

GZ.: A 23 – K – 13/99-38

Eco-City 2000 – Evaluation

Report (Expertise)
of the Eco-Team of Graz

Preface

Importance of the evaluation process from the perspective of the NGO Representatives of the Eco-Team of Graz

More than 80 active associations and groups characterize the ecological activities pursued in the City of Graz. These associations and groups do not only pursue different goals but also achieve manifold environmental performance by providing service aiming at contributing to a sustainable municipal development. They do not only provide this service in a committed way but often also provide it in an honorary capacity.

The invitation to take part in the evaluation process relating to Eco-City 2000 in connection with Local Agenda 21 was regarded as being an opportunity to bring in their technical experience and specialized findings in the course of the evaluation process by many of these NGO's. The results of the Sub-Groups partly are also distinctly characterized by this information pool. The Municipal Authorities, for their part, have not only acted as a role model by taking the unusual decision to have their work evaluated "from outside". They can also be praised for having initiated a paradigmatic change. For thanks to the approach chosen by the Municipal Authorities, professional work in the field of environmental protection no longer is regarded as being free of charge and also is appreciated and rewarded by a corresponding policy focusing on promoting and subsidizing the pertaining actions.

As for the effects on political life as a whole and environmental policy, in particular, the NGO's see the following factors:

- The results of environmental policy become transparent and quantifiable.
- The test results in terms of the single Parameters of Sustainability are very well suited for motivating politicians to reformulate their goals and should be fully made use of.
- The discussion of the topics in the interdisciplinary Sub-Groups yielded interesting recommendations for networking enabling holistic and interlinked strategies and updated Parameters for Sustainability.
- The evaluation process itself gives a fresh impetus to the cooperation among the groups and with the authorities.

The NGO Representatives in the Eco-Team of Graz

Dr. Romana Puxkandl-Ull

Mag. Andrea Wieser-Gössinger

Table of Contents

Table of Contents	
1	Introduction 7
2	Process Description..... 9
3	Results 15
3.1	Parameters for Sustainability..... 15
3.1.1	Air..... 24
3.1.2	Water..... 27
3.1.3	Soil 36
3.1.4	Noise..... 39
3.1.5	Energy and Climate 43
3.1.6	Traffic 49
3.1.7	Waste..... 54
3.1.8	Natural and Cultivated Green Spaces..... 58
3.2	Actions..... 60
3.2.1	Action Plan 1 – Private Households 60
3.2.2	Public Buildings 61
3.2.3	Action Plan 3 – Companies 62
3.2.4	Action Plan 4 – Agriculture 65
3.2.5	Action Plan 5 – Water and Water Bodies, Development of Natural and Cultivated Green Spaces 66
3.2.6	Action Plan 6 – Abandoned Polluted Areas 67
3.2.7	Action Plan 7 – Traffic 68
3.2.8	Action Plan 8 – Noise 70
3.2.9	Action Plan 9 – Energy and Climate Protection 71
4	Outlook and Strategy 73
4.1	Outlook 73
4.1.1	Parameters for Sustainability 73
4.1.2	Actions/Action Plans 73
4.2	Strategy 74
5	Annex Actions 76
	Action Plan 1- Private Households 77
	Action Plan 2- Public Buildings 92
	Action Plan 3- Companies 106

Action Plan 4- Agriculture	124
Action Plan 5- Water and Water Bodies, Development of Natural and Cultivated Green Spaces.....	130
Action Plan 6- Abandoned Polluted Areas	136
Action Plan 7- Traffic.....	141
Action Plan 8- Noise Reduction and Noise Prevention.....	157
Action Plan 9- Protection of the Earth Atmosphere	164

List of Abbreviations

List of the abbreviations used in the text

AMS	Admissible Maximum Speed
ARGE	Arbeitsgemeinschaft – Working Group
BauG	Baugesetz – Building Act
BBK GU	Bezirksbauernkammer Graz-Umgebung – District Chamber of Agriculture Graz Environs
CFC	Chlorofluorocarbon
CO	Carbon monoxide
CO ₂	Carbon dioxide
COD	Chemical Oxygen Demand
CPC	Cleaner Production Center
dB(A)	Noise level assessed as being "A" in decibel
DDC	Digital Direct Controller
Dept.	Department
FA	Fachabteilung – Specialized Department
GAST	Grazer Anrufsammeltaxi – Graz Calling Collection Taxi
GBG	Grazer Grün- und Baulandsicherungs GmbH. – Building and Grassland Protection Ltd., Graz
GEA	Grazer Energieagentur – Energy Agency of Graz
GIVE	Grazer Integrierte Verkehrsentwicklung – Integrated Traffic Development in Graz
GKB	Graz Köflach Bahn – Graz Köflach Rail Services
GREIF	
GVB	Grazer Verkehrsbetriebe – Transport Association Graz
HLAG	Hochleistungs-AG (Stock Corporation responsible for building high-performance roads)
Inst.	Institute
IPPC	Industrial Pollution Prevention Control
KEK	Kommunales Energiekonzept – Municipal Energy Plan
kWh	Kilowatthour
MIT	Motorized Individual Traffic
NGO	Non Governmental Organization
NO _x	Nitrogen oxides

List of Abbreviations

ÖBB	Österreichische Bundesbahnen – Austrian Federal Rail Services
ÖNRAP	
PM	Particulate Matter concentration according to the PM-10 Standard
RA	"Rechtsabteilung"
SG	Sub-Group
SO ₂	Sulphur dioxide
Stek	Stadtentwicklungskonzept – City Development Concept
STLB	Steiermärkische Landesbahnen – Styrian Provincial Rail Services
t/a	tons a year
TJ	Terra Joule (10 ¹² Joule)
UBA	Umweltbundesamt" – Austrian EPA – Environmental Protection Agency
UIS	Umwelt(daten)informationssystem – Environmental (Data) Information System
VDV	
VERA	Verdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte – List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz
VOC	Volatile Organic Carbon
VwGh	Verwaltungsgerichtshof – Administrative Court
WH	Wirtschaftshof
WIFI	Wirtschaftsförderungsinstitut – Institute for the Promotion of Trade and Industry
ZWHS	Zentralwasserversorgung Hochschwab Süd GmbH. – Central Water Supply Hochschwab-South Ltd.

1 Introduction

By offering its programme "Ökostadt 2000 – Auf dem Weg zu einer nachhaltigen Stadtentwicklung in Graz" ("Eco-City 2000 – on the way to sustainable city development"), the City of Graz provides an integrated concept allowing to consider the numerous aspects of the different ecologically relevant issues, problems and basic conditions in municipal environmental policy. The programme was unanimously voted in the Municipal Council of Graz on July 6, 1995. This triggered the process of large-scale and concentrated deployment.

New Quality in Environmental Policy

The idea of this Issue Related Programme "Environment" consists in achieving a new quality in municipal environmental policy. The classical concepts of environmental policy are to be extended. Up to now, environmental policy has, on the one hand, rather been seen in connection with safeguarding or re-establishing a quality of the environmental media soil, air and water that is necessary to maintain human health. On the other hand, it was a question of preserving parts of the landscape worth protecting or natural monuments. In the meantime, these concepts have been extended by focusing on preventive environmental policy. The main characteristic of this policy is to prevent (further) environmental impacts and damage done to the ecological balance from the beginning.

However, a 100% prevention in the sense of the elimination of any environmental impact is not possible. For human action will keep interfering with what happens in nature. In addition, (late) detrimental results may even be caused if the technology that is most ecologically beneficial and is fully to the state of the art is strictly adhered to. Nevertheless, it is a question of the change in the perception of the approaches for solving environmental problems. This evolution is to lead from philosophies aiming at sanitation and repair (the so-called "end of pipe" technologies) to a sustainable strategy, (which is represented by "clean technologies").

Sustainability

Sustainable development requires from us only to load the asset represented by our environment to such an extent that it can still be replaced and renewed. As for renewable resources, this means that the water and energy reserves necessary to replace them again must be available. Resources that are not renewable must not be consumed faster than renewable alternatives can replace them. The emissions must be minimized in order to prevent air, water or soil from being overloaded. Otherwise the carrying capacity of nature would no longer be sufficient to enable the self-cleaning and self-healing processes to effectively cope with the emissions.

Sustainable development requires the concern for human health and the observance of environmental standards, which guarantee the complete psychological and social well-being of man (WHO Definition of health). Part of this development also consists in preserving animal and plant life in all its diversity of species.

Introduction

These high objectives cannot be achieved by creating objective conditions, e. g. prescribing immission limits or banning certain substances, once. What is necessary is to develop creative processes on a local scale. These processes are to promote the activities strengthening the municipal eco-system and to help to quickly identify processes upsetting this eco-system and to eliminate these processes. Both the decisionmakers in the Municipal Authorities and the citizens of the city are to be incorporated into these endeavours.

Local Agenda 21

The Issue Related Programme "Ökostadt 2000" ("Eco-City 2000") is the deployment of Agenda 21, the central document of the UNCED Conference in Rio de Janeiro in 1992, in Graz. This programme sees itself as a comprehensive action plan for the transition into the 21st century.

In 1996, the City of Graz was the first city to be presented the "European Sustainable City Award" by the initiative "European Sustainable Cities and Towns", which had been founded in 1994.

Evaluation

Upon the vote of the Specialized Environmental Programme "Ökostadt 2000 – Auf dem Weg zu einer nachhaltigen Stadtentwicklung in Graz" ("Eco-City 2000 – on the way to sustainable city development") by the Municipal Council of Graz, the Department of Environmental Protection of the City of Graz was entrusted with establishing the "Grazer Öko-Team" ("Eco-Team of Graz").

The "Eco-Team of Graz" is headed by the Department of Environmental Protection of the City of Graz and is made up of one representative of the Technical University of Graz, the "Karl-Franzens Universität Graz" (Graz University) as well as the Environmental Protection Coordinator of the City of Graz and the Environmental Protection Representative of Graz, the Head of the Department of Health, the of the Head of the Department of City Development and City Preservation, one representative of the "Wirtschaftshof", the Environmental Attorney of the Province of Styria, the Environmental Coordinator of the Province of Styria, the Head of the Specialized Department Ia of the Styrian Provincial Government and one representative of the environmental organizations of Graz each.

After the evaluation documents have been prepared by external verifiers, the "Eco-Team of Graz" is charged with verifying and assessing the progress in achieving the targets placed by the Specialized Environmental Programme "Ökostadt 2000 – Auf dem Weg zu einer nachhaltigen Stadtentwicklung in Graz" ("Eco-City 2000 – on the way to sustainable city development"). Then they will hand over the final report to the Municipal Councillor for Environment, who will present the report to the Environmental Commission.

These evaluations and the pertinent reports are to be made every three years.

2 Process Description

The "Eco-Team of Graz" was founded in the constituent assembly on January 14, 1999, in the presence of all the members fixed by a vote of the Municipal Council.

Member of the Eco-Team	
SR DI Dr. Karl Niederl (Chairman)	Head of the Department of Environmental Protection of the City of Graz
DI Johannes Edegger	"Wirtschaftshof" of the City of Graz
Dr. Johann Eder	Environmental Protection Coordinator of the City of Graz
Mag. Andrea Gössinger-Wieser	NGO Representative (deputy), Climate Alliance
Ao.-Univ. Prof. Dr. Hans-Ludwig Holzer	Karl-Franzens-Universität Graz Graz University
Dr. Josef Künstner	Head of the Health Department of Graz
DI Hansjörg Luser	Head of the Department of City Development and City Preservation
HR DI Norbert Perner	Head of the Specialized Department Ia of the Styrian Provincial Government
Dr. Liliane Pistotnig	Environmental Attorney of the Province of Styria
Dr. Romana Puxkandl-Ull	NGO Representative, "Haus der Baubiologie" ("House of Building Biology")
O.-Univ. Prof. DI Dr. Helmut Renner	TU Graz (Technical University)
WHR Dr. Manfred Rupprecht	Environmental Coordinator of the Province of Styria
Dr. Wolfgang Windisch	Environmental Protection Representative of the City of Graz

In addition, DI Heinz Rosmann ("Mag. Abt. 14 – Stadtplanungsamt" – Department 14 of the Municipal Authorities – City Planning Office; Mag. Abt. – "Magistratsabteilung" – "Department of the Municipal Authorities") as well as DI Manfred Hönig ("Mag. Abt. 10-Stadtbaudirektion, Verkehrsreferat" - Department 14 of the Municipal Authorities – City Building Management, Traffic Department) were invited to take part in the "Eco-Team of Graz" due to their competency in the fields of spatial planning and traffic.

The representatives of Graz University and the Technical University of Graz were sent to the "Eco-Team of Graz" by the respective Presidents.

Results of the Evaluation

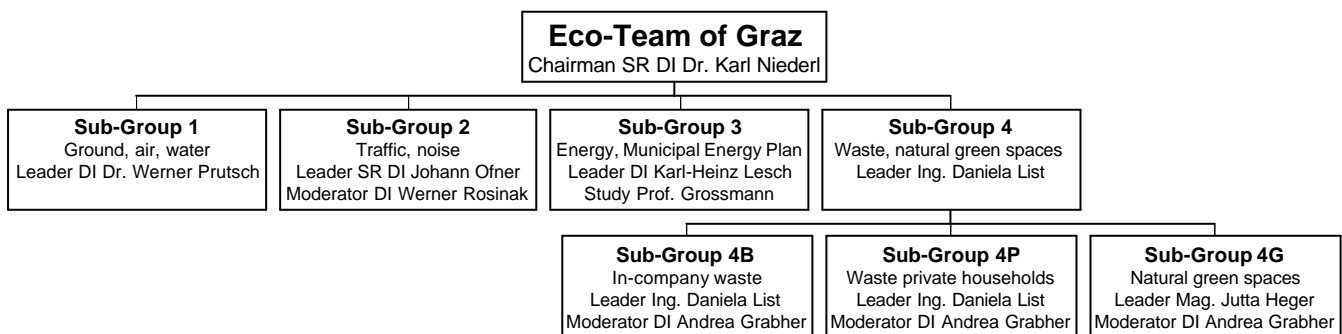
The two representatives of the NGO's of Graz were selected to represent the concerns of the organizations in the "Eco-Team of Graz" in a democratic vote among the environmental organizations of Graz.

In the course of the constituting assembly, the establishment of sub-groups according to the Parameters for sustainability mentioned in the programme "Eco-City 2000" was decided upon. These working groups had the mission to acquire and assess the data necessary for evaluation and to assess the extent to which the action mentioned in the programme has been deployed (degree of realization). Furthermore, the new orientation of the existing parameters or additional parameters as well as new proposals for action were to be discussed. The final reports of the sub-groups were submitted to the "Eco-Team of Graz" for final verification on August 2, 1999, and were at the basis of the present report presented to the Municipal Council of Graz.

The goal was to allow a large-scale participation in the evaluation process and thus an objective assessment of the programme, which had been conceived as to correspond to a Local Agenda 21. Therefore, the Department of Environmental Protection sent a mail to all the NGO's of Graz, the Departments of the Municipal Authorities and the Provincial Government responsible for the respective areas as well as representatives of trade and industry. This mail was an invitation to actively participate in the sub-groups. The NGO's of Graz were also convened by Dr. Romana Puxkandl-Ull and Mag. Andrea Gössinger-Wieser, who had been sent to the "Eco-Team of Graz" in a democratic vote.

On the whole, 6 working groups were established under the leadership of employees of the Department of Environmental Protection of Graz.

Organization of the Evaluation Process of the Programme "Eco-City2000"



On the whole, **68 representatives** of different organizations took part in the altogether **24 working sessions**. The participants were as follows:

Results of the Evaluation

Participants	Sub-Group	Institution
Susanne Bauer	SG 4B	Chamber of Labour
Hannes Binder	SG 1	Dept. of Environmental Protection, Municipal Authorities
Manfred Brandl	SG 2	"FAIRkehr" ("Fair traffic")
Thomas Czerwinka	SG 1, SG 4G	WWF
Johannes Edegger	SG 4B, SG 4P	"Wirtschaftshof"
Johann Eder	SG 4G	Environmental Protection Coordinator
Helmut Gekle	SG 4P	Federal Police Headquarters-Graz
Andrea Gössinger-Wieser	SG 1, SG 2, SG 3	Climate Alliance Styria
Andrea Grabher	SG 4	TU-Graz (moderator)
Dagmar Grage	SG 4G	"ARGE Müllvermeidung" (Working Group Waste Prevention; ARGE - ARBEITSGEMEINSCHAFT)
Manfred Grubbauer	SG 4B	A.S.A
Peter Gspaltl	SG 1-4	Dept. of Environmental Protection, Municipal Authorities
Gabriele Hasenschwandtner	SG 4G	"Öko-Service"
Jutta Heger	SG 4G	Dept. of Environmental Protection, Municipal Authorities
Gerhard Hiebler	SG 4B	Neckermann Mail-Order House
Wilhelm Himmel	SG 4P	Styrian Provincial Government, Specialized Department 1c
Michael Hochreiter	SG 1	Styrian Provincial Government, Specialized Department 1a
Manfred Hönig	SG 2	Municipal Authorities Graz, A10-Traffic Department
Hans Jaklitsch	SG 4B	Chamber of Economics
Helmut Jauk	SG 2	Styrian Provincial Government, Specialized Department 2b
Edith Kainz	SG 4P	Purchasing Department
Ingrid Kaltenegger	SG 4B	Cleaner Production Center Austria

Results of the Evaluation

Participants	Sub-Group	Institution
Thomas Kern	SG 4G	"Verein Naturerlebnispark" (Association Nature Experience Park)
Peter Köck	SG 4G	Institute for the Protection of Nature Graz
Karl Koller	SG 2	Municipal Authorities of Graz, A10-Traffic Department
Gerd Kronheim	SG 2	"Bicycle"
Helga Kropiunigg	SG 4G	Austrian Association of the Protection of Nature
Karl Heinz Lesch	SG 3	Dept. of Environmental Protection, Municipal Authorities
Daniela List	SG 4B, SG 4P	Dept. of Environmental Protection, Municipal Authorities
Werner Lackner	SG 2	"ARGE Luft-Lärm" (Working Group air-noise)
Harald Leutschacher	SG 4B	Styrian Provincial Government, Specialized Department 1c
Hansjörg Luser	SG 2	Municipal Authorities of Graz, A10/7-Department of City Development and City Preservation
Michael Mandl	SG 2	Styrian Provincial Government, Specialized Department 2b
Jelva Mang	SG 1	Austrian Water Protection Guard
Ruth Masser	SG 4P	Waste Consulting Agency of the "Wirtschaftshof"
Erik Moderegger	SG 3	Greenpeace
Johannes Muhr	SG 2	"ARGUS/GO"
Matthias Neitsch	SG 4P	"ARGE Müllvermeidung" (Working Group Waste Prevention)
Johann Ofner	SG 2	Dept. of Environmental Protection, Municipal Authorities
Maria Panholzer	SG 1	Dept. of Sewerage Construction, Municipal Authorities
Doris Pölt	SG 1	WWF

Results of the Evaluation

Participants	Sub-Group	Institution
Dietlind Proske	SG 4G	Styrian Provincial Government, Legal Department 6
Gertraud Prügger	SG 4g	Austrian Association of the Protection of Nature
Werner Prutsch	SG 1	Dept. of Environmental Protection, Municipal Authorities
Romana Puxkandl-Ull	SG 1, SG 3, SG 4G	"Haus der Baubiologie" (House of Building Biology)
Harald Ragger	SG 3	Energy Agency of Graz
Franz Reichl	SG 2	Styrian Provincial Government, Specialized Department 1a
Josef Rogl	SG 4G	Municipal Authorities of Graz, A14-City Planning Department
Werner Rosinak	SG 2	Rosinak & Partner ZT GmbH, Vienna
Heinz Rosmann	SG 1	Municipal Authorities of Graz, A14-City Planning Department
Bernhard Sackl	SG 4G	Austrian Alpine Association
Jan Sage	SG 4B	"Stenum"
Josef Saurer	SG 4B	"Saubermacher"
Andreas Schopper	SG 1	Styrian Provincial Government, Specialized Department 1a
Berthold Schleich	SG 4	"ARGE Müllvermeidung" (Working Group Waste Prevention)
Andreas Solymos	SG 2	GVB ("Grazer Verkehrsbetriebe" – Transport Association Graz)
Franz Sölkner	SG 1	
Thomas Ster	SG 4G	Municipal Authorities of Graz, A10/5 – City Garden Dept.
Dieter Strobl	SG 1	Municipal Authorities of Graz, A10/6 – City Surveying Dept.
Viola Thalhammer	SG 4G	"ERDE – Inst. f. Ökopädagogik" "EARTH – Inst. for Eco-Pedagogics")
Richard Trampusch	SG 4B, SG 4P	"AEVG"

Results of the Evaluation

Participants	Sub-Group	Institution
Ketlin Velt	SG 2	"ARGE Luft-Lärm" (Working Group air-noise)
Barbara Waldner	SG 3	Greenpeace
Lucia Waldhör	SG 4B	Chamber of Economics
Gottfried Weißmann	SG 1, SG 2, SG 4G	"ARGE Luft-Lärm" (Working Group air-noise)
Wolfgang Windisch	SG 4G	Municipal Authorities of Graz, A10 – City Building Management
Helmut Werner	SG 1	"Grazer Stadtwerke AG"
Birgit Zelinka	SG 2, SG 4G	Municipal Authorities of Graz, A10/1 – City and Bridge Construction Department

The work in the sub-groups can be described as being very constructive in view of the participants' enormous commitment and the fact that the atmosphere prevailing in the discussions often was very open.

Special thanks are also due to the representatives who were prevented from taking part in the meetings for reasons of time but enriched the discussion by sending written contributions that had been prepared well.

In this spirit, the working groups should remain a constant part of "Eco-City 2000" and continuously observe and assess the development in our city. This is all the more important in view of the positive experience gained in the course of evaluation.

In the special field "energy and climate", both the programme "Eco-City 2000" and the KEK ("Kommunales Energiekonzept" – "Municipal Energy Plan") had to be evaluated. Due to the high number of KEK Team Members (altogether appr. 180), Graz University, Department of Sociology, Ao. Univ.-Prof. Dr. Gerhard Großmann, was charged with making a study in order to allow an objective assessment. In this study, 100 members of the KEK Team were interviewed on the results and the new orientation for future work.

The progress in the sub-groups was presented in an intermediate report to the "Eco-Team of Graz" on March 24, 1999. The final reports were submitted to the "Eco-Team of Graz" for final verification on August 2, 1999. The overall report was elaborated in the course of five meetings of the "Eco-Team of Graz". In the last meeting, which took place on February 7, 2000, it was adopted.

The coordination of the entire evaluation process was assumed by the Agenda Representative DI Dr. Peter Gspaltl (Department of Environmental Protection of Grauburg).

At this point, we would really like to thank all the persons and organizations involved for their constructive cooperation, without which the overall report could not have been created.

3 Results

3.1 Parameters for Sustainability

The extent to which the quantitative targets mentioned in the programme "Eco-City 2000" (parameters for sustainability) have been achieved (extent of realization) is summarized in the following Chart. In this context, the extent of realization of 100%, (which is marked by the red line), corresponds to a complete realization of the stated target. Negative percentages show that the development in these areas is in the opposite direction.

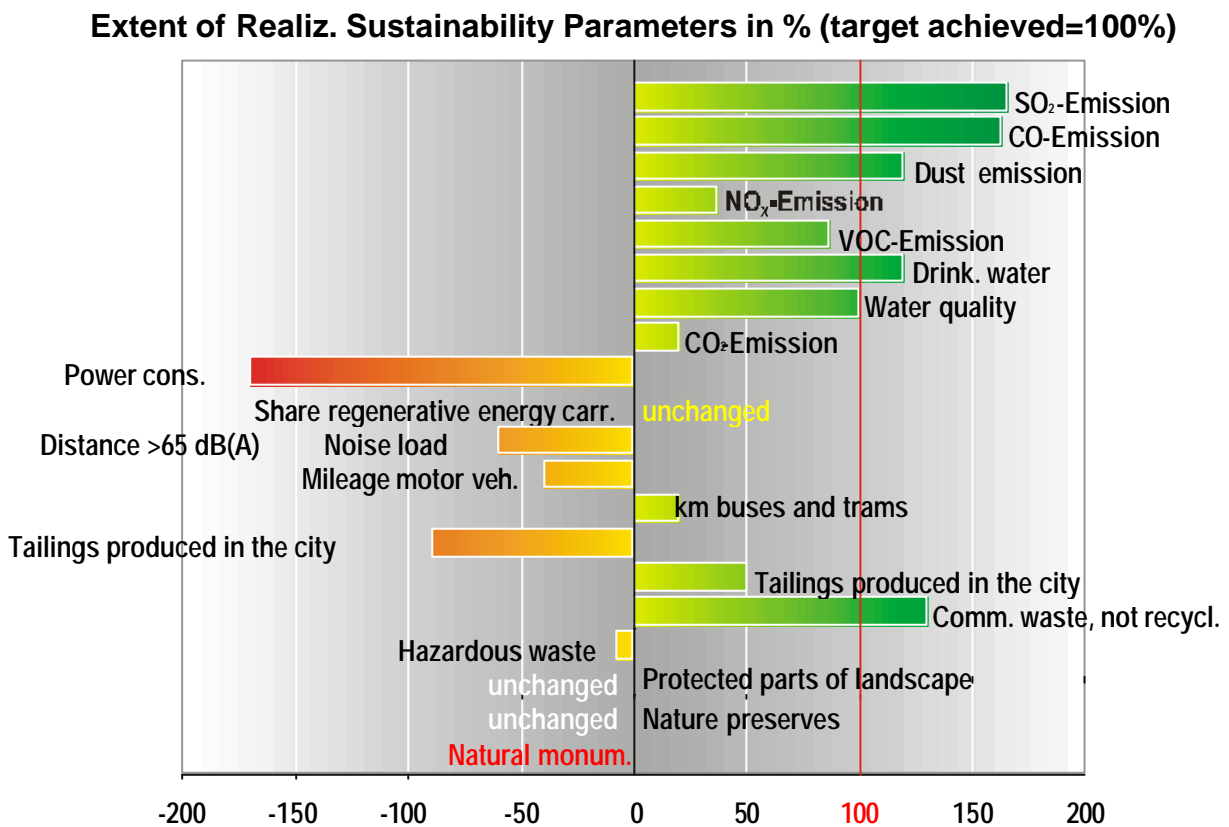


Fig.1

The following Tables (Tables 1, 2) summarize the results of the evaluation of the parameters for sustainability in figures (per cent and absolute).

The development in the individual areas will be described in detail in the following Chapters.

Table 1

Area	Parameters for Sustainability	Target (2000)	Status (year)		Tendency
Air	Emission of				
	SO ₂	-30% (from 1987)	-50% (1988-1995)	😊	↔
	CO	-30% (from 1987)	-49% (1988-1995)	😊	↔
	Dust	-30% (from 1987)	-36% (1988-1995)	😊	↔
	NO _x	-60% (from 1988)	-22% (1988-1995)	😞	↗?
	VOC	-60% (from 1985)	-52% (1988-1995)	😊	↔
Soil	Sealed area	Balance	Studies using a thermal scanner (1996)	😞	↗
	Delivered quantity of drinking water (Grazer Stadtwerke AG)	-5% (from 1993)	-6% (1993-98)	😊	↔
Water	Quality class of water bodies	Brooks I-II	Brooks mainly II	😊	↔

Table 1

Area	Parameters for Sustainability	Target (2000)	Status (year)		Tendency
	<p align="center">Level of the CO₂ Emissions (total)</p>	<p align="center">Mur II -20% (from 1987)</p>	<p align="center">Mur continuously II (2000) without trade and industry! -15% (Cadastral Map for Emissions 95) -4% (Emission Balance) (1988-95)</p>	😊	↘
	<p align="center">Level of the CO₂ Emissions from traffic (Cadastral Map for Emissions 95)</p>		<p align="center">-1% (1988-1995)</p>	😊	↔
	<p align="center">Level of the CO₂ Emissions from domestic fuel (Cadastral Map for Emissions 95)</p>		<p align="center">-22% (1988-1995)</p>	😊	↘

Table 1

Area	Parameters for Sustainability	Target (2000)	Status (year)		Tendency
Energy and Climate	Level of CO ₂ Emissions from traffic (Emission Balance)		-1% (1988-1995)	😊	↔
	Level of CO ₂ Emissions from domestic fuel (Emission Balance)		-5% (1988-1995)	😊	↘
	Level of CO ₂ Emissions from trade and industry		no comparable data for trade and industry 1998		
	Level of power consumption	-7% (from 1994)	+12% (1993-97)	😞	↗
	Share of regenerative energy sources	25% (16%, 1994)	16% (±0%) (1994-98)	😞	↗

Table 1






Area	Parameters for Sustainability	Target (2000)	Status (year)		Tendency
Noise	<p>Length of streets and roads with a noise nuisance over 65 dB(A)</p> <p>Modal Split (only population of Graz)</p>	<p>-10% (from 1994)</p> <p>41% MIT 21% public transp. 16% bicycle 22% on foot (1991)</p>	<p>+6% (1994-98)</p> <p>47% MIT 18% public transp. 14% bicycle 21% on foot (1998)</p>	<p></p> <p></p>	<p>↗</p>
	Traffic	<p>Distance covered by MIT Drivers (MIT – Motorized Individual Traffic) (only population of Graz)</p>	<p>-2% (from 1989/91)</p>	<p>+5% (1989/91-98)</p>	<p></p>
<p>Number of kilometers covered by the buses and streetcars (trams)</p>		<p>+10% (from 1993)</p>	<p>+2% (1993-98)</p>	<p></p>	<p>Approach 2000</p>
<p>Registration of motor vehicles</p>		<p>±0% (from 1989)</p>	<p>Passenger car +19% Total +12% (1989-98)</p>	<p></p>	<p>↗</p>

Table 1

Area	Parameters for Sustainability	Target (2000)	Status (year)		Tendency
Waste	Total waste in the City	-13% (from 1993)	+12% (1993-98)	☹️	↗
	Tailings in the City	-30% (from 1993)	-15% (1993-98)	☺️	↘
	Trade/Industry (non recyclable waste, use of raw and auxiliary materials)	-30% (from 1993)	-39% 18 ÖKOPROFIT Companies (1993-97)	☺️	↘
	Hazardous waste	-50% (from 1993)	+4% 12 ÖKOPROFIT Companies (1993-97)	☹️	↗ New regulation
Natural and Cultivated	Protected landscapes	+50 ha (from 1994)	±0 ha (1998)	☹️	↘ New limit
	Nature preserves	+30 ha (from 1994)	±0 ha (1998)	☹️	↘ New limit
Green Spaces	Natural monuments	+7 (from 1994)	-22 (1998)	☹️	Age, windbreak

Table 2

Area	Parameters for Sustainability	Target (2000)	Status (year)	Tendency
Air	Emission of			
	SO₂	2,551 t/a (1988)	1,286 t/a (1995)	-1,265 t/a
	CO	35,950 t/a (1988)	18,500 t/a (1995)	-17,450 t/a
	Dust	580 t/a (1988)	372 t/a (1995)	-208 t/a
	NO_x	3,052 t/a (1988)	2,367 t/a (1995)	-685 t/a
	VOC	7,437 t/a (1988)	3,598 t/a (1995)	-3,839 t/a
Soil	Sealed area	Balance	Studies using a thermal scanner (1996)	

Table 2

Area	Parameters for Sustainability	Original Value (year)	Status (year)	Difference
Water	Delivered quantity of drinking water (Grazer Stadtwerke AG)	18,436,293 m³ (1993)	17,300,320 m³ (1998)	-1,135,973 m³
	Quality class of water bodies	Brooks II-III Mur II-III (1994)	Brooks mainly II Mur continuously II (2000)	
Energy and Climate	Level of the CO₂ Emissions (total)	no data from industry (from 1988)	1,027,495 t/a (Emissionskataster 1995) 1,218,740 t/a (Emissionsbilanz)	
	Level of the CO₂ Emissions from traffic (Cadastral Map for Emissions 95)	289,600 t/a (1988)	-287,000 t/a (1995)	-2,600 t/a
	Level of the CO₂ Emissions from domestic fuel (Cadastral Map for Emissions 95)	592,000 t/a (1988)	458,500 t/a (1995)	-133,500 t/a
Climate	Level of the CO₂ Emissions from traffic (Emission Balance)	292,384 t/a (1988)	290,165 t/a (1995)	-2,219 t/a
	Level of the CO₂ Emissions from domestic fuel (Emission Balance)	683,623 t/a (1988)	646,117 t/a (1995)	-37,506 t/a

Table 2

Area	Parameters for Sustainability	Original Value (year)	Status (year)	Difference
Energy and	Level of the CO₂ Emissions from trade and industry		no comparable data for trade and industry 1998	
	Level of power consumption	4,820 TJ (1993)	5,417 TJ (1997)	+597 TJ
Climate	Share of regenerative energy sources	16% (1994)	16% (1998)	+0.5% related to the power consumption in Graz
Noise	Length of streets and roads with a noise nuisance over 65 dB(A)	156 km (1994)	166 km (1999)	+10 km
	Modal Split (only population of Graz)	46% MIT 18% public transp. 12% bicycle 24% on foot (1991)	47% MIT 18% public transp. 14% bicycle 21% on foot (1998)	MIV +1% public transp. ±0 bicycle +2% on foot -3%

Table 2

Area	Parameters for Sustainability	Original Value (year)	Status (year)	Difference
Traffic	Distance covered by MIT Drivers (only population of Graz)	2 mio km/day (1989/91)	2.1 mio km/day (1998)	+0.1 mio km/day
	Number of kilometers covered by the buses and streetcars (tramways)	10.5 mio km (1993)	10.7 mio km (1998)	+0.2 mio km
	Registration of motor vehicles	89,505 passenger cars 119,266 total motor vehicles (1989)	106,462 passenger cars 133,062 total (1998)	+16,957 passenger cars +27,592 total

Table 2

Area	Parameters for Sustainability	Original Value (year)	Status (year)	Difference
Waste	Total waste in the City	98,784 t/a (1993)	112,744 t/a (1998)	+13,960 t/a
	Tailings in the City	48,493 t/a (1993)	41,095 t/a (1998)	-7,398 t/a
	Trade/Industry (non recyclable waste, use of raw and auxiliary materials)	3,063 t/a (1993)	1,880 t/a 18 ÖKOPROFIT Companies (1997)	-1,183 t/a
	Hazardous waste	7,914 t/a (1993)	8,239 t/a 12 ÖKOPROFIT Companies (1997)	+325 t/a

Table 2

Area	Parameters for Sustainability	Original Value (year)	Status (year)	Difference
Natural	Protected landscapes	83.4 ha (von 1994)	83.4 ha (1998)	0
Green	Nature reserves	4.6 ha (von 1994)	4.6 ha (1998)	0
Land- scapes	Natural monuments	116 (1994)	94 (1999)	-22

3.1.1 Air

Objectives and Targets

An index for air quality is the concentration of the most important air pollutants in the municipal area of Graz. The Municipal Energy Plan envisages to reduce the pollutants **NO_x, SO₂, C_xH_y, CO (t/a) and dust**, (including street dust), by at least **60% by 2010 (as compared to 1987)**. As for the targets aimed at in the Issue Related Programme, this means to reduce the pollutants **SO₂, CO and dust by 11% by 1996, by 20% by 1998 and by 30% by 2000**, 1987 serving as a reference. In this context, the reference for the reductions is formed by the mean annual values as well as the maximum monthly mean values. The way these targets for the individual air pollutants were to be put in concrete terms and the corresponding action was to be planned was fixed by conceiving the Clean Air Plan.

A special role among the air pollutants is assumed by ozone. In the Ozone Act of the Federal Council, the target prescribed is to reduce the **substances preceding ozone by 40% by December 31, 1996, and by at least 60% by December 31, 2001**. In this context, **the reference year for NO_x is 1985**, (which corresponds to the reduction targets formulated in the Municipal Energy Plan), that for **VOC is 1988**.

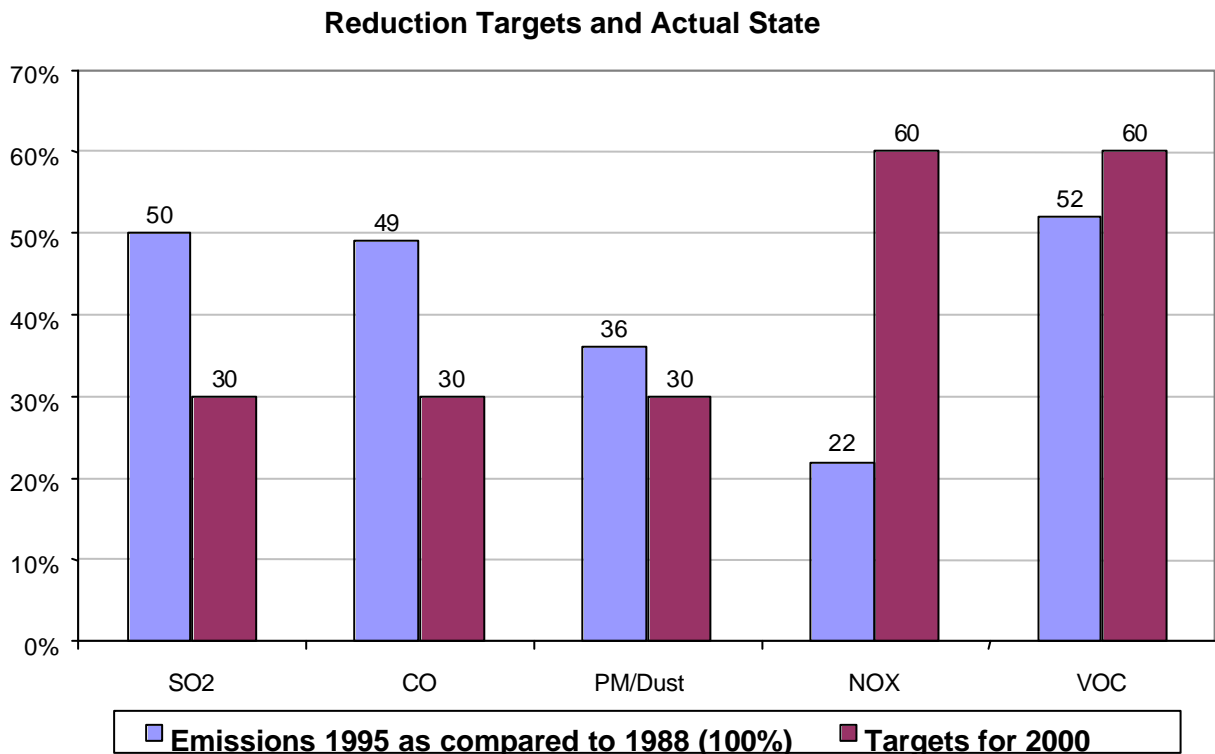


Fig.2: Presentation of the emission reductions 1988-95 (source Cadastral Map for Emissions in Graz 95) as compared to the targets 2000 for air

Air Quality – results of the evaluation

Except for the reductions in the nitrogen oxide and VOC Emissions, almost all targets set for 2000

- **SO₂, CO, dust** **-30% of 1987**
- **NO_x** **-60% of 1985**
- **VOC** **-60% of 1988**

had been achieved or partly even exceeded by 1995. The assessment of the reduction targets in the course of the evaluation was carried out on the basis of the **reference years of the respective Cadastral Maps for Emissions 1988-95**.

From **1988-95**, the emissions were reduced as follows:

- **SO₂** **-50%**
- **CO** **-49%**
- **Dust** **-36%**
- **NO_x** **-22%**
- **VOC** **-52%**

This corresponds to an **absolute emission reduction in t/a** amounting to

- **SO₂** **-1,265 t/a**
- **CO** **-17,450 t/a**
- **Dust** **-208 t/a**
- **NO_x** **-685 t/a**
- **VOC** **-3,839 t/a**

The total emissions for the reference years 1988/1995 are as follows:

t/a	SO₂	CO	PM/Dust	NO_x	VOC
Total 88	2,551	35,950	580	3,052	7,437
Total 95	1,286	18,500	372	2,367	3,598
Difference	-1,265	-17,450	-208	-685	-3,839

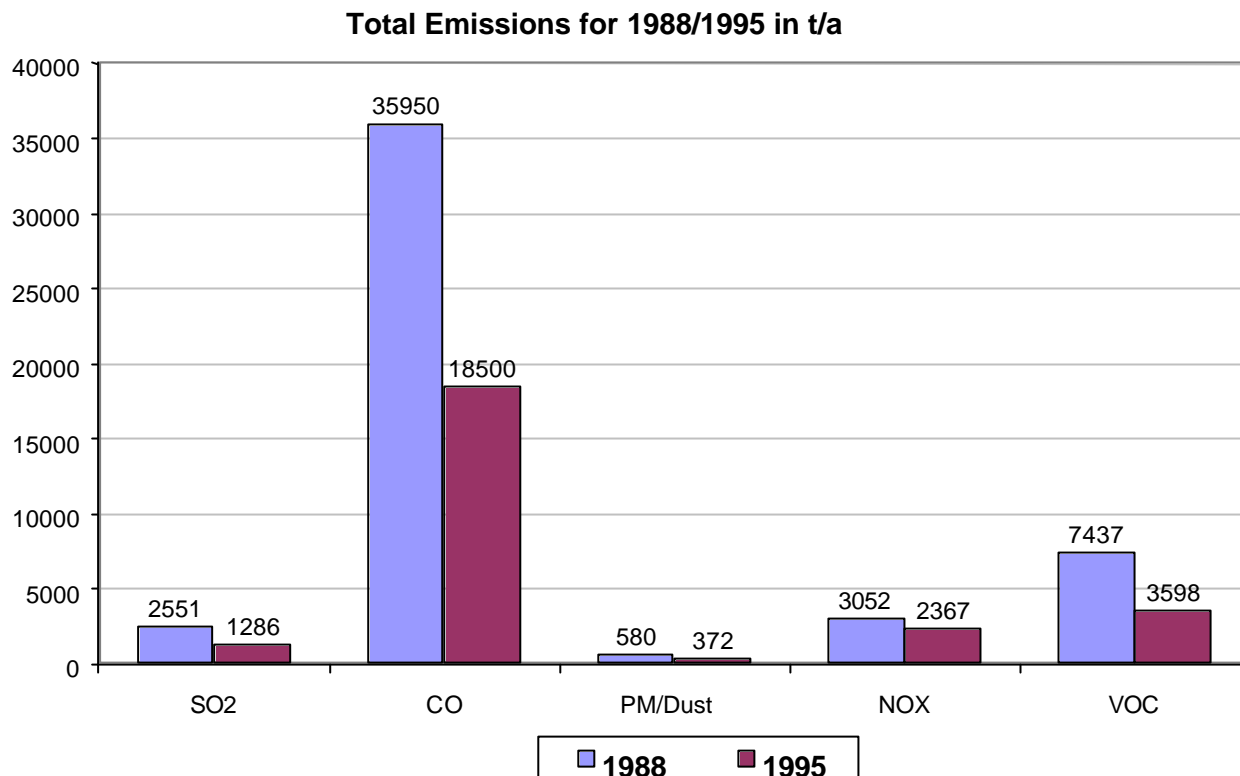


Fig.3: Presentation of the emission reductions 1988-95 (source Cadastral Map for Emissions in Graz 95)

The trend of emission development 1988-1995 in per cent as it is subdivided into individual groups of polluters is as follows:

Comparison	SO ₂ 1988	SO ₂ 1995	CO 1988	CO 1995	PM/Dust 1988	PM/Dust 1995
Traffic	5%	11%	47%	46%	18%	23%
Domestic Fuel	85%	83%	52%	53%	68%	64%
Companies	10%	6%	1%	1%	14%	13%

Comparison	NO _x 1988	NO _x 1995	VOC 1988	VOC 1995		
Traffic	68%	66%	48%	39%		
Domestic Fuel	19%	23%	32%	33%		
Companies	13%	11%	21%	28%		

As for "domestic fuel" and partly "companies", it should be noted that a considerable share of space heating is supplied by district heating and that the only emissions from this type of heat generation that are considered in the Cadastral Map are those coming from the "District Heating Plant Puchstraße".

According to the "Eco-Team of Graz", a reduction in the **NO_x Emission** by 60 % by 2000 as it is specified in the Ozone Act won't be achievable. On the one hand, the potential in the field of technical improvements (catalytic converter) is practically exhausted. On the other hand, traffic continues to increase. As far as immissions are concerned, the reduction has been stagnating since appr. 1994.

As for VOC Emissions, there are new EU Directives. However, these directives are not enforced on a national scale yet.

3.1.2 Water

Drinking Water – objectives and targets

Due to the favourable geographical position of the resources of drinking water, a drastic reduction in the consumption is no topic to be prioritized in terms of supply. Nevertheless, it should be noted that each change of the **eco-system factor water** should be scrutinized quite carefully and that a sustainable water management contributing to saving water should be striven for. Besides good housekeeping with the resources and allowing water to remain in its original eco-systems, the reduction in the consumption of (drinking) water and the commensurate **reduction in the volume of sewage water** are top priorities. Still another important parameter for handling water consists in **linking ecological and economic factors**.

Input Flows

All the input quantities 1997 may be summarized as follows:

Position	Supply	Consumption mio m ³ /a
Households		
Households	Waterworks	12.45
Households	Well	1.02
Residential buildings	Well	0.05
Households, total		13.52
Trade and industry		
Cooling water	Surface water	1.89
Drinking water, service water	Waterworks	1.14
Drinking water, service water	Well	4.71
Trade and industry, total		5.85
Non-residential area		
	Waterworks	1.88
	Well	0.81
Non-residential area, total		2.69
Precipitation		
Evaporation		63.95
Drainage in the sewerage		3.21
Seepage		36.98
Precipitation, total		104.14
Input	Waterworks	15.47
	Well	6.59
	Precipitation	3.21
	Surface water	1.89
<u>Input, total</u>		<u>27.16</u>

Source: **Grazer Wasserbilanz (Input/Outputströme)** Montanuniversität Leoben, Institut für Entsorgungs- und Deponietechnik, 1998

Water Balance of Graz (input/output flows), Leoben University, Institute of Waste Disposal and Landfill Technology, 1998

The households prove to be the main consumer with a share of 56.5% in the overall volume of 23.95 mio. m³/a (without precipitation).

Results of the Evaluation – Water

Trade and industry have a share of 32.3% in the overall consumption, 4.71 mio. m³/a or 19.7% being supplied autonomously. As for the non-residential area, the share is relatively low, amounting to 11.2%. Furthermore, its needs can largely be covered by means of municipal supply.

The **municipal area is largely supplied with drinking water** by a pipeline, which has a length of appr. 1,100 km and is provided by the Waterworks of the "Grazer Stadtwerke". Besides, water also is taken from soil and surface water by private persons and, to a large extent, by trade and industry. Industrial large-scale consumers, in particular, increasingly have recourse to these opportunities of self-sufficiency for economic reasons.

The **water volume delivered** by the "Grazer Wasserwerke" amounted to about **18 million m³** in **1993** (1985: 21 mio. m³). The **target fixed for 2000** was a volume of about **17 mio. m³ (-5%)**.

Drinking Water - results of the evaluation

The target to reduce the **delivery of drinking water** by the "Grazer Stadtwerke AG" by

- **-5% as compared to 1993**

by 2000 had been achieved as early as 1998.

The **delivery of drinking water** by the "Grazer Stadtwerke AG" was reduced from

- **18,436,293 m³ (1993)**

to

- **17,300,320 m³ (1998)**

This corresponds to a **reduction** of

- **-6% from 1993 to 1998.**

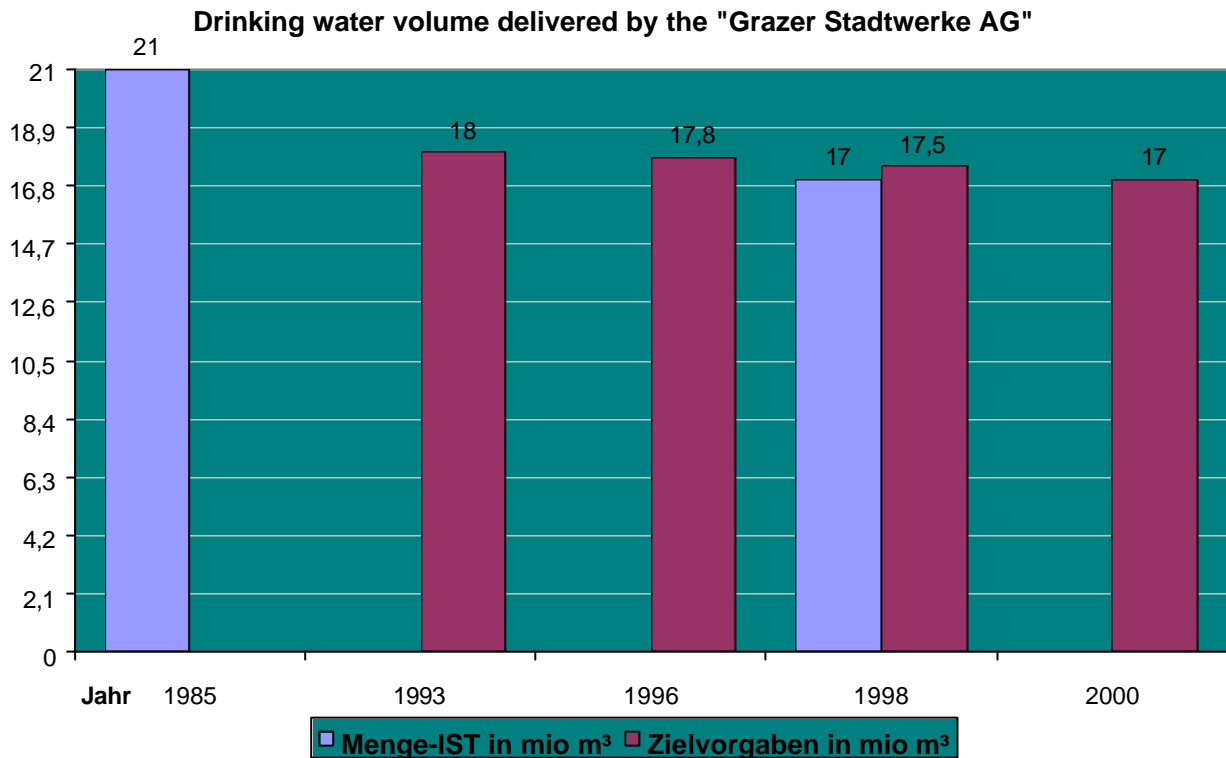


Fig.4: Delivered drinking water volume (Grazer Stadtwerke AG) and targets 2000

Since 1985, the total reduction in drinking water delivered by the "Grazer Stadtwerke AG" has amounted to appr. 21%. This was the case even though this period saw 4,825 new connections (now there are altogether 26,756 house connections) for residential buildings, trade and public buildings. This may be traced back to the **utilization of saving potentials** in households as well as to other water sources in trade and industry. By way of summary, it may be noted that the evolution of drinking water consumption depends on the economic development, the general development of the population, (including the number of students, commuters and tourists), technical innovations and the willingness to put them to use. In principle, the **general trend towards a reduced per capita consumption, which prevails world-wide**, can also be seen in **Graz**.

What is particularly noteworthy is the **saving in water consumption**, which could be achieved by companies of Graz in the course of the successful **ÖKOPROFIT** Project. The water consumption in 15 ÖKOPROFIT Companies, which have a common share of 46% in the water consumption of trade and industry in Graz, could be **reduced by altogether 1.4 mio. m³** from 1994 and 1997 by taking well-aimed action (Source: ÖKOPROFIT Graz – Data Evaluation 1994-97). The absolute saving of 663,000 m³ of drinking water, which was achieved in 1997 alone, represented 11.5% of the total water consumption of industry and large-scale business in Graz. In the 15 companies, the absolute cost reduction enabled by the reduction in water consumption (PROFIT) amounted to appr. ATS 17 mio (appr. \$ 1,235,400).

Results of the Evaluation – Water

A reduction in water consumption in trade and industry is particularly important in view of the sewage situation. **1.4 mio. m³ less water consumption means 1.4 mio. m³ less sewage water**, which would have to be treated by a high technological expenditure!

What is particularly noteworthy is the **high quality** of the drinking water delivered by the "Grazer Stadtwerke AG". The improvement of the quality was achieved by a policy of shifting the winning from the Waterworks Feldkirchen situated in the south to the municipal wells of the Water Works Andritz and Friesach (Commune of Gratkorn) and to the central supply ZWHS ("Zentralwasserversorgung Hochschwab-Süd GmbH" – "Central Water Supply Hochschwab-South Ltd.") with a right of use and enjoyment amounting to 165 l/s.

The nitrate values of the municipal wells of the Water Works Andritz und Friesach as well as of the water received from ZWHS are between 4 and 8 mg/l, the admissible maximum concentration amounting to 50 mg/l. The Water Works Feldkirchen, which has been out of operation since 1993, has nitrate values of 30 mg/l and serves as a capacity reserve if other waterworks fail.

Impurities caused by plant protectives are not detectable in the water of the Waterworks Andritz and Friesach or in the water received from the ZWHS. In the Waterworks Feldkirchen, which is out of operation, the values for atrazine and desethylatrazine are between 0.1 and 0.15 µg/l, the admissible maximum concentration amounting to 0.1 µg/l. The impairment of the water of the Waterworks Feldkirchen primarily is due to agriculture dominated by water-soluble mineral fertilizers and highly dosed pesticides.

Strategy

If a sustainable development in drinking and service water is to be achieved, the top priority is to reduce water consumption even more so that the sewage volume can be reduced. For compensating economic loss in the field of water supply, pricing should be based upon internalizing costs as far as possible and upon changing paradigms from "water volume supplier" to "water service provider".

Furthermore, it is recommended to intensively link all the parameters relevant to water to one ecological water management concept – including use planning phase) and sewage logistics.

Running Waters – objectives and targets

The cleanliness of running waters is, among other things, characterized by the **Quality Class of Water Bodies** (water quality of water bodies). This classification mainly refers to the parameters in the field of the nutrient content and the commensurate effects. For evaluation, only the factor Quality Class of Water Bodies was used.

The Quality Class of the **Mur River** was classified as being **II-III** in **1995** and was improved to **Quality Class II** by **2000**.

As for the Quality Classes of the **Brooks of Graz**, the classification was **between II and III** in **1994**, and an **improvement to Quality Level I-II** was targeted.

Running Waters – results of the evaluation

The **Water Quality of the Water Bodies of Graz** could be **considerably improved** in the last few years. Now it largely corresponds to the final point of natural self-cleaning processes for running waters of low mountain ranges and lowlands, i. e. Quality Class II, as it also is typical under natural conditions that are not influenced or are slightly influenced in anthropogenous terms. The fact that Quality Class I can only be achieved for the fewest brooks is primarily due to topographical and climatic reasons.

By 2000, the classification of **Quality Class of Water Bodies** looked as follows:

- **Brooks of Graz: mainly II**
- **Mur: continuously II**

By now the Stufenbach, the Thalerbach, the Ragnitzbach and the Stiftingbach may be assigned Quality Class II throughout their course.

As for the larger brooks of Graz, only the Kroisbach still is loaded considerably in certain sections. However, the progress of sewage sanitation in its catchment area, which has been achieved in the last few years, is clearly reflected in the improvement of the quality level by half a Quality Class on the running distance from Maria-Trost to St. Johann since 1993. In principle, the impact caused by household sewage has been reduced considerably by the ongoing development of the sewerage system.

What must be regarded as being problematic is the use of the banks of smaller brooks, e. g. the Petersbach, as storage area for grass clippings and compost. For the conditions of these water bodies can be highly impaired by the low draining. Furthermore, a restricted self-cleaning power must be diagnosed in large sections of the water bodies. This fact is due to the general denaturation of the structure of water bodies.

Results of the Evaluation – Water

This denaturation of water bodies (regulation of the course, artificial profiles, missing or untypical vegetation on the banks) is an impairment of most water bodies in the municipal area, which is typical of residential areas. In future, it will also influence the ecological overall assessment of the running waters of Graz.

The main target in terms of water management to be achieved by a continuing sanitation of running waters in Graz that may be deemed useful is Quality Class II. For the brooks of Graz primarily correspond to the type of brooks in lowlands, of which this Quality Class is typical.

In future, the assessment of the Mur River should not be limited to the municipal area of Graz, where the target of a Quality Class of Water Bodies of II has been achieved continuously. The improvement in the quality of the water body after the Sewage Clarification Plant Gössendorf (right now II-III), which is caused by heavy impacts at the entry point, should also be regarded as being a target in the sense of regional deliberations. The result of the transformation of the Sewage Clarification Plant, which is being done with a high financial expenditure, should consist in achieving Quality Class II even in this section of the water body.

Strategy

Proposals for a **sustainable handling of running waters** in the municipal area are contained in the **Issue Related Programme "Green Spaces"** as well as in the documents of the **"Grazer Bachenquetten" ("Surveys of Brooks in Graz")**. The actions to be prioritized are the protection of strips of bank borders in regional planning and the retreating of denatured structures of water bodies (regulation of the course, artificial profiles, missing or untypical vegetation on the banks).

Sewage Water

The issues related with sewage water were not explicitly discussed in the original paper of the Issue Related Environmental Programme. As, however, it is so important in the sense of Agenda 21, it is incorporated into the evaluation although no parameters have been fixed.

A detailed summary of the output volumes in 1997 looks as follows:

Output Flows

Position	mio m ³ /a	Share sewage in sewerage relating to ref. in %
Households		
Sewage in sewerage	11.58	86
Sewage led from small-scale sewage clarification plants into draining ditches	0.05	
Trade and industry		
Sewerage	2.64	50
Draining ditches	0.27	
Sewage in groundwater	0.02	
Cooling water in surface waters	1.89	
Non-residential areas		
Sewerage	1.87	70
Entry of external water – sewerage	3.33	
Precipitation – sewerage	3.21	
Periphery	0.8	
Total output – sewerage	23.44	
Inflow Sewage Clarification Plant Gössendorf	21.20	
Total output	2.20	
Draining ditches + groundwater		
Total output	25.66	

Source: **Grazer Wasserbilanz (Input/Outputströme)** Montanuniversität Leoben, Institut für Entsorgungs- und Deponietechnik, 1998

Water Balance of Graz (input/output flows), Leoben University, Institute of Waste Disposal and Landfill Technology, 1998

The difference of 1.5 mio m³ (5,5%) to the input of 27.16 mio m³ is due to losses of use. The private sector (households) is the largest consumer and emits the largest quantities.

Sewage Water – results of the evaluation

In general the situation of sewage water in Graz may be classified as being very positive !

The density of connections of the households in Graz to the sewerage system was increased from

- **95% (1994)**

to

- **97% (1998)**

by the existing obligation to be connected. At the same time, the number of drainage pits and absorbing wells is decreasing continuously. Small-scale sewage clarification plants of any kind can only be used for sanitation outside areas of sewerage.

In general the **density** of the sewerage system is in a good state so that the loss of sewage water during the drainage to the sewage clarification plant is insignificant.

As far as **heavy metal load** is concerned, the hitherto evolution of the sewage situation may be classified as being positive. For the heavy metal content in sewage sludge has shown a decreasing tendency for several years and is **far below the limits admissible according to the Sewage Sludge Regulation**. This is due to comprehensive actions taken by companies indirectly discharging sewage. The remaining residual content (with a level that is already comparatively low) is due to diffuse discharge from the normal surroundings, (e. g. road traffic). The sewage sludge will be disposed of on landfills after being dehydrated.

With the exception of boundary areas, the City of Graz has a **mixed sewerage system** (joint discharge of muddy and precipitation water). If this is possible in terms of technology and water right (area to be protected), the Sewerage Construction Department has preferred **seepage** (water from roof areas) or **irrigation** (water from park and driving areas) for many years. The possibility to store rain water in cisterns and use it for watering gardens afterwards is recommended by the Sewerage Construction Department.

Outside the areas with mixed sewerage systems, **rain water sewerage** will particularly be necessary wherever a seepage or irrigation is not possible in view of the conditions of the soil.

The future developments tend to keep rain water from the local sewerage system and to irrigate or seep it at the site – as far as this is possible in legal terms. In order to make sure the regulations of the Spatial Planning Act can be put into action, the Sewerage Construction Department has applied for the adoption of the following paragraphs into the revision of the "STEK – Bereich Abwasser" (STEK – Stadtentwicklungskonzept – City Development Concept; Bereich Abwasser – Sewager Water):

- **preferring a separating system with a separate rain water drainage into the drainage ditch**
- **retreating existing brook discharge into the public sewerage system and seepage of this water or drainage to the Mur River**
- **intensified seepage and irrigation of meteor water for unloading the sewerage system and concentrating the groundwater body**

In this context, the "Eco-Team of Graz" recommends to elaborate an **Issue Related Programme "Rain Water"**. Among other things, this programme is to fix where precipitation water can be directly recirculated into the natural cycle or where it is necessary in technological terms to install rain water discharge channels.

3.1.3 Soil

Objectives and Targets

Due to the increase in **building activities**, the extension of traffic infrastructure, incl. the creation of additional parking lots, the sealed surface of Graz is constantly increasing. Therefore, actions in terms of environmental policy should be targeted at creating new green spaces by unsealing and planting roof areas and minimizing new sealing. New sealing should, as far as possible, be compensated by different actions (planting, grassing, etc.) in coordination with other Issue Related Programmes, (e. g. "Living").

Therefore, the sealed area was incorporated into the evaluation (eco-balance). The existing natural seepage areas for brooks without draining ditches (Bründl,- Einöd,- Katzelbach et al.) must be guaranteed and kept from being covered with buildings even in future. The existing natural inundation areas (retention areas), which serve for flood protection in underlies, also need to be preserved as far as possible.

In December 1997, the Municipal Council of Graz voted the Issue Related Programme "Green Spaces" as a guideline for the policy in terms of green spaces to be pursued by the City of Graz.

As for the sealing degree, the following actions/targets are included in the **Issue Related Programme "Green Spaces"**:

- **restriction of the sealing degree (city vegetation in building areas)**
- **restriction of the sealing degree and fixing the character of surface of traffic areas and parking lots (groundwater)**

Results of the Evaluation – Soil

Up to now, the following instruments have been used to restrict the sealing of the soil:

- Since the mid-70's, planting in parking spots has been attached increasing importance to (for 4 passenger cars 1 tree, green strips and lawn honeycomb bricks instead of large-surface concrete coating). As these planting recommendations of the City Planning Department were fixed in the building decisions in a more or less consistent way, this system has eventually become a standard.
- Thanks to the Styrian Building Act 1995 § 8 (free spaces and planting), the building authorities had an instrument effective in legal terms for the first time. "Building management has to make sure that sufficient free spaces corresponding to the use and the position of the building are maintained." Furthermore, " the authorities must, according to the local conditions, prescribe planting measures for parking lots for motor vehicles, flat roofs, courtyards and operational facilities in order to design a corresponding layout of streets and communes and a corresponding landscape and to maintain and improve micro-climate and living conditions."
- These provisions of **§ 8 BauG 1995 (Baugesetz – Building Act)** have been applied at any procedure acc. to **§ 18** leg. cit. (fixing the building bases for the single case) and at the creation of **building plans** since 1995.
- In parallel, the **building degree** – i. e. the ratio between the surface covered by buildings and the building area – as well as the design of the outer facilities, such as access roads, parking lots, are fixed in the procedures mentioned above. This will always aim at preserving a share of unsealed areas that is as high as possible.
- The programme for planting **trees in streets** and for replacing impermeable surface coats by green strips and tree disks reached its climax by the late 80's and has upgraded the optical appearance and atmosphere in numerous streets (Figures City Garden Department, Issue Related Programme "Green Spaces"). It would be desirable to continue this project, which has, more or less, come to a standstill since the early 90's. The Issue Related Programme "Green Spaces" suggests further sites and opportunities in its "Actions on District Level".
- Planting trees on a large scale and considering the sealing of the soil also are important planning concerns when it comes to the **redesign of public squares** (right now Lendplatz, Griesplatz).
- In this context, it should not be forgotten that the Tree Protection Regulation of Graz has considerably contributed to protecting old trees or to counteracting a reduction in the green substance and in the unshielded areas by planting substitute trees.

Zoning Plan

In combination with the **City Development Concept**, the Zoning Plan provides the planning instrument with the biggest potential for preserving the living space (recreational areas) as well as of the compensating areas valuable in terms of ecology and climate, above all in the green belt. It is true that no "unsealing" will be possible retroactively. Nevertheless, it is possible to protect and preserve the soil that has not been paved up to now.

The current basis for the degree of soil sealing is formed by the **Classification of Surface Utilization**.

Results of the Evaluation – Soil

Based upon the data acquired by the DAEDALUS Aeroplane Scanner in 1996, a survey of the areas in the municipal areas of Graz that were wooded, planted and sealed was made. This picture clearly shows the ratio between sealed and unsealed areas and distinctly identifies individual problematic zones (railway station, industrial zones Steyr Daimler Puch, Eurostar, Köglerweg). The map is available on a CD-ROM.

Results of the Evaluation

By **January 1, 1997**, the **Municipal Area of Graz** had shown the following picture in terms of **surface utilization in ha** (Statistical Yearbook 1997):

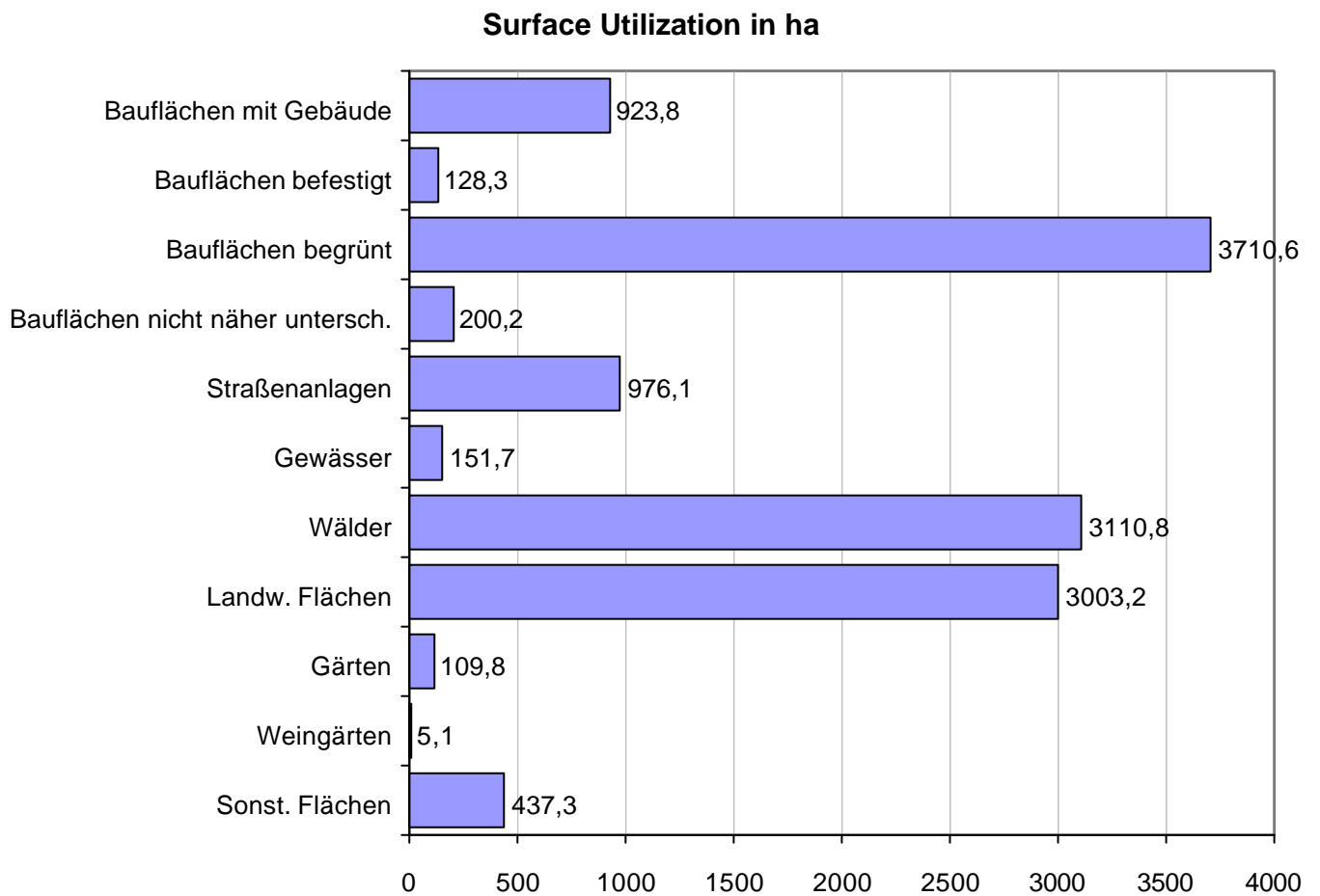


Fig. 5

Building areas					
Buildings ha	paved ha	planted ha	no clear distinction ha	Streets + roads ha	Other areas ha
923.8	128.3	3.710.6	200.2	976.1	437.3
Vineyards ha	Forests ha	Waters ha	Agricult. areas ha	Gardens ha	Total area ha
5.1	3,110.8	151.7	3,003.2	109.8	12,756.9

3.1.4 Noise

Objectives and Targets

As noise occurs in so many different ways (time, type, intensity), it is quite difficult to characterize it by using one single parameter. As, however, traffic noise is the main source of noise annoyance (ÖSTAT Study (ÖSTAT – Österreichische Statistik – Austrian Statistics) Volume 1,046 "Umweltbedingungen von Wohnung und Arbeitsplatz" ("Environmental conditions of flat and job")), the noise annoyance caused by the streets and roads – and, in particular, the size of the highly loaded areas, where the load goes beyond 65 dB(A) – are useful hints for the noise situation in the city, regional development being reflected as well. An increase in highly loaded streets is directly linked with city development. For example, the erection of large-scale shopping centres at the periphery, shifting jobs from Graz and the erection of housing estates in the environs will considerably increase traffic on high-capacity streets and roads or make it necessary to build and launch streets and roads suitable for higher speeds.

Therefore, an important quantitative target of noise protection policy consisted in **reducing the distance covered on the streets and roads loaded with more than 65 dB(A) (during the day)** by 10% by 2000. This meant a reduction by **3% by 1996, by 7% by 1998 and by 10% by 2000, 1994 serving as a reference.**

Results of the Evaluation

The distance covered on the **streets and roads** of the studied main street network of Graz, **which were loaded with > 65 dB(A)**, results from a study made by Prof. Kurt Fallast ("Ingenieurbüro für Verkehrswesen" – "Engineering Office for Traffic"), which is based upon the "Grazer Lärmkataster für das Hauptstraßennetz 1994" ("Cadastral Map for Noise on the Main Street Network in Graz 1994").

The studied street network primarily includes the streets for which the admissible maximum speed amounts to 50 km/h and more. As a whole, 349 sections "homogeneous in terms of noise" with an overall length of 230.5 km (total street network of Graz 1004 km) are studied.

The distance covered on the streets and roads loaded with > 65 dB(A) increased from

- **appr. 156 km in 1994**

to

- **appr. 166 km in 1999**

This corresponds to an increase in the distance covered on streets and roads loaded with > 65 dB(A) of appr.+6% (10 km).

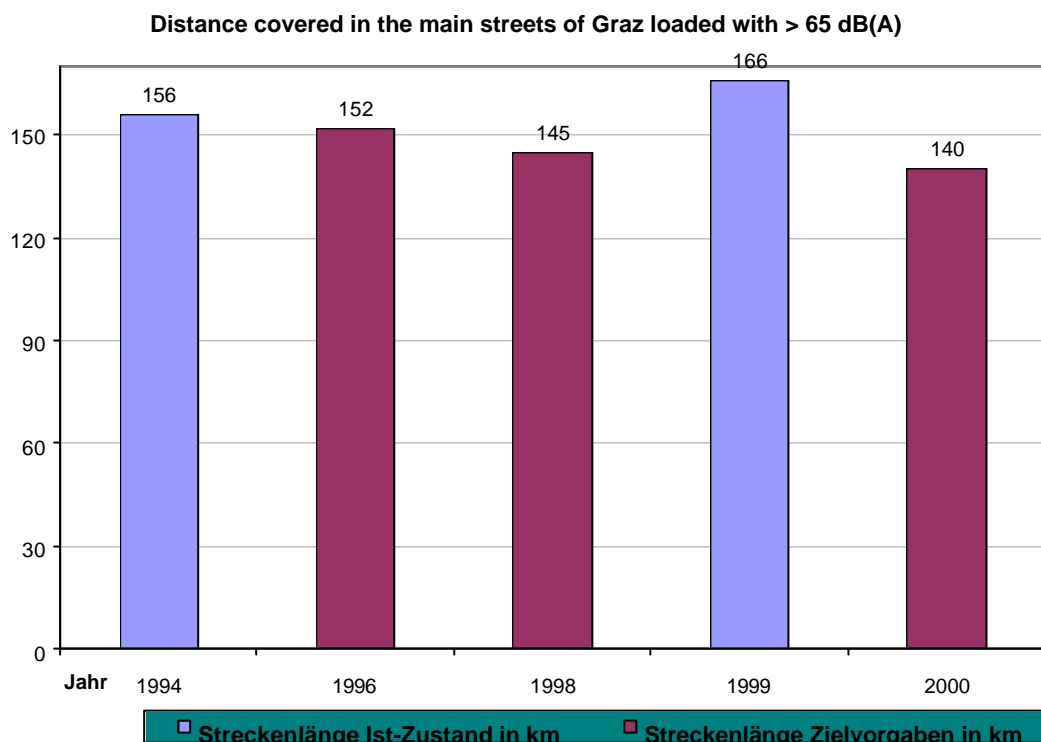


Fig. 6: Distance covered on the **streets and roads** of the main street network of Graz, which were loaded with > 65 dB(A)

A comparison of the balance of distances according to the **admissible maximum speed (AMS) and noise level** between 1994 and 1999 looks as follows:

	1994	1999	1994	1999
Noise level dB(A)	AMS 50 km/h Distance appr. km	AMS 50 km/h Distance appr. km	AMS 60 km/h Distance appr. km	AMS 60 km/h Distance appr. km
55-60	8	13		
60-65	60	53		
65-70	125	125	2	6
70-75	9	10	4	10
Noise level dB(A)	AMS 70 km/h Distance appr. km	AMS 70 km/h Distance appr. km	AMS >70 km/h Distance appr. km	AMS >70 km/h Distance appr. km
55-60				
60-65				
65-70	6			
70-75	2	5	8	10

Results of the Evaluation – Noise

It becomes quite obvious that streets and roads with a higher admissible maximum speed are much louder. This is, on the one hand, due to the fact that such streets and roads are exposed to higher traffic impacts and, on the other hand, due to the fact that higher speeds will also cause more noise.

Whereas the distance covered on streets and roads that had an admissible maximum speed of 50 km/h and were loaded with > 65 dB(A) has remained about the same (+1 km) in the period of observation, the corresponding distance covered on streets and roads that had an admissible maximum speed of 60 km/h has increased by 10 km in the last few years and that of streets and roads that had an admissible maximum speed of 70 km/h remained about the same (- 1 km).

This means that the **main share in the increase** the distance covered on streets and roads loaded with > 65dB(A) had, from 1994-1999, been assumed by the streets and roads with an **admissible maximum speed of 60 km/h**.

A comparison of the **balance of distances** according to the **road preservers** between 1994 and 1999 looks as follows:

	1994	1999	1994	1999
Noise level dB(A)	Federal Roads Length appr. km	Federal Roads Length appr. km	Provincial Roads Length appr. km	Provincial Roads Length appr. km
55-60				
60-65			21	20
65-70	44	32	33	32
70-75	18	25	2	7
Noise level dB(A)	Municipal Roads Length appr. km	Municipal Roads Length appr. km		
55-60	11	10		
60-65	44	33		
65-70	57	66		
70-75	2	4		

As could be expected, the differentiation according to road preservers shows that the Federal Roads are made to have the largest share of distances covered in the noise level > 70 dB(A) by the higher admissible maximum speed and higher traffic load.

Results of the Evaluation – Noise

The noise annoyance on Municipal Roads has considerably increased since 1994. For example, the distance covered in the area of Municipal Roads loaded with 65-70 dB(A) has increased by 9 km, that of Municipal Roads loaded with 70/75 dB(A) by 2 km.

The noise annoyance caused by Federal and Provincial Roads has been shifted to the higher area of 70-75 dB(A) (+7 km and +5 km resp.) whereas the distance covered at a load of 65-70 dB(A) has decreased (-12 km and -1 km resp.). On the whole, the share of the Federal and Provincial Roads in the distance covered on streets and roads loaded with >65 dB(A) decreased by 1 km whereas that of Municipal Roads increased by 11 km.

The **preventive noise protection** of the neighbourhood has recently been increasingly achieved by such **development solutions** as closing gaps, a pertinent planning of new buildings, (e. g. housing estate "Arlandgründe": living and relaxation areas showing to the yard) and tracks (underground tracks) as well as the calming of existing **inner yards**. Such actions as sound insulating windows or noise protection walls are **secondary actions**.

As for St. Peter Hauptstraße, a **Noise Reduction Plan** was established for this pilot area in 1998.

As the studies have shown, it is mainly road traffic noise over night that is the noise emitter relevant for noise abatement actions. The following actions were identified as being **realizable quite soon without causing too many costs**: reducing the speed limit over night (from 100 km/h to 80 km/h, from 50 km/h to 30 km/h) and a pertaining monitoring; applying noise reducing coats in the course of road sanitation; additionally building noise protection walls.

Even though traffic and, above all, road traffic may be regarded as being the main source of noise annoyance in living areas, causing 80%, the extent of noise annoyance caused by **trade and industry, (e. g. guest gardens), as well as sports and leisure facilities** must not be underestimated. In the sense of improving living quality, above all in the inner city, the target must therefore be to reduce noise annoyance to which the inhabitants are exposed by legal basic conditions, such as regulating the opening hours of guest gardens or by taking corresponding noise abatement actions.

In view of the variety and complexity in legal and technical terms, it is recommended to develop a **comprehensive noise protection concept with priorities**.

3.1.5 Energy and Climate

Objectives and Targets

The most restrictive requirement placed on the energy sector was fixed by the obligation to reduce the **CO₂ Emissions** by 50% as compared to the **reference year 1987** by 2000, which was voted by the Municipal Council (1990) in the spirit of the Climate Alliance. When the programme was created, the level of the CO₂ Emissions amounted to about 1.88 million tons CO₂ a year.

It is also in the sense of this requirement that the Municipal Energy Plan pursues the target to increase the **share in the renewable energies to 40% by 2010** or to reduce **power consumption (as compared to 1994) by 18% by 2010** as a symbolic getting out of nuclear energy. When the programme was created, the use of **regenerative energy sources**, (above all biomass and hydroelectric power), amounted to about **3550 TJ or 16% of the total energy consumption**.

The following **intermediate targets** for the Issue Related Environmental Programme were derived from these requirements:

- **CO₂ Emissions: -10% by 1996, -15% by 1998 and -20% by 2000**
- **Power consumption: -2.5% by 1996, -5% by 1998 and -7% by 2000**
- **Share of regenerative energy sources: 19% by 1996, 22% by 1998, 25% by 2000**

CO₂ Emissions – results of the evaluation

The data **of the Cadastral Map for Emissions in Graz 1995** and the **Cadastral Map for Energy and Emission** (Pischinger) was used for the evaluation.

In this context, it should be noted that there is no reliable data on the CO₂ Emissions in Austria.

The CO₂ Emissions stated in the **Cadastral Map for Emissions in Graz 1995** only refer to the municipal area of Graz and do **not** include the emissions caused by **power consumption**. On the other hand, they do include the emissions from **wood heating** (CO₂ neutral). As for **companies in Graz**, there is no **comparative data from 1988**.

A comparison of the **Cadastral Map for Emissions 1988 and 1995** shows the following scenario for the emission of CO₂:

Comparison t/a	CO ₂ 1988	CO ₂ 1995
Traffic	289600	287000
Domestic fuel (space heating)	592000	458500
Trade/industry	no data	281500

Comparison of the Cadastral Maps for Emissions of CO₂ 1988 / 1995

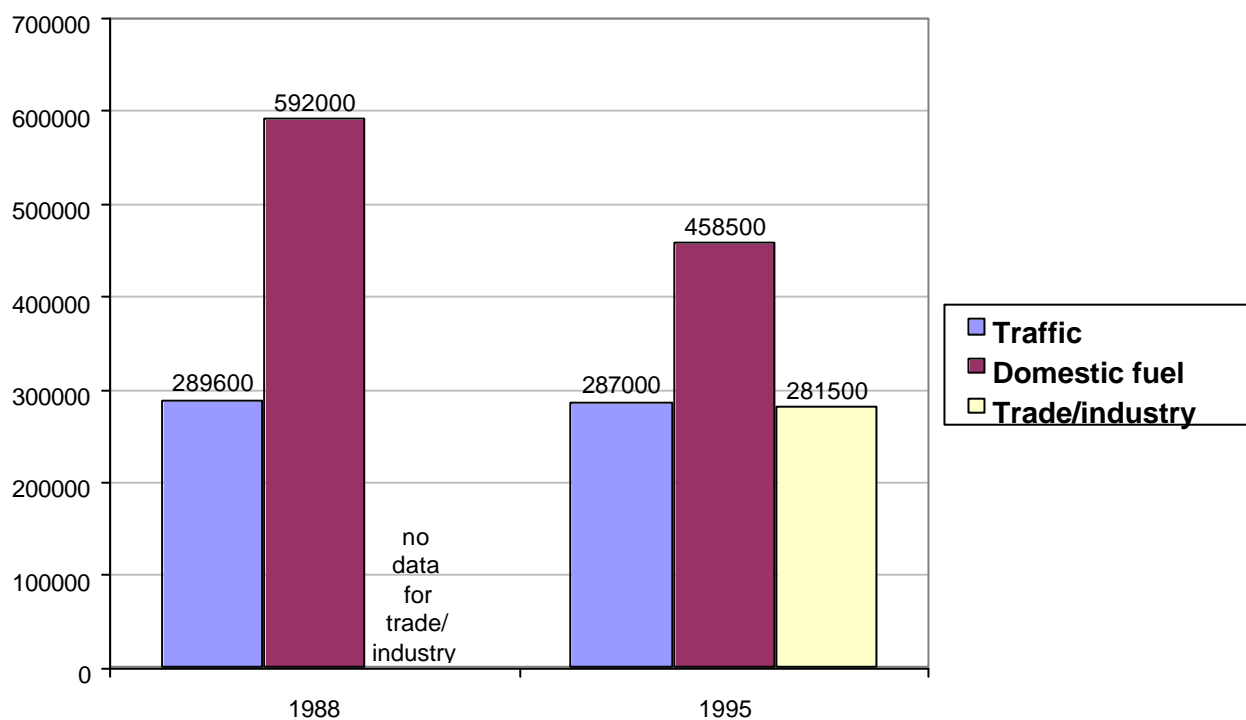


Fig. 7: Comparison of the CO₂ Emissions from the **Cadastral Maps for Emissions in Graz 1988/95**

For the sectors **traffic and domestic fuel** (space heating), the Cadastral Map for Emissions shows a

- **reduction in the CO₂ Emissions by -15% (-136,100 t/a) between 1988 and 1995**

The **Cadastral Map for Energy and Emissions for 1995** (Pischinger), which was created in 1997, reflects the **total balance of the CO₂ Emissions for Graz**. However, it differs from the **Cadastral Map for Emissions in Graz** in the fact that the latter only includes CO₂ Emissions directly produced in Graz while the balance also assesses energy consumption. Therefore, it should be noted that a considerable share of space heating in Graz is generated by means of district heating and that the only emissions from this type of heat generation that are considered in the **Cadastral Map for Emissions in Graz** are those coming from the "District Heating Plant Puchstraße".

In the **total balance of the CO₂ Emissions for Graz**, district heating and electric power are assessed very strictly in connection with their use for heating purposes (space heating and hot water treatment). For the sector domestic fuel, this means that the CO₂ Emissions are higher than the data from the Cadastral Map. Wood firing (CO₂ neutral) is not considered in the total balance.

When all the emission sectors are considered, a **comparison of the CO₂ Balances of 1988 and 1995** shows the following trend:

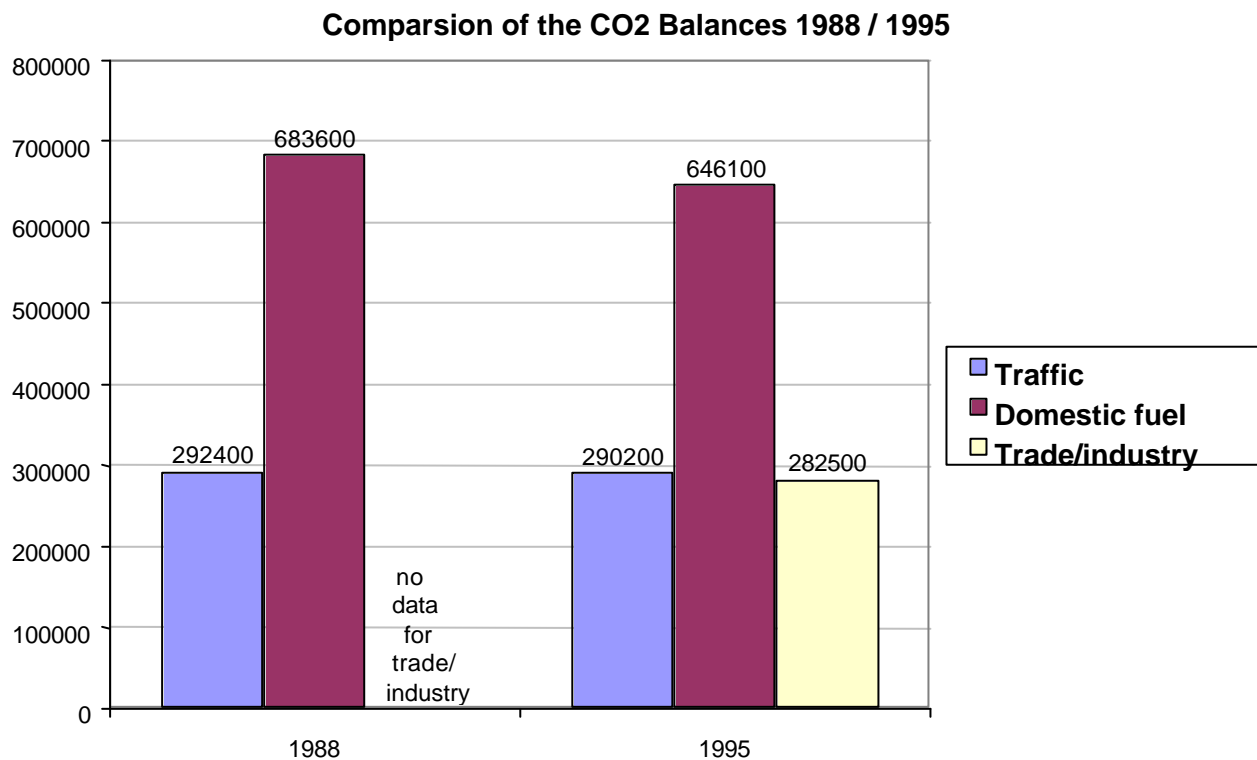


Fig .8: Total Balance of the CO₂ Emissions for Graz 1988/95; for 1988, there was no data from trade and industry

For the sectors **traffic and domestic fuel**, the **comparison of the balances** thus shows a

- **reduction in the CO₂ Emissions by –4% (–39,725 t/a) between 1988 and 1995**

It may be assumed that energy efficiency in industry has definitely been increased by various conversions, (e. g. to gas), in the last few years. In this sense, the results stated above definitely allow us to talk about a **turn of trend** even though an increase in the CO₂ Emissions may be expected for traffic in view of recent studies.

However, the **target of –20% CO₂ Emissions by 2000** cannot be achieved.

International Agreements on the Reduction of the CO₂ Emissions

Toronto Target 1988: In the final declaration of the "World Conference on the Changing Atmosphere", a reduction in the CO₂ Emissions by 20% by 2005 was recommended on the basis of the data of 1988. The Austrian Federal Government declared itself for this target in its Energy Reports 1990 and 1993.

Climate Alliance 1989-1995: About 400 European communities, cities and provinces decided to join the Climate Alliance for preserving the earth atmosphere and to reduce the CO₂ Emissions in their spheres of influence by 50% as compared to 1987 by 2010.

UNCED – Rio de Janeiro 1992: 154 states and the European Community signed the Framework Convention of the United Nations on climatic change. The goal was to stabilize the greenhouse gas concentrations to a "harmless degree". In the meantime, the Climate Convention has become binding in terms of international law after being ratified by appr. 130 states. Austria ratified the Climate Convention in 1994.

World Climate Summit Berlin 1995: On the first Contracting State Conference of the Climate Framework Convention, which had been voted in Rio in 1992, the signatory states held discussions. The Mandate of Berlin clearly states that the commitments defined in the course of the Climate Convention are not by far sufficient to achieve its goal and that action for strengthening the Convention must therefore be taken immediately.

World Climate Summit Kyoto 1997: 159 states agree upon a Protocol specifying the reduction in greenhouse gases by an average of 5.2 per cent as compared to 1990 world-wide for 2008 to 2012. In the spirit of the Kyoto Protocol, Austria commits itself to achieve a reduction in the greenhouse gas emissions by 13% within this period.

Power Consumption – results of the evaluation

The target of reducing **power consumption by -5% from 1994 to 1998 (by -7% by 2000)** could not be achieved.

Power consumption increased in the period of observations (1993-1997) by appr. **12%**.

This corresponds to an absolute increase from

- **appr. 4,820 TJ (1993, KEK Report No. 6; KEK – "Kommunales Energiekonzept" – "Municipal Energy Plan")**

to

- **appr. 5,417 TJ (1997)**

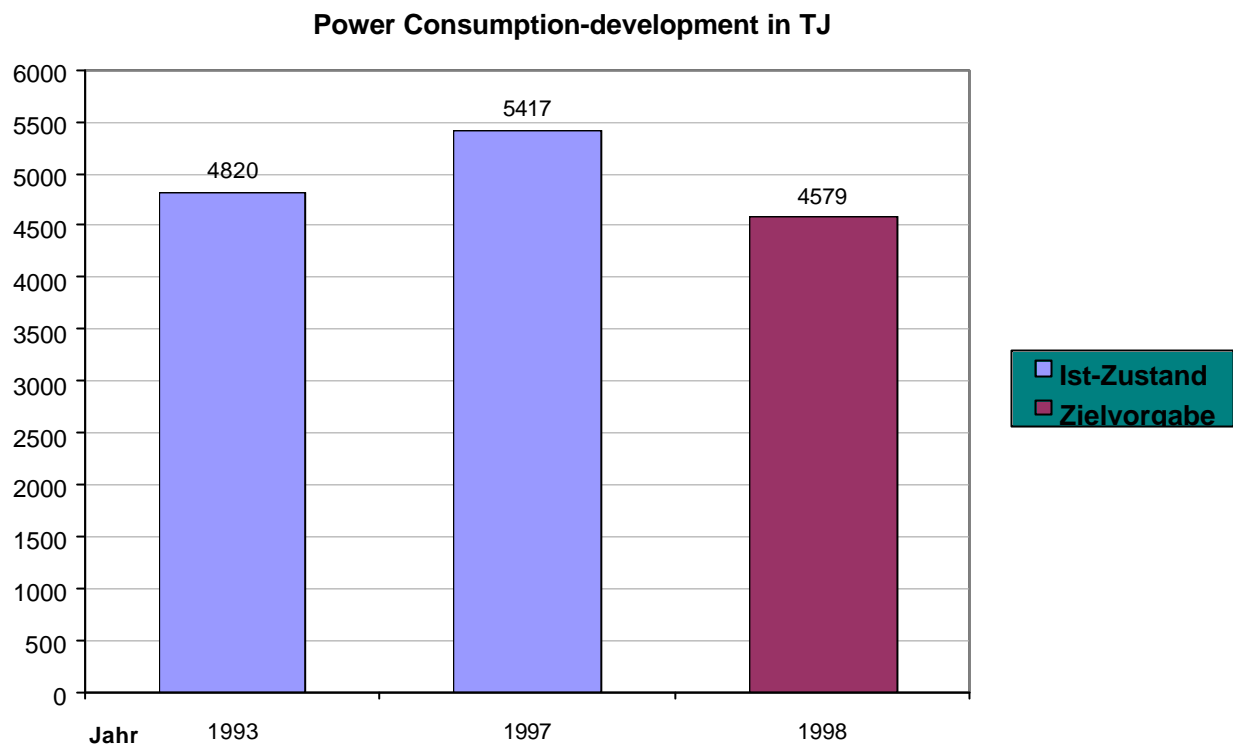


Fig. 9: Development of power consumption in Graz and targets 2000

The reasons for this tendency mainly are the steady increase in electric devices for daily use as well as the increase in production and extensive automatization/mechanization in companies. It is recommended to counteract this by taking action for building the awareness of the importance of saving energy in the private sector.

What is particularly noteworthy is the extent to which energy was saved by 24 companies of Graz from 1993/94 to 1997 in the course of the **ÖKOPROFIT** Project (source: ÖKOPROFIT Data Evaluation 1994-1997).

In 1994, these 24 companies had a total energy consumption that approximately corresponded to 50% of the total energy consumption of trade and industry in Graz.

From 1994 to 1997, the ÖKOPROFIT Companies had an **absolute additional consumption of appr. 77 mio. kWh**. This is due to an increased production and to the extensive automatization/mechanization in some companies. Considering that the production specific parameters (production, turnover, ...) of the analyzed companies increased by an average of 19% (turnover 34%), the **hypothetical savings in this period amount to appr. 58 mio. kWh**. At a constant trend, an additional consumption of appr. 31 mio. kWh as compared to 1994 could have been expected for 1997 if the companies had not taken any action. This corresponds a hypothetical **financial saving (profit) of appr. ATS 46 Mio (\$ 3,342,950)**.

Share of Regenerative Energy Sources – results of the evaluation

The use of **regenerative energy sources**, (above all biomass and hydroelectric power), could be kept about **constant** at appr. **16%** of total energy consumption.

It is true that the installation of solar power plants and biomass heatings, which was, above all, promoted by subsidizing programmes of the Municipal and Provincial Governments, helped to achieve an **increase in renewable energy sources (appr. 0.5% in relation to energy consumption in Graz)**. Nevertheless, this increase has no effect on the total balance.

Even though the target of increasing the

- **share of regenerative energy sources to 22% by 1998 (25% by 2000),**

which was formulated in "Eco-City", has not been achieved, the result ($\pm 0\%$) may be assessed as being **quite positive** in view of the fact that energy consumption has considerably increased in the period of observation.

3.1.6 Traffic

Objectives and Targets

Traffic is quantitatively characterized by several parameters. For a review, the following parameters seem to be particularly suited: the **degree of motorization of the population of Graz**, (i. e. the extent to which people use their own motor vehicles or means of public transportation), the **total distance covered** by using the different means of transportation (particularly MIT Drivers – MIT = "Motorized Individual Traffic" =) and the **Modal Split**, which states the share of the different means of transportation in the total distance covered. For these parameters, forecasts up to 2010 (basis 1989/91) were calculated within the Overall Traffic Concept of Graz. Furthermore, the scenario "Gentle Mobility" was developed to fix achievable targets.

- When the programme was created, the **degree of motorization** amounted to about **400 passenger cars and commercial vehicles per 1000 inhabitants**. If the then trend continued, this degree would increase by appr. 25% by 2011. A **stabilization of motorization** should be striven for. Balances on the registration of motor vehicles and distances covered by the MIT Drivers were to be prepared as an input for evaluation.
- As for **Modal Split**, the **Guideline for Traffic Policy 2000** suggested a distribution of mileage of **41% MIT (1989/91: 46%), 22% pedestrians (1989/91: 24%), 21% public transportation (1989/91: 18%) and 16% cyclists (1989/91: 12%)**.
- **In 1989/91**, the **distances covered by the MIT drivers** in Graz amounted to **2 million kilometers** a working day. If the then trend continued, these distances would increase by 30% by 2010. In the scenario "Gentle Mobility", it would decrease by appr. 3%. Therefore, a **reduction by 2% by 2000 was fixed** as an intermediate target.
- **In 1993**, the **distances covered by means of public transportation** (bus and tramway) in Graz amounted to about **10.5 million kilometers**. It is true that this number says little about the number of persons transported or the quality of public short-distance traffic in Graz. Nevertheless, it is a well verifiable indicator for the increase and decrease in the density of the service provided by public transportation. The target is to make sure the **distances covered by public transportation increase by 10% by 2000**.
- Provided the distances covered by power vehicles is stabilized, **technical improvements of the vehicles** make it possible to halve the CO₂ Emissions from traffic as compared to 1987 by 2010 (Study "Potentiale technischer Maßnahmen im Bereich Verkehr" ("Potentials of technical measures in the traffic sector", Doz. Fallast - TU Graz)). The intermediate target of the Issue Related Environmental Programme is to make sure the **CO₂ Emissions from traffic are to be reduced by 25% by 2000** by "Gentle Mobility" and the technical improvements of the vehicles.

Degree of Motorization – result of the evaluation

In 1998, the **degree of motorization** amounted to about **443 passenger cars and commercial vehicles per 1000 inhabitants** (106,462 passenger vehicles, 240,000 inhabitants). This corresponds to an increase of

- **+11% as compared to 1989**

This means that the targeted stabilization of the degree of motorization has not been achieved.

The **balance of the registrations of power vehicles** for 1998 looks as follows:

Passenger car	106462
Truck	9720
Motorcycles	5585
Mopeds	123
Mobylettes	9011
Other (crane trucks, ...)	2161
Total power vehicles	133062
Registrations 1998	42354
New registrations 1998	12123
Trailers 1998	11125

Modal Split – result of the evaluation

The **Traffic Study 1998** shows an increase in the distances covered by motor vehicles (**only population of Graz**) as compared to 1991 of

- **+5% (1991-98)**

The **distances covered by MIT** (Motorized Individual Traffic = passenger car, commercial vehicle) amount to

- **38% MIT Drivers**

or

- **47% MIT drivers, incl. co-driver**

for all the distances.

Results of the Evaluation – Traffic

This means that the distances covered by MIT have, thanks to the measures taken in traffic policy, **only increased slightly (+1%) since 1989/91 (46%)**. Nevertheless, it won't be possible to achieve the GIVE Target (GIVE = "Grazer Integrierte Verkehrs-Entwicklung" – "Integrated Traffic Development in Graz"), Dec. 1995), namely the reduction of the distances covered by MIT by 41% by 2000.

In 1998, **the distances covered by public transportation** amounted to **18%** of all the distances covered by the population of Graz. Since the last 10 years, this share has been about constant. Considering the downward trends in the share of public transportation in many cities, this may be assessed as being positive (though it cannot be deemed satisfactory). This development may be seen as a result of the facts that the range of services provided by public transportation and of the "Traffic Association" has been extended and that the problem with finding parking space has been alleviated.

The **distances covered by non-motorized traffic (pedestrians and cyclists) presently amounts to 35%** of all the distances. Pedestrian traffic has decreased in the last few years. This is due to the facts that the decentral development of settlement has increased the distances to be covered and that the number of motor vehicles has increased. Bicycle traffic has considerably increased as a result of the traffic policy in Graz.

Comparison of the **Distances Covered** in 1991 and 1998

Distance covered in %	1991	1998	Target acc. to Guideline for Traffic Policy 2000
MIT	46	47	41
Public transp.	18	18	21
Bicycle	12	14	16
Pedestrians	24	21	22

Comparison of the Distances Covered (Modal Split)

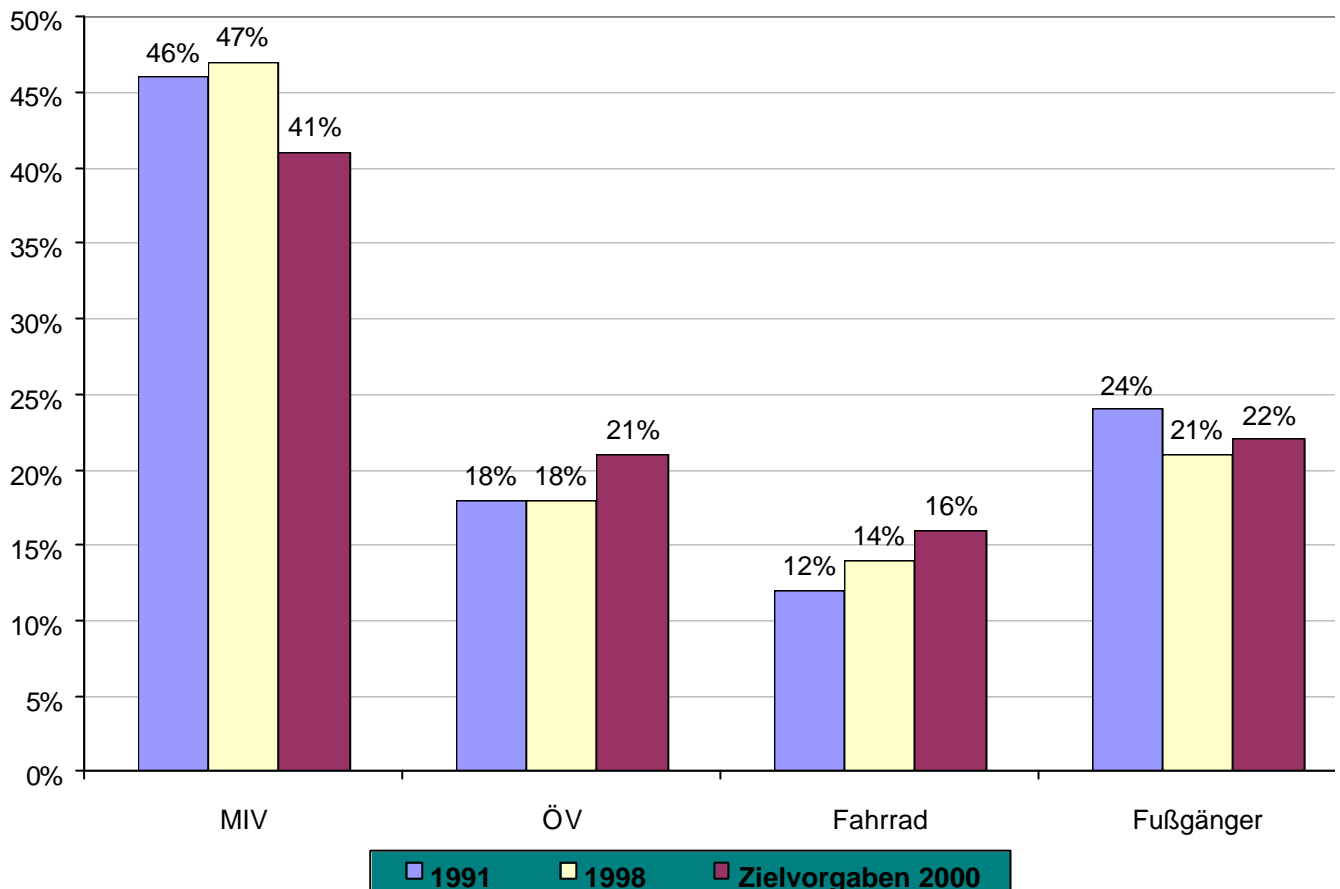


Fig.10: Development of Modal Split and Targets 2000

It should be clearly noted that the data from the traffic studies mentioned above only refers to the **selection of means of transportation by the population of Graz**, which is why no regional statements are possible. In future, balancing should be done under a regional perspective.

Distances covered by Means of Public Transportation – result of the evaluation

In 1998, the distances covered by means of public transportation (bus and tramway) in Graz amounted to **10.7 million kilometers**.

This corresponds to an

- **increase in the distances covered by the buses and tramways by +1.9% (1993-98)**

Results of the Evaluation – Traffic

In this context, the increase only refers to the distances covered by the buses. As for the tramway, a prolongation of the tram lines, (e. g. Line 6 St. Peter), has, up to now, failed because of the opposition by parts of the resident population. Thanks to the introduction of the new Bus Tangential Lines in the west and southeast of Graz, the target formulated **for 2000**, namely the increase in the distances covered by means of public transportation by **+10%** will be **almost achieved**.

CO₂ Emissions from Traffic – result of the evaluation

The **Intermediate Target** formulated in the Issue Related Environmental Programme "Eco-City 2000", namely the

- **reduction in the CO₂ Emissions from traffic by –25% (by 2000)**

by means of "Gentle Mobility" and technical improvements of the vehicles **cannot be achieved**.

For the traffic sector, the trend of emission development from 1988-1995 showed a

- **reduction in the CO₂ Emissions by appr. -1%**

In the period mentioned above, this corresponds to an **absolute reduction of -2600 t/a CO₂** from

- **289,600 t/ CO₂ in 1988**

to

- **287,000 t/a CO₂ in 1995**

The prerequisite for achieving this target by means of **technical improvements of the vehicles** was a **stabilization of the distances covered by motorized traffic**. However, the distances covered by MIT still have a strong upward tendency.

The **traffic poly of Graz** cannot be considered separately. Instead it is subjected to a **strong influence exerted by regional, national and international developments**. Putting the targets formulated in "Eco-City 2000" into action cannot only be tackled by the Municipal Authorities of Graz. This also needs to be taken into account when it comes to assessing the situation.

The **technological further development** on the vehicle sector will have to be attached utmost importance to even in future. The introduction of alternative technologies still needs to be supported by providing all the resources available. In this context, the successful cooperation of the Municipal Authorities of Graz with the universities of Graz, AVL-List and the Transport Association of Graz continues to play a particular role.

3.1.7 Waste

Objectives and Targets

Besides the degree of separation and the commensurate recycling rate, it is, above all, the amount of "produced" waste that is a central parameter for the success of sustainable environmental policy. The **total amount of waste produced in the city** (= total from tailings, waste resembling household waste, waste materials, biogenous waste and problematic substances) amounted to **98,784 tons in 1993** (Source: "Waste Statistics Graz"). The **amount of tailings produced in the city** in the same year amounted to **202 kg per inhabitant and year**. The reduction targets referred to the total amount of waste produced in the city as well as to industrial and commercial waste (in particular hazardous waste). It is also in terms of reducing industrial and commercial waste that sustainable environmental policy must start as early as at the source. By good housekeeping or by replacing raw and auxiliary materials, waste and emissions can be reduced considerably.

Therefore, the **quantitative targets for 2000** consisted in **reducing** the following amounts of waste and materials (**as compared to 1993**), the Waste Logistics Graz serving as a reference:

in households:

- **amount of municipal waste -13%**
- **amount of municipal tailings (assessed according to the amount of waste per inhabitant and year) by -30%**

in trade and industry:

- **raw and auxiliary materials** in companies by good housekeeping and efficient use **by -30%**
- **hazardous waste by -50%**
- **non-reusable industrial and commercial waste** by fully utilizing the existing and economically feasible potentials by taking in-company actions for waste prevention as well as intensified recycling and waste separation **by -30%**

Municipal Waste – results of the evaluation

The targets formulated in the programme as parameters for sustainability in the field of **Municipal Waste** for 2000

- **reduction in the total amount of waste produced in the city by -13% (since 1993)**
- **reduction in the amount of tailings produced in the city by -30% (since 1993)**

have not been fully achieved yet.

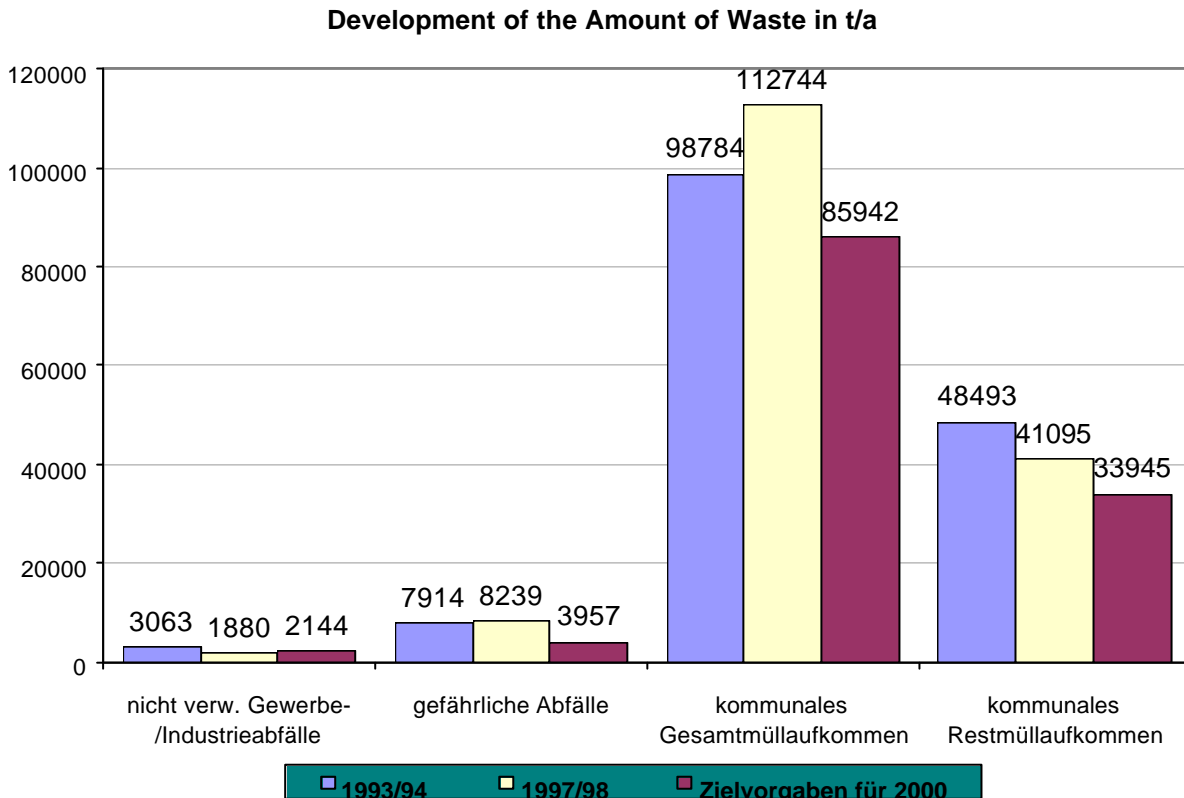


Fig. 11: Development of the amount of waste and targets 2000

From 1993 to 1998, the

- **total amount of waste produced in the city has increased by +12%**
- **total amount of tailings produced in the city has decreased by -15%**

This corresponds to the following absolute change:

- **total amount of waste produced in the city 98,784 t/a (1993) to 112,744 t/a (1998)**
- **total amount of tailings produced in the city 48,493 t/a (corresponds to 202 kg/inhabitant and year) 1993 to 41,095 t/a (corresponds to 173 kg/inhabitant and year) 1998**

Results of the Evaluation – Waste

Even though the reduction targets could not be fully achieved, progress was made in partial areas, above all in terms of **the amount of municipal waste**.

This is mainly due to **separate collection** (bio-waste, packaging) in the City of Graz and the high awareness of the population of Graz in this field, which can be traced back to **competent waste consultancy**.

Nevertheless, the **sustainability objective "waste prevention"** could not be achieved as is shown in the total amount of waste produced in the city. Such approaches for waste prevention that might have helped to achieve the objective, e. g. the Packaging Regulation, were not successful. Last but not least this is due to the fact that the development towards more waste follows an international trend (globally more and more packaging) and is very difficult to influence. The introduction of similar regulations for other products, such as motor vehicles or electric and electronic devices, has failed up to now.

Wherever **the City of Graz could intervene directly**, there has been corresponding progress. As is shown by the positive development in the amount of municipal tailings, such actions as separate collection and recycling helped to achieve a considerable reduction in the amount of tailings.

Industrial and Commercial Waste – results of the evaluation

As there is no comprehensive data on **industrial and commercial waste** for Graz, the data evaluation 1993/94 – 1997 of the **ÖKOPROFIT** Project of Graz (ÖKOPROFIT Data Evaluation 1994-1997) was used to assess the implementation of the **intermediate targets** in the field of **industrial and commercial waste** formulated in the programme as parameters for sustainability for 2000, i. e.

- **reduction in the total amount of non-reusable industrial and commercial waste by -30% (as compared to 1993)**
- **reduction in hazardous waste by -50% (as compared to 1993)**

Thanks to the actions taken in the 18 selected **ÖKOPROFIT Companies** in this period to optimize the processes and increase material efficiency,

- **the total amount of non-reusable industrial/commercial waste could be reduced by -39% (as compared to 1993/94)**

in 1997.

Parameter	1993/94 t/a	1997 t/a	Reduction %	Target 2000 %
Industrial/commercial waste, total (18 ÖKOPROFIT Companies)	3,063	1,880	-39	-30

Results of the Evaluation – Waste

The absolute savings achieved in 1994-97 (difference of the non-reusable waste to the respective year for all the companies) of the mentioned ÖKOPROFIT Companies amount to

- **appr. -2.370 t (1994-97)**

In this context, the reduction achieved results from the actions taken in terms of improved waste management (new containers, additional fractions, people motivation) and is all the more remarkable as the **production numbers have**, in the mentioned period, **increased by 34% and the turnover has increased by 38%**.

Thanks to the reduction in the amount of waste, the following financial savings have been achieved in the companies:

- **appr. ATS 2.4 mio. (appr. \$ 174,400), absolute**

or

- **appr. ATS 4.9 mio. (appr. \$ 356,100), corrected acc. to production/turnover**

Hazardous Waste – results of the evaluation

An interesting tendency may be derived from the evaluation in terms of **hazardous waste** in the 12 selected ÖKOPROFIT Companies. According to this tendency, an **increase** in this sector amounting to

- **+4%, 1993/94-1997 (Target 2000 -50%)**

may be identified.

Parameter	1993/94 t/a	1997 t/a	Increase %	Target 2000 %
Hazardous waste (12 ÖKOPROFIT Companies)	7,914	8,239	+4	-50

In 1994, the 12 companies produced appr. 7,914 t, i. e. 26-40% of the hazardous waste produced by trade and industry in Graz. In this context, it should be noted that the filter dust from the "Marienhütte" is responsible for 70% (5,500 t) of this amount. This filter dust is separated on the dedusting line and is transported to Germany for recycling (high metal share).

It is true that the amount of **hazardous waste** has increased in the 12 ÖKOPROFIT Companies in the last few years. Nevertheless, a downward trend may be identified.

The growth is due to **increased production** in some companies. On the other hand, this will, at a corresponding **correction of the factor of change in production** (production indices on the average +18%, turnover + 39%), allow to derive a considerable degree of **savings, i. e. appr. 2,300 t/a** (Source: ÖKOPROFIT Data Evaluation 1994-1997).

According to general estimation, still another factor contributing to this growth is the **improvement in the collecting system** along with an increased collecting morale, which may be judged as being positive. Furthermore, the legal basic conditions for **hazardous waste** have, in the period of observation, been changed by a new regulation (Waste Catalogue of the Hazardous Waste, Code Numbers).

It is true that an exact assessment is made impossible by the fact that there is no database for all the companies. Nevertheless, a **distinct improvement in the field of waste in companies** can be identified. Last but not least, this is due to successful projects for in-company preventive environmental protection and the **good cooperation between the companies, the disposal companies and the authorities**. However, the assessment is to be made more objective in future by increasingly using material flows instead of absolute reduction targets for waste. For otherwise the result would be falsified by such economic factors as increase or conversion in production.

3.1.8 Natural and Cultivated Green Spaces

Objectives and Targets

In the field of natural and cultivated green spaces, the following numerical targets were identified:

- **protected landscapes, additionally 50 ha**
- **nature preserves, additionally 30 ha**
- **natural monuments, additionally 7**

In 1989, a **Biotope Map** was created. Among other things, this map identifies areas whose protection is to be prioritized particularly. For preserving ecological balance and the recreational value of green spaces within and near cities, the preservation of these biotope areas worth protecting was demanded most urgently.

Results of the Evaluation

By **January 1999, appr. 0.7% (879,221 m²) of the municipal area had been protected landscapes or nature preserves (appr. 35,000 m²).**

Since the programme was established, **no additional protected areas** have been identified.

An **additional nature preserve**, which entered into its realization phase in 2000, is an **area in the Buchkogelwald, which covers a surface of about 6 ha.**

Among the **116 natural monuments**, which had been designated originally, **22 were abolished** because of their age or due to damage caused by storm.

The targets in terms of the topic "Development of Natural and Cultivated Green Spaces" in Eco-City 2000 were formulated in 1993/94 and reflect the then "understanding of nature". In the last few years (among other things "Advisory Board for the Protection of Nature", Issue Related Programme "District Discussion on Green Spaces", "European Year of Protection of Nature 1995"), the field of "municipal protection of nature and green spaces" has gained a more far-reaching importance. On the other hand, the fact of "**putting areas under protection**" does not play such an important role any more. For in practice, the fact of putting areas under protection will fail to yield the desired success if it is not accompanied by **systematic care and servicing**. Here there has been a paradigmatic change towards setting more generic priorities.

As for **securing areas**, current protection of nature does **attach utmost importance** to this action. This also is expressed in the Issue Related Programme "Green Spaces". This action was promoted too little in the period of evaluation.

For example, the nature preserves are, in the **revision of the 3^d Zoning Plan for Graz**, rather readjusted than expanded. Only few additional protected landscapes and natural monuments are intended.

In terms of municipal policy and natural and cultivated green spaces, the targets of Eco-City 2000 for natural and cultivated green spaces have been made more topical and far-reaching and transferred to the **Issue Related Programme "Green Spaces"**.

The Issue Related Programme "Green Spaces" was commissioned in autumn 1993. The "discussion draft" was presented in January 1997. In December 1997, the Municipal Council of Graz voted the Issue Related Programme "Green Spaces" as a guideline for the policy in terms of green spaces with its 5 project bundles.

1. **Planting in the city** – trees, avenues, hedges, design of building areas, inner courts, front gardens, roof gardens, etc.
2. **Parkgrounds, playgrounds and sports grounds** – appropriated purchasing, surfaces owned by the Municipal Authorities, lease, securing by way of the City Development Concepts or the Zoning Plan
3. **Tracks, paths and trails** – cycle tracks, footpaths, promenades and hiking trails
4. **Preserving green belts and development of recreational facilities in the immediate vicinity** – nature and biotope protection, recreational forest in the immediate vicinity, design of the bank of the Mur River
5. **Securing areas reserved for later use** by means of the City Development Concept and Zoning Plan (GBG – Grazer Bau- und Grünlandsicherungs GesmbH – Building and Grassland Protection Ltd., Graz)

The **Issue Related Programme "Green Spaces"** should, in the sense of Agenda 21, also be subjected to an **evaluation** in periodic intervals, i. e. every 3-4 years, e. g. in 2001 and 2004.

3.2 Actions

For assessing the actions mentioned in the nine Action Plans of "Eco-City 2000", Questionnaires were sent to the corresponding actors in mid-March 1999. In these Questionnaires, the actors were asked to report the latest state of deployment.

Among the total number of 385 Questionnaires, which were sent to 57 different actors, 159 were answered (41%). Furthermore, former comprehensive comments made by various actors were used. The majority of the remaining actions was assessed as to their degree of realization by the participants in the individual sub-groups.

The "Eco-Team of Graz" subjected the individual actions to a + - 0 evaluation by means of the systematic documentation of the deployment of actions (see Annex) and then made a summarizing assessment of the individual actions.

Actions whose deployment is not directly part of the sphere of influence of the Municipal Authorities of Graz were not assessed by the "Eco-Team of Graz".

The comments made to the individual actions by the individual institutions are summarized systematically in the Annex. The original comments may be viewed in the Department of Environmental Protection of the Municipal Authorities of Graz.

3.2.1 Action Plan 1 – Private Households

Though **communication** works very well in partial areas, it must be classified as being worth improving, above all when it comes to such complex programmes as "Eco-City 2000". A **positive tendency** is identifiable.

Progress in the fields of drinking water and air within rooms may be regarded as being very positive. Several actions have been deployed or are successfully under way.

In the field of **building biology**, the awareness of the population, which already exists, continues to grow. In the private sector, there are very good approaches today. As for **public building promoters**, a **deficit** in this connection is still identifiable. Some projects, e. g. a LIFE Project of the **Energy Agency of Graz** relating to the topic "Ecological building and energy efficiency", are under way.

In the field of **energy**, much progress was made in the last few years. The **Thermoprofit** Programme has been advanced a lot by the foundation of the Energy Agency of Graz and pertaining marketing, (e. g. **sanitation of the City Hall and Official Quarters ("Amtshaus")** as a Thermoprofit Project), and will, in future, be expanded on a municipal scale.

What was particularly successful was the **expansion of the district heating network**, which could be **doubled** by corresponding subsidies in the last ten years. For Graz, the expansion of district heating is a **central strategic issue** on the way to sustainable city development. If the Styrian Provincial Government stopped its subsidizing activities, this positive development would be put at risk.

The use of **renewable energy sources** is promoted a lot by subsidies, energy consultancy and organizational support. Promoters for residential building are addressed directly.

3.2.2 Public Buildings

The **purchasing activities** of the Municipal Authorities in terms of existing buildings can be regarded as being a **role model**. The **Purchasing Department of the Municipal Authorities of Graz** has acted as a **pioneer** in ecologically beneficial purchasing for years and continues to endeavour to meet this challenge by ensuring continuous further development.

As for such details as the **selection of building materials**, above all for new buildings, (e. g. schools), however, **deficits** are identifiable. As for the erection or sanitation of public buildings, **corresponding additional requirements should be incorporated into the Requests for Quotation**, (incl. overall planning). This is particularly essential for the erection of the planned "Kunsthaus" in Graz.

The Budget 2000 allows to equip **all the public buildings** with corresponding containers for a **separate collection of waste**. In most **schools serving for compulsory education in Graz**, there is a continuing **backlog**.

Thanks to the conversion of existing heatings in **public buildings** to gas, district heating and solar energy, **energy savings of appr. 25%** could be achieved in the last few years. The conversion programme "**Thermoprofit**" is taken into account and put into action in all the Requests for Quotation for public buildings, (e. g. City Hall, Official Quarters ("Amtshaus")), and has been intensified even more by the foundation of the **Energy Agency of Graz**.

The development of graduated plans for the use of **zero-emission vehicles** is obsolete for technical and legal reasons. By using **bio-fuel made from used frying oil methyl ester (UFO-ME)** for buses of the **GVB ("Grazer Verkehrsbetriebe" – "Traffic Services of Graz")**, Graz acts as a **pioneer** in the field of regenerative energy sources and low-emission vehicles. By early 2000, appr. 50 buses of the GVB (appr. 1/3 of the bus fleet) had been operated by using this fuel having few emissions with the support of the Department of Environmental Protection of the Municipal Authorities of Graz. In the meantime, the project has been extended by the gratuitous collecting campaign "**Collection of Used Frying Oil in Catering Businesses in Graz**" ("From the Pan into the Tank!"). Upon the initiative of the Department of Environmental Protection of the Municipal Authorities of Graz, used frying oil produced in catering businesses is collected for free and turned into bio-fuel in Mureck. This bio-fuel will be used for buses of the GVB.

3.2.3 Action Plan 3 – Companies

In-Company Preventive Environmental Protection

The **promotion of in-company preventive environmental protection** by the Department of Environmental Protection of the Municipal Authorities of Graz is enabled to go full blast by the **ÖKOPROFIT** Project. In 1999, there had been **75 ÖKOPROFIT Companies** in Graz. The **ÖKOPROFIT Club** has grown to **35 members**.

In 1999, a project tailored to tourist companies – "**ÖKOPROFIT-Tourism**" – was carried out for the first time in cooperation with the Department of Economic and Tourism Development.

ÖKOPROFIT has meanwhile gained international reputation as **THE Project for In-Company Preventive Environmental Protection**, which also is a perfect way to put the Local Agenda 21 into action. The excellent reputation is evidenced by the fact that the project is imitated quite often, (e. g. ÖKOPROFIT Munich). Upon the successful foundation of the **Cleaner Production Center**, this development has been intensified even more. In 1999/2000, the "**ÖKOPROFIT Academy**" was established. In this Academy, participants from several European states were trained as **ÖKOPROFIT Consultants** for the first time. These Consultants will continue to contribute to the propagation of the **Model of Graz**.

One **deficit** still is the **lack of cooperation** in terms of in-company preventive environmental protections with institutions involved. For example, the Trade Department does not support the execution of ÖKOPROFIT in any way.

Environmental Information

The **UIS ("Umweltdateninformationssystem" – "Environmental Data Information System")** of the Municipal Authorities of Graz is making big progress. In future, it will be possible to visualize and thus link all the ecologically relevant data.

Material Flow

As for the partial areas air and water (Aquaprofit – Stenum), analyses are available. As for the partial area waste, approaches were proposed in Diploma Theses. However, these approaches were not pursued.

The "Montanuniversität Leoben, Institut für Entsorgungs- und Deponietechnik" ("Leoben University, Institute for Waste Disposal and Landfill Technology") prepared the **Water Balance of Graz** (input/output analysis) of the municipal area of Graz in order to obtain information on the development of water consumption and the most important consumer groups.

It is also Leoben University (Prof. Hofer) that is elaborating an evaluation system according to **eco-points** for Graz. This system will be of utmost importance for future evaluations.

Results of the Evaluation – Actions

Two companies of Graz took part in a pilot project, which consisted in undergoing an audit according to the **IPPC Directives of the EU (IPCC – Industrial Pollution Prevention Control)**. They were quite successful.

Training

Training programmes for environmental experts in companies are carried out in ÖKOPROFIT Projects, by the "Arge Müllvermeidung" ("Working Group Waste Prevention") (training to the Company Waste Representative), the WIFI ("Wirtschaftsförderungsinstitut" – "Institute for the Promotion of Trade and Industry"), the "Wirtschaftskammer Steiermark" ("Chamber of Economics Styria") and the "Ökologische Betriebsberatung" ("Ecological Company Consultancy") (training and consultancy programmes in cooperation with the Provincial Government, the Chamber of Economics and the WIFI). In addition, a pertaining course at the "Institut für Verfahrenstechnik" ("Institute of Process Engineering") of the "TU-Graz" (Technical University of Graz) is starting. Projects of University Institutes relating to this topic, e. g. by way of Diploma Theses, are to be offered to an increasing extent.

Zoning

A **Strategic Environmental Planning**, which has been suggested by the EU, is to be considered to an increasing extent when creating the **Zoning Plan**. In Weiz, for example, this planning has been applied to problematic surfaces.

As for the problems related with traffic, **linking development plans** (access roads, public transportation, etc.) will have to be **considered to an increasing extent** in future. The STEK ("Stadtentwicklungskonzept" – "City Development Concept") will have to be reviewed for this.

Licensing Procedures

The general trend that may be observed is the fact that **environmental protection is becoming less and less important** in the course of licensing procedures. This is mainly due to the high (time related and legal) procedural risk, which implies a high expenditure. This means that the kind and execution of licensing procedures must be **optimized urgently** in order to minimize this risk. The content of the procedures, which can be judged as a big success for Austria as far as environmental protection is concerned, should be maintained.

CFC and Chlorinated Hydrocarbon

The actions mentioned in connection with **CFC and Chlorinated Hydrocarbon** reflect the problems that required a solution most urgently when the programme was created. However, the issue has lost its topicality in view of the high number of actions successfully taken on a national and international scale in the last few years. The expansion of the targets and actions to **fluorocarbons** must be intensified.

Chemical cleaners continue to pose a problem to the neighbourhood, in particular. The Department of Environmental Protection of the Municipal Authorities of Graz proceeds very **systematically** in this field. Several activities (measurements, promotion of new technologies) were taken in the last few years. What is noteworthy is the cooperation with Stross, a cleaning shop in Graz, which is a particular role model when it comes to the use of new alternative technologies.

Energy and Subsidizing

In-company actions for using waste heat are supported by subsidizing companies (Marienhütte ATS 1.0 mio, appr. \$ 72,700.-). An efficiency programme for the 20 companies with the highest energy consumption was conceived in the programme ÖKOPROFIT-Energy (KEK Report 19; KEK – "Kommunales Energiekonzept" – "Municipal Energy Plan").

The pot of subsidies available to existing **environmental subsidizing** was fully exploited in 1999 (ATS 10 mio, appr. \$ 727,000,-). This means that the existing public relations relating to environmental subsidizing may be assessed as being very positive.

Linking **subsidizing** to the execution of an eco-audit or the participation in ÖKOPROFIT, PREPARE or similar projects is not included in the subsidizing guidelines and is opposed to by the Chamber of Economics.

Upon the foundation of the **Energy Agency of Graz**, the "Thermoprofit" Project has been advanced. Sanitations in the public sector using Thermoprofit are under way (City Hall, Official Quarters ("Amtshaus")).

Several companies (appr. 20) strive for a Thermoprofit Partnership (with a Certificate and membership fee).

Sewage Water

There is no **link between the sewage water fee and water consumption** and the dirt load according to the polluter-pays-principle, (e. g. by considering the COD Value).

The provision of the **Sewerage Fee Regulation**, which would have demanded a surcharge to be paid for a high degree of soiling, was dropped. However, one objective was reached. For the relevant parties responsible for a high degree of soiling have, in the meantime, erected pre-purification plants. Since the Amending Statute of the Water Law Act (1997), most parties indirectly discharging sewage have stopped to be subject to licenses granted by the authorities. Now they have to conclude private law agreements with the Sewerage Company. In Graz, probably 500 to 1000 companies whose indirect sewage discharge deviates from domestic sewage water more than slightly will be subject to the new provision.

Since the Indirect Sewage Discharge Regulation (1998), most Water Right Rulings have been out of force. According to § 32b Water Right Act, all the limits must be observed by parties discharging sewage ex lege without rulings and contract. Within water right, there used to be a sequence of courts (up to the VwGH ("Verwaltungsgerichtshof" – "Administrative Court")). Now contracts provide for a mutual right of action. Pre-purification will be **monitored** by own measurements and testing and inspection. Large companies will be checked continuously.

Noise

There are no **advantages for building machines emitting little noise**, (e. g. exceptions from time related restrictions of the building activities in the municipal area). As building activities will, by nature, mostly be connected with a certain development of noise, solutions for the problem noise caused by building activities are hard to find.

The **guest gardens** in the inner city were checked for the **noise annoyance to which the neighbours were subjected**. The load was classified as being very high. More than 90% of the complaints about noise, which are addressed to the Department of Environmental Protection of the Municipal Authorities of Graz, refer to annoyance caused by guest gardens. This circumstance has serious impacts on the inner city. For the inhabitants living there tend to leave the area because the living quality is insufficient.

In this context, it should be noted that the Municipal Authorities cannot influence trade law. On the other hand, they do have the right to intervene in renting property situated in the streets owned by them. This is not possible on private property. Here the Municipal Authorities only act as an administrative body.

3.2.4 Action Plan 4 – Agriculture

Organic Farming

The City of Graz has a very **dense network of farmers' markets**, the demand for which among the population of Graz is increasing. The trend to products coming from **organic farming** is also clearly reflected in the increasing offer of large-scale food chains, which have recently successfully put their stake on high-quality products supplied by domestic farmers.

The sales of agricultural products coming from organic growing and offered on markets in Graz should, in future, particularly be promoted by **making use of opportunities** that may be influenced by the Municipal Authorities (Market Department). This definitely also includes awarding pertinent stands a so-called **"Bio Badge"**. The providers or products thus marked must be subjected to strict testing and inspection. This testing and inspection should be done by institutions authorized for this according to existing guidelines or regulations, (e. g. "Active Animal Protection"). The values of such a **"certification"**, i. e. the guarantee for organic farming, must be communicated to the prospective customer by accompanying measures forming confidence (guarantee of origin, etc.). In this context, it should be noted that covering the demand on farmers' markets in Graz by additionally purchasing agricultural products coming from undefined sources must be assessed as being extremely contraproductive and thus must be refused. For like this, the confidence of the population in the products offered and thus in the "authenticity" of farmers' markets will be shaken considerably.

Agriculture as a Special Issue

Agriculture continues to be an issue that is extremely important in terms of the environment (fertilizing, pest control) and therefore should be declared as a **Special Issue** within the City of Graz. Economic stimuli as well as information addressed to certain target groups are to make the way to **extensifying** agricultural growing more attractive and thus to make it easier to give up intensive farming. Preparing a **material flow analysis** (input/output) for agriculture would, in future, be of utmost importance for enabling the authorities to proceed in a well-aimed way. **The City of Graz**, which is one of the largest agricultural communes of Styria, lacks a corresponding **formal responsibility** in administration. This makes it quite difficult to deal with the topic agriculture.

3.2.5 Action Plan 5 – Water and Water Bodies, Development of Natural and Cultivated Green Spaces

Water and Water Bodies

There is no **systematic study** of all the wells for drinking and service water, (incl. private wells), in the municipal area. In this context, we would, once again, like to hint at the **high quality of the drinking water in Graz** (Grazer Stadtwerke AG), which is delivered to the consumer without any treatment. However, studies in the supply network of the "Grazer Stadtwerke AG" are only made up to the house connection. The quality of drinking water "on the tap" is not checked.

Purchasing border strips of water bodies by providing public funds is not achievable (the financial expenditure is too high). **Holding** sufficiently broad brook bank zones **free from building activities** (in the Zoning Plan) is being put into action as a protective measure for areas prone to high water.

As for the **Living Space Mur**, there is extensive documentation that has, above all, been prepared for the power plant study. However, the concepts for designing the Mur Space range from completely leaving it in its natural state to intensive care. The City Building Management must coordinate this correspondingly.

A project team "**Brook Development Concept**", which should have been based upon the study "Brooks of Graz, high water discharge", has not been established. The **Pilot Project "Gabriachbach"** ("**Bach**" – "**Brook**") (ATS 35-40 mio, appr. \$ 2.8 mio joint project Municipal, Provincial, Federal Governments) will be ready for being put into action as a result of the **Second Brook Survey in Graz**.

Development of Natural and Cultivated Green Spaces

Here we would, once again, like to hint at the **Issue Related Programme "Green Spaces"**. This programme defines the targets of "Eco-City 2000" for natural and cultivated green spaces for municipal policy and specifically to natural and cultivated green spaces in a topical and comprehensive way.

For example, a new description of **biotope mapping** is a fixed part of the Issue Related Programme "Green Spaces", all the competent authorities and Prof. Zimmermann being incorporated. The biotope mapping created by Prof. Zimmermann is considered in the Zoning Plan. An update has been adopted into the Issue Related Programme "Green Spaces". Original documentation may be viewed in the City Planning Department. The biotope mapping is to be considered in procedures in construction law and spatial planning. It is recommendable to extend the biotope mapping dealing with vegetation by also considering the flora and fauna.

3.2.6 Action Plan 6 – Abandoned Polluted Areas

Project "VERA" – short description

The concept for the "VERA" Project was prepared by JOANNEUM RESEARCH Forschungsgesellschaft m.b.H. in coordination with the Specialized Division Ia of the Styrian Provincial Government and the Federal Ministry for Environment, Youth and Family.

Its contents are subdivided into 3 parts:

	Description	Result
Part 1	First recording of operational data of old sites where contamination is suspected	Basic data on old sites of the City of Graz
Part 2	Data acquisition and methodological treatment of the basic data relevant for abandoned polluted areas	Approved selection technique for the preliminary assessment of the risk potential
Part 3	Development of a model for the preliminary assessment of the risk potential	List of suspicious areas, study programmes for special types of sites and pollutants

On the whole, the **VERA** Project is to create well-founded bases for marking contaminated areas in the Cadastral Map for Suspicious Areas of the UBA ("Umweltbundesamt" – Austrian EPA – "Environmental Protection Agency") in a traceable way.

Project Costs

The funding of the project (overall costs appr. ATS 7.0 mio., appr. \$ 510,000.-) will be done by the Municipal Authorities of Graz (appr. ATS 1.8 mio, appr. \$ 130,000.-), the Federal Ministry for Environment, Youth and Family (appr. ATS 3.8 mio, appr. \$ 280,000.-) and the Styrian Provincial Government (appr. ATS 1.8 mio, appr. \$ 130,000.-).

3.2.7 Action Plan 7 – Traffic

The **traffic policy of Graz** is strongly linked to that of the **Province of Styria** and therefore cannot be considered separately. This is why actions and their deployment must be viewed **from a regional perspective**. In this sense, it is necessary to revise and combine the regional and municipal overall traffic concepts.

Public Transportation, Cycle Tracks, Pedestrian Zones

In the traffic sector, numerous actions have, above all, been deployed in the fields of **public transportation and cycle traffic**. In this context, we would like to mention the extension of the **cycle track** network of Graz and that of the **bus network** of the GVB ("Grazer Verkehrsbetriebe" – "Traffic Services of Graz") (whereas the extension of the **tram network has failed up to now** - Line 6 St. Peter) and the "**Verkehrsverbund**" ("**Traffic Association**").

Since May 1998, there are altogether 12 additional trains between Spielfeld and Graz and between Graz-Frohnleiten (Kapfenberg) as well as 2 additional trains between Graz and Lannach. The distance Graz-Spielfeld was coordinated with the bus lines. Since May 1999, there has been an additional evening connection Graz-Bruck and an additional Saturday connection Spielfeld-Graz.

It is true that a concept for establishing a **Styrian Rail Traffic System** (express rail system and city/regional rail), which prioritizes on the Graz Area, is available. Nevertheless, its deployment has, up to now, failed because of the **funding issue**.

There are three **pedestrian zones** (Lendplatz, Griesplatz, Schloßbergplatz) in Graz. Still another extension of pedestrian zones is not deemed useful. Instead a penetration into smaller streets (Gleisdorfergasse) seems recommendable. The **Annenstraße** Project was stopped shortly after the project start because the acceptability was too low.

There is a **GAST ("Grazer Anrufsammeltaxi" – "Graz Calling Collection Taxi")** between 8 pm and 4 am. Right now a simplification of the system is being elaborated. It is, above all, the service between 0 am and 4 am that is to be made more attractive, the degree of utilization being below the expectations. The trial service in Andritz and Waltendorf was very successful. However, the system had to be simplified in order to increase acceptability (cf. Linz).

Zero-Emission Vehicles or ULEV's (Ultra-Low Emission Vehicles)

The evolution towards **zero-emission vehicles**, which still could be expected when the programme was created, has not come true. The main reason for this is the fact that **technology**, above all in the field of supercharging, still is not available or is not matured yet.

Last but not least it was for this reason that the very ambitious emission reduction programme in California was dropped.

The deployment of the **actions** formulated in relation to the topic electric and solar vehicles, which range from the establishment of an infrastructure via the use of these vehicles as official or commercial vehicles, their use in public transportation, the creation of benefits at use to the draft of an emission reduction programme according to the Californian model was practically started in all cases.

- **Electric vehicles are available as official vehicles in the Municipal Authorities (Department of Environmental Protection, "Wirtschaftshof")**
- **Electric vehicles are exempt from parking fees in the inner city**
- **Four energy supply stations in the inner city were planned**
- **There is one solar station in Graz**
- **A research project on electric taxis was carried out with the Taxi Group 878**
- **The "Wirtschaftshof " purchased two electric vehicles**

However, the **success** of the actions mentioned above must be **assessed as being low**. So the deployment will not be continued, above all as the **technology is not matured yet**.

A very **encouraging evolution** may be observed in the field of **ULEV's**. This refers to the development of new engines (low consumption) at large-scale automobile manufacturers as well as the development of new low-emission fuels made from regenerative raw materials (**bio-fuel**). In the last few years, the City of Graz followed this trend by taking pertaining actions and thus reacted dynamically to the changed technological situation.

For years, a joint project between the Department of Environmental Protection of the Municipal Authorities of Graz and the GVB ("Grazer Verkehrsbetriebe" – "Traffic Services of Graz") has been under way. From 2000, 50 buses (1/3 of the bus fleet) were exclusively driven by bio-fuel. Right now 18 buses of the GVB are driven by bio-fuel. Commercial vehicles of the "Wirtschaftshof" as well as one official vehicle of the Department of Environmental Protection also were retrofitted for the use of bio-fuel.

The fuel is produced by SEEG Co., which has its headquarters in Mureck in the South of Graz. This company turns used frying oil into bio-fuel by using a special technique. The **collection of used frying oil** in private households presently is done by the "Wirtschaftshof". Upon the initiative of the Department of Environmental Protection of Graz, a gratuitous collection of used frying oil was started with catering businesses in Graz in 1999. This collection, which is carried out by "Öko-Service", will continue as a constant service. Thus the circle from the useful use of the problematic

substance used frying oil as a valuable raw material for producing bio-fuel to the use as a low-emission fuel for buses run by the GVB is closed sustainably.

Furthermore, **alternative actions** for restricting **individual traffic** were taken to react to the fact that the annoyance caused by traffic is constantly increasing in Graz. Upon the initiative of the Department of Environmental Protection of Graz, a **Mobility Management** Project was carried out in cooperation with the automobile manufacturers Steyr-Daimler-Puch Fahrzeugtechnik and Chrysler/Eurostar. This project was aimed at influencing the selection of the means of transportation by the employees by corresponding actions promoting public transportation, bicycle or driving communities.

3.2.8 Action Plan 8 – Noise

Cadastral Maps for Noise

Cadastral Maps for Noise are available for:

- **Rail (ÖBB – "Österreichische Bundesbahnen" – "Austrian Federal Rail Services")**
- **Cadastral map for emissions for the main streets of Graz**
- **Industry (Pilot Project St. Peter)**
- **Air traffic (Studying the "Draken" for Graz)**

In the Specialized Division 1b, there was a study on civil and military air traffic. However, this study was not really related to Graz (such adjacent communes as Seiersberg were mainly concerned).

Noise Protection and Noise Abatement

As the issue is diverse and complex in technical and legal terms, it is recommended to develop a **comprehensive noise protection concept with priorities**.

In **St. Peter**, a **pilot project** for determining noise abatement measures that could be put into action quickly and were cost efficient was carried out. A **Noise Abatement Plan ÖBB** with a graduated plan was elaborated (cooperation Province/ÖBB).

The **preventive noise protection** of the neighbourhood has recently been increasingly achieved by such **development solutions** as closing gaps, a pertinent planning of new buildings, (e. g. housing estate "Arlandgründe": living and relaxation areas showing to the yard) and the calming of existing **inner yards**. Such actions as sound insulating windows or noise protection walls are **secondary actions**.

All trucks over 3.5 t (1987) are subjected to a **ban on driving at night** without any exceptions. As more and more trucks emit little noise, exceptional regulations would be contraproductive.

In the last few years, the **Traffic Services of Graz** have increasingly put their stake on a superstructure of the **tram tracks that would reduce noise**, e. g. in the inner city (Sackstraße, Murgasse, Annenstraße).

An intensified use of the opportunities offered by the **Zoning Plan** as an instrument of **noise protection** is only given in case of new allocations because it is not possible to cancel allocations once granted. The only possibility of control is provided by **Provincial Subsidizing for Residential Building**. There are inadequacies in the allocation and in the licensing procedures.

The **Styrian Building Act 1995** did not enter into force until the programme "Eco-City 2000" had been voted by the Municipal Council of Graz. According to this new legal basis, **§ 26** enumerates the neighbours' rights (the noise caused by street traffic is not concerned). What is decisive for neighbourhood protection in view of buildings subject to licensing is the demand for a far-reaching "**congruence of a project with the Zoning Plan**" (or Development Plan or Development Guidelines). Since the Building Act entered into force, the adoption of provisions regulating immission protection into the Zoning Plan has been more important than it used to be.

3.2.9 Action Plan 9 – Energy and Climate Protection

Subsidizing, District Heating, Low-Energy House

The new design and corresponding allocation of **district heating subsidizing** (City, Province, Utilities) have been concluded and will support the conversion of heatings to district heating and gas by environmental/energy subsidizing. The list of priority areas has been revised and adapted. It is true that there is **no obligation to be connected to district energy**. Nevertheless, subsidies do provide stimuli. The **extension of the district heating network** has been advanced successfully.

Last but not least the development of **energy subsidizing** may be assessed as being very positive in view of the creation of the **Environmental Service Center**, which combines consultancy and subsidizing service.

A **change in subsidizing for residential building activities** (implementing order), which would also have made building low-energy houses attractive for cooperatives, has not been made. Nevertheless, such a change would be very important because subsidizing for residential building activities can influence all the residential building activities. The examples in Vorarlberg and Salzburg show that almost all the new buildings will be built as low-energy houses within few years if there is the corresponding subsidizing.

Individual **low-energy houses** and **zero-energy houses**, (including photovoltaics), were built in the area of one-family houses. The **Project Residential Low-Energy Estate**, which was supposed to be carried out within KEK ("Kommunales Energiekonzept" – Municipal Energy Plan), was stopped because no real estate could be found. However, a similar private project was planned.

For fixing **energy indices** different from k values (heat pass), which will allow to assess the thermic standards of buildings in a uniform way, a guideline has recently been published by the "Österreichisches Institut für Bautechnik" ("Austrian Institute for Building Technology"). This guideline should also be incorporated into legislation.

Educational Initiatives

Programmes for the **further training of occupational groups** in the fields of heat insulation, passive use of solar energy, use of renewable energy sources are done in the form of **active building consultancy** in districts of Graz and public information evenings organized by the "Grazer Energieberatung" ("Energy Consultancy of Graz") and the "ARGE Erneuerbare Energie" ("Working Group Renewable Energy"; ARGE – Arbeitsgemeinschaft). There have been **Regular Meetings of Solar Engineers ("Solateure")** for some years. The **WIFI** (Wirtschaftsförderungsinstitut – Institute for the Promotion of Trade and Industry) offers a training course for **solar engineers**.

School projects for the use of solar energy are supported continuously. Prior to the "Environmental Party 1999", which was organized in June for the first time, there was an "Active Week" for the first time. The KEK Educational Initiative (KEK – Kommunales Energiekonzept – Municipal Energy Plan) offered several school projects in the school year 2000. These projects could be used for free by using a chequebook (**KEK Cheque**), which was sent to all the teachers and parents' representatives at schools in Graz.

CFC and Chlorinated Hydrocarbon

The issue CFC and Chlorinated Hydrocarbon has lost its topicality in view of the high number of actions successfully taken on a national and international scale in the last few years. The **expansion** of the targets and actions to **fluorocarbons** must be intensified.

4 Outlook and Strategy

4.1 Outlook

4.1.1 Parameters for Sustainability

As a result of the first evaluation of the programme "Eco-City 2000" by the "Eco-Team of Graz", the stated quantitative targets (parameters for sustainability) proved to be very suitable for assessing the development towards sustainability. It is true that not all the intermediate targets that had been set could be achieved. In some areas, a development in opposite direction may even be observed. Nevertheless, the positive effects of the successful work made in the last few years are clearly visible. This mainly refers to the improvement in the quality of the air in Graz and the drinking water situation, where most parameters defined for 2000 could be achieved as early as 1998.

For some parameters, however, a regional perspective will be required in future. Like this it will also be possible to observe the influence or the effects on regions outside the municipal area of Graz. This mainly refers to the areas "traffic" (commuters) and CO₂ Emissions. Here overall balances will be required instead of "Graz related" studies for the next evaluation.

The workload for evaluating the programme "Eco-City 2000" is made very high and thus time consuming by the high extent of the data to be acquired and to be assessed in a large-scale discussion. Besides, no major changes in the present results may be expected by 2001. Therefore, it seems to be useful to extend the period between the individual evaluations to five years. In this spirit, the next evaluation should take place in 2005. All the stated parameters for sustainability should remain in their existing shape until 2005 so that the evolution in the corresponding areas can be traced continuously.

4.1.2 Actions/Action Plans

The actions proposed in the 9 Action Plans of "Eco-City 2000" should be combined to bundles in future. These bundles should have a direct link to the parameters for sustainability. Like this the effects of the individual actions can be observed better and more distinctly.

Actions whose deployment cannot directly be influenced by the City of Graz were not assessed in the course of the evaluation and should no longer be traced in future.

4.2 Strategy

For the success in implementing "Ökostadt 2000 – Local Agenda 21", three factors are particularly important:

Information and Communication

Sustainability – this term, which is only known to few experts and is a catchword in politics, is anchored too little among the population. Therefore, it is, first of all, a matter of explaining sustainability. In the course of a "public awareness concept", open and straightforward **information and communication** must create a new awareness and motivate people to act differently. In this context, different target groups are to be addressed in a differentiated way.

Various institutions and organizations are to cooperate in an active **dynamic network**. A new type of cooperation, **networking** of all the important actors, can yield additional advantages and synergy effects.

For this, an intensive cooperation with the "Directorate of the Municipal Authorities of Graz – Department for Public Relations and Information" will be necessary.

Creating Stimuli

The deployment of "Local Agenda 21" must not only take place in the Department of Environmental Protection of the Municipal Authorities of Graz. Instead it must be anchored in the awareness all the Departments of the Municipal Authorities.

There are no single spectacular actions allowing to meet the parameters for sustainability quasi from one moment to the other. The working mechanisms are too complex for this. For this reason alone pilot projects are necessary. These projects are to signal the readiness to act even though measurable success cannot always be expected. Pilot projects also serve to test procedures and to develop the readiness to act.

The creation of a specific "Local Agenda 21 Budget", which must be accessible to all the Departments under certain conditions, is to create stimuli and make it possible to carry out projects relating to the issue of sustainability. The Main Office of the Municipal Authorities of Graz should administer the budget accordingly. The "Eco-Team of Graz" establishes the corresponding "subsidizing criteria".

Evaluating the Issue Related Programmes

Since "Eco-City 2000" was voted, different Issue Related Programmes directly referring to the individual Chapters of "Eco-City 2000" were developed on all the levels of the Municipal Authorities. The Chapters of "Eco-City 2000", which had been elaborated by experts, dealt with the evolutions in the pertaining areas in a competent way. By way of example, we would particularly like to mention the Issue Related Programme "Green Spaces" and GIVE.

In future, the existing Issue Related Programmes but also future Issue Related Programmes are to be subjected to a periodic evaluation to create additional stimuli for their deployment.

5 Annex Actions

- Comments to the individual actions
- Assessment of the degree of realization by the Eco-Team of Graz

+ completed or generally positive tendency

0 partly realized, existing deficits

- not tackled or generally negative tendency

Action Plan 1-

Private Households

1 Private Households

General

General No.	Action	Time Horizon	Actors
	General		
1	Establishing a communication concept fixing the basic conditions for all the tasks connected with communication and public relations in terms of the project Eco-City 2000	from 1995 continuously	Correspondence City Hall "MD", Dept. of Environmental Protection, "Wirtschaftshof"

Nobody has contacted MD. This should be intensified in future.

Comment: MD.

WH not involved in establishing the concept.

Comment: Wirtschaftshof.

"Eco-City" little known up to the evaluation, no contact A23-MD.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: 0

Communication on single projects is very lively. On the whole, there is much information but there is no overall concept. The actors in the MD are different from those that have prepared Eco-City 2000.

2	Environmental Week/Environmental Days/Environmental Party		
	Activity Day Climate Protection Environmental Party 95 under this motto	06/10/1995	Dept. of Environmental Protection, "Wirtschaftshof" (Waste Consulting Agency), initiatives, such as "ÖIE", "Arge Erneuerbare Energie" (Working Group Renewable Energy), "Arge Müllvermeidung" (Working Group Waste Prevention), "Arge Umwelterziehung" (Working Group Environmental Education)

Campaign "CFC in atomizers and PU foams" on the Hauptplatz;

Graz, the first city without CFC propellents / positive list for alternatives;

Survey SEGRO: Are products containing CFC still offered after being banned?

The activities mentioned above were published at the Environmental Party.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: +

The Environmental Party has, in the meantime, become a tradition. This year it was carried out for the tenth time. For the first time, a project week was organized beforehand. In this project week, the schools were offered a comprehensive programme relating to ecologically relevant

Annex Actions – private households

topics.

3	Prepare information material (BIG (Bürgerinformation Graz – Citizens' Information Graz): Environmental Page, Special BIG, etc.):		
	Handling household chemicals (avoid, replace, reduce, collect separately) and "black list" (list of substances that should not be used)	Until 1995	Waste Consulting Agency, Purchasing Department of the Municipal Authorities

The action is under way as a continuous project and is implemented in the course of purchasing planning, organization and control.

Aggressive chemicals are avoided by, e. g., using dry cleaning systems or by cleaning without chemistry in offices (microfibre).

The use of refilling systems and dosing devices leads to waste reduction (total and chemicals).

Providers must supply a safety data sheet and a questionnaire relating to the substances contained for each product. There is a "black list" (list of substances that should not be used).

Cleaning personnel is trained in two years' intervals.

Comment: Purchasing Department

A folder on problematic substances as well as a brochure "Umweltschonende Reinigungs- u. Pflegemittel" ("Ecologically beneficial cleaning agents and care products") were prepared. There were series in newspapers: "Courage": "Chemistry in the household"; "Neue Zeit": "Poisons in the household". In the supermarket chain SEGRO, a product survey relating to substances contained was carried out.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: +

The Purchasing Department of the Municipal Authorities of Graz has acted as a pioneer in ecologically beneficial purchasing for many years. Information and consultancy are continuously offered by the Waste Consulting Agency of the "Wirtschaftshof".

4	Prepare information material (BIG (Bürgerinformation Graz – Citizens' Information Graz): Environmental Page, Special BIG, etc.):		
	Influences of building materials and auxiliary building materials on the air in the interior of new buildings and redeveloped buildings	until 1996	Dept. of Environmental Protection, Institute for Building Biology

Information brochure prepared by the Institute for Building Biology, also distributed to the Department of Environmental Protection

Comment: Haus der Baubiologie

Assessment by the Eco-Team of Graz: -

There is an information deficit in terms of the influence of building materials on the air in the interior.

Annex Actions – private households

5	Prepare information material (BIG (Bürgerinformation Graz – Citizens' Information Graz): Environmental Page, Special BIG, etc.):		
	Sticker stating the water hardness for the washing machine	until 1995	Grazer Stadtwerke

June 1995 – Sticker stating the water hardness distributed to 110,000 households (Stadtwerke-Customer Periodical). Since then stickers have been distributed on all events dealing with the topic of water.

Comment: Grazer Stadtwerke

Assessment by the Eco-Team of Graz: +

6	Prepare information material (BIG (Bürgerinformation Graz – Citizens' Information Graz): Environmental Page, Special BIG, etc.):		
	Questions on gardens: indigenous species of wood, composting, alternative products to peat, etc.	until 1996	Wirtschaftshof (Waste Consulting Agency), City Garden Dept., Dept. of Environmental Protection

The City Garden Department has, up to now, supported citizens in many questions on garden architecture by direct consultancy. Special support for garden ponds was hardly made use of.

Comment: City Garden Department.

Information material prepared by the WH

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: 0

Direct consultancy is available at any time. As for composting, there is information material prepared by the WH. However, consultancy and information on questions on gardens are worth improving.

7	Prepare information material (BIG (Bürgerinformation Graz – Citizens' Information Graz): Environmental Page, Special BIG, etc.):		
	Environmental Calendar for the notice board in houses by stating the place and time of collections of bulky waste, problematic substances and giving hints at the consultancy service offered by the Municipal Authorities, contact addresses, etc.	until 1996	Wirtschaftshof, Dept. of Environmental Protection

For the notice board in houses, the dates for the clearance of junk in the district, for the express service for toxic waste (collection of problematic substances), an information poster on separate collection as well as topical information are distributed every year. At Christmas the dates for the places collecting Christmas trees are distributed.

Comment: WH.

Assessment by the Eco-Team of Graz: +

Information given by the WH is exemplary.

Annex Actions – private households

	Prepare information material (BIG (Bürgerinformation Graz – Citizens' Information Graz): Environmental Page, Special BIG, etc.):		
8	Publishing a Repair Guide	until 1996	Dept. of Environmental Protection, Chamber of Economics, "Wirtschaftshof"

The publication of a pertaining brochure is being prepared.

Comment: WH.

Is put into action by the "Ecological Company Consultancy" in cooperation with the Provincial Government and the Department of Environmental Protection.

Comment: Chamber of Economics.

A list of all the repair companies of Graz is being prepared again (cooperation with the "Ecological Company Consultancy").

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: -

Under way of preparation for a longer time but not put into action.

	Model projects and illustrative objects:		
9	Exhibition of low-noise devices	from 1997 continuously	Chamber of Economics

Has not been started yet.

Comment: Chamber of Economics.

Assessment by the Eco-Team of Graz: -

	Model projects and illustrative objects:		
10	Exhibition of devices saving energy	from 1996 continuously	Dept. of Environmental Protection, "Stadtwerke" of Graz

Exhibition room for electric and electronic devices in Steyrergasse 116. At the beginning guided tours for school classes. Due to a lack of interest, the exhibition room was closed again.

Comment: Grazer Stadtwerke

The project "Efficiency wins!", during which the sales of efficient electric and electronic household appliances was to be promoted by stating the average annual operating expenses and training salespersons, was not started because the companies were not sufficiently interested.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: -

Annex Actions – private households

11	Information campaigns:		
	Climate protection and others	from 1997 continuously	Dept. of Environmental Protection, initiatives (s. No. 2)

Environmental Party, which takes place every year; brochures prepared by various initiatives

Assessment by the Eco-Team of Graz: 0

Single activities were made but there were no real information campaigns.

Chemistry in the Household

12	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Establishing a team dealing with the load in the air in the interior of buildings. Information and measuring services are to be continued and extended.	From 1996	Dept. of Environmental Protection, Information Headquarters of the Provincial Hygienist

No separate team has been established.

Information and measuring services (formaldehyde, BTX) are provided by the Department of Environmental Protection, the Provincial Hygienist and the "House of Building Biology".

Comment: Department of Environmental Protection, "House of Building Biology"

The measuring and information services provided by the Provincial Hygienist have been developed and extended.

No common team has been established.

Comment: Provincial Hygienist

Assessment by the Eco-Team of Graz: +

The cooperation between the organizations mentioned above works very well. Upon request, measurements can be made at any time.

13	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Formulating a ban on using chemical pesticides in the lease and purchase contracts of the City of Graz, (which already exist or will be concluded)	until 1997	Legal Department, Real Estate Mgt.

Will be put into action in new contracts. At existing contracts, there is no possibility of intervention.

Comment: Real Estate Management

Annex Actions – private households

As for purchase contracts to be concluded, it is, in coordination with Mag. Abt. 41 (Mag. Abt. – Magistratsabteilung – Department of the Municipal Authorities) (Real Estate Management), targeted to formulate a ban on using chemical pesticides for real estates serving for agricultural purposes. As for existing contracts, there is no possibility of intervention. Lease contracts on real estate are concluded according to the business division of A 12 – Real Estate Management.

Comment: Legal Department

Assessment by the Eco-Team of Graz: -

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
14	Supporting the building of garden ponds and hedges	From 1995	City Garden Dept.

The City Garden Department has, up to now, supported citizens in many questions on garden architecture by direct consultancy. Special support for garden ponds was hardly made use of.

Comment: City Garden Department

Assessment by the Eco-Team of Graz: +

Direct consultancy is available at any time.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
15	More cost efficient sites for farmers specialized in organic farming (harvest for life) on farmers' markets in Graz by changing the market regulation and/or subsidies	From 1996	Market Department

Right now there are two farmers' markets for organic farming (Mariahilferplatz, Bad Eggenberg). The farmers specialized in organic farming have, from the beginning, been offered the opportunity to sell their products by the Market Department – but this was done in the sense of the principle of equality. Right now a change in the market regulation in the sense of the perception is not intended. The Market Department of Graz is not in the position to provide any subsidies for farmers specialized in organic farming either. Furthermore, the fees for the tables on the producers' markets in Graz may be regarded as being very low.

Comment: Market Department

Assessment by the Eco-Team of Graz: +

Trend to organic farming all over Austria.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
16	New regulation of the charge for the use of the sewerage system according to water consumption	until 1997	Sewerage Construction Department

Annex Actions – private households

Charges merely fixed according to water consumption are not in line with the polluter-pays principle. For the expenditure for maintaining and cleaning the sewerage system as well as the operation of the sewage clarification plant only depend on the sewage volume to a slight extent. What is practicable is a system combining basic charges and consumption charges as it is presently done by charging a lump sum for each lavatory (WC) (120 m³/a) and by charging an additional fee for each m³ of additional consumption. Right now the charges amount to ATS 2039,40 / (WC/a) or 11 S/m³ additional consumption of water.

Comment: Sewerage Construction Department

Assessment by the Eco-Team of Graz: -

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
17	Projects with/for students of architecture (TU Graz) relating to the topics biological building, biological interior design, biological renovating	From 1996	Dept. of Environmental Protection, TU Graz (Inst. for Building Construction), Institute for Building Biology

ECO Lecture given by Architect Neubauer.

Comment: House of Building Biology

Active building consultancy in districts of Graz in the form of public information evenings. EDP documents for planners for calculating the "Low-Energy House of Graz" are available. Diploma Thesis by Marlies Sofia (1998): Topic "Biological Building" "Ecological criteria for operational facilities" have been elaborated from the perspective of a female architect. An Architects' Climate Model has been conceived. The order for deployment has not been placed yet. Individual low-energy houses were built. The project "Low-Energy Housing Estates" in the course of the Municipal Energy Plan was stopped because no real estate was available. Nussmüller Office plans to erect a low-energy housing estate in Graz. The calculation model for low-energy houses has been provided.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

	Actions and campaigns carried out in cooperation with different institutions		
18	Ban on using chemical pesticides in garden regulations of the Home Garden Associations	Until 1997	Dept. of Environmental Protection, Home Garden Associations, City Garden Dept.

No ban on using but personal consultancy.

Comment: City Garden Department.

Different responsibility (letter to the City Garden Department)

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

In one Home Garden Association, there is such a ban on using.

Annex Actions – private households

	Actions and campaigns carried out in cooperation with different institutions		
19	Rapid and efficient replacement of connecting pipes made of lead for water pipes	Until 2000	"Stadtwerke" of Graz

According to the Regulation on the "Quality of water for use by man" dated July 23, 98, the admissible lead load in drinking water will be reduced from 50 µg/l to 10 µg/l in 2013. By that time, the lead pipes will have to be replaced.

1995-1998 renewing 1155 connecting pipes, rest (2800) planned until 2008.

Comment: Grazer Stadtwerke.

Assessment by the Eco-Team of Graz: +

The replacement of supply pipes in houses needs to be intensified even more (not a task of the "Stadtwerke" of Graz).

	Actions and campaigns carried out in cooperation with different institutions		
20	Continuing asbestos fibre volume measurements in the water supply network of Graz and making documentation publicly accessible	Until 1996	"Stadtwerke" of Graz

The City of Graz has not approached the "Stadtwerke". Extensive studies of asbestos in drinking water were carried out all over Austria. The results were published in 1993 in Volume 5/93 of the Federal Ministry for Health, Sports and Consumer Protection under the title "Asbest im Trinkwasser" ("Asbestos in drinking water").

Comment: Grazer Stadtwerke.

Assessment by the Eco-Team of Graz: +

	Actions and campaigns carried out in cooperation with different institutions		
21	"Round table" with businesspersons dealing in painting and do-it-yourself needs	Until 1996	Dept. of Environmental Protection, Chamber of Economics

Has not been started yet.

Comment: Chamber of Economics.

Assessment by the Eco-Team of Graz: -

Annex Actions – private households

22	Initiating important decisions relating to environmental policy in other institutions		
	Ban on the use of particularly (ecologically) toxic chemicals in/for the household, in particular ban on the use of pesticides for pest control	Until 1997	Federal Government (Regulation acc. to Chemical Act and Act regulating Plant Protectives)

No pertaining petition was drawn up.

Assessment by the Eco-Team of Graz: not assessed

Actions that are not in the sphere of responsibility of the City of Graz (petitions) are not tracked.

23	Initiating important decisions relating to environmental policy in other institutions		
	Obligatory product declaration (kind and quantity of the substances contained), in particular substances contained in building materials, pieces of furniture, products for hobby and do-it-yourself and handicraft needs	Until 1996	Federal Government (Trade Regulation, Regulation acc. to Chemical Act)

No pertaining petition was drawn up.

Assessment by the Eco-Team of Graz: not assessed

Actions that are not in the sphere of responsibility of the City of Graz (petitions) are not tracked.

24	Initiating important decisions relating to environmental policy in other institutions		
	Ban on the use of PVC, in particular for food packaging and other short-lived goods	Until 1996	Federal Government (Regulation acc. to Federal Waste Management Act, Regulation acc. to Chemical Act)

No pertaining petition was drawn up.

Assessment by the Eco-Team of Graz: not assessed

Actions that are not in the sphere of responsibility of the City of Graz (petitions) are not tracked.

25	Initiating important decisions relating to environmental policy in other institutions		
	Incorporating the sanitation (when, how, ...) of building materials containing asbestos into the Asbestos Regulation	Until 1997	Federal Government

No pertaining petition was drawn up.

Assessment by the Eco-Team of Graz: not assessed

Annex Actions – private households

Actions that are not in the sphere of responsibility of the City of Graz (petitions) are not tracked.

	Initiating important decisions relating to environmental policy in other institutions		
26	On all packs of tobacco products, the following hint is to be placed, "Smoking endangers your health and that of your fellow-men."	Until 1996	Federal Government

No pertaining petition was drawn up.

Assessment by the Eco-Team of Graz: not assessed

Actions that are not in the sphere of responsibility of the City of Graz (petitions) are not tracked.

Energy, Climate and Air

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
27	Establishing a programme for the thermal sanitation of public and private envelopes of buildings (Thermoprofit Graz)	Until 1996	City of Graz, "Stadtwerke" of Graz

For establishing and carrying out contracting programmes, the "Energy Agency of Graz" was founded. Sample contracts are continuously collected by the Energy Division of the Department of Environmental Protection. Requests for quotation for sanitations in the own area (Municipal Authorities) serve to create provider structures. The thermal sanitation of the Primary School Ries as well as heating conversions in two schools, i. e. Berlinerring and Karl Morre School, have been concluded.

The Chamber of Economics has offered to subsidize the Thermoprofit for three years by providing ATS 500,000.- every year. The GEA ("Grazer Energieagentur" – "Energy Agency of Graz") is to be the central body. The Advertising Agency i-Punkt has already elaborated a communication concept.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

The sanitations of the City Hall and Official Quarters ("Amtshaus") are handled as Thermoprofit Projects by the Energy Agency of Graz.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
28	Expand energy consultancy in Graz, extend the pertaining body (GREIF)	Until 2000	City of Graz

The Energy Agency of Graz has been founded.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Energy consultancy was expanded by founding the Energy Agency of Graz and is very popular.

Annex Actions – private households

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
29	State restriction zones for (solid!) fuels for space heating in the Zoning Plan (STEK 1990)	from now on	City Planning Dept.

In the Clean Air Plan, "quality zones for space heating" were initiated. In the Municipal Energy Plan, areas to be connected to district heating were stated.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Restriction zones are finished for legal reasons. The use of biomass is strongly intensified in border districts (zone in Andritz).

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
30	Action plan for the conversion of existing electric heatings to district heating and gas	from now on	Dept. of Environmental Protection, "Stadtwerke" of Graz

Is under way.

Comment: Grazer Stadtwerke.

The conversion of heatings to district heating and gas is supported within Environmental/Energy Subsidizing.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: +

Since the new edition of the Styrian Building Act, there have been no subsidies for electric heatings. Therefore, there is no stimulus.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
31	Ecological sanitation of the council flats, whose number amounts to appr. 5000, by using a funding model like that for converting the heating of buildings owned by the Municipal Authorities to pipe-linked energy sources	from 1996	Dept. of Environmental Protection, Dept. of Dwelling Affairs

Sanitations acc. to §18 MRG ("Mietrechtsgesetz" – "Law of Tenancy") have already been carried out at more than 50% of all the council houses. As for comprehensive sanitations, all the tenants' approval is required.

Comment: Department of Dwelling Affairs

Annex Actions – private households

Diploma Thesis M. Dollinger (1998): "Kosten/Nutzen-Analyse für die Drittmittelfinanzierung mittels Contracting" ("Cost/benefit analysis for third-means funding by means of contracting"). Preliminary talks were held with the competent Departments of the Municipal Authorities. Contracting is done by the GEA.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

The legal situation is problematic.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
32	Intensifying the use of renewable energy sources, in particular the installation of solar collectors, by increasing subsidizing and organizational support	from 1995	City of Graz

Fitters in Graz are not interested in such a cooperation. The information and further training of professionals are done continuously. Continuous marketing for the use of solar energy is made specifically to target groups. One example is solar hot water generation for sports facilities (2 projects implemented). School projects for using solar energy are being supported continuously. Demonstration objects with a solar long-time accumulator were implemented in one-family houses. Solar consultancy is provided by the "ARGE Erneuerbare Energie" ("Working Group Renewable Energy") in the GREIF. A modification of solar subsidizing is being prepared.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Intensify the cooperation with the fitters.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
33	Increasing subsidies for heat insulating measures going beyond the legal requirements and efficient heating systems	from 1995	City of Graz

The City of Graz subsidizes the "Low-Energy House of Graz". Right now there are no subsidies for heat insulation ("Thermoprofit" – GEA)

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Annex Actions – private households

34	Actions and campaigns carried out in cooperation with other institutions		
	Elaborating an accurate and efficient development plan for district heating in connection with a obligation to be connected	Until 1996	Dept. of Environmental Protection, "Stadtwerke" of Graz

There are priority areas for natural gas and district heating but there is no regulation for the obligation to be connected to district heating.

Comment: Grazer Stadtwerke

The list of the priority areas for district heating has been revised and adapted. The obligation to be connected to district heating was treated in the Municipal Energy Plan.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

In the last 10 years, the district heating network has been successfully expanded by means of subsidizing activities. The consumption values have increased accordingly (doubling!). The expansion of the district heating network is a central strategic item for Graz (budget ATS 7 mio/a).

35	Initiating important decisions relating to environmental policy in other institutions		
	Dynamic efficiency standard for electric and electronic devices: after three years, today's optimal value should be used as a limit	Until 1997	Federal Government (Regulation relating to the Law on Electrical Engineering)

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Has been done.

36	Initiating important decisions relating to environmental policy in other institutions		
	Commitment to sanitating old houses relating to energy, subsidizing according to this criterion	Until 1996	Provincial Government (provisions for subsidizing in residential building)

Introduction of a Building Survey Sheet for simplifying the assessment of the building envelope and required improvement actions in terms of energy. The windows and heatings will only be replaced if the energy balance of the house meets the requirements.

Comment: RA 14

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

Is being implemented. However, the requirements for subsidies are not high.

Noise Abatement

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
37	Emission limits (max. noise level), introduction of a category "Low-noise devices" in the "Noise Protection and Clean Air Regulation" of Graz	Until 1997	City of Graz (Noise Protection and Clean Air Regulation)

Not included in the Regulation, which was passed by the Municipal Council on July 2, 1998, and deals with the protection from immissions impairing local community life (ISVO – "Immissionsschutzverordnung" – Immission Protection Regulation).

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: -

	Initiating important decisions relating to environmental policy in other institutions		
38	Noise identification of household appliances	Until 1997	Federal Government (Law on Electrical Engineering)

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Actions that are not in the sphere of responsibility of the City of Graz (petitions) are not tracked.

Action Plan 2-

Public Buildings

2 Public Buildings

Allgemein

No.	Action	Time Horizon	Actors
1	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
	Making ecologically compatible purchasing legally binding for all the Divisions of the Municipal Authorities. At each purchasing, it is necessary to justify separately why it is not the product most ecologically compatible that has been purchased.	Until 1996	City of Graz

Making ecologically compatible purchasing legally binding has been completed. A separate justification is not possible.

Comment: Purchasing Department.

Assessment by the Eco-Team of Graz: +

The Purchasing Department of the Municipal Authorities of Graz has acted as a pioneer in ecologically beneficial purchasing for years and continues to endeavour to meet this challenge by ensuring continuous further development.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
2	Pioneer role of the Municipal Authorities for the selection of materials and innovative building techniques that are in line with building biology in sanitations and new buildings, (e. g. installing transparent heat insulation, solar collectors, photovoltaics, use of service water, sound insulation). At each building project, the reasons for not taking such actions must be justified.	from now on	Dept. of Environmental Protection, City School Department, Dept. of Dwelling Affairs, Real Estate Management, Dept. of Building Construction

For all the large-scale sanitations (§18 as well as comprehensive sanitations), the selection of materials is specified in the Requests for Quotation (materials that are in line with building biology). Since 1998, the Energy Agency of Graz has been incorporated into house sanitation as far as the relevant objects are suited for a more cost efficient energy source. Tenants as well as co-owners cannot be forced to accept the energy plan.

Comment: Department for Dwelling Affairs.

Annex Actions – public buildings

Energy controlling by means of computer aided energy accounting is being carried out continuously. The master data is being acquired and evaluated. A project, "System for making proposals for ideas and hints for saving energy" is being elaborated. A basic vote "Low-Energy House" for new buildings built for the Municipal Authorities was taken in the Municipal Council but has not been put into action yet. Between 1995 and 1997, 20 school objects were sanitized in terms of energy. The Karl Morre School was equipped with a collector surface for solar hot water preparation, which covers 40 m².

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: -

In such details as the selection of building materials, in particular for new buildings, (e. g. schools), deficits are identifiable. These deficits are mainly due to problems with decision-taking in the City School Department, the Real Estate Management and the Department of Building Construction.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
3	Further training of the officials relating to ecological building materials and techniques. For each employee, at least 2 days a year must be provided for this.	from 1996 continuously	Dept. of Environmental Protection, City School Department, Dept. of Dwelling Affairs, Real Estate Management, Dept. of Building Construction

Up to now, this had neither been possible in the Academy of Administration nor via the Training Department.

Comment: Department of Dwelling Affairs

In a letter to the Academy of Administration, a pertaining offer was initiated.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: -

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
4	Standards that are particularly stringent are to be at the basis of purchasing in kindergartens, day nurseries and schools	from now on	Purchasing Dept., City School Dept., Dept. of Youth and Family, "Wirtschaftshof"

Is taken into account continuously. The requesting Division must contribute in pursuing this goal.

Comment: Purchasing Department

The exclusive use of ecologically compatible cleaning agents is anchored for placing orders.

Comment: Department of Youth and Family

Pieces of furniture made of solid wood are manufactured by the joiner's shop of the WH.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: +

Annex Actions – public buildings

Purchasing for existing objects as it is done by the Municipal Authorities of Graz is a role model. However, there are deficits in the selection of building materials for new buildings and rebuilding. Here a stronger networking among the competent bodies should be striven for.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
5	Binding facilities for waste separation and securing their sites for all the new buildings and sanitations by order of the Municipal Authorities	from now on	Real Estate Mgt., Dept. of Youth and Family, City School Dept., Dept. of Dwelling Affairs, Purchasing Dept.

A Waste Management Concept is being elaborated. Financial means for making sure purchasing of pertaining facilities covers a large area (cost estimates and systems can be viewed at the WH) have not been available from the beginning. The deployment has partly been completed (A6, Official Quarters ("Amtshaus") and individual Sections upon their own initiative).

Comment: Purchasing Department.

In kindergartens, day nurseries, homes and children's cribs, paper and household waste are principally collected separately. Glass is disposed of via the nearest public glass container. In 30% of the day nurseries and homes and in 50% of the kindergartens, containers for bio-waste and/or composters are used. In the other cases, there is too little bio-waste; problems are due to annoyance caused by bad smell; excessive delivery of food can be restricted by changing planning/ordering in the central kitchen for kindergartens and day nurseries on a short-term basis, which means low volumes of bio-waste.

Comment: Department of Youth and Family.

The facilities were – as far as possible – installed in all the municipal objects in cooperation with the Waste Consulting Agency of the "Wirtschaftshof" and the AEVG. Tenants speaking foreign languages are handed over Waste Separating Brochures in the respective mother tongue upon conclusion of the tenancy agreement.

Comment: Department of Dwelling Affairs.

Assessment by the Eco-Team of Graz: 0

The budget 2000 allowed to equip all the offices with corresponding containers for a separate collection. Most schools serving for compulsory education still lack the possibilities of separate collection.

Annex Actions – public buildings

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
6	Low-noise office machines, garden appliances, household appliances, powered devices (stating the noise level in Requests for Quotation)	from now on	Purchasing Dept., "Wirtschaftshof", City Garden Dept., Road and Bridge Construction Dept.

Deployment for office machines for many years; occasionally for different devices if no other priorities were required

Comment: Purchasing Department.

If it is economically feasible, low-noise devices will be used.

Comment: City Garden Department.

The Purchasing Department issues Requests for Quotation for low-noise devices and purchases such devices.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: +

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
7	Compulsory purchasing of low-noise municipal vehicles, (in particular electric vehicles), and use as advertising medium ("Ecological Municipal Authorities")	from now on	Purchasing Dept., "Wirtschaftshof", Road and Bridge Construction Dept., City Garden Dept.

Vehicles are not purchased by the Purchasing Department.

Comment: Purchasing Department.

If it is economically feasible, low-noise devices will be used.

Comment: City Garden Department.

This has been taken into account in the Requests for Quotation for many years. The vehicles are tested every 2 years.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: 0

Annex Actions – public buildings

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
8	Renouncing the purchasing of products containing CFC in the Municipal Authorities and companies owned by the City without exception	from now on	Purchasing Dept., "Wirtschaftshof", "Stadtwerke" of Graz

Has been completed.

Comment: Purchasing Department.

Has been completed. Has been intensified since 1986.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: +

In future, a pertaining renunciation should also be applicable for fluorocarbons.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
9	Renouncing the purchasing of products made of PVC for the offices and interior in the Municipal Authorities and companies owned by the City without exception	from now on	Purchasing Dept., "Wirtschaftshof", "Stadtwerke" of Graz

Has been completed.

Comment: Purchasing Department.

Has been completed.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: +

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
10	Placing orders for the servicing of office machinery, garden appliances, powered devices and municipal vehicles only with service providers that have been granted an Environmental Award	Until 1996	Purchasing Dept., "Wirtschaftshof", Real Estate Mgt., City Garden Dept., Road and Bridge Construction Dept.

Office machinery is repaired by the repair shop of A20. Certain devices are bound to the manufacturer.

Comment: Purchasing Department.

Annex Actions – public buildings

Repairs are mainly made in the workshops owned by the City or by the manufacturer. For placing orders with service providers that have been granted an Environmental Award, it would be necessary to amend the Placing Guidelines.

Comment: City Garden Department.

Orders for the servicing of office machinery and other facilities are placed by the Purchasing Department.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: 0

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Introducing or continuing ecologically compatible purchasing in the Municipal Authorities		
11	Replacing fire extinguishers containing halon in the Municipal Authorities and companies owned by the City	from 1996	Purchasing Dept., "Wirtschaftshof", Fire-Brigade

Has been implemented for 7 years.

Comment: Purchasing Department.

No halon extinguishers are used.

Comment: Wirtschaftshof.

No halon extinguishers are used.

Comment: Fire-Brigade.

Assessment by the Eco-Team of Graz: +

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Parties and festivals:		
12	Purchasing mobile dishes. Compulsory use at events that need to be approved by the Municipal Authorities and fixing the ecological boundary conditions for the power of disposition	Until 1997	"Wirtschaftshof", Road and Bridge Construction Dept., Dept. of Environmental Protection, Building Inspection Authorities, Market Dept., Trade Dept.

A4 is not involved.

Comment: Trade Department.

Was done in 1996 (operator: ÖKOService).

Comment: Wirtschaftshof.

Purchasing by WH; prescribing the use of mobile dishes possible in the licensing procedures relating to the event.

Comment: Road and Bridge Construction Department.

Annex Actions – public buildings

Mobile dishes have been purchased. Purchasing for the Schwarzenegger Stadium is under way.

Comment: Department of Environmental Protection.

No relevant discussions were held with the Market Department.

Comment: Market Department

Assessment by the Eco-Team of Graz: +

In future the use of mobile dishes can be prescribed in the licensing procedures carried out by the Road and Bridge Construction Department.

13	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Parties and festivals:		
	Installing an IT supported Environmental Information System in connection with the digital map of Graz	from 1996	Dept. of Environmental Protection, City Surveying Dept.

System currently on SICAD SD 98 with data from EMIKAT 95. Due to software problems, the system needs to be supplemented by ARC Software.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: 0

Must have been processed by the next evaluation.

Energy, Climate, Air

14	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Reduction in the road dust load by taking organizational measures and making investments	ab 1995	City of Graz, Province of Styria

Use of grit that is harder and more abrasionproof (basalt). Carpeting is to be minimized. Use of road sweepers down to -2°C; additional renting of sweepers in spring.

Comment: Wirtschaftshof.

Continuous efforts taken by the WH. Study group meetings took place.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

Improvements have been achieved by the conversion to more abrasionproof grit.

Annex Actions – public buildings

15	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Reduction in the heat required for heating purposes and in the emitted pollutants:		
	Specifically establishing an energy management for the Municipal Authorities	from on	now on

Energy controlling is being carried out continuously. The master data is being acquired. The installation of a data exchange through teletransmission is being prepared.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

16	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Reduction in the heat required for heating purposes and in the emitted pollutants:		
	Further conversions of public buildings to low-pollutant fuels (district heating and gas)	from on	now on

The school objects Karl Morre and Berlinerring, which had been heated by electric power, were converted to natural gas in 1997.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Thanks to the conversion of heatings, energy savings amounting to 25% could be achieved in the last few years.

17	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Reduction in the heat required for heating purposes and in the emitted pollutants:		
	Development and deployment of a funding model for heat insulation measures for public buildings as it has been practised at the conversion to district heating and long-distance gas ("Thermoprofit")	from on	now on

For establishing and carrying out contracting programmes, the "Energy Agency of Graz" was founded. Sample contracts are continuously collected by the Energy Division of the Department of Environmental Protection. Requests for quotation for sanitations in the own area (Municipal Authorities) serve to create provider structures.

The Chamber of Economics has offered to subsidize the marketing for the Thermoprofit Project for three years by providing ATS 500,000.- every year. The GEA ("Grazer Energieagentur" – "Energy Agency of Graz") is to be the central body. The Advertising Agency i-Punkt has already elaborated a communication concept.

Comment: Department of Environmental Protection.

Annex Actions – public buildings

Assessment by the Eco-Team of Graz: +

Sanitations in the public sector are carried out as Thermoprofit Projects (City Hall, Official Quarters ("Amtshaus")).

18	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Reduction in the heat required for heating purposes and in the emitted pollutants:		
	Improvements of heating controllers (controllers for single rooms) in public buildings	from now on	Real Estate Mgt., City School Dept., Dept. of Environmental Protection, Contracting Partner(s)

In more than 20 objects owned by the Municipal Authorities, such as schools and kindergartens, DDC's (digital direct controllers), mainly controllers for single rooms, were installed. The installation of a data exchange through teletransmission relating to the counter counts and remote access to the controllers are being prepared.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

The data exchange through teletransmission and control in schools of Graz have stood the test.

19	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Reduction in the heat required for heating purposes and in the emitted pollutants:		
	Replacing the existing electric heatings in the area of the Municipal Authorities by energy sources that are ecologically more compatible	from now on	Real Estate Mgt., City School Dept., Dept. of Environmental Protection, Contracting Partner(s)

The school objects Karl Morre and Berlinerring, which had been heated electrically, were converted to natural gas in 1997. Still other conversions are being planned.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

20	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Reduction in power consumption:		
	Conversion of lighting in the Municipal Authorities and other public objects to highly efficient lamps and reflectors, possibly control by photocells. Frequency modulated chokes for street lamps	From now on	Dept. of Environmental Protection, Purchasing Dept., Real Estate Mgt., City School Dept., Road and Bridge Construction Dept.

Annex Actions – public buildings

Is under way as a continuous project. An external consultant is entrusted with neutrally assessing the present light conditions and analyzing the products on the market.

Comment: Purchasing Department.

Using twilight switches for street lamps. At a rebuilding and new building, energy saving lamps are used. In 1998, several streets in the old city were retrofitted (rest appr. 20%). The reduction between 12 pm and 5 am has still not been carried out in appr. 40% of the municipal area (financial means are missing).

Comment: Road and Bridge Construction Department.

In the sanitated schools, mainly electronic chokes and energy saving lamps were installed.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

21	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Pilot and model projects		
	Development of a graduated plan for the use of zero-emission vehicles in the municipal area	From 1996	Dept. of Environmental Protection, "Wirtschaftshof"

Responsibility A23

Comment: Wirtschaftshof.

Bio-fuel project (Ökodrive) is under way. "Zero emission" with electric vehicles is restricted. Prescriptions cannot be put into action in the US.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: 0

22	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Pilot and model projects		
	Use of low-energy house construction when erecting objects owned by the City. Target 50kWh/m ² and year; for sanitations 65kWh/m ² and year	from 1996	Dept. of Environmental Protection, Building Authorities, Real Estate Mgt.

A declaration of principles "Low-Energy House" for new buildings owned by the Municipal Authorities was voted in the Municipal Council. However, it has not been put into action yet.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: -

The public authorities should give signs in terms of public buildings!

Annex Actions – public buildings

23	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Pilot and model projects		
	Use of renewable energy sources, (in particular solar collectors), for hot water treatment in municipal objects	from now on	Real Estate Mgt., Dept. of Building Construction, City School Dept., Dept. of Environmental Protection

The action has been implemented. The potential is classified as being very high. The use of renewable energy serves to reduce emissions, save energy and increase economic efficiency. In the Kindergarten Mariatrost, the heating is operated by means of a solar/water heat pump. In the Karl Morre School, appr. 70% of the hot water requirements are covered by solar collectors, the rest by means of a gas firing plant.

Comment: Dept. of Building Construction.

The Karl Morre School was equipped with a collector surface for solar hot water preparation, which covers 40 m².

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: +0

24	Initiating important decisions relating to environmental policy in other institutions		
	Adapting legal regulations for building by targeting at a more efficient use of energy resources and the use of renewable energy sources	Until 1996	Styrian Building Regulations, Styrian Building Act, Zoning Act, Law regulating the Preservation of the Old City of Graz, Sweeping Regulations, Fire Police Act, Law regulating Subsidies for Residential Building

Implementing order to the Styrian Law regulating Subsidies for Residential Building 1993, according to which additional costs and expenses to be borne for alternative energy installations are to be covered.

Comment: RA 14.

The Building and Zoning Acts are to be re-enacted by the provincial legislator. The City of Graz has submitted the pertaining comment under the coordination of the Building Law Department. No influence has been exerted by any different body.

Comment: Building Law Department.

Assessment by the Eco-Team of Graz: not assessed

Annex Actions – public buildings

	Initiating important decisions relating to environmental policy in other institutions		
25	Development of graduated plans for the use of zero-emission vehicles by public institutions and organizations	Until 1996	Federal Govt., Provincial Govt., Transportation Services of Graz, Transportation Association

The state of the art is not suitable for general use; problems with costs

Comment: GVB (Grazer Verkehrsbetriebe – Traffic Services of Graz).

No responsibility

Comment: FA 5.

Bio-fuel project (Ökodrive) is under way. "Zero emission" with electric vehicles is restricted. Prescriptions cannot be put into action in the US.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: not assessed

By using bio-fuel made from used frying oil methyl ester (UFO-ME) in buses of the GVB, a trend-setting step has been taken. However, zero emission is not technically feasible.

Air in the Interior of Buildings

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
26	Programme for determining the increased load in the air in the interior of buildings, (in particular asbestos and radon), in hospitals, schools, kindergartens. Developing sanitation concepts	from 1996	Youth Department, Real Estate Mgt., Social Dept., Province of Styria, Dept. of Environmental Protection

Is under way. (ÖNRAP; investigations D. I. Ambros, A21)

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: 0

Measurements are possible at any time. However, there is no pertaining programme.

Water Management

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
27	Replacing drinking water by service/rain water for irrigating green areas, cleaning streets and roads, car wash plants. Checking all the municipal buildings and installations with a high water consumption. Forming the awareness of the employees by corresponding training	from now on	Dept. of Environmental Protection, "Wirtschaftshof", City Garden Department

Annex Actions – public buildings

A study (DI Dr. Weiß) on the replacement of drinking water by service water, etc., in all the public buildings was commissioned by the WH. The study is to give information on the use of water from the Mur and Mühlgangwasser resp. for cleaning the streets and for operating a car wash plant.

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: 0

Is put into action for cleaning the streets and operating the wash plant of the WH.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
28	Recording and (if necessary) replacing drinking water pipes made of lead in municipal buildings	from 1996	Real Estate Mgt.

Assessment by the Eco-Team of Graz: -

Must be intensified.

Action Plan 3-

Companies

3 Companies

General Actions

No.	Action	Time Horizon	Actors
1	Promoting in-company preventive environmental protection		
	Continuing Ökoprofit	continuously	Dept. of Environmental Protection, Trade Dept.

Waste and emission prevention programme for companies of Graz (production and service companies, public institutions > 20 employees, tourist companies), no support by the Trade Department.

Comment: Department of Environmental Protection.

The Management is assumed by A 23.

Comment: Trade Department.

Assessment by the Eco-Team of Graz: +

By 1999, 75 companies had been awarded the title Ökoprofit Company.

2	Promoting in-company preventive environmental protection		
	Establishing an Ökoprofit Club for companies of Graz under the guidance of the Department of Environmental Protection	from 1995	Dept. of Environmental Protection, Trade Dept.

Continuing to coach the Ökoprofit Companies (no support by the Trade Department).

Comment: Department of Environmental Protection.

The Management is assumed by A 23.

Comment: Trade Department.

Assessment by the Eco-Team of Graz: +

In the meantime, the Ökoprofit Club has grown to 35 members.

3	Promoting in-company preventive environmental protection		
	Presenting an Ökoprofit Company Award in analogy to the COUNCIL REGULATION No. 1836/93 (EMAS REGULATION) for Eco-Audits	continuously	Dept. of Environmental Protection, Trade Dept.

Is done every year (no support by the Trade Department).

Comment: Department of Environmental Protection.

The Management is assumed by A 23.

Annex Actions - companies

Comment: Trade Department.

Assessment by the Eco-Team of Graz: +

	Promoting in-company preventive environmental protection		
4	Coordination of the activities taken for preventive environmental protection by all the involved parties	from 1995	Dept. of Environmental Protection, Trade Dept., Building Law Dept., "Wirtschaftshof", Chamber of Economics, Province of Styria

Is not in the sphere of responsibility (Environmental Coordinator).

Comment: Wirtschaftshof.

A 4 is only involved as an authority.

Comment: Trade Department.

A procedure that should be fixed in mutual consent between the Trade and Building Departments and should be equally applicable to various Departments would have to be initiated by the MD. What needs to be expected is whether the shift of the competency as it is intended in the Law regulating Plants enters into force.

Comment: Building Law Department.

Assessment by the Eco-Team of Graz: 0

On the right way but not yet applicable to various Departments.

In the course of licensing procedures, companies are offered consultation hours by the Municipal Authorities (project related consultation days with experts and companies).

In future, CPC Process Management Programmes for verifiers will be offered (also by the Provincial Government).

The WIFI (Wirtschaftsförderungsinstitut – Institute for the Promotion of Trade and Industry) starts training programmes for preventive environmental protection.

Employees of the Department of Environmental Protection are fully involved due to Ökoprofit.

	Promoting in-company preventive environmental protection		
5	Creating training programmes for in-company preventive environmental protection for the experts of the Municipal Authorities	from 1996	Dept. of Environmental Protection, Building Inspection, Coordinator of Environmental Protection, "Wirtschaftshof"

The action is being prepared. In the course of a Life Project, the Cleaner Production Center-Austria is preparing a prototype of such a training programme.

Comment: Department of Environmental Protection.

The Chamber of Economics plans to carry out a pertaining programme for the technical experts and planners of the Province in cooperation with the Administration Academy of the Provincial Government in autumn.

Comment: Wirtschaftskammer.

Is not in the sphere of responsibility (Environmental Coordinator).

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: 0

	Promoting in-company preventive environmental protection		
6	Coupling the promotion of trade and industry to the execution of an Eco-Audit or to the participation in Ökoprofit or Prepare or similar projects	from now on	City of Graz

Such a coupling is not included in the Promoting / Subsidizing Guidelines.

Comment: Department of Environmental Protection.

The Chamber of Economics is opposed to coupling the subsidies to the participation in such projects as Ökoprofit. The companies should take part voluntarily.

Comment: Chamber of Economics

Assessment by the Eco-Team of Graz: -

	Recording in-company environmental data		
7	Creating a material flow analysis for Graz	from 1997	Dept. of Environmental Protection, Trade Department, "Wirtschaftshof", Province of Styria

For the partial areas air and water (Aquaprofit – Stenum), analyses are available. As for the partial area waste, there were approaches via Diploma Theses. However, these approaches have not been pursued.

Comment: Department of Environmental Protection.

The competent body is not known.

Comment: Wirtschaftshof.

Not known – A 4 not involved.

Comment: Trade Department.

Assessment by the Eco-Team of Graz: 0

The "Montanuniversität Leoben, Institut für Entsorgungs- und Deponietechnik" ("Leoben University, Institute for Waste Disposal and Landfill Technology") prepared the Water Balance of Graz (input/output analysis) of the municipal area of Graz in order to obtain information on the development of water consumption and the most important consumer groups.

Leoben University (Prof. Hofer) is elaborating an evaluation system according to eco-points for Graz. This system will be of utmost importance for future evaluations.

Two companies of Graz took part in a pilot project, which consisted in undergoing an audit according to the IPPC Directives of the EU (IPCC – Industrial Pollution Prevention Control). They successfully completed this audit.

Annex Actions - companies

8	Recording in-company environmental data		
	Creating and maintaining an IT supported Cadastral Map for Emissions in Companies (air and waste)	from 1995 continuously	Dept. of Environmental Protection, "Wirtschaftshof"

The Cadastral Map for Emissions 95 (air) has been completed (EDP – AP2 No. 13). For waste, the data may be taken from the Waste Database.

Comment: Department of Environmental Protection.

Is not in the sphere of responsibility. (A23)

Comment: Wirtschaftshof.

Assessment by the Eco-Team of Graz: +

LUIS, the "Landes-Umweltdateninformationssystem" ("Environmental Data Information System") is in the midst of being established. In future, all the ecologically relevant data will be displayed in a uniform system and can be linked to that system, (e. g. Chimney Sweeper File coupled with a geographical system).

9	Recording in-company environmental data		
	Introducing continuous measuring programmes for large-scale emitters	from 1996	Dept. of Environmental Protection, Sewerage Construction Dept.

The exhaust air or gas are measured by Joanneum Research. As for waste, there are no continuous measuring programmes. Large-scale emitters in the field of sewage water are checked by the Sewerage Construction Department.

Comment: Department of Environmental Protection.

With the support of the Water Right Authority (only body authorized to prescribe measurements), the required measurements were prescribed to all the known large-scale emitters and were carried out. At parties indirectly discharging sewage, there are checking measurements.

Comment: Sewerage Construction Department.

Assessment by the Eco-Team of Graz: +

10	Promoting programmes for further training:		
	Creating a training programme for environmental experts in companies with the priorities energy and waste	from 1996	Dept. of Environmental Protection, Chamber of Economics, Universities

Training programmes are carried out via Ökoprofit Projects, the "Arge Müllvermeidung" (Working Group Waste Prevention) (training to the Company Waste Representative), the WIFI (Wirtschaftsförderungsinstitut – Institute for the Promotion of Trade and Industry), the Styrian Chamber of Economics and the Ecological Company Consultancy (training and consultancy programmes in cooperation between the Provincial Government, the Chamber of Economics and the WIFI).

Comment: Department of Environmental Protection, Chamber of Economics.

Assessment by the Eco-Team of Graz: +

A corresponding course is starting at the "Institut für Verfahrenstechnik of TU-Graz" ("Institute of Process Technology" at the "Technical University of Graz").

Corresponding projects of university institutes relating to this topic should, e. g., be increasingly offered by Diploma Theses.

11	Promoting programmes for further training:		
	Carrying out marketing campaigns for sanitations of buildings and heatings in cooperation with municipal providers; target group: commercial enterprises	from 1996	Dept. of Environmental Protection, Chamber of Economics, NGO's

"Thermoprofit" Project of the Energy Agency of Graz.

Comment: Chamber of Economics

Final Report 96 "ARGE Erneuerbare Energie" ("Working Group Renewable Energy"). The Chamber of Economics has offered to subsidize the Thermoprofit Project for three years by providing ATS 500,000.- every year. The GEA ("Grazer Energieagentur" – "Energy Agency of Graz") is to be the central body. The Advertising Agency i-Punkt has already elaborated a communication concept.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: +

Within Thermoprofit, a comprehensive marketing project is carried out by the Energy Agency of Graz.

The Programme Thermoprofit-Plus – ecological building – also is carried out successfully by the GEA.

12	Promoting programmes for further training:		
	Public relations and establishing programmes for further training in the fields of heat insulation, passive use of solar energy, use of renewable energy sources for occupational groups concerned	from 1995	Chamber of Economics, Utilities

Energy consultancy is being offered in the course of customer service.

Comment: STEWEAG

Training "Solar Engineers" (WIFI (Wirtschaftsförderungsinstitut – Institute for the Promotion of Trade and Industry) and LEV (Landesenergieverein – Provincial Energy Association)).

Comment: Chamber of Economics.

Continuous building consultancy in 4 districts of Graz, solar consultancy in the GREIF, Final Report 96 "ARGE Erneuerbare Energie" ("Working Group Renewable Energy").

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: 0

Consultancy for interested groups has a very positive course.

In future, the wishes of target groups should be increasingly responded to.

Annex Actions - companies

13	Promoting programmes for further training:		
	Intensified public relations relating to existing environmental subsidies and programmes	from 1995	Dept. of Environmental Protection, Correspondence City Hall "MD"

Nobody has contacted MD.

Comment: MD.

Has not been started yet.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: +

The pot of subsidies for 1999 (ATS 10 mio) has been exploited. This means that the existing public relations relating to environmental subsidizing may be assessed as being very positive.

14	Promoting programmes for further training:		
	Creating consultancy offers for companies relating to the low-noise building of operational facilities in the course of ecological company consultancy	from 1995	Dept. of Environmental Protection, Chamber of Economics

Right now Consultation Day for Environmental Protection, which is offered by the WIFI (1 x a month) relating to the topic facilities.

Comment: Chamber of Economics.

Assessment by the Eco-Team of Graz: 0

General Legal Actions

15	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Considering environmental aspects when preparing the Zoning Plan	from now on	City of Graz

The list of priority areas for district heating has been revised and adapted. The obligation to be connected to district heating was dealt with in the Municipal Energy Plan and must be ordained by the City Planning Department. In the Clean Air Plan, "quality zones for space heating" were initiated. In the Municipal Energy Plan, areas to be connected to district heating were stated. Both actions must be ordained by the City Planning Department. City and building planning that is aware of energy related issues is suggested in the KEK Report 16 (KEK – Kommunales Energiekonzept – Municipal Energy Plan).

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

The regulation on an obligation to be connected to district heating (by the Building Law Department) is regarded as being obsolete. For it would only be realizable by subsidizing guidelines socially graduated, which do not exist. There are subsidizing stimuli.

Annex Actions - companies

For taking over costs for planting, (e. g. Linz: 1-2%), there would have to be a pertaining provision in the Building Act or at the corresponding Subsidizing Bodies.
 A "Strategic Environmental Planning", which is suggested by the EU, will have to be intensified when creating the Zoning Plan, (e. g. Weiz: use on problematic areas).
 As for the problems related with traffic, linking development plans (access roads, public transportation, etc.) will have to be considered to an increasing extent in future. The STEK ("Stadtentwicklungskonzept" – "City Development Concept") will have to be reviewed for this.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
16	Strictly adhering to the regulations of building law even though all the other licensing procedures have been completed successfully	from now on	City of Graz

The question as to whether the building regulations are strictly adhered to in all the procedures is taken into account independently from other licenses.

Comment: Building Law Department

An "energy pass" for the assessment of new buildings has been developed.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
17	Amending the allocation of functions within the Municipal Authorities so that the Department of Environmental Protection is actively involved in all the ecologically relevant decisions of the Municipal Authorities	from now on	City of Graz

Assessment by the Eco-Team of Graz: 0

It is true that a corresponding integration is prescribed in a provincial law ("Presidential Decree"). Nevertheless, it has not been enacted yet.
 If an EMAS Audit is passed, this will be done automatically.

	Initiating important decisions relating to environmental policy in other institutions		
18	Anchoring the principle of cleaner production as a prerequisite for licensing (§ 77 GewO – Gewerbeordnung – Trade Regulation Act)	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: -

A tendency in the opposite direction is identifiable.

Annex Actions - companies

19	Initiating important decisions relating to environmental policy in other institutions		
	Introducing operating licenses limited in time in the Trade Regulation Act and making it possible to adapt existing companies to the state of the art in the sense of preventive sanitation	Until 1996	Federal Government (Trade Regulation Act)

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

In the IPPC Directives of the EU (IPCC – Industrial Pollution Prevention Control), a new licensing within eight years is prescribed. A new licensing also is necessary in case of technological modifications.

Such a prescription is inconceivable in Austria in view of the legal situation.

Please also refer to the Summary of Actions 18-23.

20	Initiating important decisions relating to environmental policy in other institutions		
	Relativizing the right to claim an operating license by adding the words "unless other public interest is opposed to this" as the first collateral sentence in Provision § 77 al.1 1 st sentence Trade Regulation Act	Until 1996	Federal Government (Trade Regulation Act)

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Please also refer to the Summary of Actions 18-23.

21	Initiating important decisions relating to environmental policy in other institutions		
	Anchoring material flow analyses (ecological balances) in the Trade Regulation Act, efficiency having to be evidenced every two years in the sense of the COUNCIL REGULATION No. 1836/93 (EMAS REGULATION) for Eco-Audits	Unitl 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Please also refer to the Summary of Actions 18-23.

Annex Actions - companies

	Initiating important decisions relating to environmental policy in other institutions		
22	Anchoring a legal Environmental Representative in the Trade Regulation Act	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Please also refer to the Summary of Actions 18-23.

	Initiating important decisions relating to environmental policy in other institutions		
23	Extending the immission related protective provisions in building law by emission related requirements also in view of pollutants relevant for greenhouse gases	Until 1996	Province of Styria

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Summarizing Comment of the Eco-Team of Graz to Actions 18-23:

The general trend that may be observed is the fact that environmental protection is becoming less and less important in the course of licensing procedures. This is mainly due to the high (time related and legal) procedural risk, which implies a high expenditure. This means that the kind and execution of licensing procedures must be optimized urgently in order to minimize this risk. The content of the procedures, which can be judged as a big success for Austria as far as environmental protection is concerned, should be maintained.

CFC and Chlorinated Hydrocarbon

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
24	Carrying out a subsidizing campaign for substituting chlorinated hydrocarbon for cleaning and degreasing metal and for chemical cleaners	from 1995	City of Graz, "Kommunal-Kredit" ("Municipal Credit")

Assessment by the Eco-Team of Graz: not assessed

Please also refer to the Summary Chapter CFC and Chlorinated Hydrocarbon.

Annex Actions - companies

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
25	Purchasing and operating a plant for recovering CFC	Until 1997	City of Graz and other institutions

Is not purchased by the "Wirtschaftshof".

Co.,emt: Wirtschaftshof.

Assessment by the Eco-Team of Graz: not assessed

Please also refer to the Summary Chapter CFC and Chlorinated Hydrocarbon.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
26	Public relations or propagating a voluntary renunciation of the use of CFC and chlorinated hydrocarbon	from now on	Dept. of Environmental Protection, Correspondence City Hall "MD", Chamber of Economics

Has not been started yet.

Comment: Chamber of Economics.

Voluntary renunciation of the City of Graz acc. to the Vote of the Municipal Council; deficit in public relations.

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: not assessed

Please also refer to the Summary Chapter CFC and Chlorinated Hydrocarbon.

	Initiating important decisions relating to environmental policy in other institutions		
27	Aggravating the Plant Regulation relating to Chlorinated Hydrocarbon: prescribing the use of aqueous cleaning systems wherever this is possible	Until 1996	Federal Government (BMWA – Bundesministerium für Wirtschaft und Arbeit – Federal Ministry for Economic Affairs and Labour)

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Please also refer to the Summary Chapter CFC and Chlorinated Hydrocarbon.

Annex Actions - companies

	Initiating important decisions relating to environmental policy in other institutions		
28	Elaborating a legally anchored reduction programme for chlorinated hydrocarbon by 2000. By that year, 80% of the chemical cleaners were supposed to work without chlorinated hydrocarbon.	Until 1996	Federal Government (Chemical Act)

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Please also refer to the Summary Chapter CFC and Chlorinated Hydrocarbon.

	Initiating important decisions relating to environmental policy in other institutions		
29	Limiting and banning the use of partly halogenized CFC's	Until 1996	Federal Government (Chemical Act)

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Summarizing Comment of the Eco-Team of Graz to the Chapter CFC and Chlorinated Hydrocarbon:

The actions mentioned in connection with **CFC and Chlorinated Hydrocarbon** reflect the problems that required a solution most urgently when the programme was created. However, the issue has lost its topicality in view of the high number of actions successfully taken on a national and international scale in the last few years.

Chemical cleaners continue to pose a problem to the neighbourhood, in particular. The Department of Environmental Protection of the Municipal Authorities of Graz proceeds very systematically in this field. Several activities (measurements, promotion of new technologies) were taken in the last few years. What is noteworthy is the cooperation with Stross, a cleaning shop in Graz, which is a particular role model when it comes to the use of new alternative technologies.

Energy

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
30	Creating stimuli for using waste heat in Graz, even within companies	Until 1996	Dept. of Environmental Protection, "Stadtwerke" of Graz

Uncoupling heat from the flue gas of the pusher furnace of the Marienhütte (cooling the flue gas from appr. 600 °C to appr. 150 °C)

Comment: Grazer Stadtwerke

Annex Actions - companies

Support can be granted within company subsidizing (Marienhütte ATS 1,000,000.-). A subsidy for the use of waste heat has been applied for by Bakery Kern. An efficiency programme for the 20 companies with the highest energy consumption has been conceived in the Programme Ökoprofit-Energy (KEK Report 19; KEK – "Kommunales Energiekonzept" – "Municipal Energy Plan").

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Subsidies are granted within environmental subsidizing for companies (30% of the invested sum up to no more than ATS 300,000.-). Many companies take pertaining actions autonomously.

31	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Studying energy saving potentials within the Ökoprofit Consultancy Project	Until 1995	Dept. of Environmental Protection

Is under way or being prepared (ecological energy). Energy workshop in the Ökoprofit Programme; Innovation Pool 98, which prioritizes energy; thermographic measurements.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Corresponding priorities are continuously being set within Ökoprofit.

32	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Establishing a programme for mobilizing energy saving potentials within ecological company consultancy ("Thermoprofit")	Until 1996	Dept. of Environmental Protection, Contracting Partner(s)

Task of the Energy Agency of Graz

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Several companies (appr. 20) strive at a Thermoprofit Partnership (with a Certificate and membership fee).

Sanitations in the public sector are carried out as Thermoprofit Projects (City Hall, Official Quarters ("Amtshaus")).

A corresponding Request for Quotation for the school in Webling has had a very positive course.

33	Initiating important decisions relating to environmental policy in other institutions		
	Introducing an informative type plate for electric and electronic devices	Until 1996	Federal Government (BMWA – Bundesministerium für Wirtschaft und Arbeit – Federal Ministry for Economic Affairs and Labour), Chamber of Economics

Annex Actions - companies

This has become superfluous in view of the laws.

Comment: Chamber of Economics.

Electric and electronic devices are identified according to EU Directives.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

The action has become superfluous in view of pertaining EU Directives.

	Initiating important decisions relating to environmental policy in other institutions		
34	Improving the access to information on energy related data of the companies, utilities, etc., within environmental information law	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
35	Incorporating evidencing energy efficiency into the trade procedure, anchoring in the Trade Regulation Act	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

A corresponding evidence is anchored in the IPPC Directives of the EU (IPCC – Industrial Pollution Prevention Control). (For large-scale plants, it is obligatory). However, this has not yet been incorporated into national law.

	Initiating important decisions relating to environmental policy in other institutions		
36	Creating the legal requirements (acc. to the Trade Regulation Act) for prescribing the use of waste heat in commercial and industrial plants	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Annex Actions - companies

	Initiating important decisions relating to environmental policy in other institutions		
37	Initiating subsidizing instruments for reducing emissions relevant for the climate	Until 1996	Federal Government, "Kommunal-Kredit" ("Municipal Credit")

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Subsidizing possibilities are ensured by "Kommunal Kredit".

Further Actions relating to Substances

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
38	Link the sewage fee to the water consumption and the load freight, (e. g. by taking the COD Value as a reference) (polluter-pays principle)	Until 1996	Sewerage Construction Dept.

On the application of the Financial Law Department, the Municipal Council has dropped the provision relating to the surcharge to be paid for a high degree of soiling in the Sewerage Fee Regulation (due to the lack of exact cost data, an objection by the VwGH ("Verwaltungsgerichtshof" – "Administrative Court") had to be expected. Nevertheless, one of the objectives had been achieved. For the relevant parties responsible for a high degree of soiling have, in the meantime, erected prepurification plants. On the whole, 10 companies were among the parties responsible for a high degree of soiling (> 20,000 m³/a additional consumption, COD > 600 mg/l). Since the Amending Statute of the Water Law Act (1997), most parties indirectly discharging sewage have stopped to be subject to licenses granted by the authorities. Now they have to conclude private law agreements with the Sewerage Company. In Graz, probably 500 to 1000 companies whose indirect sewage discharge deviates from domestic sewage water more than slightly will be subject to the new provision.

Essential contents of the contract:

Terms of business and fee scale

Consensual definition, possibly for each partial current

Since the Indirect Sewage Discharge Regulation (1998), most Water Right Rulings have been out of force. According to § 32b Water Right Act, all the limits must be observed by parties discharging sewage ex lege without rulings and contract. Within water right, there used to be a sequence of courts (up to the VwGH ("Verwaltungsgerichtshof" – "Administrative Court")). Now contracts provide for a mutual right of action. Prepurification will be monitored by own measurements and testing and inspection. Large companies will be checked continuously.

Comment: Sewerage Construction Dept.

Assessment by the Eco-Team of Graz: +

In this context, it should be stated that a certain amount of carbon (= impurity) is absolutely necessary for decomposing nitrogen compounds.

Annex Actions - companies

	Initiating important decisions relating to environmental policy in other institutions		
39	Banning the production and distribution of products containing mercury, cadmium, lead (except for batteries, storage batteries and fluorescent lamps) in offices, in structural and civil engineering, for treating wood; reducing the limits for products containing formaldehyde and formaldehyde derivatives.	Until 1997	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
40	The production and sales of toys, drawing, painting and handicraft utensils containing substances that may damage our health or be toxic to the environment are to be banned.	Until 1997	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
41	Banning the use and distribution of highly toxic plant protectives, (which are based upon halogenized hydrocarbons)	Until 1997	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Noise Abatement

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
42	Creating advantages for low-noise building machines, (e. g. exceptions from time related restrictions of the building activities in the municipal area)	Until 1996	City of Graz

Annex Actions - companies

There are no advantages.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: -

As building activities will, by nature, mostly be connected with a certain development of noise, solutions for the problem noise caused by building activities are hard to find.

43	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Incorporating noise protection measures into the Request for Quotations for public building contracts	Until 1996	City of Graz

Assessment by the Eco-Team of Graz: -

44	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Intensified monitoring of the limits and regulations	Until 1996	City of Graz

In all the procedures in question, the issue of annoyance caused by noise, which also is a neighbourhood right in connection with the "FLÄWI" ("FLÄCHENWIDMUNGSPLAN" – Zoning Plan), is settled by means of an expertise prepared by the competent Department.

Comment: Building Law Department.

Assessment by the Eco-Team of Graz: -

The guest gardens in the inner city were checked for the noise annoyance to which the neighbours were subjected. The load was classified as being very high. More than 90% of the complaints about noise, which are addressed to the Department of Environmental Protection of the Municipal Authorities of Graz, refer to annoyance caused by guest gardens. This circumstance has serious impacts on the inner city. For the inhabitants living there tend to leave the area because the living quality is insufficient.

45	Initiating important decisions relating to environmental policy in other institutions		
	Concluding an Agreement between the Provinces (Art. 15a BV-G) to make the emission limits uniform all over Austria or to ordain a homologation and noise limit for building machines acc. to § 71 GewO (Gewerbeordnung – Trade Regulation Act)	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Regulated by the EU. For immissions, there are no uniform Directives.

Annex Actions - companies

	Initiating important decisions relating to environmental policy in other institutions		
46	Introducing an obligation to identify the noise of building machines acc. to § 72 GewO (Gewerbeordnung – Trade Regulation Act)	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
47	Regulations to limit noise emission for machines or subassemblies acc. to § 71 GewO (Gewerbeordnung – Trade Regulation Act)	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
48	Issuing regulations acc. to § 72 GewO (Gewerbeordnung – Trade Regulation Act), which allow to fix the obligation to identify the noise of machines and instruments	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
49	Compulsory use of low-noise lorries in the works and supply area of food chains, dairies, etc., within city traffic, even during the day	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Action Plan 4-

Agriculture

4 Agriculture

General Actions

No.	Action	Time Horizon	Actors
1	Consultancy and further training:		
	Establishing an independent consultancy office for farmers (consultancy on how to minimize the pollutant load, how to convert farming to organic farming, etc.)	Until 1997	City Garden Dept., Market Dept., City Building Mgt. (Coordinator of Environmental Protection), Chamber of Agriculture, Working Group for Organic Farming, Agricultural Institute of Further Training and others

A consultancy office for farmers, which is independent from companies, has not been established yet. A pertaining initiative must be taken by a different body. Consultancy offices are installed at the Chamber of Agriculture, (incl. intensive consultancy for organic farming).

Comment: City Garden Department.

Consultancy by the Provincial Chamber of Agriculture and Forestry Styria, (e. g. organic farming, fertilizing consultancy, plant protection, integrated production); agricultural environmental consultant in the BBK GU ("Bezirksbauernkammer Graz-Umgebung" – "District Chamber of Agriculture Graz Environs"), Leibnitz, Radkersburg; consultants and employees of the biological associations).

Comment: RA 8.

No pertaining discussions were held with the Market Department. Of course, those selling their products in the producers' markets of Graz are advised in view of all the market related issues by the Market Department.

Comment: Market Department

Assessment by the Eco-Team of Graz: -

2	Subsidies:		
	Bonus for changing over to organic farming	from 1996 continuously	City of Graz, Chamber of Agriculture, Market Department

No pertaining discussions were held with the Market Department. However, the Market Department has no financial means enabling it to distribute such a bonus.

Comment: Market Department

Assessment by the Eco-Team of Graz: -

Annex Actions - agriculture

3	Subsidies:		
	Preferably allocating new stands on farmers' markets to farmers specialized in organic farming	Until 1996	Market Dept., Trade Dept.

Responsibility A19

Comment: Trade Department.

In 1997, a market stand on the merchants' market Jakominiplatz was allocated to a group of farmers specialized in organic farming. There are two farmers' markets for farmers specialized in organic farming (Mariahilferplatz, Bad Eggenberg).

The interested farmers specialized in organic farming have, from the beginning, been offered the opportunity to sell their products by the Market Department – but this was done in the sense of the principle of equality. Right now a change in the market regulation in this sense is not intended. The Market Department of Graz is not in the position to provide any subsidies for farmers specialized in organic farming either.

Comment: Market Department

Assessment by the Eco-Team of Graz: -

4	Subsidies:		
	Badge for stands of farmers specialized in organic farming on farmers' markets	Until 1996	Chamber of Agriculture, such institutions as "Working Group of Farmers marketing their products themselves"

Assessment by the Eco-Team of Graz: -

5	Subsidies:		
	Reducing the costs for the stand on farmers' markets for farmers specialized in organic farming	Until 1997	Market Department, Trade Department

Responsibility A19

Comment: Trade Department.

The interested farmers specialized in organic farming have, from the beginning, been offered the opportunity to sell their products by the Market Department – but this was done in the sense of the principle of equality. Right now a change in the market regulation in the sense of the perception is not intended. The Market Department of Graz is not in the position to provide any subsidies for farmers specialized in organic farming either. Furthermore, the fees for the tables on the producers' markets in Graz may be regarded as being very low.

Comment: Market Department

Assessment by the Eco-Team of Graz: -

Legal Measures

	Initiating important decisions relating to environmental policy in other institutions		
6	Reducing the upper limits of fertilizers (pure nitrogen per hectare and year) by 30%; reducing the use of phosphate and potassium fertilizers by 30%	Until 1997	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
7	Banning the feeding of liquid manure and sewage sludge and the mineral fertilization in areas in which groundwater is subject to protection, saving, preventive protection and sanitation	Until 1996	Province of Styria, Styrian Agricultural Soil Protection Act

The ordaining power is incumbent to the City of Graz.

Comment: RA 6/ Specialized Division Protection of Nature.

Provisions of the Styrian Agricultural Soil Protection Act and, in particular, the Regulation of Liquid Manure and Sewage Sludge, which has been passed for this purpose.

Scope of the Regulation of Liquid Manure: quaternary valley course of the Mur from Graz to Radkersburg. Scope of the Regulation of Sewage Sludge: feeding sewage sludge onto agricultural soil and bans on feeding.

Comment: RA 8.

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
8	General accountancy on each cultivated area in Styria by the beneficiary (type of fertilizer (chemicals, liquid manure, ...), amount of fertilizer, treatment) so that it is possible to check the implementation of the Styrian Agricultural Soil Protection Act	Until 1996	Province of Styria (Agricultural Soil Protection Act, Agricultural Chemical Act)

General accountancy on each cultivated area in Styria. This is neither prescribed in the Styrian Agricultural Soil Protection Act nor in the Styrian Agricultural Chemical Act.

Comment: RA 8.

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
9	Banning the use of chemical pesticides in areas in which groundwater is subject to protection, saving, preventive protection and sanitation	Until 1997	Province of Styria (Agricultural Soil Protection Act)

The use of chemical pesticides does not form an object of the Styrian Agricultural Soil Protection Act.

Comment: RA 8.

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
10	Obligation to test and inspect devices for feeding pesticides	Until 1997	Province of Styria (acc. to §5 Agricultural Chemical Act)

Devices for pesticide feeding are tested and inspected voluntarily within the consultancy activities taken by the Provincial Chamber of Agriculture and Forestry Styria.

Comment: RA 8.

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
11	Restricting pesticides that are critical in terms of environmental toxicity and for which the load of water bodies cannot be excluded even at their appropriate use	Until 1996	Federal Government (Federal Plant Protection Act)

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
12	Considering environmental toxicity when registering pesticides	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Annex Actions - agriculture

	Initiating important decisions relating to environmental policy in other institutions		
13	Linking the sales of chemical plant protectives to an evidence of specialized knowledge (presently only included in the Styrian Agricultural Chemical Act and only linked to the use of chemicals)	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
14	Explicitly considering the possibilities of biological plant protection in The Federal Plant Protective Act	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Action Plan 5-

Water and Water Bodies, Development of Natural and Cultivated Green Spaces

5 Water and Water Bodies, Development of Natural and Cultivated Green Spaces

Drinking Water

No.	Action	Time Horizon	Actors
1	Actions and campaigns carried out in cooperation with other actors		
	Study programme for all the wells for drinking and service water in the municipal area	Until 1997	City Building Mgt. (Coordinator of Environmental Protection), "Stadtwerke" of Graz, Graz University: Institute of Hygiene

Private wells are not in the field of responsibility; municipal wells are studied every day.

Comment: Grazer Stadtwerke.

Assessment by the Eco-Team of Graz: 0

There is no **systematic study** of all the wells for drinking and service water, (incl. private wells), in the municipal area. Studies in the supply network of the "Grazer Stadtwerke AG" are only made up to the house connection. The quality of drinking water "on the tap" is not checked.

Surface Water

2	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Purchasing border strips of water bodies by providing public funds	from now on	Federal Government, Province of Styria, City of Graz

This is not achievable as demanded (the financial expenditure is too high). There is no referencing to finances in the specifications.

Comment: Real Estate Management.

Assessment by the Eco-Team of Graz: -

3	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Holding sufficiently broad brook bank zones free from building activities (in the Zoning Plan). In built areas, buffer zones of no less than 5m must be provided for. In open land, along industrial zones and along the Mur, these zones must amount to at least 10m.	Until 1996	City of Graz

Assessment by the Eco-Team of Graz: 0

This is under way as a protective measure for areas prone to high water.

4	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Creating an Issue Related Programme "Living Space Mur"	Until 2000	Dept. of Environmental Protection, Dept. of City Development, City Building Mgt., City Garden Dept., Province of Styria

As for the Living Space Mur, there is extensive documentation that has, above all, been prepared for the power plant study. However, the concepts for designing the Mur Space range from completely leaving it in its natural state to intensive care. A corresponding coordination must be assured by the City Building Management. Suggestions made by the City Garden Department have not been approved up to now.

Comment: City Garden Department.

Assessment by the Eco-Team of Graz: 0

Approaches are available.

5	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Brook Development Concept		
	Establishing a project team "Brook Development Concept"	Until 1995	Dept. of Environmental Protection, City Garden Dept., Road and Bridge Construction Dept., Province of Styria, City Building Mgt.

Has not been started yet (based upon the study "Brooks of Graz High Water Discharge", retention areas, retreating running waters, renaturing, flood protection), responsibility City Planning Dept. and Representative of Protection of Nature.

Comment: Road and Bridge Construction Department.

No responsibility.

Comment: City Garden Department.

Assessment by the Eco-Team of Graz: 0

Second Brook Survey in Graz – Pilot Project Gabriachbach (ATS 35-40 mio, joint project Municipal, Provincial, Federal Governments)

Annex Actions – water and water bodies, development of green landscapes

6	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Brook Development Concept:		
	Competition of ideas for designing the water bodies and bank zones of Graz	Until 1997	Dept. of Environmental Protection, Dept. of Cultural Affairs, City Garden Dept., City Building Mgt.

No responsibility.

Comment: City Garden Department.

No responsibility.

Comment: Department of Cultural Affairs.

Assessment by the Eco-Team of Graz: 0

The extent to which running waters of Graz are obstructed amounts to 7% in the municipal area (comparison Zürich 70%).

Concepts for the Mur and Gabriachbach are available and will be put into action soon.

7	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Sponsorship for brooks		
	Extending the number of people interested in sponsoring brooks from the groups presently addressed, i. e. schools, to youth groups, small garden associations and the like	from 1995 continuously	Dept. of Environmental Protection, Dept. of Youth and Family, City Building Mgt.

It is true that the kindergartens and day nurseries cannot sponsor brooks. Nevertheless, there are other projects that are to familiarize children and young people with the good housekeeping with natural resources (small biotopes, small gardens).

Comment: Department of Youth and Family.

Assessment by the Eco-Team of Graz: 0

The idea of sponsoring brooks has fallen into oblivion and should be intensified again.

Development of Natural Spaces

8	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Implementing biotope mapping by fixing binding guidelines for opening up new plots of land for residential building	Until 1996	City of Graz

Annex Actions – water and water bodies, development of green landscapes

No official comment has been received. A new description is a fixed part of the Issue Related Programme "Green Spaces", all the competent bodies and Prof. Zimmermann being incorporated. The biotope mapping created by Prof. Zimmermann is considered in the Zoning Plan. An update has been adopted into the Issue Related Programme "Green Spaces". Original documentation may be viewed in the City Planning Department. The biotope mapping is to be considered in procedures in construction law and spatial planning.

Assessment by the Eco-Team of Graz: -

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
9	Intensified purchasing of plots of land for endangered forest structures and key biotopes while providing for the required budget	Until 1996	City of Graz

Mag. Abt. 4L (Mag. Abt. – Magistratsabteilung – Dept. of the Municipal Authorities) only concludes purchase contracts while Mag. Abt. 12 is responsible for leasing and renting. It is primarily industrial and commercial areas that are sold. A 4L (A – Abteilung – Dept.) should have been contacted before the vote of the Municipal Council.

Comment: Real Estate Management.

The deployment of the Issue Related Programme "Green Spaces" would require about ATS 500 mio for all the actions. Unfortunately, however, there are no long-term plans for budgeting (no provision has been made in the budget).

Assessment by the Eco-Team of Graz: 0

An additional nature preserve, which entered into its realization phase in 2000, is an area in the Buchkogelwald, which covers a surface of about 6 ha.

	Initiating important decisions relating to environmental policy in other institutions		
10	Deployment of biotope mapping by a protection ex lege while revising the Law regulating the Protection of Nature	Until 1996	Province of Styria

There are no comments from the Provincial Government, and the deployment is not taken into consideration.

Assessment by the Eco-Team of Graz: -

Annex Actions – water and water bodies, development of green landscapes

	Initiating important decisions relating to environmental policy in other institutions		
11	Deployment of biotope mapping by providing for the budget for purchasing and covering the contractual protection of nature	Until 2000	Province of Styria

It is the Municipal Authorities of Graz that is responsible for biotope mapping, the deployment and purchasing of areas to be protected. The biotope preservation programme for making sure the natural state is kept is open to everybody.

Comment: RA 6/Specialized Department Protection of Nature.

Assessment by the Eco-Team of Graz: -

Action Plan 6-

Abandoned Polluted Areas

6 Abandoned Polluted Areas

Initiating a Survey Programme

No.	Action	Time Horizon	Actors
1	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Continuing the recording and study of former and current operating sites where contamination is suspected	continuously	Dept. of Environmental Protection, Province of Styria, UBA ("Umweltbundesamt" – Austrian EPA – "Environmental Protection Agency"), Federal Government

Other responsibility

Comment: Fa 5.

Is under way (Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz"))

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: +

Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz")

2	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Continuing the recording and study of suspicious areas	continuously	Dept. of Environmental Protection, "Wirtschaftshof", Province of Styria, Federal Government, UBA ("Umweltbundesamt" – Austrian EPA – "Environmental Protection Agency")

Since the sanitation and closing of the landfill, this has no longer been necessary. For there is no more waste formerly put on the landfill where contamination is suspected.

Comment: Wirtschaftshof.

Is under way (Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz"))

Assessment by the Eco-Team of Graz: +

Annex Actions – abandoned polluted areas

Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz")

3	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Systematically recording suspicious areas, processing these areas and creating a list of priorities for sanitation; making it possible to view this list	continuously	Dept. of Environmental Protection, Province of Styria, Federal Government, Federal Environmental Protection Agency

Is under way (Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz"))

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: +

Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz")

4	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Incorporating abandoned polluted areas or suspicious areas into the Zoning Plan	from now on	City of Graz

Is under way (Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz"))

Comment: Department of Environmental Protection.

Assessment by the Eco-Team of Graz: +

Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz")

5	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Creating a database that may be jointly used by the different authorities for recording suspicious areas	Until 1997	IT Office of the Directorate of the Municipal Authorities and City Survey Department in coordination with the involved Divisions and Departments of the Provincial Government, "Stadtwerke" of Graz

Annex Actions – abandoned polluted areas

For several years, measuring values relating to groundwater have been exchanged with FA 3a (FA – Fachabteilung – Specialized Department). Up to now, Departments of the Municipal Authorities have not approached the "Grazer Stadtwerke AG"-water.

Comment: Grazer Stadtwerke.

Assessment by the Eco-Team of Graz: +

6	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Permanent exchange of data with the "Stadtwerke" of Graz in terms of measuring values relating to groundwater	from 1996 continuously	Dept. of Environmental Protection, "Stadtwerke" of Graz

Up to now, the Department of Environmental Protection has not approached the "Grazer Stadtwerke AG"-water by expressing such a wish.

Stellungnahme: Grazer Stadtwerke.

Assessment by the Eco-Team of Graz: -

7	Initiating important decisions relating to environmental policy in other institutions		
	Increasing the means for the sanitation of abandoned polluted areas in the Environmental Fund and Water Management Fund by newly calculating the contribution to be paid for abandoned polluted areas	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

8	Initiating important decisions relating to environmental policy in other institutions		
	Extending the financial and human resources of the authorities competent for recording and sanitating abandoned polluted areas	Until 1997	Federal Government, Province of Styria

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Further Actions

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
--	---	--	--

Annex Actions – abandoned polluted areas

9	Restricting or excluding certain types of use on areas that are contaminated or where contamination is highly suspected, (e. g. use as children's playgrounds, areas used for agriculture), by means of the Zoning Plan	from now on	City of Graz, Province of Styria
---	---	-------------	-------------------------------------

Assessment by the Eco-Team of Graz: +

This is treated within the Project "VERA" ("VERdachtsflächen- und Altlastenverzeichnis Grazer Betriebsstandorte" – "List of Suspicious Areas and Abandoned Polluted Areas Operating Sites of Graz").

Action Plan 7-

Traffic

7 Traffic

Traffic Policy (forming awareness)

No.	Action	Time Horizon	Actors
1	Forming awareness within the Municipal Authorities ("Official Bicycles instead of Official Cars")	from now on	all the Departments, Personnel Representation

Forming awareness in the Municipal Authorities is not done systematically. However, there are approaches. In some Departments (Purchasing Department, Road and Bridge Construction Department, Department of Environmental Protection), official bicycles are available. However, the scope is restricted to short distances.

For promoting official bicycles even more, it might be conceivable to introduce mileage allowance for official trips by taking the bicycle (example Vienna).

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

2	Events (workshops for future, etc.) in order to achieve the acceptability of far-reaching changes in behaviour	from now on	City Building Mgt., Dept. of City Development and Preservation, Road and Bridge Construction Dept., City Planning Dept., Dept. of Environmental Protection
---	--	-------------	--

The deployment of the action has not been started yet.

Comment: Road and Bridge Construction Department

In companies, measures forming awareness were and are taken within Mobility Management Projects (AVL, "Stmk. GKK" ("Steiermärkische Gebietskrankenkasse" – "Styrian Regional Sickness Insurance Fund"), Steyr Fahrzeugtechnik, Eurostar).

Comment: Department of Environmental Protection

The question arises as to whether events form a suitable means for leading to far-reaching changes in behaviour. The present traffic policy as it is done over the media is not systematic. It is not sufficiently consistent. Such mock issues as a subway concept in Graz rather are diverting manoeuvres. There is no public awareness in terms of traffic policy.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

Promoting types of traffic that are ecologically compatible

3	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Improving public transportation in Graz		
	Disentangling the rail network on Jakominiplatz and the track relieving the Herrengasse	from now on	City of Graz

The disentanglement of the rail network on Jakominiplatz has been completed. For the Herrengasse, the SPÖ ("Sozialistische Partei Österreichs" – "Austrian Socialist Party") has made a declaration of intents, according to which the variant Neutorgasse is to be tackled within the following three years.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: +

4	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Improving public transportation in Graz		
	Linking large settlements to railway (Berlinererring, Rotmoosweg et al.). Border districts that have a dense population should also be linked better.	from now on	City of Graz

Tangential lines in the west (existing) and in the southeast of Graz (southeast tangent by autumn 2000) create a better connection to border districts.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

The extension of the bus network in Graz may be assessed as being very positive. A corresponding extension of the railway network could not be achieved (see Line 6, St. Peter).

5	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Improving public transportation in Graz		
	Priority for public transportation at traffic lights and eliminating small-scale impediments of public transportation	from now on	City of Graz

The action is being implemented. The potential of the action is classified as being very high. The deployment increases the competitiveness of public transportation to motorized individual traffic.

Annex Actions - traffic

A sample corridor for Lines 4 and 5 has been completed. In the course of the EU Project "Centaur", Lines 1, 7 and 67 have been accelerated. In the bus sector, new technologies are partly used. Further improvements are expected to be achieved upon the installation of the new traffic computer.

The following factors are named as the reasons of success:

real reduction in operating expenses for Lines 4 and 5

shortening the running times for Lines 7 and 67

The additional actors mentioned are the City of Graz, the Traffic Planning Offices, Siemens and INIT Co.(on-board computer).

Comment: GVB

Assessment by the Eco-Team of Graz: +

6	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Improving public transportation in Graz		
	Extending and building BIKE&RIDE Stations, in particular at final stops of the GVB (Grazer Verkehrsbetriebe – Traffic Services of Graz)	from now on	City of Graz

The action is being implemented. There are Bike&Ride Stations in Puntigam, Liebenau and St. Peter.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

7	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Better linking the periphery to means of public transportation		
	Extending the existing "Verkehrsverbund" ("Traffic Association")	from now on	City of Graz, Province of Styria

The action is being implemented. The potential of the action is classified as being very high. The deployment also is important in view of forming awareness (ecologically viable travelling behaviour).

There is a three-step operating concept, "Steirertakt" ("Styrian Coordinating Cycle"):

1st step "Making attractive":

Since May 1998, there have altogether been 12 additional trains between Spielfeld and Graz and Graz-Frohnleiten (-Kapfenberg) as well as 2 additional trains between Graz and Lannach. The distance Graz-Spielfeld has been coordinated with the accompanied bus lines. Since May 1999, there has been an additional evening connection Graz-Bruck and an additional Saturday train Spielfeld-Graz.

2nd step "Optimization"

All train lines in Greater Graz are coordinated in regular intervals.

3rd step "S-Bahn" ("Schnellbahn" – "Suburban Fast Train")

All the vehicles and stations are brought to the "S-Bahn" standard.

Annex Actions - traffic

The following factors are named as the reasons of success:

Customer friendliness

Facilitating access to public transportation by increasing the feasibility of the timetables for the customers

The additional actors mentioned are the City of Graz, the ÖBB ("Österreichische Bundesbahnen" – "Austrian Federal Rail Services"), the GKB ("Graz Köflach Bahn" – "Graz Köflach Rail Services"), STLB ("Steiermärkische Landesbahnen" – "Styrian Provincial Rail Services") and other traffic companies.

Comment: Provincial Government, Specialized Division 2b (see Action 26)

Assessment by the Eco-Team of Graz: +

8	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Better linking the periphery to means of public transportation		
	Creating a concept for establishing a Styrian rail traffic system (suburban fast train system and city/regional train system)	from now on	City of Graz, Province of Styria

A concept has been created but not pursued. In the existing network, the "Steirertakt" Concept ("Styrian Coordinating Cycle") is being implemented (see also Action 7)

Comment: Provincial Government, Specialized Division 2b (see Action 26)

Assessment by the Eco-Team of Graz: 0

There is a corresponding concept. Up to now, however, the deployment has failed through the funding issue.

9	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Better linking the periphery to means of public transportation		
	Continuing to develop the Main Train Station of Graz (integration of tramways, buses, taxis, bicycles), keeping free the crossing of the "Bahnhofgürtel"	from now on	City of Graz

The project does exist (with underground track for the tramway, virtual model – Zechner Brothers). However, the funding is not clarified yet. There is a vote by the Municipal Council.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

The development of the Main Train Station of Graz is under way but without keeping free the crossing of the "Bahnhofgürtel".

Annex Actions - traffic

10	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Bicycle traffic:		
	Marking cycle strips on streets with a speed limit of 50 km/h. This is to help to prevent unclear situations in gateways, crossroads and conflicts with pedestrians	from now on	City of Graz

The action is being implemented. However, the potential of the action is classified as being very low. The deployment primarily serves to guarantee road safety.

Comment: Road and Bridge Construction Department

Assessment by the Eco-Team of Graz: +

Before the Velocity Congress, 30 km of cycle strips were marked additionally.

11	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Bicycle traffic:		
	Marking cycle strips having priority at traffic lights	from now on	City of Graz

The action is being implemented. However, the potential of the action is classified as being very low. The deployment primarily serves to guarantee road safety.

Comment: Road and Bridge Construction Department

Assessment by the Eco-Team of Graz: +

12	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Bicycle traffic:		
	Marking reduced strips in the middle of the street to make it possible to turn left safely	from now on	City of Graz

The action is formulated in an unclear way.

There is no special reason to implement this action.

Comment: Road and Bridge Construction Department

Assessment by the Eco-Team of Graz: 0

Annex Actions - traffic

13	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Bicycle traffic:		
	Intensified care of the cycle tracks (snow, grit, leafage removal, repairing potholes)	from now on	City of Graz

This was done before the Velocity Congress. Otherwise there has been no change. An additional actor mentioned by the Road and Bridge Construction Department is the WH ("Wirtschaftshof").

Comment: Road and Bridge Construction Department

Assessment by the Eco-Team of Graz: 0

The intensified care of the cycle tracks should absolutely be maintained.

14	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Bicycle traffic:		
	Erecting roofed lit parking areas for bicycles, (which also are protected from theft)	2 years	City of Graz

The action has not been started yet.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

15	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Bicycle traffic:		
	Establishing a renting system for bicycles and bicycle trailers	from now on	City of Graz, private organizations

There are such private initiatives as "Bicycle", "Rent a Bike" and the "Mobilitätszentrale" ("Central Mobility Service").

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

16	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Pedestrians:		
	Redesigning the streets and roads: extending the pedestrian zones, broadening the footpaths, control of traffic lights enabling the correct priority ("Green Everywhere")	ab sofort	City of Graz

Annex Actions - traffic

The action is being implemented. The potential of the action is classified as being very high. Three pedestrian zones (Lendplatz, Griesplatz, Schloßbergplatz) are being developed or are being prepared for 1999.

Broader footpaths can only be realized seldom because the streets and roads are too broad. According to a vote taken by the Municipal Council, a width of 2 m is prescribed.

"Green Everywhere" is made impossible by the required efficiency for all road users (public transportation, bicycle).

Comment: Road and Bridge Construction Department

The action was implemented as far as possible when redesigning the Jakominiplatz. As for the Annenstraße, planning has been completed (presentation of the project May 12, 1999).

Extending pedestrian zones even more is not deemed useful. What, however, seems useful is to allow them to penetrate into smaller streets (Gleisdorfergasse). Using them at different times would rather be to the pedestrians' disadvantage.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

The Project Annenstraße was stopped shortly after project start because the acceptability was insufficient.

17	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Use of zero-emission or low-emission vehicles as official and commercial vehicles for the Municipal Authorities	from now on	all the Departments

The potential of the action is classified as being very low. 2 electric vehicles have been purchased. However, the fact that the technology is not matured (batteries) creates problems, above all in winter.

Comment: Wirtschaftshof

In the Department of Environmental Protection, an "Eco-Golf" operated with bio-fuel (engine shutoff) and an electric vehicle were made available as official vehicles. The deployment of the action primarily has a demonstrative character.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

18	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Erecting a solar and bio-fuel filling station in the "Wirtschaftshof"	Until 1996	City of Graz, "Wirtschaftshof"

A bio-fuel filling station is available in the WH. A solar station has not been erected. The potential of the action is classified as being very high.

Comment: Wirtschaftshof

Annex Actions - traffic

The topic "Solar Station" no longer seems topical to the participants from today's perspective because photovoltaics have hardly developed in the last few years. On the other hand, engine engineering has, in the same period, made enormous progress, (e. g. BMW, TDI).

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

19	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Extending the programme "Ökodrive"	from now on	Dept. of Environmental Protection, "Wirtschaftshof", "Stadtwerke" of Graz, Utilities

The action is being implemented. 6 electric vehicles are used. Parking areas for bicycles are created for employees.

Comment: STEWEAG

The Department of Environmental Protection is responsible.

Comment: Wirtschaftshof

By summer 1999, 25% of the buses of the GVB will be driven by bio-fuel. Special campaigns for collecting used frying oil in private households and tourist companies are being prepared and are to be put into action this year. Mobility management projects with SFT (Steyr Fahrzeugtechnik – Steyr Vehicle Engineering) and Eurostar are carried out.

Comment: Department of Environmental Protection

10 buses driven by bio-fuel have been used for a longer time. Due to the positive experience, the bus fleet will be increased by 10 buses. New vehicles must meet the Ökodrive Criteria. An additional actor that is named is the City of Graz (subsidies for the additional expenses). The potential of the action is classified as being medium. The focus is placed on the role model assumed by public transportation (positive image).

Comment: GVB

Assessment by the Eco-Team of Graz: +

20	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Subsidizing investments by companies converting their motor vehicle fleet to zero-emission or low-emission vehicles	from 1996	City of Graz

In the course of the Ökodrive Project, the costs and expenses for making buses of the GVB suitable for being operated with bio-fuel was partly borne by the Department of Environmental Protection.

Annex Actions - traffic

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

21	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Subsidies for electric taxis	from now on	City of Graz, Federal Government, Province of Styria

There was a research project with the Taxi Group 878. However, this project was stopped.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

22	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Increasing the subsidies for investments in companies manufacturing zero-emission or low-emission vehicles or parts thereof	Until 1996	City of Graz, Federal Government, Province of Styria

In the participants' opinion, the action has not been started. The responsibility rests upon LR (Landesrat – Provincial Councillor) Paierl.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: -

23	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Establishing an infrastructure for solar, RME (rape-oil methyl ester) and electric filling stations in the municipal area	from 1995	City of Graz, Utilities, private organizations

The deployment of the action was started and had no result. 4 electric filling stations in the inner city were planned. This project has failed through the lack in interest of city politicians.

Comment: STEWEAG

There is one solar station in Graz but there is no infrastructure.

The approach for bio-fuel must be treated in terms of federal policy (admixing or pure). The action must start with large-scale customers (public transportation, forwarders, army). As for passenger vehicles, the deployment seems useless.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

Annex Actions - traffic

Erecting solar and electric filling stations is obsolete because there is no corresponding vehicle technology.

In Graz, bio-fuel can be refilled at Roth Co. and at BAN. The GVB has a bio-fuel filling station of its own.

24	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Advantages for zero-emission or low-emission vehicles in the inner city, (e. g. at parking, using the bus track)	from now on	City of Graz

The deployment of the action has become unnecessary.

Comment: Road and Bridge Construction Department

In the participants' opinion, the action has not been started. For example, messengers taking the bicycle in the Herrengasse have no advantages over the normal delivery service.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz:: +

Electric vehicles are exempt from parking fees in the inner city. As for vehicles operated with RME (rape-oil methyl ester), such a preferential treatment is not possible because the checking possibilities are insufficient.

25	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Zero-emission or low-emission vehicles		
	Exception in traffic restrictions for zero-emission or low-emission vehicles	from 1995	City of Graz

Comment: Road and Bridge Construction Department

Electric vehicles are exempt from parking fees in the inner city. Otherwise the participants think that there are no exceptions in traffic restrictions.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: -

Annex Actions - traffic

	Initiating important decisions relating to environmental policy in other institutions		
26	Implementing the concept for an express rail system and city/regional rail in the Graz area	Until 2000	Federal Government, Provincial Government

There is a concept. However, this concept has been postponed.

Comment: Provincial Government, Specialized Division 2b (see Action 7)

Assessment by the Eco-Team of Graz: -

	Initiating important decisions relating to environmental policy in other institutions		
27	Extending the GAST ("Grazer Anruftsammeltaxi" – "Graz Calling Collection Taxi")	from now on	Traffic Services of Graz

The action has been implemented. The potential of the action is classified as being very low and mainly lies in increasing personal safety provided by the offer of public transportation around the clock.

There is a GAST covering the entire area from 8 pm to 4 am. Right now the simplification of the system is being worked at. It is, above all, service between 0 and 4 Uhr am that is to be made more attractive. For the degree of utilization is below the expectations. The trial run in Andritz and Waltendorf was very successful. An additional actor that is named is City-Funk 878.

Comment: GVB

In the participants' opinion, the system needs to be simplified in order to increase acceptability (example Linz).

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: +

	Initiating important decisions relating to environmental policy in other institutions		
28	Use of electric and solar vehicles for public transportation and public institutions	Until 1996	Traffic Services of Graz, Province of Styria, Federal Government

The deployment of the action has not been started. The potential of the action is classified as being low. Battery driven small buses are available. However, the batteries form a weak point. At the present state of the art, it is not possible to cover the required mileage without pauses for intermediate charging. Thus a use for public transportation won't be possible. Besides, there are problems with costs.

Comment: GVB

Assessment by the Eco-Team of Graz: 0

Annex Actions - traffic

	Initiating important decisions relating to environmental policy in other institutions		
29	Draft of an emission prevention programme according to the Californian model: By 2000, 10% of the newly registered motor vehicles are to be "zero-emission vehicles" (electric and solar vehicles) and 30% "low-emission vehicles"	Until 1998	Federal Government

In the participants' opinion, the action has not been started. The programme was even withdrawn in California.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: not assessed

Comments to the Topic Zero-Emission or Low-Emission Vehicles

The evolution towards zero-emission vehicles, which still could be expected when the programme was created, has not come true. The main reason for this is the fact that, above all in the field of supercharging, still is not available or is not matured yet.

Last but not least it was for this reason that the very ambitious emission reduction programme in California was dropped.

The deployment of the actions formulated in relation to the topic electric and solar vehicles, which range from the establishment of an infrastructure via the use of these vehicles as official or commercial vehicles, their use in public transportation, the creation of benefits at use to the draft of an emission reduction programme according to the Californian model was practically started in all cases.

- Electric vehicles are available as official vehicles in the Municipal Authorities
- Electric vehicles are exempt from parking fees in the inner city
- Four energy supply stations in the inner city were planned
- There is one solar station in Graz

A research project on electric taxis was carried out with the Taxi Group 878.

The "Wirtschaftshof " purchased two electric vehicles

However, the of the actions mentioned above must be assessed as being very low. So the deployment will not be continued, above all as the technology is not matured yet.

A very encouraging evolution may be observed in the field of low-emission vehicles. This refers to the development of new engines (low consumption) at large-scale automobile manufacturers as well as the development of new low-emission fuels made from regenerative raw materials (bio-fuel). In the last few years, the City of Graz followed this trend by taking pertaining actions and thus reacted dynamically to the changed technological situation.

For years, a joint project between the Department of Environmental Protection of the Municipal Authorities of Graz and the GVB ("Grazer Verkehrsbetriebe" – "Traffic Services of Graz") has been under way. A further increase is planned. By now 25% of the bus fleet are exclusively driven by bio-fuel. A further increase is planned. Commercial vehicles of the "Wirtschaftshof" as well as one official vehicle of the Department of Environmental Protection also were retrofitted for the use of bio-fuel.

The fuel is produced by SEEG Co., which has its headquarters in Mureck in the South of Graz. This company turns used frying oil into bio-fuel by using a special technique. The collection of used frying oil in private households presently is done by the "Wirtschaftshof". Upon the initiative of the Department of Environmental Protection of Graz, a gratuitous collection of used frying oil was started with catering businesses in Graz in 1999. This collection, which is carried out by "Öko-Service", will continue as a constant service. Thus the circle from the useful use of the

Annex Actions - traffic

problematic substance used frying oil as a valuable raw material for producing bio-fuel to the use as a low-emission fuel for buses run by the GVB is closed sustainably.

Restricting Ways of Traffic damaging the Environment

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
30	Erecting and extending pedestrian zones and zones with restricted traffic in centres of districts or quarters	continuously	City of Graz

The action is being implemented. Additional actors named are the City Building Management and the City Planning Department.

Projects: Lendplatz (under way of construction), Griesplatz and Andritz (planning finalized)

Comment: Road and Bridge Construction Department

Assessment by the Eco-Team of Graz: 0

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
31	Restricting the loading time in pedestrian zones for customary vehicles in combination with consistent monitoring, expansion for electric and solar vehicles, access permit for electric taxis	Until 1996	City of Graz

The deployment of the action has become unnecessary. Additional actors named are representations of interests, (e.g. Chamber of Economics), and the police.

Comment: Road and Bridge Construction Department

There are practically no electric vehicles. Monitoring basically is insufficient.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: -

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
32	Promoting the common use of cars (driving community, co-driving centres, car sharing), establishing mobility consultancy	Until 1996	City of Graz, Province of Styria

Promotion is not done in an organized way. Single projects in companies (AVL, GKK, SFT) are promoted.

There are driving communities but there is no co-driving centre (only in its initial stage). For driving communities, there are no advantages in the city area like, e. g. for taxis. There is an information centre for public transportation.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

Annex Actions - traffic

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
33	Creating stimuli for low-emission and zero-emission vehicles in terms of parking lots	Until 1996	City of Graz, Province of Styria

The deployment of the action has become unnecessary. An additional actor named is the Department of Environmental Protection.

Comment: Road and Bridge Construction Department

Assessment by the Eco-Team of Graz: -

Electric vehicles are exempt from the parking fee in the inner city. Otherwise the participants think that there are no exceptions in traffic restrictions.

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
34	Voluntary agreement on cleaner production at the production of customary vehicles	Until 1996	City of Graz, Province of Styria

In the participants' opinion, the deployment of the action is under way. Ökoprofit (SFT, Eurostar) goes into this direction.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: +

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
35	Promoting and subsidizing the conversion of existing production plants and the manufacturing of ecologically compatible vehicle components or types (lean engine technology, hybrid vehicles, etc.). Eco-High-Tech-Cluster	Until 1996	City of Graz

While manufacturing is not promoted, research, e. g. AVL, FH Eggenberg, is (engine test bed has been co-financed). It is mainly for economic reasons that technological activities are started by the producers.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: -

Annex Actions - traffic

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
36	Fast conversion of all filling stations and tank farms to gas pendulum lines by making the pertaining arrangements	Until 1995	City of Graz

The deployment of the action has been ruled by federal law.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: +

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
37	Prescribing washing plants with a closed circle for new plants and voluntary conversion of existing plants	Until 1995	City of Graz

Prescribed by federal legislation, trade and water right.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: 0

Prescribing for new plants.

	Initiating important decisions relating to environmental policy in other institutions		
38	Route linkage for heavy trucks (more than 7.5 t) for protecting residential areas	from now on	Federal Government

The deployment of the action has not been started yet. An additional actor named is the City of Graz.

Comment: Road and Bridge Construction Department

The question arises as to how useful this action is because no truck will voluntarily drive into a residential area. There is a ban on trucks driving at night.

Comment: Sub-Group 2 – Traffic and Noise

Assessment by the Eco-Team of Graz: +

The deployment of the action has been ruled by federal law.

Action Plan 8-

Noise Reduction and Noise Prevention

8 Noise Reduction and Noise Prevention

Noise reduction plan and preventive noise abatement

No.	Action	Time Horizon	Actors
	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Preparing a scheduled noise reduction plan with the following fields:		
1	Creating a Cadastral Map for Noise covering large areas (road traffic noise, rail, air traffic, industrial and commercial enterprises, other facilities, e. g. playing and sports fields)	from 1995 continuously	Dept. for Environmental Protection, City Building Mgt., City Survey Dept., City Planning Dept., Trade Dept., Province of Styria

The responsibility devolves on the Technical Specialized Divisions.

Comment: Trade Department

The action has been implemented. Additional actors mentioned are the TU-Graz (Technical University), traffic associations (ÖAMTC, ARBÖ, etc.) as well as specific fields of industry (AVL, Chrysler). The potential of the action is classified as being very high. This is also due to the fact that specialized treatment of the road traffic noise leads to make people even more aware of the overall issue.

Comment: Provincial Government, Specialized Division 1a

The creation of a Cadastral Map for Noise covering large areas is particularly important for noise sanitation. The more detailed the stocktaking is, the better can possible sanitation actions be elaborated.

Cadastral maps are available for:

Rail (ÖBB)

Cadastral Map for Emissions for the main street and road network of Graz

Industry (pilot project St. Peter)

Air traffic (Study of the "Draken" for Graz)

In the FA 1b (FA – Fachabteilung – Specialized Division), a study of civil and military air traffic was carried out. However, this study was only slightly related to Graz (it is, above all, such adjacent communes as Seiersberg that were concerned)

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: +

Annex Actions – Noise Reduction and Noise Prevention

2	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Preparing a scheduled noise reduction plan with the following fields:		
	Integration of relevant noise data into the Provincial Environmental Information System	Until 2000	Dept. of Environmental Protection, Province of Styria

According to the participants, the action is being implemented (Draken, rail) but not systematically.

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: 0

3	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Preparing a scheduled noise reduction plan with the following fields:		
	Preparing a graduated plan for the noise sanitation of highly loaded areas	from 1995 continuously	Dept. of Environmental Protection, City Building Mgt., City Survey Dept., City Planning Dept., Trade Dept., Province of Styria

The responsibility devolves on the Technical Specialized Divisions.

Comment: Trade Department

There is no graduated plan yet. St. Peter was chosen as a pilot area because of the high load. A noise sanitation plan of the ÖBB, which also includes a graduated plan, is being elaborated (cooperation Province of Styria/ÖBB).

Comment: Department of Environmental Protection of the Municipal Authorities of Graz

The following statements are also made in connection with the topic noise sanitation:

The Cadastral Map for Noise of Graz is *one* basis for the Zoning Plan.

Even the load is high, the motto "Living is not permitted here" is not put into action.

Building YES if there are protective actions.

A self-protection by the citizens should be promoted (erecting noise protecting walls).

The Provincial Government wanted to erect noise protecting walls in St. Peter. However, the Road and Bridge Construction Department forbids the erection of noise protecting walls in the municipal area of Graz (cityscape).

The conflict plan should be adopted into the Zoning Plan so that it becomes possible to derive neighbours' rights.

Is noise *protection* in the city a useful strategy?

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: 0

Annex Actions – Noise Reduction and Noise Prevention

4	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Preparing a scheduled noise reduction plan with the following fields:		
	Intensified use of the possibilities of the Zoning Plan as an instrument of noise protection	from now on	Municipal Authorities of Graz, City Planning Department, Province of Styria

There are only possibilities when it comes to new allocations. It is not possible to cancel allocations once granted. The only way to check the system is given by the promotion of residential building granted by the Provincial Government. Deficiencies in the allocation and licensing procedures are already visible.

Noise reduction and sanitation would have to start in the inner courts.

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: 0

5	Initiating important decisions relating to environmental policy in other institutions		
	Standardizing the noise protection regulations and zoning categories in the competence of the Federal, Provincial and Municipal Governments all over Austria	Until 2000	Federal and Provincial Governments

The deployment of the action has not been started and is not relevant as an objective of Eco-City. There is a list of the regulations.

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: not assessed

6	Initiating important decisions relating to environmental policy in other institutions		
	Petitions addressed to the Federal and Provincial Governments for strengthening the instrument Spatial Planning, among other things by: incorporating criteria relating to city building when fixing immission limits for residential areas (floor space, etc.), allowing to exclude the use of individual sites from the legally fixed types of utilization for ecological reasons	Until 2000	Federal and Provincial Governments

Assessment by the Eco-Team of Graz: not assessed

Protection from Road Traffic Noise

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
7	Ban on driving at night and restrictions of use of motorized two-wheelers with the exception of certain low-noise types and electric mopedettes	Until 1997	City of Graz

The deployment of the action has become unnecessary.

Comment: Road and Construction Department

Assessment by the Eco-Team of Graz: -

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
8	Ban on driving at night for trucks in the municipal area, exceptional regulation for low-noise vehicles	from now on	City of Graz

The deployment of the action has been completed.

Comment: Road and Construction Department

There is a ban on driving at night for ALL THE trucks with a weight of more than 3.5 t (1987), without any exceptions. As more and more trucks are low-noise, exceptions would be counterproductive in the participants' opinion.

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: 0

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
9	Promoting and subsidizing electric vehicles, establishing a pertinent infrastructure, restrictions for other vehicles in sensitive zones	Until 1997	City of Graz

The technological development does not meet the expectations. There are practically no electric vehicles.

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: 0

Exempting electric vehicles from parking fees.

There was a subsidized research project with the Taxi Group 878 for electric taxis. However, this project has been stopped.

Annex Actions – Noise Reduction and Noise Prevention

	Joint actions with other actors		
10	Converting the traffic system of the GVB ("Grazer Verkehrsbetriebe" – "Traffic Services of Graz") to the use of low-noise buses as soon as possible	Until 2000	Traffic Services of Graz

The deployment of the action has been concluded. Vehicles are exclusively purchased with sound insulation for the engine according to the existing VDV Guidelines.
The potential of the action is classified as being medium. Silent buses will promote the image of public transportation.

Comment: GVB

Assessment by the Eco-Team of Graz: +

	Initiating important decisions relating to environmental policy in other institutions		
11	Ordaining more stringent noise emission limits for motor vehicles and twowheelers by the Ministry of Traffic	Until 1996	Federal Government

Modifications are made by the EU (graduated plan for trucks).

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: not assessed

	Initiating important decisions relating to environmental policy in other institutions		
12	Binding limits for the short-distance noise level for motorized twowheelers by the Minister of Traffic	Until 1996	Federal Government

Assessment by the Eco-Team of Graz: not assessed

Protection from Rail Traffic Noise

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
13	Noise protecting actions in the field of tramways; intensified construction of separate tramway track lines with "lawn tracks"	from now on	Traffic Services of Graz

The deployment of the action has been concluded (existing lines) or is being prepared (lines to be newly built). The potential of the action is classified as being high. Positive experience has been made in Andritz. The deployment of the action leads to an increased acceptability of tramways, (in particular in the neighbourhood). Lawn tracks will only be possible if the line is not used by buses as well.

Annex Actions – Noise Reduction and Noise Prevention

In the participants' opinion, the term "lawn tracks" designates the foundation of tracks. Concrete foundations are principally needed for the superstructure types used in Graz. There is no causal connection with the age of the vehicles used but with the axle loads, which are, as a rule, even higher for new sets. In the inner city (Sackstraße, Murgasse, Annenstraße), the superstructure will be made from double granules in the course of track sanitation.

Comment: GVB

Assessment by the Eco-Team of Graz: +

	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
14	Noise protecting actions by the ÖBB on loaded track sections in Graz	from now on	ÖBB, BMöWV, Provincial Government

The action in Graz is deployed as a project (agreement Provincial Government/ÖBB, Dec. 98).

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: 0

Noise protection wall Rach, Hauptbahnhof, HLAG (Hochleistungs-AG – Stock Corporation responsible for building high-performance roads)

	Initiating important decisions relating to environmental policy in other institutions		
15	Incorporating the noise protection regulations into railroad law	from now on	Federal Government

The deployment of the action has been completed.

Comment: Sub-Group 2 – traffic and noise

Assessment by the Eco-Team of Graz: +

Action Plan 9-

Protection of the Earth Atmosphere

9 Protection of the earth atmosphere

General actions

No.	Action	Time Horizon	Actors
1	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Entrusting the Environmental Commission with dealing with the topics "Climate Alliance" and "Protection of the Earth Atmosphere" in regular intervals (twice a year)	from now on	City of Graz

Assessment by the Eco-Team of Graz: 0

The awareness does exist.

2	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Municipal ecological compatibility test for the settlement of companies, public large-scale projects and projects in the traffic sector, for which ecological compatibility is an essential part (elaborating guidelines and directives)	Until 1996	Dept. of Environmental Protection, Promotion of Trade and Industry

The action has not been started.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: -

Energy Consumption

3	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Submitting a municipal energy and CO ₂ report with an energy and CO ₂ balance in three years' intervals	1997	Dept. of Environmental Protection

This is being continuously done along with the evaluation of Eco-City.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Annex Actions – Protection of the Earth Atmosphere

4	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Creating efficient and socially compatible enforcement structures as a basic requirement for the enforcement of the obligation to be connected to district heating; development planning in cooperation with the "Grazer Stadtwerke"	from now on	City of Graz

The new design and pertaining allocation of funds for subsidizing district heating (Municipal, Provincial Governments, Utilities) have been completed. The conversion from heatings to district heating and gas is subsidized within environmental / energy subsidizing. The list of priority areas for district heating has been revised and adapted. The obligation to be connected to district heating was treated in the Municipal Energy Plan and needs to be ordained by the Building Law Department. An "energy pass" for assessing new buildings has been developed.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

There is no obligation to be connected. The extension of the district heating network has been advanced successfully. Stimuli for being connected to district heating are provided by subsidies.

5	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Upgrading and extending the Energy Consultancy Agency GREIF; improvements of the process structures in cooperation with the "Grazer Stadtwerke" (detailed planning within the KEK)	Until 2000	City of Graz

Foundation of the Energy Agency of Graz

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Establishing the Environmental Service Center by combining consultancy and subsidizing. Positive development of energy subsidizing.

6	Actions and campaigns carried out by the Municipal Authorities in cooperation with other actors		
	Newly focusing the activities of the "Energieservice GmbH" ("Energy Service Ltd.") (subsidiary of the "Stadtwerke") or establishing a similar facility in view of marketing, funding, planning and implementing energy saving actions (use of waste heat, Thermoprofit, etc.), detailed planning within the KEK	from now on	"Stadtwerke" of Graz, City of Graz, Chamber of Economics

This has been fulfilled by founding the Energy Agency of Graz.

Comment: Chamber of Economics

Foundation of the Energy Agency of Graz

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

	Actions and campaigns carried out by the Municipal Authorities in cooperation with other actors		
7	Checking further possibilities to use industrial waste heat for the district heating network of Graz in cooperation with the "Grazer Stadtwerke"	from 1996 continuously	"Stadtwerke" of Graz, City of Graz

A subsidy for the use of waste heat by the Bakery Kern has been applied for. An efficiency programme for the 20 companies with the highest energy consumption has been conceived in the programme ÖKOPROFIT-ENERGY (KEK Report 19).

This is the task of the GEA ("Grazer Energieagentur" – Energy Agency of Graz).

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

	Actions and campaigns carried out by the Municipal Authorities in cooperation with other actors		
8	Carrying out pilot projects and building model houses in low-energy and zero-energy design and by using regenerative energy sources in cooperation with Utilities and potential other institutions	Until 1997	"Stadtwerke" of Graz, cooperatives, architects, etc.

Individual low-energy houses were built. The project "Low-Energy Housing Estate" in the course of the Municipal Energy Plan was stopped because no real estate was available. Nussmüller Office plans to erect a low-energy housing estate in Graz. The calculation model for low-energy houses has been provided. Demonstration objects with solar long-time storage have been implemented in one-family houses.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

	Actions and campaigns carried out by the Municipal Authorities in cooperation with other actors		
9	Creating know-how for planners, architects (Architects' Model "Climate Protection"), fitters, building trade, etc., by pertaining prize competitions, subsidizing and pilot projects in cooperation with other facilities (Chamber of Economics, Engineers' Chamber, Technical University, etc.)	from 1996 continuously	Dept. of Environmental Protection, Chamber of Economics, Engineers' Chamber, Technical University, etc.

The action has not been started yet.

Comment: Chamber of Economics.

Annex Actions – Protection of the Earth Atmosphere

Active building consultancy in the districts of Graz in the form of public information evenings. IT documents enabling planners to calculate the "Low-Energy House of Graz" are available. Diploma Thesis by Marlies Sofia (1998) relating to the topic "Biological building". "Ecological criteria for operational facilities" from the perspective of an architect have been elaborated.

An Architects' Model has been conceived. The order for creation has not been placed yet. Final report "ARGE Erneuerbare Energie" ("Working Group Renewable Energy") 1997.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: -

10	Actions and campaigns carried out by the Municipal Authorities in cooperation with other actors		
	Further training programmes for interested vocational groups in the fields of heat insulation, passive use of solar energy, use of renewable sources by the GREIF in cooperation with the Chamber of Economics	Until 1997	Dept. of Environmental Protection, Chamber of Economics

The action has not been started yet.

Comment: Chamber of Economics

Active building consultancy in the districts of Graz in the form of public information evenings. Reports "ARGE Erneuerbare Energie" ("Working Group Renewable Energy"). "Regular Meetings of Solar Engineers ("Solateure")"

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: 0

WIFI Course "Solar Engineers"

11	Initiating important decisions relating to environmental policy in other institutions		
	Introducing an energy tax with the exception of regenerative energy sources	from now on	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

12	Initiating important decisions relating to environmental policy in other institutions		
	Creating the legal prerequisites for prescribing the use of waste heat of industrial plants	Until 1996	Federal Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

13	Initiating important decisions relating to environmental policy in other institutions		
	Creating a tariff system for pipe-linked energy sources, which offer stronger stimuli for load management and increase in efficiency; eliminating cheap special tariffs	Until 1997	Federal Government, Province of Styria

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

14	Initiating important decisions relating to environmental policy in other institutions		
	Fixing the energy indices for assessing the calorific standard of buildings instead of the k values (heat pass)	Until 1996	Province of Styria

Is under way (simplified calculation of indices).

Comment: RA 14.

An "energy pass" for assessing new buildings has been developed.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

The deployment of the action would be of utmost importance. For fixing energy indices would allow a uniform deliberation, which would not only assess the thermal insulation of the single components but also the architecture of the building.

15	Initiating important decisions relating to environmental policy in other institutions		
	Change in subsidizing for residential building activities (implementing order), which will also make building low-energy houses attractive for cooperatives	Until 1996	Province of Styria

Is under way (simplified calculation of indices).

Comment: RA 14.

The City of Graz subsidizes the "Solar Low-Energy House of Graz"

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

The deployment of the action would be of utmost importance. For residential building as a whole can be influenced by the subsidizing of residential building activities. The examples in Vorarlberg and Salzburg show that almost all the new buildings will be built as low-energy houses within few years if there is the corresponding subsidizing.

Getting out of the use of CFC's

16	Initiating important decisions relating to environmental policy in other institutions		
	Getting-out scenario for chlorinated hydrocarbons	from now on	Provincial Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

A pertaining regulation should also be applicable to fluorocarbons in future.

17	Initiating important decisions relating to environmental policy in other institutions		
	Compulsory identification of products containing CFC or partly halogenized	from now on	Provincial Government

No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

A pertaining regulation should also be applicable to fluorocarbons in future.

Waste prevention and treatment

18	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Implementing the Integrated Waste Disposal Concept of Graz within the Waste Management Plan for the City of Graz	Until 1996	City of Graz

Implemented.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Annex Actions – Protection of the Earth Atmosphere

19	Initiating important decisions relating to environmental policy in other institutions		
	Incorporating a obligation to collect and utilize landfill gas in power-heat coupling plants into the Waste Management Act	Until 1997	Federal Government

This is continuously being implemented in Graz. No pertaining petition was drawn up.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: not assessed

Positive assessment for Graz. The action has been implemented.

International contributions – Climate Alliance

20	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Financial support of projects relating to development policy, which are suggested by the COICA (Coordination Center of the Indian Organizations of the Amazonas Basin)	continuously	City of Graz

Climate Alliance / Rio Negro Partnership.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

21	Vote of the Municipal Council in terms of actions that are in the sphere of responsibility of the Municipal Authorities		
	Active membership in the International Council for Local Environmental Initiatives (ICLEI)	from now on	City of Graz

Graz has been an ICLEI / CITELEC Member since 1997

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +

Annex Actions – Protection of the Earth Atmosphere

	Joint actions with other actors		
22	Support of project weeks in school, e. g. in terms of the topic "Our contribution to protecting the rain forest"	continuously	Dept. of Environmental Protection, schools, "Arge Umwelterziehung" (Working Group Environmental Education), City School Department

School projects for using solar energy are being supported continuously. Prior to the "Environmental Party 1999", which was organized in June for the first time, there was an "Active Week" for the first time. The KEK Educational Initiative (KEK – Kommunales Energiekonzept – Municipal Energy Plan) offered several school projects in the school year 2000. These projects could be used free of charge by using a chequebook (KEK Cheque), which was sent to all the teachers and parents' representatives at schools in Graz.

Comment: Department of Environmental Protection

Assessment by the Eco-Team of Graz: +