therefore, before verifying and analysing the units replying, the non-replying rate has been checked and analysed (by separating them into two basic categories: total non-reply and partial non-reply).

The total non-reply rate represents the weigh of the units that did not offer data because of various reasons such as: temporary/definitive cease of activity; refusal to participate in the survey; not contacted; not identified.

The compensation of the total non-reply is achieved by rectifying the coefficients. The method of data reconstruction is applied for recovering the partial non-reply.

Date of availability of results: October 2001.

Difficulties

- Some expenditure could not be divided according to environmental domains (water, air, etc) e.g. taxes for environmental authorisation which is given for all domains (problem has been solved by the automatic procedures for data entry which split the total value in equal parts for each domain);
- There are facilities (e.g. heating systems) which do not belong either to added "end of pipe" or "integrated" categories, but investments in their modernisation have a strong environmental benefit effect (the problem has been solved by introducing them conventionally to "end of pipe" category);
- Some of the units investigated have complained that they were overwhelmed by other statistical surveys.

Quality of the data

- The variables and the definitions of the variables for the EPE survey have been chosen in order to comply with European requirements (SERIEE system) and for a better measure of the impact of specific policy drivers.
- A special methodological guideline has been developed for filling in the questionnaires.
- The data collected in field operations have been verified and introduced in a database (FoxPro software). In the database some special procedures were written and used to process the data and edit various reports (tables) regarding survey responses and environmental expenditures in the year 2000.
- The overall quality is higher than the data processed through the previous surveys.

Slovak Republic

Environmental protection expenditure survey

The Questionnaire on Environmental Expenditure is part of a business sector survey. It has been sent out annually since 1998 to all reporting units with 20 or more employees and to all municipal offices since 1999. The environmental investments are not split into environmental domains.

Sample used

All reporting units with 20 or more employees in the following branches are surveyed: (Science and Research, Agriculture, Forestry, Industry branches (all without Construction), Construction, Trade (Wholesale and also Retail Trade), Accommodation, Transport, Selected Market Services (without Banking, Insurance, Marketing and Mediation of Real estate, Post and Telecommunications, All municipalities (circa 2 800 subjects).

All subjects which have permission for enterprise activity in Slovak territory and which are registered in the Trade or Business Register are included in the surveys. The Trade Register is a sub-aggregate of the Business Register.

Questionnaire design

The questionnaire on the business sector (Roc 1-01, 2000) includes 1 table for environmental expenditure.

The table consists of 3 parts:

- Total amount of environmental investments is split into multi-purpose or single-purpose technologies and broken down by financing sources (state budget, or foreign investor)
- The current expenditure part surveys internal current expenditure (salaries and others) and external current expenditure (private companies or public companies)
- Income is split into income from the sale of products, the sale of environmental protection technologies and services in the environmental protection domain.
- The set of questionnaires is sent out in May and the answers are received in January from municipal offices and in March from other reporting units.

Difficulties

- Use of the Business register is a weak point; selection and identification of reporting units should be improved
- Identification of specialised producers
- Differences between the present methodology, classifications, data collection and evaluation methods in Slovak Republic and in the EU
- Identification of public and private enterprises
- Investments in integrated technology are not surveyed yet
- Environmental protection expenditure are not broken down by environmental domains

Slovenia

Environmental protection expenditure survey

The expenditure questionnaire is part of the gross fixed capital formation survey. Only a small table is included for expenditure. Data on the end-of pipe investments and current expenditure by domains is collected. Investments for integrated technologies are not covered. For the year 2000 the data on the investments for research and development were collected but data are not reliable. Data on business and public sector were processed.

For 2000 data on gross fixed capital formation and current expenditure for environmental protection and other environment related expenditures are the result of the annual survey on Gross Fixed Capital Formation (INV-01 form). With the special table that is a part of INV-01 form for 2000 all reporting units that had over 10 persons in paid employment were included. The response rate was 88%; 3.2% of them responded about gross fixed capital formation for environmental protection, 3.3% about current expenditure and 2.6% about other environment-related expenditure. For the non-responding units, re-calculation to the total population with ratio estimator using depreciation of fixed assets from final accounts or the number of people employed in public administration were performed.

Data collection for 2001 will be performed as a part of a pilot project survey. In GFCF survey only a control question concerning data on total environment expenditure remains.

Business Register

The Business Register is used for the determination of reporting units. It is an administrative register but used for statistical purposes. At the present stage one legal unit means an enterprise. In future the information will be extended and a survey is in preparation to update the Business Register. The register stores the information about the main activity and about the form of ownership and sectors (no detailed information about the shares of foreign ownership).

Questionnaire design

The questionnaire on gross fixed capital formation (INV-1, 2000) includes one small table for environmental expenditure. The table consists of 4 rows. Data are requested on total amount of environmental investments, on current expenditure, on other environment-related expenditures and R&D expenditures broken down by environmental domains. For the 2001 survey a new separate questionnaire is in preparation.

Publication

The following tables are presented in the Rapid Report from May 2002 on Gross Fixed Capital Formation and Current Expenditure for Environmental Protection and other Environment-related expenditure:

- Gross fixed capital formation for environmental protection by activity of investor and purpose, (1998-2000), organisational principle
- Current expenditure for environmental protection by activity of investor and purpose, (1998-2000), organisational principle
- Other environment-related expenditure by activity of investor and purpose, organisational principle, (1998-2000)
- Gross fixed capital formation for environmental protection by statistical regions, 2000
- Current expenditure for environmental protection by statistical regions, 2000
- Other environmental related expenditures by statistical regions, 2000

Pilot project on EPE in Slovenia

International obligations for reporting data on environmental expenditure (Joint questionnaire every two years) showed that data gathered with the special table that is part of the Annual Report on Gross Fixed Capital Formation (INV-01 form) does not satisfy the questionnaire demands. Therefore Slovenia decided to improve the data collection by carrying out a new independent survey on environmental expenditure.

Evaluation of the existing survey

With the table on environmental expenditure that was part of the Annual Report on Gross Fixed Capital Formation, Slovenia gathered data on environmental gross fixed capital formation (GFCF) and current expenditure for environmental protection. In recent years the statistical office tried to also collect data on other environment-related expenditures (taxes, subsidies, fees), but data were not reliable. Data were gathered according to the environmental domains of waste and wastewater management, protecting of air, noise

abatement, protection of soil and groundwater, protection of nature and landscape (including biodiversity) and other environmental protection domains (mainly the expenses for environmental management and radiation and magnetic field prevention).

The response rate for the table on environmental expenditures was very low (app. 3.3 %). The question was whether the reporting units did not have such investment or perhaps they just forgot or ignored the environmental expenditure part of the GFCF questionnaire.

Evaluation of effects on results from the change in methodology

With the new independent questionnaire the reporting units will be forced to focus only on the environmental questions. Therefore there will less chance that they forget to fill in tables. In the new questionnaire there will also be some control questions that will be strictly connected to particular answers. Some questions on environmental expenditure in total still remain part of the big GFCF questionnaire, so that we could have a double control on reporting.

In the new questionnaire we have some more detailed questions on subsidies, fees and taxes (which was a single question before).

With the new methodology we will also get more detailed data on reporting by sectors, ownership, size classes (according to the SBS regulative).

The final data will be also more precise on the specialised producers.

We intend to compare new, more detailed data with some data from administrative sources (Ministry of the finance, Ministry for the environment, spatial planning and energy..).

Selection of target group and programming

For the year 2000 data, we gathered data with a sample of 9 136 units.

For the new survey on environmental expenditure, Slovenia decided to take a smaller sample from the sample of the big GFCF survey. We decided, in agreement with Landsis experts, that for the pilot survey we would have a sample of 2 524 units (2 269 units with 50 or more employees, 86 units from the field of activities 37, 41 and 90 with 10 or more employees and from the rest of GFCF sample 169 units were chosen by chance. It is perhaps quite a big sample frame that will compensate for the decision of taking the smaller one in the regular survey next year.

The survey is mainly focused on the business sector (NACE C, D and E in two digit level). Following the idea of having timeliness also in other fields of activity, we also decided to collect data from other sectors. Among the observation units we have specialised producers as well, so we will have some availability of data from that field of activity.

Future steps

For the total completion of the project the following tasks will be done with SORS own resources and independently until 30 June 2003:

- Data entry and editing, data processing
- Analyses of the results. Assessing the possibilities to report environmental variables according to the SBS legal framework.
- Publication of data and dissemination

Difficulties

The main problems that exist in the new survey, according to some consultations with selected reporting units, are accounting regulations. It would be much easier for reporting units to have a more environmentally friendly accounting system. The units showed great interest in an accounting system that could cover the survey demands.

Expected results

With the change of the methodology and enlargement of the tables, Slovenia will get more specific data on environmental expenditure. With the compiled data from the Ministry of Finance (especially for subsidies) and the Ministry of Environment, Spatial Planning and Energy (especially for taxation) it will be possible to get more detailed data on some financial flows (considering environmental protection). This will also be due to the fact that the observing units are also from the field of activities 37, 41 and 90 and will report more data in the JQ 2004 tables for specialised producers.

Table 5.1:
Gross domestic product at market prices

million of euro (ECU 1996-1998)

		1996	1997	1998	1999	2000
EU-15	European Union	6 919 643	7 287 667	7 629 817	8 023 703	8 544 959
CC-12	Accession countries	284 309	317 175	350 736	358 598	410 988
CC-10	Accession countries, except Cyprus and Malta	274 660	306 731	339 475	346 508	397 562
BG	Bulgaria	7 822	9 167	11 386	12 164	13 734
CY	Cyprus	7 027	7 499	8 129	8 670	9 560
CZ	Czech Republic	45 476	46 755	50 636	51 575	55 755
EE	Estonia	3 432	4 075	4 668	4 878	5 575
HU	Hungary	35 583	40 352	41 931	45 075	50 571
LT	Lithuania	6 216	8 452	9 587	10 003	12 218
LV	Latvia	4 013	4 958	5 441	6 217	7 776
MT	Malta	2 622	2 945	3 132	3 420	3 866
PL	Poland	113 323	127 131	141 292	145 506	170 896
RO	Romania	27 770	31 181	37 436	33 388	40 172
SI	Slovenia	14 876	16 063	17 497	18 760	19 532
SK	Slovak Republic	16 150	18 596	19 600	18 941	21 333

Table 5.2:
Gross domestic product at market prices per capita

euro (ECU 1996-1998)

		1996	1997	1998	1999	2000
EU-15	European Union	18 480	19 410	20 280	21 270	22 560
CC-12	Accession countries	2 674	2 987	3 308	3 388	3 892
CC-10	Accession countries, except Cyprus and Malta	2 610	2 920	3 236	3 309	3 806
BG	Bulgaria	940	1 100	1 380	1 480	1 680
CY	Cyprus	10 840	11 460	12 310	13 040	14 290
CZ	Czech Republic	4 410	4 540	4 920	5 010	5 430
EE	Estonia	2 420	2 910	3 370	3 550	4 070
HU	Hungary	3 490	3 970	4 150	4 480	5 050
LT	Lithuania	1 720	2 360	2 700	2 830	3 480
LV	Latvia	1 610	2 010	2 220	2 600	3 280
MT	Malta	6 900	7 690	8 130	8 830	9 910
PL	Poland	2 930	3 290	3 650	3 760	4 420
RO	Romania	1 230	1 380	1 660	1 490	1 790
SI	Slovenia	7 470	8 080	8 830	9 450	9 810
SK	Slovak Republic	3 010	3 450	3 640	3 510	3 950

Table 5.3:
Structure of GDP by sectors

[%]

		Agriculture	Industry	Construction	Others
EU-15	European Union	2.11	22.65	5.35	69.89
BG	Bulgaria	13.79	22.97	3.46	59.78
CY	Cyprus 1999	4.18	13.26	7.69	74.87
CZ	Czech Republic	4.3	32.26	7.11	56.33
EE	Estonia	6.14	22.37	6.11	65.38
HU	Hungary	4.25	28.73	4.64	62.38
LT	Lithuania	7.74	25.81	6.1	60.35
LV	Latvia	4.86	18.62	6.73	69.79
MT	Malta	2.29	26.51	2.52	68.68
PL	Poland	3.68	26.51	8.37	61.44
RO	Romania	12.19	28.15	5.55	54.11
SI	Slovenia	3.25	31.43	6.03	59.29
SK	Slovak Republic	4.47	28.94	5.25	61.34

Table 5.4:
Population on 1. January of each year

[million persons]

		1996	1997	1998	1999	2000
CC-12	Accession countries	106.34	106.18	106.02	105.85	105.59
CC-10	Accession countries, except Cyprus and Malta	105.23	105.06	104.89	104.72	104.46
BG	Bulgaria	8.38	8.34	8.28	8.23	8.19
CY	Cyprus	0.74	0.74	0.75	0.75	0.75
CZ	Czech Republic	10.32	10.31	10.30	10.29	10.28
EE	Estonia	1.48	1.46	1.45	1.45	1.37
HU	Hungary	10.21	10.17	10.14	10.09	10.04
LT	Lithuania	3.71	3.71	3.70	3.70	3.70
LV	Latvia	2.50	2.48	2.46	2.44	2.38
MT	Malta	0.37	0.37	0.38	0.38	0.38
PL	Poland	38.61	38.64	38.66	38.67	38.65
RO	Romania	22.66	22.58	22.53	22.49	22.46
SI	Slovenia	1.99	1.99	1.98	1.98	1.99
SK	Slovak Republic	5.37	5.38	5.39	5.39	5.40

Table 5.5:
Exchange rate

[1 EUR/ECU=]

		1996	1997	1998	1999	2000
EUR-12	eur Euro	1	1	1	1	1
BG	bgn New bulgarian Lev	0.225149	1.90157	1.96913	1.95584	1.94792
CY	cyp Cyprus Pound	0.591904	0.582628	0.577418	0.57885	0.573924
CZ	czk Czech Koruna	34.4572	35.9304	36.3196	36.8843	35.5995
EE	eek Estonian Kroon	15.2763	15.715	15.753	15.6466	15.6466
HU	huf Hungarian forint	193.741	211.654	240.573	252.767	260.045
LT	ltl Lithuanian Litas	5.07899	4.53616	4.48437	4.26405	3.69516
LV	lvl Latvian Lats	0.699605	0.659401	0.66024	0.625601	0.559227
MT	mtl Malta lira	0.458156	0.437495	0.434983	0.425773	0.404138
PL	pln New Polish Zloty	3.42232	3.71545	3.91784	4.22741	4.00817
RO	rol Romanian leu	3922.19	8111.5	9984.88	16345.2	19921.8
SI	sit Slovenian Tolar	171.778	180.996	185.958	194.473	206.613
SK	skk Slovak Koruna	38.9229	38.1061	39.5407	44.1229	42.6017

European Commission

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