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Improvement of data quality in Environmental Expenditure Account as well as in Eco Industry – Sample survey at service industries

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PROJECT REPORT

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CONTENT

FOREWORD

Environmental protection expenditure accounts and environment industry accounts are high priority fields of action of the European Commission and part of the regular work programme of Statistics Austria. With regard to the improvement of data quality Statistics Austria planned to carry out two surveys, one on environmental service industries and one on environmental protection expenditures of service industries, within the Eurostat/DG Environment grants for 2005.

The actions and results are presented in this report.

Due to the fact that both surveys realised low response rates it was decided to make a non-response analysis for the survey on environmental service industries, but not for the survey on environmental protection expenditures of service industries as their response rate was too poor. Reasons for the low response and proposals for the future are discussed.

Chapter one provides a detailed description of the action, its objectives, planned activities and expected results as well as the background of the project.

An overview on the current data status is given in chapter two.

The timetable of the activities is presented in chapter three.

The core of the action – the methodology – is described in chapter four. It comprises a list of the used literature, a detailed description of each survey containing selection of branches of the survey, design of the sample, content and execution of the survey.

In chapter five some results of the survey on environmental service industries are presented.

Chapter six follows with the discussion of the main problems connected to the surveys and proposals for the future.

After summary and references an English version of the questionnaires and the explanations are listed in the annex. Annex II contains the survey on environmental service industries, annex III the non-response analysis and annex IV the survey on environmental protection expenditures of service industries. The first annex contains a common table of turnovers and employees for the described environmental services industries.

Chapter one: INTRODUCTION

1 Description of the action

1.1 Introduction

Environmental protection expenditure accounts and the calculation of the economic output of environment industries (Environment industry accounts) are part of regular work of Statistics Austria and the former Central Statistical Office respectively since the early 1990s.

With the accession to the European Union the methodology was adapted.

In 1997 the implementation of SERIEE (European System for the Collection of Economic Information on the Environment) had been finished[1] and since 1998 Environment Protection Expenditure Accounts are calculated every year. Data are available in a continuous time series from 1994.

The economic output of environment industries for 1994 and 1995 was figured out on recommendation of Eurostat within a pilot study[2] also in 1997. This project was carried out in coordination with the Austrian Institute of Economic Research (WIFO). For the description of the economic output the common framework[3] of OECD and Eurostat was used. Since 1998 every year the output of environment industries is calculated. Methodological framework is the common OECD/Eurostat "The Environmental Goods and Services Industry – Manual for data collection and analysis"[4].

In 1997 basic information for all NACE classes was provided within Structural Business Statistics for the last time (for the year under review 1995). In the subsequent years estimations, expert valuations and extrapolations had to be used.

For both accounts data on specialised and other producers of manufacturing industry and some service industries are available. But as the economic output of all service industries is of high interest, it is necessary to get data on production of characteristic activities, connected and adapted products as well as information on the demand side.

1.2 Objectives of this study

Therefore the aim of this study was to provide a detailed overview on production of characteristic activities as well as connected and adapted products of the Austrian service industries and on the demand side, which means e. g. consumption of environmental services like waste management or goods like filters, for 2003 and 2004.

A first study on environmental consulting in Austria has been made by the Interdisciplinary Institute for Environment and Economy (Interdisziplinäres Institut für Umwelt und Wirtschaft) of the Vienna University of Economics and Business Administration[5] on behalf of the Federal Ministry of Environment, Youth and Family in 1993. For the first time the significance of environmental technology as an economic factor has been analysed in detail by the Austrian Institute of Economic Research (WIFO)[6] on behalf of the Federal Ministry of Economic Affairs in 1995. Both studies were repeated in subsequent years but they didn't give a complete overview neither on environmental service industries nor on environmental technology industries because they used different methodologies and ignored the construction sector.

[1] Kranvogel (1997)
[2] Gerhold/Milota (1997)
[3] OECD (1995) und OECD (1996)
[4] OECD, Eurostat (1999)
[5] Martinuzzi A. et al (1994)
[6] Köppl, A., Pichl, C. (1995)

1.3 Planned activities

In detail the aim of this study was to analyse the structure of the service industries concerning the production of specific products and services, i.e. characteristic activities, connected and adapted products.

The OECD/Eurostat "The Environmental Goods and Services Industry – Manual for data collection and analysis" gives some guidance to this topic but it also contains several shortcomings concerning definitions which makes it impossible to completely describe the environment industries on production or demand side. The most important shortcoming is the missing agreed methodology for cleaner products, services and technologies. It is not possible to identify all environmental goods and services. Difficulties in including environmental goods and services also arise in the case of goods and services which could be used for environmental protection although their principal purpose is not environmental protection. In both cases further methodological work is necessary.[7]

The SERIEE Handbook Version 1994[8] and the compilation guide from 2002[9] give guidance to environmental output of service industries.

The output of the production and construction sector is well described in our annual reports.

This study should complete the picture for the service industries. The existing annual reports should be extended by specific information on production of environmental services of the whole service industry in Austria using a sample survey. In this context it had to be taken into account that companies might not be classified in the right NACE class.

The survey should contain questions about:

- Turnover
- Employees
- Investments
- Current Expenditure
- Exports
- Research and Development
- Innovations
- Licences
- Public grants

A second sample survey dealing with environmental protection expenditure of the service industries should provide information on the demand side.

With regard to the different history of economic development in European countries and to future development of economic structures – that is to ensure the international comparability of economic data – public and private companies as well as external and internal activities should be covered by these surveys.

The outcome of both surveys should be used for:

- Environmental Industry Account
  This account provides information on the environmental goods and services industry, grouping technologies, goods and services into:
  - A: Pollution management group
  - B: Cleaner technologies and products group
  - C: Resource management group

[7] OECD, Eurostat (1999), S. 11
[8] Eurostat (2002a)
[9] Eurostat (2002b)

- Environmental Protection Expenditure Account
  This account provides information on environmental protection expenditures, considering:
  - A: National expenditure for environmental protection
  - B: Production of services for environmental protection
  - C: Financing of national expenditure for environmental protection

1.4 Expected results of the action

It was expected to provide a detailed overview on production of characteristic activities as well as connected and adapted products of the Austrian service industries and on the demand side, that is the consumption of environmental services.

An additional goal of the study was the assessment of the integration of the Austrian service industries into the global economy with respect to environmental services via the export structure.

Detailed information on production and use of environmental goods and services for both accounts should be available for at least the two years under review (2003 and 2004).

2 Background of the project

Environmental protection expenditure accounts and environment industry accounts are modules of environmental accounts. Environmental accounts link environmental and natural resource related information with data of national accounts and thus allow the analysis of the interaction between environment and economy. On the one hand they permit the analysis of the contribution of the environment to the economy and on the other hand the environmental impact of the economy. The different modules of environmental accounts are designed to form satellite accounts to the national accounts and constitute a tool for policy making.

In the last years Eurostat and the EU Member States made substantial progress in developing and implementing environmental accounting modules. And one target of the current Community work programme for 2003 to 2007 is to further adapt and extend environmental accounts to serve as an essential statistical tool for analyses of sustainable development. The “European Strategy for Environmental Accounting Task Force” (ESEA Task Force) has recommended prioritising the work on the modules of environmental accounting. In this context environmental protection expenditure accounts and environment industry accounts are recommended for short term EU wide implementation.

Further high priority modules are:

- Air emissions accounts
- Economy-wide material flow accounts
- Environmental taxes
- Water flow accounts
- Natural resource accounts for forests and for subsoil accounts

In the last decade Statistics Austria made strong efforts in implementing some of these high priority modules but there is still work to do. As mentioned above the aim of this study is to improve the data quality and availability concerning production of characteristic activities as well as connected and adapted products of the Austrian service industries and on the demand side, i.e. the consumption of environmental services, entering environmental protection expenditure accounts and environment industry accounts.

Chapter two: CURRENT DATA STATUS

1 Production of environmental services as well as connected and adapted products by service industries

These data are provided partly by environmental protection expenditure account and partly by environment industry account. As they are mutually used the relevant data enter both accounts.

1.1 Environmental protection expenditure account[10]

Data for environmental services are derived from structural business statistics and a study on environmental consulting in Austria[11]. Depending on the kind of industry a specific share of turnover is taken into account. The share for each industry has been defined by expert opinion[12] and is described as follows:

- 51.57: Wholesale of waste and scrap (15%)
- 73.10: Research and experimental development on natural sciences and engineering (3.8%)
- 73.20: Research and experimental development on social sciences and humanities (3.8%)
- 74.11: Legal activities (3.8%)
- 74.14: Business and management consultancy activities (3.8%)
- 74.20: Architectural and engineering activities and related technical consultancy (3.8%)
- 74.30: Technical testing and analysis (3.8%)
- 92.53: Botanical and zoological gardens and nature reserves activities (100%): As this class is not surveyed anymore by structural business statistics old data are adjusted.

Data of NACE90 Sewage and refuse disposal, sanitation and similar activities are collected by a specific survey. Therefore this branch has not to be estimated in the above manner.

Production of connected and adapted products by service industries is not taken into account as relevant data are not available.

1.2 Environment industry account[13]

In addition to the data of environmental protection expenditure account the following services are calculated by environment industry account:

- Measurement of exhaust gases of vehicles
- Inspection of heating systems by chimney sweepers
- Disposal of cooling units
- Environmental auditing
- Studies concerning cleaning-up of former waste disposal sites
- Monitoring and cleaning-up of former waste disposal sites
- Environmental Consulting
- Engineering services
- Environmental research and development

[10] see project reports on http://www.statistik.at/fachbereich_umwelt/umweltschutz.shtml (only available in German)
[11] see Martinuzzi, A. et al (1994)
[12] A. Martinuzzi (Interdisziplinäres Institut für Umwelt und Wirtschaft, Vienna University of Economics and Business Administration) and A. Steurer (at that time Austrian Central Statistical Office, now Eurostat)
[13] see project reports on http://www.statistik.at/fachbereich_umwelt/oeko.shtml (only available in German)

- Services concerning wastewater treatment plants
- Services concerning water treatment plants

Production of connected and adapted products by service industries is not taken into account as relevant data are not available.

2 Demand of environmental services as well as connected and adapted products by service industries

Data for the demand of environmental services as well as adapted and connected products by service industries are not included in the environmental protection expenditure account as the necessary information is not available from the statistical sources. Demand data are only considered for private households. These data are derived from environment industry account.

Chapter three: TIMETABLE of the ACTION

Start of the action was on January, 1st 2006 with duration of 12 months.

The first step comprised the determination of the samples for the 2 surveys and their questions.

The second step included the design of the surveys and the composition of their explanations.

In the third step both surveys were sent out at the beginning of June 2006 with June, 30 2006 as time limit for response.

In the fourth step non responding companies of the first round of data collection which were supposed to be of environmental service industries were called and asked for reply to increase the response rate (August 2006).

The fifth step was a non-response survey covering a sample of the non responding companies of the environmental service industries survey. The survey was sent out at the beginning of October 2006 with October, 20 2006 as time limit for response.

Analysis of received data was made for both surveys in the sixth step and finally in the seventh step the final report has been written.

Chapter four: METHODOLOGY

1 Literature

For the survey on environmental service industries the following literature was used:

- The Environmental goods and services industry – Manual for data collection and analysis; OECD, Eurostat; Paris 1999
- Materialiensammlung Öko-Consulting in Österreich; Interdisziplinäres Institut für Umwelt und Wirtschaft; Vienna 1994
  (Study on environmental consulting in Austria)
- A. Köppl: Österreichische Umwelttechnikindustrie; WIFO; Vienna 2000
  (Study on Austrian environmental technology industry)
- RWI-D: Definition and Evaluation of Household Environmental Protection Activities; Internal working document Doc. Publ-Admin/96/4; Joint Eurostat/EFTA group "Statistics on the Environment", sub group "Economic data"; meeting of 29-30 April 1996; Luxemburg 1996

For the survey on environmental protection expenditure of the service industries the following literature was used:

- SERIEE European System for the collection of economic information – 1994 Version; Eurostat; Luxemburg 2002
- SERIEE Environmental Protection Expenditure Accounts – Compilation Guide; Eurostat; Luxemburg 2002
- RWI-D: Definition and Evaluation of Household Environmental Protection Activities; Internal working document Doc. Publ-Admin/96/4; Joint Eurostat/EFTA group "Statistics on the Environment", sub group "Economic data"; meeting of 29-30 April 1996; Luxemburg 1996

2 The survey on environmental service industries

2.1 Selection of branches

The selection of the economic branches covered by this survey has been made on the basis of previous Austrian studies (see the cited studies in the above list of literature), recommendations of the Eurostat Task Force on Environment Industries[14] and own decisions of the project team. To this end economic branches of the classification ÖNACE[15] have been evaluated on 6 digits level concerning their usability (from GA – Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods to OA – Other community, social and personal service activities).

Finally the following branches were chosen:

- 502004: Electrical repair of motor vehicles
  Reason: Provision of an environmental service by making emission tests and setting engines to reach emission set points.
- 502005: Other maintenance and repair of motor vehicles
  Reason: Provision of an environmental service by making emission tests, setting engines to reach emission set points, changing of air filters etc.
- 504002: Maintenance and repair of motorcycles
  Reason: Provision of an environmental service by making emission tests, setting engines to reach emission set points etc.
- 515701: Wholesale of metal waste and scrap

[14] EITF (2006)
[15] Statistik Austria (2003)

Reason: Core environmental service by definition, reuse of natural resources.

- 515702: Wholesale of other waste and scrap
  Reason: Core environmental service by definition, reuse of natural resources.
- 641200: Courier activities other than national post activities; only bicycle couriers
  Reason: It was decided that bicycle couriers provide an environmental service as they do not use but replace motor vehicles and therefore transport goods without producing air emissions.
- 652200: Other credit granting
  Reason: Several special credits institutes were identified, which offer subsidies and other services for environmental purposes and it was decided to take these services into account.
- 731000: Research and experimental development on natural sciences and engineering
  Reason: There are companies in this branch engaged in environmental research and development.
- 741100: Legal activities
  Reason: It was the objective to include those lawyers that are specialised in environmental law. Basis for the sample was the "Österreichisches Rechts-anwaltsverzeichnis", an on-line database (http://aspnew.rechtsanwaelte.at/-AVZFormular.asp) that allows the identification of Austrian lawyers by field of law. A weakness is that the lawyers specify the fields of law by their own and that allows no conclusion whether they are actually working in that field or not.
- 741401: Business and management consultancy activities (except public relations consultancy)
  Reason: It was to assume that there are companies dealing with services like environmental consulting.
- 742001: Architectural activities
  Reason: There are architects planning low energy houses and passive houses.
- 742002: Engineering activities and related technical consultancy
  Reason: Inclusion of companies dealing with environmental contracting and engineering or other environmental technical services.
- 743000: Technical testing and analysis
  Reason: Inclusion of companies dealing with environmental analytical services.
- 747002: Chimney cleaning
  Reason: Most of the work of chimney sweepers is related to air pollution control, indoor air pollution control and heat/energy saving and management.
- 747004: Cleaning of tanks and boilers
  Reason: This branch is considered to be a core environmental industry as their companies clean tanks and boilers and provide disposal and further treatment of the waste.
- 751200: Regulation of the activities of agencies that provide health care, education, cultural services and other social services, excluding social security
  Reason: There are some agencies providing environmental services.
- 751300: Regulation of and contribution to more efficient operation of business
  Reason: There are some agencies providing environmental services.
- 804200: Adult and other education n.e.c.
  Reason: There are some companies dealing with environmental services.
- 913300: Activities of other membership organizations n.e.c.
  Reason: There are some organisations that carry out environmental services like environmental organisations or auto clubs.
- 925200: Museums activities and preservation of historical sites and buildings
  Reason: There are some institutions performing activities in the field of environmental education, training and information.

- 925300: Botanical and zoological gardens and nature reserves activities
  Reason: There are some institutions performing activities in the field of environmental education, training and information.

In addition information about enterprises which rent out mobile toilets was collected and all of them were included into the survey sample, because they carry out waste management activities. As it was not possible to identify these companies from the business register they were looked up in the so called "yellow pages"[16].

The companies dealing with renting out of mobile toilets for different uses (construction sites, open-air events etc.) are classified in the following branches:

- 514602: Wholesale of orthopaedic appliances and medical and surgical equipment
- 672000: Activities auxiliary to insurance and pension funding
- 713400: Renting of other machinery and equipment n.e.c.
- 714002: Renting of sports equipment
- 714005: Renting of other personal and household goods n.e.c.
- 923300: Fair and amusement park activities
- 927200: Other recreational activities n.e.c.
- 930500: Other service activities n.e.c.

It was also planned to evaluate the environmental services of fire brigades, both auxiliary and professional (NACE 752500: Fire service activities) but due to different problems it was decided not to do so. One main problem was that in the provinces not all auxiliary fire brigades are connected to the common IT infrastructure, where many of the fire brigades document their actions (kind of action, man-hours, accounted costs etc.). So it seemed not to be possible to collect data in a cost-efficient way. The other main problem was the difficulty of estimating the environmental services contained in the actions. Many tasks of fire brigades have environmental concerns but it is difficult to estimate the share of costs, man-hours etc. for all actions within a reporting period.

Another service industry that was not covered by this survey is NACE 90: Sewage and refuse disposal, sanitation and similar activities. This branch is already subject of a survey and therefore not taken into account in this project.

NACE 732000: Research and experimental development on social sciences and humanities, which is already considered with 3.8% of total turnover by the environment protection expenditure account, was not deemed to be relevant for the survey and therefore not part it.

Botanical and zoological gardens and nature reserves activities (NACE 925300) are yet considered in the environmental protection expenditure account. Despite that it was decided to survey this branch as it is updated on the basis of relatively old data.

NACE 515701: Wholesale of metal waste and scrap and 515702: Wholesale of other waste and scrap are currently regarded in the environmental protection expenditure account with 15% of total turnovers. This factor relies on expert opinion concerning the share of environmental services of these two branches. In environment industry account they are core environmental industries and therefore taken into account with their entire turnovers. The diverse treatment depends on methodological differences. Data can be drawn from structural business statistics but due to the importance of these branches it was decided to include them into the survey for cross checking already available data.

[16] Herold (2005)

2.2 Design of the sample

The size of the population of the selected NACE classes was 49.548. All enterprises that were active at January 1, 2003 were considered regardless their number of employees. That means that we included all enterprises starting with one-man businesses without thresholds. The aim was to cover as much environmental service enterprises as possible. The size of the sample was 2000 units. As 32 enterprises of this sample have been shut down over the years 2003 and 2004 the sample was reduced to a size of 1968 units.

In some of the industries a preselection of the enterprises was made and this reduced the size of the population. This preselection was made on the decision whether an enterprise ought to be an environmental service enterprise or not. As already mentioned for some of the industries information about possible environmental service enterprises was available from external sources (yellow pages, data-base of Austrian lawyers). In other NACE classes the number of companies has been reduced via the name.

The preselected companies were fully taken into account, besides one branch, whereas the companies of the other branches were chosen by random sampling, also besides one branch. Table 1 provides detailed information about this process.

Table 1: Overview of industries with preselection/original population, size of the new population and kind of coverage in the survey

NACE	Population	Size	Coverage in the survey
500204	Original population	43	Random sample
500205	Original population	3.140	Random sample
504002	Original population	54	Random sample
514602	Preselection	1	Full coverage
515701	Original population	142	Random sample
515702	Original population	88	Random sample
641200	Preselection	11	Full coverage
652200	Preselection	3	Full coverage
672000	Preselection	1	Full coverage
713400	Preselection	1	Full coverage
714002	Preselection	2	Full coverage
714005	Preselection	5	Full coverage
731000	Original population	407	Random sample
741100	Preselection	73	Full coverage
741401	Original population	5.849	Random sample
742001	Original population	4.343	Random sample
742002	Original population	7.650	Random sample
743000	Original population	1.720	Random sample
747002	Original population	706	Random sample
747004	Original population	36	Full coverage
751200	Preselection	9	Full coverage
751300	Preselection	11	Full coverage
804200	Preselection	3	Full coverage
913300	Preselection	79	Random sample
923300	Preselection	1	Full coverage
925200	Preselection	4	Full coverage
925300	Preselection	20	Full coverage
927200	Preselection	1	Full coverage
930500	Preselection	1	Full coverage
Total size		**24.404**	

From table 1 one can see that in 17 industries a preselection was made in order to isolate the number of possible environmental service enterprises and in 12 industries the original population was the basis for the subsequent drawing of the survey units. The total size of the population has been reduced from 49.548 to 24.404.

2.3 Content of the survey

The survey consisted of a two-sided questionnaire and five-sided explanations.

The first question related to the main activities of the enterprises and if they carry out an environmental service. In the case of environmental services they should record the turnovers in the reporting periods by activity according to the definitions of the OECD/Eurostat manual[17].

Concerning the environmental activities they were asked for further specification by kind of service (e.g. trade, R & D, consulting) and for a brief description.

The implementation of environmental management systems was also a topic.

An important part of the questionnaire comprised detailed questions on employees, revenues and incomes, expenditures and investments, but also exports of environmental services.

The remaining questions related to research and development activities of the enterprises and to patents, concessions, industrial property rights and similar rights as well as licences derived out of it.

The last point of the questionnaire was a response burden barometer asking the respondents for the time dedicated to filling in the questionnaire.

Annex II contains an English version of the questionnaire and the explanations.

2.4 Execution of the survey

Questionnaire and explanations were sent to the enterprises on June 1, 2006, time limit for response was June 30, 2006. As the response rate was unsatisfactory (reasons will be discussed in chapter six) a second round of data collection was carried out by phone-calling the enterprises and asking for their contribution.

This effort was also not very successful. The response rate increased but the overall outcome was pretty low with 400 responses out of 1968 questionnaires (20.3%).

Based on this result it was decided to make a non-response analysis of the survey on environmental service industries.

3 Non-response analysis of the survey on environmental service industries

The target of the non-response analysis was to verify whether the kind of question in the original questionnaire was the reason for the low response rate. In question 1 of the original questionnaire the respondents were asked with a YES/NO question whether they offer an environmental service or not. This optional question could have been the reason for the low response rate.

3.1 Selection of branches and design of the sample

The population for the non-response analysis consisted of the non-responding enterprises of the preceding survey on environmental service industries reduced by those branches with only one or a few companies in this population.

[17] OECD/Eurostat (1999)

200 enterprises were chosen by random sampling but as 4 enterprises have been shut down during the reporting period the final sample consisted of 196 enterprises of the following branches:

- 502005: Other maintenance and repair of motor vehicles
- 515701: Wholesale of metal waste and scrap
- 714005: Renting of other personal and household goods n.e.c.
- 731000: Research and experimental development on natural sciences and engineering
- 741100: Legal activities
- 741401: Business and management consultancy activities (except public relations consultancy)
- 742001: Architectural activities
- 742002: Engineering activities and related technical consultancy
- 743000: Technical testing and analysis
- 747002: Chimney cleaning
- 747004: Cleaning of tanks and boilers
- 913300: Activities of other membership organizations n.e.c.
- 925300: Botanical and zoological gardens and nature reserves activities

3.2 Content of the survey

The survey consisted of a reduced set of questions (one side) of the preceding survey on environmental service industries, again for the two reporting periods 2003 and 2004, and 2-sided explanations.

The first question only encompassed the revenues from environmental services, broken down into the same environmental activities as in the original questionnaire but without the possibility to decide whether the company is a supplier of environmental services or not. The aim of this kind of question was to avoid overhasty false classifications of environmental service companies by themselves through a YES/NO question.

The second question was related to further specification by kind of service (e.g. trade, R & D, consulting), followed by question three with a brief description of the supplied environmental services.

The final question asked for the total number of employees, without any breakdown.

In annex III there is an English version of the questionnaire and the explanations.

3.3 Execution of the survey

Questionnaire and explanations were sent out on October 2, 2006 with October 20, 2006 as time limit for response due to the elapsed project time.

This questionnaire achieved a slightly higher response rate (60 out of 196, i.e. 30.6%), which is still not satisfactory.

Possible reasons for the insufficient response rate are discussed in chapter six.

4 Survey on environmental protection expenditure of the service industries

4.1 Selection of branches

Population for this survey were the services industries GA – Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods to KA – Real estate, renting and other business activities and NA – Health and social work to OA – Other

community, social and personal service activities. Not taken into account were LA – Public administration and defence; compulsory social security, MA – Education, PA – Activities of households and QA – Extraterritorial organisations and bodies.

4.2 Design of the sample

The enterprises were chosen by random sampling on the NACE 4-digit level. The sample consisted of 2000 enterprises that were active on January 1, 2003 and had 10 and more employees.

Smaller enterprises were not taken into account because of the response burden.

4.3 Content of the survey

The survey consisted of a two-sided questionnaire and five-sided explanations.

Questions one to four were related to general information about the concerned enterprise (main activity, number of employees, revenues and total investments in the reporting periods 2003 and 2004).

In question five the respondents were asked whether the enterprise made use of, bought or self-performed activities for environmental protection in the reporting periods or not (YES/NO question).

In question six they should specify the expenditures for environmental protection activities according to the same breakdown of environmental activities as in both above questionnaires. Basis was again the OECD/Eurostat "The Environmental Goods and Services Industry – Manual for data collection and analysis"[18]. The expenditures were broken down into investments, compensation of employees, payments to enterprises, charges and other expenditures and amended by incomes of received subsidies and investment grants.

Brief descriptions of the environmental activities connected to the expenditures and incomes as well as of the environmental management systems implemented in the enterprise followed afterwards.

The last point of the questionnaire was a response burden barometer like in the survey on environmental service industries asking the respondents for the time dedicated to filling in the questionnaire.

Annex IV contains an English version of the questionnaire and the explanations.

4.4 Execution of the survey

Questionnaire and explanations were sent to the enterprises on June 1, 2006, time limit for response was June 30, 2006.

Even though the time limit for response has been extended the response rate of this survey was very poor. Only 411 enterprises out of 2000 (20.6%) replied to the questionnaire (see table 2 on page 17). The majority of these enterprises answered that they had no expenditures for environmental protection in the reporting periods.

In general the vast majority of the enterprises must have environmental protection expenditures, at least for wastewater management, waste management and water supply. Possible reasons for the surprising result are discussed in chapter six.

Due to the fact that only some enterprises reported environmental protection expenditures and the impossibility of calling the other enterprises on the one hand to rethink their reported data and on the other hand to reply at all to the questionnaire it was decided to concentrate

[18] OECD/Eurostat (2005)

on the evaluation why the enterprises didn't report the corresponding expenditures and to suppose how environmental protection expenditures could be surveyed and allocated to the economic branches in future (see chapter six)

Table 2: Response rate of the survey on environmental protection expenditures of service industries and ratio of yes/no replies

NACE	Number	Replies	%	Yes	No
50	101	19	18,8%	4	15
51	307	64	20,8%	12	52
52	267	45	16,9%	4	41
55	274	47	17,2%	7	40
60	153	36	23,5%	4	32
62	4	0	0,0%	0	0
63	54	10	18,5%	1	9
64	14	6	42,9%	2	4
65	94	24	25,5%	5	19
66	22	4	18,2%	0	4
67	13	5	38,5%	0	5
70	62	11	17,7%	2	9
71	6	1	16,7%	0	1
72	58	15	25,9%	1	14
73	8	0	0,0%	0	0
74	247	77	31,2%	4	73
85	160	23	14,4%	6	17
90	20	4	20,0%	2	2
91	37	6	16,2%	1	5
92	52	7	13,5%	1	6
93	47	7	14,9%	0	7
Total	**2000**	**411**	**20,6%**	**56**	**355**

Chapter five: RESULTS

As already mentioned it was decided to concentrate on the results of the survey on environmental service industries.

Table 3 shows the sample size of each NACE class, number and percentage of replies and the ratio of yes/no answers to the question of being an environmental service enterprise or not.

Table 3: Response rate of the survey on environmental service industries and ratio of yes/no replies

NACE	Sample size	Replies	%	Yes	No
500204	4	0	0,0%	0	0
500205	443	56	12,6%	7	49
504002	2	1	50,0%	0	1
514602	1	0	0,0%	0	0
515701	26	9	34,6%	4	5
515702	8	1	12,5%	0	1
641200	8	1	12,5%	1	0
652200	3	2	66,7%	1	1
672000	1	0	0,0%	0	0
713400	1	1	100,0%	1	0
714002	1	0	0,0%	0	0
714005	4	1	25,0%	1	0
731000	41	12	29,3%	2	10
741100	60	14	23,3%	2	12
741401	280	72	25,7%	3	69
742001	264	43	16,3%	6	37
742002	540	127	23,5%	32	95
743000	114	27	23,7%	7	20
747002	92	8	8,7%	6	2
747004	26	6	23,1%	0	6
751200	4	3	75,0%	2	1
751300	4	2	50,0%	0	2
804200	2	0	0,0%	0	0
913300	15	4	26,7%	2	2
923300	1	0	0,0%	0	0
925200	4	1	25,0%	0	1
925300	17	9	52,9%	4	5
927200	1	0	0,0%	0	0
930500	1	0	0,0%	0	0
Total	**1968**	**400**	**20,3%**	**81**	**319**

As the response rate was very poor, only for a few branches data can be presented in this chapter.

The branches 515701 (Wholesale of metal waste and scrap) and 515702 (Wholesale of other waste and scrap) are defined as core environmental industries by the Environment Industry Task Force of Eurostat[19]. As the response rates of these branches are too low for a

[19] EITF (2005)

calculation in the framework of this report it is proposed to continue the current method, i.e. to use data from structural business statistics. Furthermore it is proposed also to consider the class 747004 (Cleaning of tanks and boilers) as core industry – with 100% of total turnover in environment industry account and a share of it, that still has to be determined, in environmental protection expenditure account – as it carries out waste management services.

Data for 747002 (Chimney cleaning) should also be taken from structural business statistics and weighted with the share of environmental services based on expert knowledge as it is already done.

In some branches each enterprise of the industry or at least of the sample should carry out an environmental service, e.g. 500205 (Other maintenance and repair of motor vehicles), 504002 (Maintenance and repair of motorcycles), 641200 (Courier activities other than national post activities; only bicycle couriers) or the enterprises leasing mobile toilets, which are spread over several NACE classes. But data cannot be presented as the reply was too poor. For these industries new strategies for data collection have to be applied in future, e.g. cooperation with the Austrian Economic Chamber or other lobbying organisations.

The same holds for other branches, where a certain number of enterprises have to carry out environmental services but didn't report it due to different reasons (see chapter six).

Hence, in this chapter only 4 NACE classes are discussed, namely:

- 742001: Architectural activities
- 742002: Engineering activities and related technical consultancy
- 743000: Technical testing and analysis
- 925300: Botanical and zoological gardens and nature reserves activities

But it has to be clearly pointed out that also these data are more or less weak (see table 4) and therefore they have to be interpreted very carefully.

Table 4: Response rate of specific environmental service industries and ratio of yes/no replies

NACE	Sample size	Replies	%	Yes	No
742001	264	43	16,3%	6	37
742002	540	127	23,5%	32	95
743000	114	27	23,7%	7	20
925300	17	9	52,9%	4	5

Some results:

1 Turnover

The tables 5a to 5d present data for environmental services turnovers of the mentioned industries. The data were derived by extrapolating data of the survey with weighting factors.

Table 5a (see page 20) describes the calculation for NACE 742001: Architectural activities. The data are aggregated to the level of the three groups of activities as due to the low response rate a more detailed presentation is not reliable. According to the kind of architectural activities there are no services for cleaner technologies and products. But there are services in most of the other environmental domains, especially in wastewater management, environmental contracting and engineering, water supply as well as heat/energy saving and management.

Table 5a: Environmental services turnovers by architectural activities in Euro

NACE	742001	
Environmental services **Year**	**2003**	**2004**
Services for pollution management	11.191.120	12.879.086
Services for cleaner technologies and products	0	0
Services for resource management	15.218.433	19.107.708
Total	**26.409.55**	**31.986.794**

Source: own calculation

The results for NACE 742002: Engineering activities and related technical consultancy are presented in table 5b. Based on the replies it can be said that among the discussed branches these data are the most reliable. Dominant environmental activities are wastewater management, water supply, renewable energy plant as well as heat/energy saving and management. Comparing turnovers this branch is the most important environmental service industry of those analysed in this chapter.

Table 5b: Environmental services turnovers by engineering activities and related technical consultancy in Euro

NACE	742002	
Environmental services **Year**	**2003**	**2004**
Pollution Management: Services for		
Air pollution control	12.525.217	12.525.217
Wastewater management	85.141.261	93.125.398
Waste management	4.739.563	4.225.161
Environmental R&D	2.839.049	3.277.432
Environmental contracting and engineering	24.934.915	27.839.217
Other services	40.306.471	51.640.991
total	170.486.477	192.633.417
Cleaner technologies and products: Services for		
Cleaner/resource-efficient technologies and processes	8.872.029	10.437.681
Cleaner/resource-efficient products	0	7.306.377
Total	8.872.029	17.744.058
Resource Management: Services for	0	0
Indoor air pollution control	8.060.000	10.362.857
Water supply	59.562.633	77.190.325
Renewable energy plant	38.236.580	50.459.433
Heat/energy saving and management	37.790.973	45.677.575
Other services	35.668.926	34.917.375
Total	179.319.112	218.607.565
Total services	**358.677.618**	**428.985.040**

Source: own calculation

Technical testing and analysis (NACE 743000) provides services in the pollution management group and resource management group (see table 5c on page 21). The most important fields of activity are wastewater management, environmental contracting and engineering as well as renewable energy plant.

Table 5c: Environmental services turnovers by technical testing and analysis in Euro

NACE / Environmental services / Year	743000 2003	743000 2004
Pollution Management: Services for		
Air pollution control	321.797	582.933
Wastewater management	30.324.670	34.403.843
Waste management	7.964.950	9.642.047
Environmental R&D	333.333	500.000
Environmental contracting and engineering	11.442.150	17.922.557
Other services	0	0
total	50.386.900	63.051.380
Services for cleaner technologies and products		
Total	0	0
Resource Management: Services for		
Indoor air pollution control	333.333	333.333
Water supply	1.225.952	1.225.952
Renewable energy plant	10.446.131	11.605.417
Heat/energy saving and management	0	0
Other services	1.159.286	1.159.286
Total	13.164.703	14.323.989
Total services	**63.551.602**	**77.375.369**

Source: own calculation

In NACE 925300: Botanical and zoological gardens and nature reserves activities a preselection has been made to filter out those institutions supplying environmental activities. Generally speaking national parks, natural parks and societies dealing with environmental education and training have been taken into account. The activities are concentrated in the pollution management group (see table 5d), more precisely in environmental education and training as well as analytical laboratory services. Compared to other branches the economic value of the services is low because most of their activities cannot be monetary valued and are therefore non-market services.

Table 5d: Environmental services turnovers by botanical and zoological gardens and nature reserves activities in Euro

NACE / Environmental services / Year	925300 2003	925300 2004
Services for pollution management	679.592	787.855
Services for cleaner technologies and products	0	0
Services for resource management	0	0
Total services	**679.592**	**787.855**

Source: own calculation

From 2003 to 2004 environmental turnovers in the four branches show a very dynamic development (see table 6 on page 22) compared to the total turnovers[20] of the branches (NACE 925300 is not covered by business statistics, so a comparison to the total turnover is not possible). Even though it has to be kept in mind that the short period and the partly small number of enterprises limit the significance a generally increasing importance of the environmental services market arises.

[20] Zach, S.; Gründler, C. (2005) and (2006)

Table 6: Development of environmental turnovers compared to total turnovers

NACE		2003	2004	Change	Share of env. services	
					2003	2004
742001	Environmental turnover	26.409.553	31.986.795	21.12%	2.88%	3.43%
	Total turnover	916.510.000	933.157.000	1.82%		
742002	Environmental turnover	358.677.618	427.833.611	19.60%	9.93%	11.60%
	Total turnover	3.613.864.000	3.697.918.000	2.33%		
743000	Environmental turnover	63.551.602	77.375.369	21,75%	13,35%	16,28%
	Total turnover	476.196.000	475.225.000	-0.20%		
925300	Environmental turnover	679.592	787.855	15.93%	4.88%	5.43%
	Total turnover*	13.919.068	14.503.669	4.2%**		

Source: own calculation

* Updated turnover is taken from environmental protection expenditure accounts
** Increase of nominal GDP

As already mentioned in chapter two, Statistics Austria is estimating at the moment the environmental services of the observed industries with factors provided by experts.

These factors are:

- 742001: Architectural activities (3.8%)
- 742002: Engineering activities and related technical consultancy (3.8%)
- 743000: Technical testing and analysis (3.8%)
- 925300: Botanical and zoological gardens and nature reserves activities (100%)

In the area of architectural activities the currently used factor of 3.8% is higher than the shares of environmental services (2.88% in 2003 and 3.43% in 2004) determined by the survey. But as the number of architects replying to the survey was very low it is proposed to further use the expert value and to resurvey this industry in the future, if possible in cooperation with the Chambers of Architects and Engineers.

In contrast the shares of environmental turnovers of NACE 742002 in 2003 (9.93%) and 2004 (11.60%) were much higher than the expert value (3.8%). In that case the survey data seem to be sufficiently reliable to propose an adjustment of the factor for this industry in the environmental protection expenditure account.

In NACE 743000: Technical testing and analysis the surveyed shares of environmental turnover (13.35% in 2003 and 16.28% in 2004) are also higher than the expert value (3.8%) used in environmental protection expenditure accounts. An adjustment of the factor for EPEA should be proved for the future but as the number of replies and therefore the reliability of the shares are relatively low further studies in this context are recommended.

Botanical and zoological gardens and nature reserves activities are fully included into environmental protection expenditure accounts. As this NACE class is not surveyed since the mid 1990s data from 1995 are updated every year with the GDP growth rate. By the way data of the environmental protection expenditure account are much higher than the results of the present survey. This is to a certain degree due to a stricter interpretation of the definitions of the “OECD/Eurostat – The Environmental goods and services industry – Manual for data collection and analysis” for this survey, which led to the exclusion of a number of enterprises that are regarded in EPEA. But as this doesn’t explain the whole difference further studies are necessary.

Annex I contains a common table of turnovers and employees.

2 Employees in environmental activities

In the context of employees the survey asked for the number of self-employed and employed employees as well as unpaid family workers, further called employees. The following tables 7a to 7d show the weighted number of employees engaged in environmental activities of the described industries. The data have to be interpreted with care as a few enterprises didn't provide data for employees and in general the number of respondents is relatively low.

In the survey the enterprises were asked to differentiate between employees working in Austria and abroad if they possess sites not only in Austria. As the data do not allow a description of this relationship the data only relate to the total number of environmental employees.

The data are presented in the same structure as the turnovers, so the level of detail differs. A special distinction between male and female employees as foreseen in the new standard tables of the Environment Industry Task Force of Eurostat is not possible as this information was not asked in the survey.

In table 7a the environmental employees of NACE 742001: Architectural activities are shown. Due to the low response rate the data are aggregated to the level of the three groups of activities. Most of the employees work in the environmental domains heat/energy saving and management, water supply, renewable energy plant as well as indoor air pollution control.

Table 7a: Environmental employees in architectural activities

	NACE	742001	
Environmental services	**Year**	**2003**	**2004**
Services for pollution management		248	244
Services for cleaner technologies and products		0	0
Services for resource management		758	771
Total services		**1.006**	**1.015**

Source: own calculation

Table 7b expresses the data for NACE 742002: Engineering activities and related technical consultancy. In the reporting period this industry was active in all environmental services, whereas most employees worked in the provision of services for wastewater management, water supply, renewable energy plant as well as other services for pollution management.

Table 7b: Environmental employees in engineering activities and related technical consultancy

	NACE	742002	
Environmental services	**Year**	**2003**	**2004**
Pollution Management: Services for			
Air pollution control		188	209
Wastewater management		1.380	1.552
Waste management		94	84
Environmental R&D		53	53
Environmental contracting and engineering		396	407
Other services		591	578
total		2.703	2.883
Cleaner technologies and products: Services for			
Cleaner/resource-efficient technologies and processes		209	196
Cleaner/resource-efficient products		0	56

Total	209	252
Resource Management: Services for		
Indoor air pollution control	43	62
Water supply	899	940
Renewable energy plant	539	757
Heat/energy saving and management	436	514
Other services	575	500
Total	2.493	2.773
Total services	**5.405**	**5.908**

Source: own calculation

The response rate of the enterprises of NACE 743000: Technical testing and analysis also allows a detailed presentation of the results (see table 7c). The enterprises were active in pollution management and resource management. The majority of the employees worked in the fields of wastewater management and renewable energy plant.

Table 7c: Environment employees in technical testing and analysis

NACE	**743000**	
Environmental services **Year**	**2003**	**2004**
Pollution Management: Services for		
Air pollution control	2	2
Wastewater management	290	270
Waste management	39	35
Environmental R&D	2	2
Environmental contracting and engineering	54	174
Other services	0	0
total	387	483
Services for cleaner technologies and products		
Total	0	0
Resource Management: Services for		
Indoor air pollution control	2	3
Water supply	58	59
Renewable energy plant	204	106
Heat/energy saving and management	0	0
Other services	58	58
Total	322	226
Total services	**709**	**709**

Source: own calculation

As already mentioned above, a preselection has been made in NACE 925300: Botanical and zoological gardens and nature reserves activities to filter out those institutions supplying environmental activities. National parks, natural parks and societies dealing with environmental education and training have been taken into account. Therefore the employees are concentrated in the provision of environmental education and training as well as analytical laboratory services (see table 7d on page 25).

Table 7d: Environmental employees in botanical and zoological gardens and nature reserves activities

NACE	925300	
Environmental services **Year**	**2003**	**2004**
Services for pollution management	50	64
Services for cleaner technologies and products	0	0
Services for resource management	0	0
Total services	**50**	**64**

Source: own calculation

Annex I provides a common table of turnovers and employees.

3 Kind of service

The enterprises were asked in the survey to allocate their activities to several kinds of services, namely project planning/engineering, trade, consulting, R&D or other services. The vast majority in the four described industries was engaged in project planning/engineering, followed by consulting. Some enterprises carried out other services and R&D activities, none trade.

4 Environmental management systems

Environmental management systems don't play a role. Only 6 of all responding enterprises have implemented environmental management systems (EMAS and ISO 14001).

5 Environmental turnovers by sales markets

Some of the enterprises of the analysed branches exported their services but by far the most important market was Austria.

6 Research and development; patents, concessions, industrial property rights and similar rights as well as licences derived out of it

R&D as well as patents, concessions industrial property rights etc. were matters just for a few enterprises. R&D was carried out in three of the industries, except architectural activities.

Only enterprises in NACE 742002 and 743000 owned patents, concessions, industrial property rights and similar rights as well as licences derived out of it.

Based on the results of the whole survey one can say that R&D as well as patents, concessions, industrial rights etc. have no importance in service industries.

Chapter six: PROBLEMS and PROPOSALS

The response rates of the three surveys were very low – between 20.3% and 30.6%. This chapter is dedicated to the discussion of probably the most important reasons for this result and to proposals for the future collection of the concerned data.

1 Problems occured

1.1 Survey on environmental service industries and non-response analysis

An important – maybe the most important – reason for the poor response to both questionnaires seems to be that the examination of the issue of environmental services is unusual for service enterprises. One result of the telephone conversations with persons in charge is that they didn't consider their supplied services as environmental. In the manufacturing industry the situation is different. The companies often produce equipment, machinery, facilities etc. directly for an environmental purpose. Enterprises of branches like NACE 515701: Wholesale of metal scrap and waste, NACE 515702: Wholesale of other waste and scrap, Bicycle couriers (part of NACE 641200) or lessors of mobile toilets don't realise the environmental dimension of their services. The environment seems not to be part of their business plans.

Another important reason should have been the complex structure of the questionnaires. This point refers especially to the detailed breakdown of environmental activities (pollution management group, cleaner technologies and products group and resource management group plus further breakdown). Linked to this aspect is the fact that many persons in charge should not have read the explanations. This assumption is based on the experience that many respondents called us before reading the explanations.

Many respondents had problems to understand the structure of the questionnaires. They believed that they should fill in data for each of the environmental activities not understanding that they should only fill in data for their actual environmental activities.

The voluntariness of the questionnaires was another reason for the poor response, probably boosted by the difficulty of the questions and the necessary expenditure of time to collect the data.

A smaller but anyway an effect on the response rate had the fact that about 4% of the questionnaires of the survey on environmental service industries could not be sent to the enterprises due to wrong addresses. Most of them had up to 9 employees and are in general not surveyed by official statistics. Unless information about changes of company addresses are available from administrative sources these addresses cannot be updated by the business register.

In some branches it is not possible to calculate the amount of environmental services as they are part of a comprehensive service, e. g. inspection and/or change of filters and catalytic converters in vehicles as well as measurement of exhaust gases of vehicles. These services are often part of the yearly inspection of vehicles and not calculable by the persons in charge. Another example is legal services. In general environmental law is one of several areas of expertise of lawyers and for the vast majority its share is not identifiable.

In some of the branches it was possible to make a preselection of environmental service enterprises or expected environmental service enterprises. But this step was not possible in other branches, e.g. business and management consultancy activities (except public relations consultancy), architectural activities or engineering activities and related technical consultancy. So probably a high sampling error influenced the outcome.

1.2 Survey on environmental protection expenditures of the service industries

Some of the above mentioned possible reasons for the poor response rate are also applicable to the survey on environmental protection expenditures of the service industries.

One of these reasons is that this survey covered a subject area that was new for the enterprises. In contrast to the structural business survey of the manufacturing industry the survey of the service industries doesn't include voluntary questions on environmental protection expenditures (current expenditure and investments). So the respondents are not familiar with this topic. In addition telephone conversations displayed difficulties of the persons in charge to understand the meaning of the term environmental expenditure.

Furthermore the complex structure of the questionnaire – a detailed breakdown of environmental activities plus different types of expenditures (and revenues) – and the voluntariness of the questionnaire should have been important reasons for response denial.

Also some respondents believed that they should fill in data for each of the environmental activities not understanding that they should only fill in data for their actual environmental expenditures.

Learned from this it could be that the questionnaire and the explanations were too difficult and too advanced for the respondents.

A specific problem of many service enterprises is that their offices are hired. Detailed data on general environmental expenditures (waste management, wastewater management, chimney sweeper etc.) are part of the annual statement of running costs. Frequent information by telephone was that the collection of these data would occupy too much time.

The time needed to gather the data from bookkeeping and the overall burden with statistical questionnaires should have been an important reason for denying response.

2 Proposals for the future

2.1 Survey on environmental service industries

Some of the information, especially for core environmental industries like NACE 515701: Wholesale of metal scrap and waste and NACE 515702: Wholesale of other waste and scrap, should still be taken from other sources e.g. structural business statistics.

In this respect it is necessary that the common European definition of environment industries will be finalised. The current set of core industries should perhaps be extended e.g. by NACE 747004: Cleaning of tanks and boilers.

Branches with shares of environmental services like NACE 747002: Chimney cleaning are considered in environmental protection expenditure account with specific shares of turnover. Data source is structural business statistics. These shares coming from experts could still be used in future as a proxy for missing data but they should be updated if necessary.

A questionnaire like the mentioned with the need to provide specific data is always problematic compared to questionnaires with YES/NO questions. The temptation to refuse response tends to be higher. And this questionnaire was very ambitious, with a detailed breakdown of environmental activities and further key company data. In future the questionnaire should be easier, reduced to absolutely necessary data. The breakdown of environmental activities cannot be reduced but other questions, e.g. concerning the export structure, environmental management systems, patents, concessions, industrial property rights and similar rights as well as licences, removed. These data would be interesting but they are not necessary. And with the environment industry standard tables of the Eurostat Environment Industry Task Force there will be available a frame for data collection in the near future.

The target of the survey should be to describe the environmental services industry as fully as possible. But this will not be possible because for some branches the data collection is not

possible (e.g. environmental services of NACE 502005: Maintenance and repair of motor vehicles or of NACE 741100: Legal activities as these data are not earmarked and therefore not obtainable from bookkeeping). In other branches it is difficult to identify the enterprises supplying environmental services (e.g. NACE 742001: Architectural activities, NACE 742002: Engineering activities and related technical consultancy or NACE 731000: Research and experimental development on natural sciences and engineering). In this respect cooperation with economic chambers, lobbying organisations, current update of specific business data bases and research will be necessary.

Most enterprises in the branches bicycle couriers and lessors of mobile toilets have less than 10 employees. These companies are not covered by business surveys because of the response burden. So even if these data would be interesting further data collection should be avoided. Maybe there are associations having such data. It is planned to make further investigations in this regard.

The response of non-profit institutions serving households (NPIsH) was very weak. In a current cooperation project Statistics Austria and the Vienna University of Economics and Business Administration are building a data base on NPIsHs. In the near future it is maybe possible to get data for environmental NPIsHs from this data base.

2.2 Survey on environmental protection expenditures of the service industries

It is suggested to supplement the structural business survey of service industries by some questions on current environmental expenditure and environmental investments like for the manufacturing industry. As already mentioned nearly each company should have at least current expenditure for waste management and wastewater management. From experience in the manufacturing industry only a part of the enterprises fill in these data. But even if it is not possible to get a full data set on current expenditures it should be possible to get pretty reliable information on environmental investments. If more detailed information is needed the responding enterprises could be asked for further data.

If it is not possible to supplement the structural business survey in future, the current questionnaire should be reduced to absolutely necessary questions. The breakdown into environmental domains and different kinds of expenditures (and revenues) should be retained unchanged as these data are necessary for the compilation of environmental protection expenditure accounts. But the design could be made more user-friendly and the explanations revised.

SUMMARY

Content of this study were two surveys, one on economic data of environmental service industries and one on environmental protection expenditures of the service industries. The target was to show a comprehensive picture of the supply and the demand side.

For the survey on environmental service industries a detailed analysis of all NACE 6-digits was carried out to identify those branches which definitely or possibly supply environmental services. Depending on the size of each industry and the availability of further information a preselection was made in some of them to reduce the population before drawing the sample.

The survey on environmental protection expenditures of the service industries covered all services industries except LA – Public administration and defence; compulsory social security, MA – Education, PA – Activities of households and QA – Extraterritorial organisations and bodies.

As the response rate of both questionnaires was unsatisfactory (both about 20%) it was decided to cancel the work on the survey on environmental protection expenditures of the service industries and to continue the work on the survey on environmental service industries by carrying out a non-response analysis. The intention was to verify whether the kind of question in the original questionnaire was the reason for the low response rate. It reached a higher but still insufficient response rate (about 30%).

Based on the results four industries were further analysed, namely 742001: Architectural activities, 742002: Engineering activities and related technical consultancy, 743000: Technical testing and analysis as well as 925300: Botanical and zoological gardens and nature reserves activities. The analysis comprised turnovers, employees, kind of service, environmental management systems, environmental turnovers by sales markets, research and development as well as patents, concessions, industrial property rights and similar rights as well as licences derived out of it.

Each of these industries is already covered by environmental protection expenditure account using factors for the calculation of environmental turnovers. They are based on expert opinion and differ from the results of the survey. It has to be decided how to continue in the future in calculating the environmental turnovers of these industries taking into account that the response rate of the survey is poor and therefore the data relatively weak.

NACE 515701: Wholesale of metal scrap and waste and NACE 515702: Wholesale of other waste and scrap are considered as core environmental industries by the Eurostat Environment Industry Task Force. So data can be taken one to one from structural business statistics. It is proposed also to treat NACE 747004: Cleaning of tanks and boilers as core environmental industry as it carries out waste management services and to take data from structural business statistics.

Chimney cleaning (NACE 747002), Research and experimental development on natural sciences and engineering (NACE 731000), Research and experimental development on social sciences and humanities (NACE 732000) and some other service industries are also covered with shares of total turnover based on expert opinion. These shares should be further used as long as no concrete data are available.

As a conclusion one can say that due to the variety of environmental services a full description of this industry should be impossible but using different data sources, calculation factors as well as expert opinions could lead to an overview with limited data comparability.

Compared to the supply side the environmental protection expenditures of the environmental industries are a more complex challenge for the future as these data have to be provided by the enterprises and thus their cooperation is absolutely necessary.

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ANNEX

Environmental turnover and employees of selected service industries

NACE	742001				742002				743000				925300			
Year	2003		2004		2003		2004		2003		2004		2003		2004	
Environmental services	**Turnover**	**Empl.**	**Turnover**	**Empl.**	**Turnover**	**Empl.**	**Turnover**	**Empl.**	**Turnover**	**Empl.**	**Turnover**	**Empl.**	**Turnover**	**Empl.**	**Turnover**	**Empl.**
Pollution Management: Services for																
Air pollution control					12.525.217	188	12.525.217	209	321.797	2	582.933	2				
Wastewater management					85.141.261	1.380	93.125.398	1.552	30.324.670	290	34.403.843	270				
Waste management					4.739.563	94	4.225.161	84	7.964.950	39	9.642.047	35				
Environmental R&D					2.839.049	53	3.277.432	53	333.333	2	500.000	2				
Environmental contracting and engineering					24.934.915	396	27.839.217	407	11.442.150	54	17.922.557	174				
Other services					40.306.471	591	51.640.991	578	0	0	0	0				
total	**11.191.120**	**248**	**12.879.086**	**244**	**170.486.477**	**2.703**	**192.633.417**	**2.883**	**50.386.900**	**387**	**63.051.380**	**483**	**679.592**	**50**	**787.855**	**64**
Cleaner technologies and products: Services for																
Cleaner/resource-efficient technologies and processes					8.872.029	209	10.437.681	196	0	0	0	0				
Cleaner/resource-efficient products					0	0	7.306.377	56	0	0	0	0				
Total	**0**	**0**	**0**	**0**	**8.872.029**	**209**	**17.744.058**	**252**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Resource Management: Services for																
Indoor air pollution control					8.060.000	43	10.362.857	62	333.333	2	333.333	3				
Water supply					59.562.633	899	77.190.325	940	1.225.952	58	1.225.952	59				
Renewable energy plant					38.236.580	539	50.459.433	757	10.446.131	204	11.605.417	106				
Heat/energy saving and management					37.790.973	436	45.677.575	514	0	0	0	0				
Other services					35.668.926	575	34.917.375	500	1.159.286	58	1.159.286	58				
Total	**15.218.433**	**758**	**19.107.708**	**771**	**179.319.112**	**2.493**	**218.607.565**	**2.773**	**13.164.703**	**322**	**14.323.989**	**226**	**0**	**0**	**0**	**0**

ANNEX II

STATISTIK AUSTRIA
Die Informationsmanager

Identification number:
Enterprise name:
Address:
Postal code:
Town:
Serial number:

DIREKTION Raumwirtschaft
Umweltstatistik

Sachb.: Mag. Sacha Baud, Brigitte Petrovic
Telefon: +43 (1) 711 28 -7235; -7184
e-mail: brigitte.petrovic@statistik.gv.at;
sacha.baud@statistik.gv.at

Unser Zeichen: 1.016/0-R/06
Datum: 1. Juni 2006

Before filling in please read the explanation!

Contact person for further inquiries

Name	
Phone number	
Fax number	
e-mail	

Reporting year 2003/2004

Response at the latest:
30.06.2006

1. Activity of the enterprise

Please indicate the main activity (according to two-digit ÖNACE code) of your enterprise**:**

Did your enterprise offer services for environmental protection within the reporting period?

Yes ☐ No ☐

If yes, in which of the following environmental activities:	**turnover 2003**	**turnover 2004**
A – Pollution management Provision of services for:	**in €**	**in €**
A.1 Air pollution control		
A.2 Wastewater management		
A.3 Waste management		
A.4 Environmental research and development		
A.5 Environmental contracting and engineering		
A.6 Other services		
A.7 Total (sum of A.1 – A.6)		
B – Cleaner technologies and products Provision of services for:	**in €**	**in €**
B.1 Cleaner/resource-efficient technologies and processes		
B.2 Cleaner/resource-efficient products		
B.3 Total (sum of B.1 – B.2)		
C – Resource management Provision of services for:	**in €**	**in €**
C.1 Indoor air pollution control		
C.2 Water supply		
C.3 Renewable energy plant		
C.4 Heat/energy saving and management		
C.5 Other services		
C.6 Total (sum of C.1 – C.5)		

2. Which kind of environmental activity did your enterprise offer?	**in percent of environmental turnover**	
2.1 Project planning and/or engineering		
2.2 Trade		
2.3 Consulting		
2.4 Research and development for other enterprises		
2.5 Other services		

3. Please briefly describe your environmental services!

4. Which environmental management systems do you have implemented in your enterprise (e.g. EMAS, ISO 14001)?

Please turn over!

	in 2003	in 2004
5. Employees in the reporting period (self-employed and employed, unpaid family workers)		
5.1 Total employees		
thereof environment-related		
thereof in Austria		
6. Revenues and incomes in the reporting period	**in €**	
6.1 Total revenues		
thereof environment-related		
thereof in Austria		
6.2 Total subsidies/aids/investment grants		
thereof environment-related		
thereof in Austria		
7. Expenditures in the reporting period	**in €**	
7.1 Total expenditures		
thereof environment-related		
thereof in Austria		
8. Investments in the reporting period	**in €**	
8.1 Total investments		
thereof environment-related		
thereof in Austria		
9. Environmental turnover of Austrian enterprise units by sales market	**in percent of turnover**	
9.1 Austria		
9.2 European Union (EU15)		
thereof Germany		
9.3 New EU Member States		
9.4 Eastern Europe		
9.5 North America (USA, Canada)		
9.6 Asia		
9.7 Other countries		

10. Is your enterprise carrying out research and development?

If yes, in which environmental domains (see question 1, A.1 – C.6):

11. Does your enterprise own patents, concessions, industrial property rights and similar rights as well as licences derived out of it?

Yes ☐ No ☐

If yes, in which environmental domains (see question 1, A.1 – C.6):

12. Has your enterprise applied or acquired patents, concessions, industrial property rights and similar rights as well as licences derived out of it in 2003 or 2004?

Yes ☐ No ☐

If yes, in which environmental domains (see question 1, A.1 – C.6):

applied:

acquired:

13. Has your enterprise placed or sold patents, concessions, industrial property rights and similar rights as well as licences derived out of it in 2003 or 2004?

Yes ☐ No ☐

If yes, in which environmental domains (see question 1, A.1 – C.6):

placed:

sold:

Thank you very much for your support!

For evaluating the complexity of this survey we would like to ask you to specify the time you spent for filling in it.

Minutes:

STATISTIK AUSTRIA
Die Informationsmanager

General information for the survey on economic data of environmental service industries

The objective of this **voluntary** survey is the establishment of a data base on the supply of environmental services in Austria by Austrian companies.

As this sector is currently not covered with updated data the focus of this survey is on the one hand to compile the manifold spectrum of environmental services and on the other hand the structure of the supplying companies. Together with already collected key figures of environmental technology producers these data should provide a comprehensive overview of the Austrian business sectors with environmental concern.

The concept is based on Europe-wide applied guidelines for the collection and analysis of data of the environment industry.

The results are subject to confidentiality provisions of the Federal Statistics Act as well as the Data Security Act and will be in compliance with these provisions implemented in highly aggregated form into the report of this survey, the calculation of the Austrian environmental protection expenditures as well as the calculation of the Austrian environment industry.

Inquiries and information

For inquiries the staff members cited on the questionnaire are at your service. In support of possible queries we recommend to make a copy of the survey documents. The questionnaire is also available as word file under **http://www.statistik.at/_downloads/umwelt/wirtschaftsdaten.shtml** and can be sent to our staff members by e-mail.

Definition of environmental services

Environmental services are those services which are used to measure, prevent, limit, minimise or correct environmental damage to water, air and soil as well as problems related to waste, noise and eco-systems.

Explanations of the questionnaire

The explanations follow the questions of the questionnaire.

Survey unit is the enterprise in terms of a legal and organisational unit for producing goods and services. The activity/activities can be carried out at one or more locations.

Please always refer in responding to the questions to the reporting periods 2003 and 2004. If the bookkeeping records of your enterprise reply on the fiscal year and not on the calendar year, the two fiscal years completed before December 31, 2004 (e.g. 1.9.2002-31.8.2003 and 1.9.2003-31.8.2004) should be taken into account.

Question 1:

Main activity:

Please indicate the 2-digit ÖNACE code where you gain the majority of your turnover. ÖNACE reflects the economic activities within a detailed system. If you do not know the 2-digit ÖNACE code of the enterprise, please describe in brief the main activity of the enterprise.

STATISTIK AUSTRIA
Die Informationsmanager

A Pollution management:

A.1 Air pollution control includes any service that designs, manages systems or provides other services for the treatment and/or removal of exhaust gases and particulate matters from both stationary and mobile sources.

Examples are bicycle couriers, inspection and/or change of filters and catalytic converters in vehicles, measurement of exhaust gases of vehicles, measurement of air quality, environment-related analytical measurements and emission certificates.

A.2 Wastewater management includes any service that designs, operates systems or provides other services for the collection, treatment and transport of wastewater and cooling water.

A.3 Waste management includes any service that designs, operates systems or provides other services for the collection, treatment, management, transport, storage and recovery of hazardous and non-hazardous wastes. Furthermore it includes the operation of sites and recycling plants, but **not** services for the manufacture of new materials or products from waste or scrap.

Examples are trade of metal waste and scrap, trade of other waste and scrap, cleaning of tanks and boilers or leasing of mobile toilets.

A.4 Environmental research and development includes any systematic and creative activity concerned with the generation, advancement, dissemination and application of scientific and technological knowledge to reduce or eliminate emissions in all environmental media and to improve environmental quality. It includes research and development of environment-friendly products, methods and technologies and non-technological research to improve knowledge on ecosystems and the impact of human activities on the environment.

A.5 Environmental contracting and engineering includes any service that investigates feasibility, designs and manages environmental projects not included elsewhere.

Examples are multidisciplinary environmental contracting and engineering, environmental management consulting, environmental audit services, lawyers specialised in environmental law, environmental ombudsmen and environment organisations.

A.6 Other services includes any service that designs, manages systems or provides other services to reduce emissions to soil and water, to reduce or eliminate emissions of noise and vibrations as well as to sample, measure and record various characteristics of environmental media. Furthermore it includes any service that provides environmental education or training or disseminates environmental information.

Examples are environmental education and training, observation stations, health, safety and toxicology studies and analytical laboratory services.

B Cleaner technologies and products:

This group includes any service which continuously improves, reduces or eliminates the environmental impact of technologies, processes or products.

B.1 This group includes any service for ***cleaner/resource-efficient technologies and processes***. These services reduce material inputs, energy consumption of technologies and processes, recover valuable by-products, reduce emissions, minimise waste disposal problems, or some combination of these.

B.2 This group includes any service for ***cleaner/resource-efficient products***. These services are used to manufacture products with less material inputs, improved product quality, reduced energy consumption, minimised waste disposal problems, reduced emissions during use, or some combination of these.

STATISTIK AUSTRIA
Die Informationsmanager

C Resource management:

C.1 Indoor air pollution control includes any service that designs, constructs or installs, manages or provides other services for the treatment and renewal of indoor air to remove pollutants, **excluding** air-conditioning.

Examples are maintenance of air circulation equipments or inspection of heating systems by chimney sweepers.

C.2 Water supply includes any service that designs, constructs or installs, manages or provides other services for water supply and delivery systems, both publicly and privately owned.

Examples are all services for the collection, purification and distribution of potable water to users.

C.3 Renewable energy plant includes any service that designs, constructs or installs, manages or provides other services for the generation, collection or transmission of energy from renewable energy sources.

C.4 Heat/energy saving and management includes any service that designs, constructs or installs, manages or provides other services to reduce heat and energy use or minimise heat and energy loss.

Examples are design of low energy houses and passive houses, energy contracting, measurement of energy use and design of energy and heat saving measures.

C.5 Other services includes any service that measures, prevents, limits or corrects environmental damage to water, air and soil as well as problems related to waste, noise and eco-systems which is not included in any other class.

Question 2:

Please allocate your turnover of environmental services to the specified kinds of services in percent of your total environmental turnover.

Question 3:

Please describe in brief your environmental services. This question is used to specifically allocate the services and for detailed analysis.

Question 4:

Please indicate the environmental management systems implemented in your enterprise.

Note

If you cannot exactly reply to questions 5 to 9, please try to estimate. The values should be indicated net.

If your enterprise operates internationally, we request to indicate the data in accordance with the following structure.

1. the total enterprise;
2. the total environment-related data;
3. only the Austrian environment-related data.

STATISTIK AUSTRIA
Die Informationsmanager

Question 5:

Please indicate the number of employees as **yearly average value**. If you cannot get this value from your bookkeeping, you can sum up the number of employees at the end of each month and divide it by 12 (round up to full values). This calculation method also applies to seasonal companies.

Employed employees are clerks, workers and apprentices who had a valid employment contract with the enterprise during the reporting period (2003 and 2004) and carried earnings (or employee leave benefits in case of illness) of it.

Self-employed employees are owners or co-owners – also tenants – and own the whole or a part of the enterprise and perform an activity which is relevant for the enterprise by managing it economically or organisationally.

Unpaid family workers are members of the family of the owner (co-owner or tenant) and regularly work for the enterprise. These people neither carry earnings nor are covered by social insurance as employed employees.

Question 6:

Please separate incomes from subsidies/aids/investment grants from revenues when replying to this question.

Revenues comprise the sum of all from the enterprise during the reporting period invoiced amounts (less value added tax) for services performed for third parties within the frame of ordinary activities and the **revenues of other activities**, that are all other services or activities (also additional businesses) like revenues from leasing contracts, revenues from payments in kind (e.g. enterprise canteen) to employees.

Subsidies (aids) are current payments of the government or institutions of the EU to resident companies, like interest allowances, peggings, compensations for transport costs, subsidies for clean measures as well as other current government or community grants. **Investment grants** are aids in the form of unique, non-repayable grants.

Question 7:

Expenditures comprise:

- Gross earnings (incl. overtime premiums and supplementary grants), gross payments to apprentices;
- Legal contributions of the employer (social security contributions of the employer, contribution to the promotion of housing, municipal tax, employers' levy for the construction of the underground railway system in Vienna etc.);
- Other social expenditures (allocations to enterprise pension reserves, pension payments to former employees or their surviving dependents, other payments not included in gross earnings to active or former employees or their surviving dependents (financial aid to sick people, death benefits etc.));
- Acquisition of commodities for resale;
- Acquisition of services for resale and services passed on to account respectively;
- Acquisition of materials for processing;
- Expenses for repairs and maintenances;
- Expenses for external workers (compensations for leasing and temporary workers, for people with contracts for work and service as well as for freelancers and commissions to self-employed agents);
- Expenses for placed wage work;
- Acquisition of fuels:

- Expenses for rents (rents for the use of immobile and mobile goods, like built-up land, all kinds of houses and accommodations, machinery, equipments (including IT equipment), furniture and means of transportation as well as rents for shops);
- All leasing expenditures;
- Other operative expenditures (e.g. office equipment, expenditures for legal advice, management consultancy and tax consultancy, other economic services, insurance premiums, security and cleaning companies, mail and telephone charges, municipal charges (e.g. sewerage charges, waste management charges etc.) as well as contributions to common projects (Water cooperatives, water organisations etc.);
- Interests and similar expenditures (all interest payments for debt capital);
- Depreciation of tangible and intangible capital as well as
- Taxes and levies (consumption taxes and all other taxes on production, like motor vehicle tax, insurance tax, taxes on land and buildings, road transport duty and local taxes as well as public charges).

Question 8:

Investments are tax deductible acquisitions to the capital assets – **only acquisitions in the reporting period** – (investments in undeveloped real estates and old buildings; construction and modification of buildings; machinery and equipment, tools, factory and office equipment; means of transportation; used fixed assets; low-value assets; investments in software; concessions, industrial property rights and similar rights). Further elements are down payments made as well as assets under construction, extensions and modifications increasing the value, improvements and repairs, which prolongate the normal service life or improve the productivity of existing equipments as well as fixed capital acquired via finance leasing.

Question 9:

This question is used for the analysis of integration of Austrian environmental service industries into the world market.

Therefore we request you to indicate the environmental turnover according to sales markets. If you do not have detailed data from the bookkeeping, please estimate the values. If your enterprise has also units abroad, only report the revenues of **Austrian enterprise units**.

Questions 10 to 13:

These questions matter as they allow conclusions to what extend innovations and inventions in the field of environmental services are of relevance. Please refer to the groups of environmental activities of question 1 (pollution management, cleaner technologies and products, resource management).

ANNEX III

DIREKTION Raumwirtschaft
Umweltstatistik

Sachb.: Mag. Sacha Baud, Brigitte Petrovic
Telefon: +43 (1) 711 28 -7235; -7184
e-mail: brigitte.petrovic@statistik.gv.at;
sacha.baud@statistik.gv.at

Unser Zeichen: 1.016/1-R/06
Datum: 2. Oktober 2006

Identification number:
Enterprise name:
Address:
Postal code:
Town:
Serial number:

Before filling in please read the explanation!

Contact person for further inquiries

Name	
Phone number	
Fax number	
e-mail	

Reporting year 2003/2004

Response at the latest:
20.10.2006

1. Turnover from environmental services	**2003**	**2004**
A – Services for:	**in €**	**in €**
A.1 Air pollution control		
A.2 Wastewater management		
A.3 Waste management		
A.4 Environmental research and development		
A.5 Environmental contracting and engineering		
A.6 Other services		
B – Services for:	**in €**	**in €**
B.1 Cleaner/resource-efficient technologies and processes		
B.2 Cleaner/resource-efficient products		
C – Services for:	**in €**	**in €**
C.1 Indoor air pollution control		
C.2 Water supply		
C.3 Renewable energy plant		
C.4 Heat/energy saving and management		
C.5 Other services		
2. Of which kind were these environmental services?	**in percent of your environmental turnover**	
2.1 Project planning and/or engineering		
2.2 Trade		
2.3 Consulting		
2.4 Research and development for other enterprises		
2.5 Other services		

3. Please briefly describe your environmental services!

	2003	**2004**
4. Employees in the reporting period (self-employed and employed, unpaid family workers)		
4.1 Total employees		

Thank you very much for your support!

STATISTIK AUSTRIA
Die Informationsmanager

General information for the survey on economic data of environmental service industries

Inquiries and information

For inquiries the staff members cited on the questionnaire are at your service. In support of possible queries we recommend to make a copy of the survey documents.

Definition of environmental services

Environmental services are those services which are used to measure, prevent, limit, minimise or correct environmental damage to water, air and soil as well as problems related to waste, noise and eco-systems. They also include environmental education and training as well as dissemination of environmental information in the broadest sense.

Explanations of the questionnaire

Survey unit is the enterprise in terms of a legal and organisational unit for producing goods and services. The activity/activities can be carried out at one or more locations.

Please always refer in responding to the questions to the reporting periods 2003 and 2004. If the bookkeeping records of your enterprise reply on the fiscal year and not on the calendar year, the two fiscal years completed before December 31, 2004 (e.g. 1.9.2002 - 31.8.2003 and 1.9.2003 - 31.8.2004) should be taken into account.

Question 1:

A.1 Air pollution control includes any service for treatment/removal/prevention of exhaust gases and particulate matters from both stationary and mobile sources.

Examples are bicycle couriers, inspection and/or change of filters and catalytic converters in vehicles, measurement of exhaust gases of vehicles, measurement of air quality, environment-related analytical measurements and emission certificates.

A.2 Wastewater management includes any service related to collection, treatment and transport of wastewater and cooling water.

A.3 Waste management includes any service related to collection, treatment, management, transport, storage and recovery of hazardous and non-hazardous wastes. Furthermore it includes the operation of sites and recycling plants, but **not** recycling.

Examples are trade of metal waste and scrap, trade of other waste and scrap, cleaning of tanks and boilers or leasing of mobile toilets.

A.4 Environmental research and development includes any systematic and creative activity concerned with generation, advancement, dissemination and application of scientific and technological knowledge to reduce or eliminate emissions in all environmental media and to improve environmental quality.

Examples are research and development of environment-friendly products, methods, technologies and non-technological research to improve knowledge on ecosystems and the impact of human activities on the environment.

A.5 Examples for ***environmental contracting and engineering*** are multidisciplinary environmental contracting and engineering, environmental management consulting, environmental audit services, lawyers specialised in environmental law, environmental ombudsmen and environment organisations.

A.6 Other services includes any service to reduce emissions to soil and water, to reduce or eliminate emissions of noise and vibrations as well as to sample, measure and record various characteristics of environmental media. Furthermore it includes any service that provides environmental education or training or disseminates environmental information.

Examples are environmental education and training, health, safety and toxicology studies and analytical laboratory services.

STATISTIK AUSTRIA
Die Informationsmanager

B.1 This group includes any service for ***cleaner/resource-efficient technologies and processes***. These services reduce material inputs, energy consumption of technologies and processes, recover valuable by-products, reduce emissions, minimise waste disposal problems, or some combination of these.

B.2 This group includes any service for ***cleaner/resource-efficient products***. These services are used to manufacture products with less material inputs, improved product quality, reduced energy consumption, minimised waste disposal problems or reduced emissions during use.

C.1 Indoor air pollution control include any service that designs, constructs or installs, manages or provides other services for the treatment and renewal of indoor air to remove pollutants, **excluding** air-conditioning.

Examples are maintenance of air circulation equipments or inspection of heating systems by chimney sweepers.

C.2 Water supply includes any service – both publicly and privately owned – related to water supply.

Examples are all services for the collection, purification and distribution of potable water to users and the design of facilities.

C.3 Renewable energy plant includes any service that designs, constructs or installs, manages or provides other services for the generation, collection or transmission of energy from renewable energy sources.

C.4 Heat/energy saving and management includes any service to reduce heat and energy use or minimise heat and energy loss.

Examples are design of low energy houses and passive houses, energy contracting, measurement of energy use and design of energy and heat saving measures.

C.5 Other services includes any service that is not included in any other class.

Question 2:

Please allocate your turnover of environmental services to the specified kinds of services in percent of your total environmental turnover.

Question 3:

Please describe in brief your environmental services. This question is used to specifically allocate the services and for detailed analysis.

Question 4:

Please indicate the number of employees as **yearly average value**. If you cannot get this value from your bookkeeping, you can sum up the number of employees at the end of each month and divide it by 12 (round up to full values). This calculation method also applies to seasonal companies.

Included are:

Employed employees are clerks, workers and apprentices who had a valid employment contract with the enterprise during the reporting period (2003 and 2004) and carried earnings (or employee leave benefits in case of illness) of it.

Self-employed employees are owners or co-owners – also tenants – and own the whole or a part of the enterprise and perform an activity which is relevant for the enterprise by managing it economically or organisationally.

Unpaid family workers are members of the family of the owner (co-owner or tenant) and regularly work for the enterprise. These people neither carry earnings nor are covered by social insurance as employed employees.

ANNEX IV

STATISTIK AUSTRIA
Die Informationsmanager

DIREKTION Raumwirtschaft
Umweltstatistik

Sachb.: Mag. Sacha Baud, Brigitte Petrovic
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e-mail: brigitte.petrovic@statistik.gv.at;
sacha.baud@statistik.gv.at

Unser Zeichen: 1.017/0-R/06
Datum: 1. Juni 2006

Identification number:
Enterprise name:
Address:
Postal code:
Town:
Serial number:

Before filling in please read the explanation!

Contact person for further inquiries

Name	
Phone number	
Fax number	
e-mail	

Reporting year 2003/2004

Response at the latest:
30.06.2006

1. Activity of the enterprise

Please indicate the main activity (according to two-digit ÖNACE code) of your enterprise**:**

	in 2003	In 2004
2. Employees		
3. Turnover		
4. Total investments		

5. Has your enterprise made use of, bought and/or self-performed activities for environmental protection in 2003 or 2004?

Yes ☐ No ☐

If **yes**, please fill in questions 6 to 8.
If **no**, please proceed to question 8.

6. These activities for environmental protection consisted of?

	Investments		Compensation of employees		Payments to enterprises	
	2003	2004	2003	2004	2003	2004
A – Pollution management	**in €**					
A.1 Air pollution control						
A.2 Wastewater management						
A.3 Waste management						
A.4 Environmental research and development						
A.5 Environmental contracting and engineering						
A.6 Other services						
A.7 Total (sum of A.1 – A.6)						
B – Cleaner technologies and products	**in €**					
B.1 Cleaner/resource-efficient technologies and processes						
B.2 Cleaner/resource-efficient products						
B.3 Total (sum of B.1 – B.2)						
C – Resource management	**in €**					
C.1 Indoor air pollution control						
C.2 Water supply						
C.3 Renewable energy plant						
C.4 Heat/energy saving and management						
C.5 Other services						
C.6 Total (sum of C.1 – C.5)						

Please turn over!

	Charges		Others	
	2003	2004	2003	2004
A – Pollution management	**in €**			
A.1 Air pollution control				
A.2 Wastewater management				
A.3 Waste management				
A.4 Environmental research and development				
A.5 Environmental contracting and engineering				
A.6 Other services				
A.7 Total (sum of A.1 – A.6)				
B – Cleaner technologies and products	**in €**			
B.1 Cleaner/resource-efficient technologies and processes				
B.2 Cleaner/resource-efficient products				
B.3 Total (sum of B.1 – B.2)				
C – Resource management	**in €**			
C.1 Indoor air pollution control				
C.2 Water supply				
C.3 Renewable energy plant				
C.4 Heat/energy saving and management				
C.5 Other services				
C.6 Total (sum of C.1 – C.5)				

	Subsidies received		Investment grants	
	2003	2004	2003	2004
A – Pollution management	**in €**			
A.1 Air pollution control				
A.2 Wastewater management				
A.3 Waste management				
A.4 Environmental research and development				
A.5 Environmental contracting and engineering				
A.6 Other services				
A.7 Total (sum of A.1 – A.6)				
B – Cleaner technologies and products	**in €**			
B.1 Cleaner/resource-efficient technologies and processes				
B.2 Cleaner/resource-efficient products				
B.3 Total (sum of B.1 – B.2)				
C – Resource management	**in €**			
C.1 Indoor air pollution control				
C.2 Water supply				
C.3 Renewable energy plant				
C.4 Heat/energy saving and management				
C.5 Other services				
C.6 Total (sum of C.1 – C.5)				

7. Brief description of these environmental activities

in 2003:

in 2004:

8. Which environmental management systems are implemented in your enterprise (e.g. EMAS, ISO 14001)?

Thank you very much for your support!

For evaluating the complexity of this survey we would like to ask you to specify the time you spent for filling in it.

Minutes:

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General information for the survey on
environmental protection expenditure of service industries

The objective of this **voluntary** survey is the establishment of a data base for different questions at the interface between environment and economy. The focus is on the breakdown of environmental protection expenditures on the one hand to different branches and on the other hand to public and private companies of the service industries.

This sector is currently not covered with updated data.

Together with already collected key figures of the manufacturing industry these data should provide a comprehensive overview of the environmental protection expenditures of the Austrian economy.

In addition to activities purchased from other companies also in-house environmental protection expenditures should be registered. This should among others contribute to an improvement of the planning base for efficient environmental policies of the companies (e.g. environmental audits).

The concept of the survey is based on Europe-wide applied guidelines for the collection of economic information on the environment and has been adapted to Austrian circumstances.

The results are subject to confidentiality provisions of the Federal Statistics Act as well as the Data Security Act and will be in compliance with these provisions implemented in highly aggregated form into the report of this survey, the calculation of the Austrian environmental protection expenditures as well as the calculation of the Austrian environment industry.

Inquiries and information

For inquiries the staff members cited on the questionnaire are at your service. In support of possible queries we recommend to make a copy of the survey documents. The questionnaire is also available as word file under http://www.statistik.at/_downloads/umwelt/umweltschutzaufwendungen.shtml and can be sent to our staff members by e-mail.

Definition

Environmental protection in the sense of this survey comprises those activities that are used to measure, prevent, limit, minimise or correct environmental damage to water, air and soil as well as problems related to waste, noise and ecosystems associated with the activity of the enterprise.

Their primary objective is the prevention and reduction of emissions or the treatment of materials harmful to the environment. Measurement and control of emissions are also included as well as administration and management tasks associated with these activities. These measures refer to environmental investments, environmental services and adapted and connected products. Measures aimed at the protection of employees are **not** part of environmental protection in the sense of this survey.

Explanations of the questionnaire

The explanations follow the questions of the questionnaire.

Survey unit is the enterprise in terms of a legal and organisational unit for producing goods and services. The activity/activities can be carried out at one or more locations.

Please always refer in responding to the questions to the reporting periods 2003 and 2004. If the bookkeeping records of your enterprise reply on the fiscal year and not on the calendar year, the two fiscal years completed before December 31, 2004 (e.g. 1.9.2002-31.8.2003 and 1.9.2003-31.8.2004) should be taken into account.

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Question 1:

Main activity:

Please indicate the 2-digit ÖNACE code where you gain the majority of your turnover. ÖNACE reflects the economic activities within a detailed system. If you do not know the 2-digit ÖNACE code of the enterprise, please describe in brief the main activity of the enterprise.

Question 2:

Please indicate the number of employees (employed employees, self-employed employees and unpaid family workers) as **yearly average value**. If you cannot get this value from your bookkeeping, you can sum up the number of employees at the end of each month and divide it by 12 (round up to full values). This calculation method also applies to seasonal companies.

Employed employees are clerks, workers and apprentices who had a valid employment contract with the enterprise during the reporting period and carried earnings (or employee leave benefits in case of illness) of it.

Self-employed employees are owners or co-owners – also tenants – and own the whole or a part of the enterprise and perform an activity which is relevant for the enterprise by managing it economically or organisationally.

Unpaid family workers are members of the family of the owner (co-owner or tenant) and regularly work for the enterprise. These people neither carry earnings nor are covered by social insurance as employed employees.

Question 3:

Turnover comprise the sum of all from the enterprise during the reporting period invoiced amounts (less value added tax) for services performed for third parties within the frame of ordinary activities.

Question 4:

Investments are acquisitions to the capital assets – **only acquisitions in the reporting period** – (investments in undeveloped real estates and old buildings; construction and modification of buildings; machinery and equipment, tools, factory and office equipment; means of transportation; used fixed assets; low-value assets; investments in software; concessions, industrial property rights and similar rights). Further elements are down payments made as well as assets under construction, extensions and modifications increasing the value, improvements and repairs, which prolongate the normal service life or improve the productivity of existing equipments as well as fixed capital acquired via finance leasing.

Question 5:

Please indicate whether your enterprise made use of, bought and/or self-performed activities for environmental protection within the reporting period.

Question 6:

Please specify in the table the environmental expenditures as well as subsidies and investment grants of the enterprise in the reporting period 2003 and 2004.

If you cannot exactly reply to the questions of point 6, please try to estimate. The values should be indicated net.

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Below there are explanations for each category.

A Pollution management:

A.1 Air pollution control includes all expenditures (subsidies and investment grants respectively) in equipments, products and services for treatment and/or removal of exhaust gases and particulate matters from both stationary and mobile sources.

Examples are catalytic converters, ventilation systems, chemical treatment plants, dust catchers/dust collection systems, filters, air pollution control systems (stationary and mobile), measurement of exhaust gases of vehicles and facilities or services of chimney sweepers.

A.2 Wastewater management includes all expenditures (subsidies and investment grants respectively) in equipments, products and services for the collection, treatment and transport of wastewater and cooling water.

Examples are goods and systems for wastewater treatment, sewage sludge treatment, collection appliances for discharging and exhausting emissions, wastewater disposal lines and pressure lines as connection to municipal wastewater collection systems and wastewater treatment plants, wastewater filters, products for water purification (crude salt, decalcifier), cesspits, organic products for cesspits, wastewater saving household equipment or canal charges.

A.3 Waste management includes all expenditures (subsidies and investment grants respectively) in equipments, products and services for the collection, treatment, management, transport, storage and recovery of hazardous and non-hazardous wastes. Furthermore it includes the operation of sites and recycling plants, but **not** activities for manufacturing new materials or products from waste or scrap.

Further examples are waste disposal charges and costs, refuse bags, refuse bins, rubbish containers, compost containers or chaff equipments.

A.4 Environmental research and development includes any systematic and creative activity (subsidies and investment grants respectively) concerned with the generation, advancement, dissemination and application of scientific and technological knowledge to reduce or eliminate emissions in all environmental media and to improve environmental quality. It includes research and development of environment-friendly products, methods and technologies and non-technological research to improve knowledge on ecosystems and the impact of human activities on the environment.

A.5 Environmental contracting and engineering includes all expenditures (subsidies and investment grants respectively) for services/activities that investigates feasibility, designs and manages environmental projects not included elsewhere.

Examples are biological and ecosystem studies, legal services (environmental law), multidisciplinary environmental contracting, environmental management consulting, environmental audit services, estimation and inspection of environmental damages.

A.6 Other activities includes all expenditures (subsidies and investment grants respectively) in equipments, products and services to reduce emissions to soil and water, to reduce or eliminate emissions of noise and vibrations as well as to sample, measure and record various characteristics of environmental media. Furthermore it includes any activity that provides environmental education or training or disseminates environmental information.

Examples are education to environmental protection officers, noise insulation arrangements (e.g. windows) and noise barriers, noise insulating materials, noise and vibration control and measuring systems, observation stations, health, security and toxicology studies, analytical laboratory services or radiation protection.

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B Cleaner technologies and products:

B.1 Cleaner/resource-efficient technologies and processes reduce material inputs, energy consumption, recover valuable by-products, reduce emissions, minimise waste disposal problems, or some combination of these.

B.2 Cleaner/resource-efficient products reduce material inputs, improve product quality, reduce energy consumption, minimise waste disposal problems and reduce emissions during use, or some combination of these.

Examples are water saving installations, environment-friendly refrigerators, CFC-free products (substitute goods for CFC, refrigerators, aerosol cans), environment-friendly washing machines, environment-friendly dishwashers, phosphate free washing agents, bio-degradable washing and cleaning agents, quieter vehicles and lawn-mowers, organic pesticides, remoulds or refilled cartridges (printers, copying machines).

C Resource management:

C.1 Indoor air pollution control includes all expenditures (subsidies and investment grants respectively) in equipments, products and services for the treatment and renewal of indoor air to remove pollutants, **excluding** air-conditioning.

Examples are filters.

C.2 Water supply includes all expenditures (subsidies and investment grants respectively) in equipments, products and services for water supply and delivery systems, both publicly and privately owned.

Examples are charges for water supply, drinking water treatment plants or water purification systems.

C.3 Renewable energy plant includes all expenditures (subsidies and investment grants respectively) in equipments, products and services for the generation, collection or transmission of energy from renewable energy sources.

Examples are renewable energy sources (e.g. pellets, biomass, wind and solar energy) or renewable energy plants.

C.4 Heat/energy saving and management includes all expenditures (subsidies and investment grants respectively) in equipments, products and services to reduce heat and energy use or minimise heat and energy loss.

Examples are thermal insulation materials, thermostats and heat detectors.

C.5 Other activities includes all expenditures (subsidies and investment grants respectively) in equipments, products and services that measures, prevents, limits or corrects environmental damage to water, air and soil as well as problems related to waste, noise and eco-systems which are not included in any other class.

Below there are further explanations concerning **environmental** investments and current expenditures.

Investments: Environmental investments refer to technical measures and equipments, which prevent discharge of emissions to the environment and/or measure as well as control emissions. Equipments or parts of equipments that are entirely or predominantly used for environmental protection should be taken into account. Investments also include education and training.

Compensation of employees: Gross earnings (incl. overtime premiums and supplementary grants), legal and voluntary social contributions for stuff that is predominantly or exclusively working for an environmental protection purpose. Proportional costs should be at least estimated.

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Payments to enterprises: Expenditures for external services (e.g. chimney sweeper, metrological inspections (TÜV), waste collection by private enterprises, cleaning of sewers, licence fees (e.g. for recycling systems), costs for external treatment of hazardous wastes).

Charges and other payments to public institutions: Relevant municipal charges (e.g. canal and canal connection charges, waste disposal charges) as well as contributions to common projects (Water cooperatives, water organisations etc.).

Others: Any other current environmental protection expenditure, especially operating and maintenance expenses, material and equipment expenses, rents (e.g. for landfill sites), overheads and administrative expenses, current extra costs incurred by forced or voluntary use of environment-friendly products or energy sources.

Environment-related incomes:

Subsidies (aids) are current payments of the government or institutions of the EU to resident companies, like interest allowances, peggings, compensations for transport costs, subsidies for clean measures as well as other current government or community grants. Please indicate only environment-related subsidies.

Investment grants are aids in the form of unique, non-repayable grants. Please also indicate only environment-related investment grants.

Question 7:

Please describe in brief your purchased equipments, products and services. This question is used for specific allocation and for detailed analysis.

Question 8:

Please indicate the environmental management systems implemented in your enterprise.