Abridged version

2006

LAND OBERÖSTERREICH

UPPER AUSTRIAN ENVIRONMENTAL REPORT

Published by the Upper Austrian Academy for the Environment and Nature on behalf of the State Ministry of Environment of Upper Austria

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UPPER AUSTRIAN ENVIRONMENTAL REPORT 2006

ELABORATED ON BEHALF OF THE STATE MINISTRY OF ENVIRONMENT OF UPPER AUSTRIA

LAND OBERÖSTERREICH

AKADEMIE FÜR UMWELT UND NATUR

State Minister of Environment, Energy, Water and Consumerism

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EDITORIAL

ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT – A COMPREHENSIVE DUTY OF THE STATE OF UPPER AUSTRIA

Since the year 1990 the State Government of Upper Austria has regularly published an environmental report, which presents the measures and strategies taken by all departments and sectoral divisions to secure and enhance environmental quality and the quality of life in Upper Austria. The environmental report is submitted to the Upper Austrian Parliament by the State Government of Upper Austria.

The environmental report is arranged according to subjects and includes summaries of the relevant contributions of different sectoral divisions. The focus is on duties and achievements with regard to environment, water and energy. These contents are supplemented by contributions from the competences of other sectoral divisions (e.g. nature conservation, traffic, economy, regional planning, etc.). The technical information relates to the period 2000 - end of 2005 and was compiled by about 150 employees of the competent departments or institutions of the Office of the State Government of Upper Austria.

In the last few decades a number of standards defining the environment-related duties of public and private players were created under Community, federal and provincial law.

Since the mid-1990s the model of sustainable development and the process of global protection of the atmosphere have been the yardstick for modern and future-oriented environmental policy.

Environmental protection and sustainable development require the development of connections – connections between man, technology and nature, between economic success and ecological responsibility, between public and private commitment, between today and tomorrow. A modern environmental report should make these connections apparent.

This abridged version presents an overview of the information contained in the Upper Austrian Environmental Report 2006.
The text in full is available at the Upper Austrian Academy for Environment and Nature or on the homepage of the State of Upper Austria at www.land-oberoesterreich.gv.at in the sections „Topics/Environment“ or „Topics/Achievements/Publications“.

DEAR FELLOW CITIZENS!

The challenges of modern environmental protection are numerous and varied. In many cases they cannot be solved on a local level but require committed international cooperation.

Climate change is a classic example of such a global challenge, and in the hundred year flood in the year 2002 and the drought in the subsequent year also Upper Austria experienced the impact of climate change. Upper Austria meets this challenge by forming aggressive alliances with other European regions and daring new ventures within the European Union. Environmental policy in Upper Austria is more than raising a warning finger; it focuses on sustainable development for enhanced quality of life and emphasises cooperation based on partnership between environment and economy, the former opponents.

We want to show that this cooperation works and that we can have a thriving economy and at the same time not only conserve but enhance the environment for the generations to come. Capital investment sparked off by a modern environmental policy can create thousands of new jobs in Upper Austria.

The publication of the Environmental Report 2006 coincides with the end of the first half of parliament and thus affords a good opportunity to take stock in between.

Environmental policy is no short-term issue but requires long-term planning and predictability, commitment, the inhabitants' participation, and stamina.

Without bothering about issues which dominate day-to-day politics we focus on long-term improvement of conditions: from environmentally sustainable agriculture over reduction of greenhouse gas emission to improvement of the condition of our rivers and lakes. For example, we have planned 385 flood control projects. Some of these projects are already in operation, but others will not be completed before a further decade to guarantee optimal protection against floods and maximal sustainability and integration into nature. Environmental protection with foresight is no longer just a commitment; it gives us the chance to create many jobs – from use of renewable energy sources to flood control.
We should like to thank our employees and everyone in our state for their involvement and interest in working for the benefit of our environment.

Rudi Anschober
State Minister of Environment, Energy, Water and Consumerism

Dr. Josef Pühringer
Governor of Upper Austria

1.0 | AIR QUALITY, NOISE AND RADIATION

HOW WE TREAT OUR ATMOSPHERE

1.1. AIR POLLUTION CONTROL

Air pollution is both a local and a transboundary problem. Air pollutants can have a harmful impact on the environment and human health by themselves or through chemical reactions. Emission (= exhaust emissions) is the release of substances, energy or radiation to the environment. Immission (= introduction of harmful substances) occurs when harmful substances from the atmosphere settle on a surface again, for example on the mucous membranes of the respiratory passages in humans or on the leaves of plants.

Due to the transboundary impact of air pollution the EU has defined limit values for sulphur dioxide and dust starting in 1980, and later also for nitrogen dioxide and ozone. These limit values were incorporated in the Austrian law in the Law on Ambient Air Protection in 2001. More important than the EU-wide ambient air quality standards are the EU directives on emissions limitation. They include, for example, limit values for waste gas emissions of large firing plants, the solvent emissions of paint shops and print shops, or the contaminant content of car exhaust fumes, which must be reduced step by step.

HOW AIR POLLUTION AFFECTS HUMAN HEALTH AND ECOSYSTEMS

Today, the harmful substances which affect human health most seriously are particles („fine dust“) and ground-level ozone.

Fine dust and ground-level ozone

Fine dust is airborne particulate matter which can penetrate into the lung. This part of the dust, which consists of particles less than 10 micrometers in diameter, is also referred to as PM10 dust. The smaller the particles the more harmful they are for human health. Austria is less affected by fine dust than most of its neighbouring countries, with the exception of the Linz area.

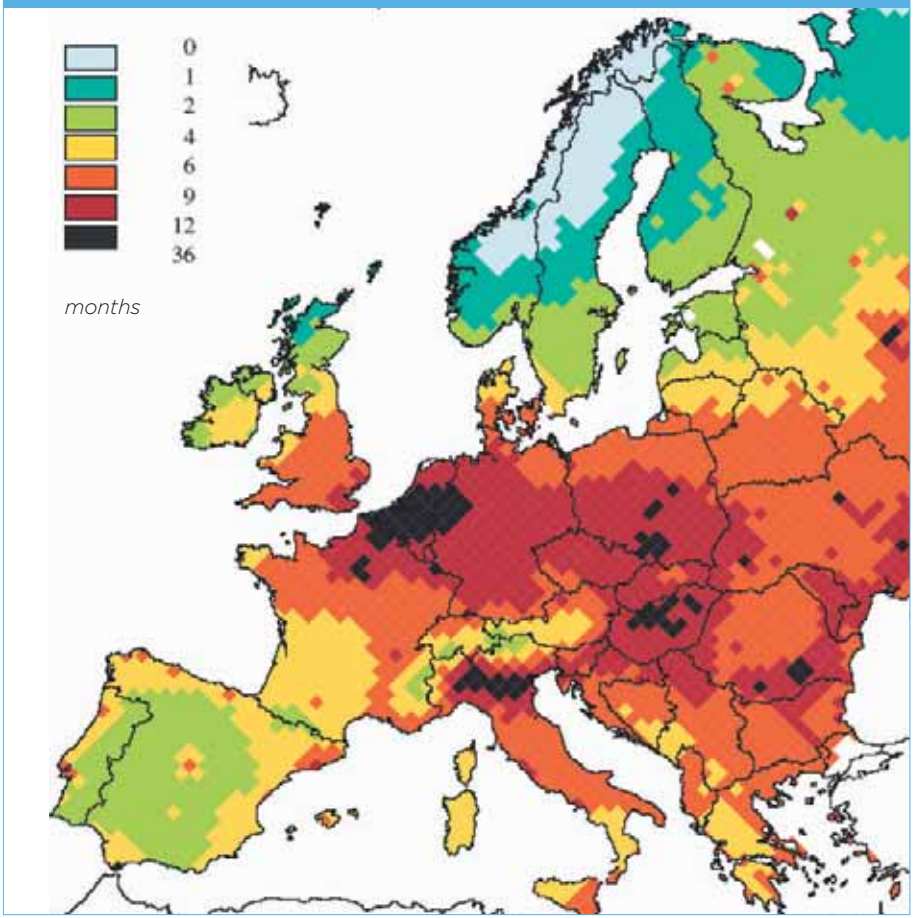
Gaseous pollutants such as ozone, nitrogen dioxide und sulphur dioxide affect primarily the respiratory passages. Again primarily persons with already impaired health are at risk.

Ecosystem stress

Plants and ecosystems can be damaged by

- build-up of acid formers – sulphur dioxide, nitrogen oxides and ammonia – which destroy the animal and plant world ,
- excessive nitrogen build-up in the form of ammonia and nitrogen oxides (so-called „eutrophication“), which destroys plant life or can get into fresh water, which leads to loss of biodiversity in any case,
- ground-level ozone, which leads to damage and reduced growth in agricultural plants, forests and other plants.

STATISTICAL DECREASE IN LIFE EXPECTANCY CAUSED BY FINE DUST (PM 2.5)



AIR POLLUTION CONTROL, LEGAL BACKGROUND

EU directives

In 1996 the EU directive on ambient air quality assessment and management („Framework Directive") was adopted. The „Daughter Directives" contain limit values which are binding throughout the EU for

- sulphur dioxide, nitrogen dioxide, particulate matter and lead
- benzene and carbon monoxide
- ozone
- arsenic, cadmium, nickel, mercury and polycyclic aromatic hydrocarbons

1.0 | AIR QUALITY, NOISE AND RADIATION

Law on ambient air protection

Since April 1, 1998 the issues of ambient air protection have been regulated by the „Law on ambient air protection" (IG-L) (under federal law):

Objectives:

- Long-term protection of human, animal and plant health, and the complete environment
- Preventive reduction of air pollutant immission
- Conservation or improvement of the air quality in designated regions

The Law on ambient air protection (IG-L) contains limit values for different air pollutants for the long-term protection of human health.

The IG-L also contains alert thresholds for SO2 and NO2. Their levels correspond by and large to those of the previous law on smog alarm. At levels beyond the alert thresholds immediate steps can be taken.

The Ozone Act

The Ozone Act contains medium- and long-term goals for the protection of health and the vegetation as well as an information threshold and an alert threshold.

During spells of hot and dry weather the information threshold can be exceeded, about which the population is informed by the media. It is very unlikely, however, that the alert threshold is exceeded in Upper Austria.

The Upper Austrian provincial low on air pollution control

To control air pollution in Upper Austria, regulations were issued on a provincial level in Upper Austria by the Upper Austrian Air Pollution Control and Energy Technology Act (OÖLuftREnTG). This law contains safety regulations and provisions on the protection of the environment, which are to reduce emissions, including, but not limited to, emissions of non-industrial firing plants. Moreover, this law contains safety regulations for the storage of combustible material and requirements for heating systems.

The technical requirements are to ensure that new and existing plants are state-of-the-art. Furthermore, exact emissions limit values for various pollutant parameters, i.e. for dust, sulphur dioxide (SO2), carbon monoxide (CO), nitrogen oxide (NOx) and organic total carbon (OTC) were set forth.

The experiences from the 2002 flood were also integrated into this ordinance. This disaster destroyed many fuel tanks, and the discharged fuel oil caused considerable damage. To prevent such accidents in the future the use of oil heating in regions exposed to floods was subjected to very clear and strict requirements.

SOURCES OF HARMFUL SUBSTANCES AND EMISSIONS – RESULTS OF THE UPPER AUSTRIAN EMISSIONS MAP

In 1996 a map of the air pollutant emissions was created for the state of Upper Austria as basis for town and country and environmental planning (Oö. EMIKAT).

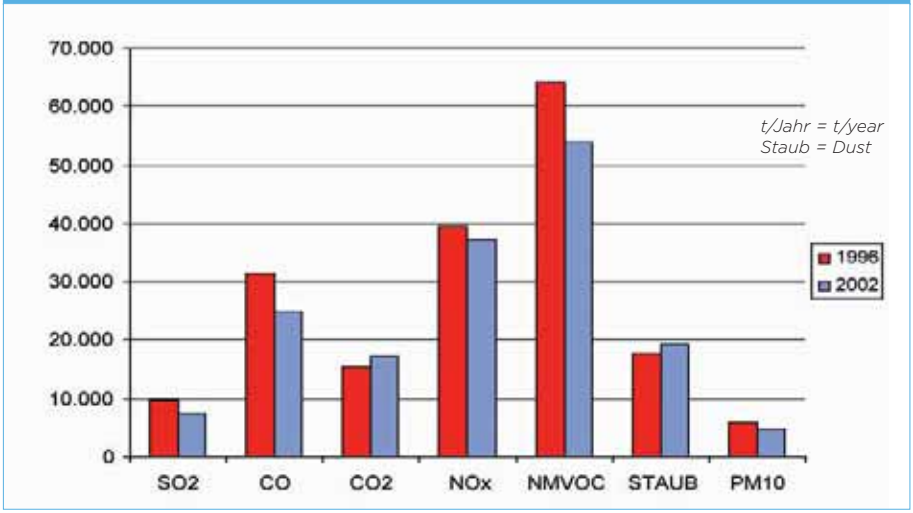
Total emissions trends in Upper Austria (1996 – 2002)

A direct comparison of the years 1996 and 2002 shows a clear decrease in air pollutant emissions. Even SO2, which was already low in 1996, was further reduced. Emissions of the greenhouse gas CO2 increased, however, although reductions should have been achieved since 1990. Total dust also shows increases. This is not very significant as long as the established health--relevant parameter PM10 can be further reduced.

EMISSIONS OF THE INDIVIDUAL GROUPS OF EMISSION SOURCES 2002 (Data in t/year)

EMITGR	SO2	NOx	NMVOC	CO	CO2	DUST	PM10
Power and district heating plants	463	1,748	16	560	1,739,432	56	60
Production of physical goods	3.975	7.415	6.193	101.121	8.967.655	1.857	1.576
Agriculture	26	876	3	24	38.675	2	1
Private households	1.834	3.019	24.908	115.239	1.848.624	1.143	1.029
Tourism	92	153	597	2.973	107.037	24	22
Trade	142	310	611	1.627	193.225	67	62
Nature	0	13	17.017	0	0	0	0
Other stationary emission sources	457	1.072	1.445	6.243	345.422	262	236
Ground traffic	307	20.755	3.121	19.515	3.230.101	15.640	1.732
Water traffic	17	339	41	136	9.497	31	31
Air traffic	112	1.094	63	368	355.523	0	0
TOTAL	**7.426**	**36.794**	**54.016**	**247.807**	**16.835.191**	**19.082**	**4.750**

EMISSION TRENDS 1996 - 2002 t/year (CO*10; CO2*1000)



MONITORING AND CONTROL OF AIR QUALITY – IMMISSION TRENDS IN RECENT YEARS

Currently the ambient air pollution measuring network, which was set up in 1977, comprises 20 fixed measuring locations and several mobile installations. The readings are transmitted to the measuring network centre on an hourly basis and checked for values exceeding limit and target values. On sites without fixed measuring locations the air quality can be monitored by mobile measuring installations in the framework of scheduled measuring campaigns.

1.0 | AIR QUALITY, NOISE AND RADIATION

MAJOR TRENDS IN RECENT YEARS

Sulphur dioxide

Statutory regulations which limited the exhaust emissions of large businesses on the one hand and the sulphur content in combustible fossil fuels on the other hand have led to a clear reduction of the pollution burden in densely populated areas. In the 1990s the portion of SO2 which is attributable to long-distance transportation also decreased considerably. Throughout Upper Austria the levels are even below the limit value for sensitive ecosystems.

Nitrogen dioxide

Nitrogen dioxide is mainly caused by traffic. The decrease which has been recorded since the peak load in the mid-80s is attributable to steps taken by the industry and above all to the introduction of the catalytic converter for automobiles with petrol engines. In recent years the NO2 burden has been slightly increasing again due to the increase in diesel automobiles -their NOx emission levels are higher than those of petrol-powered vehicles.

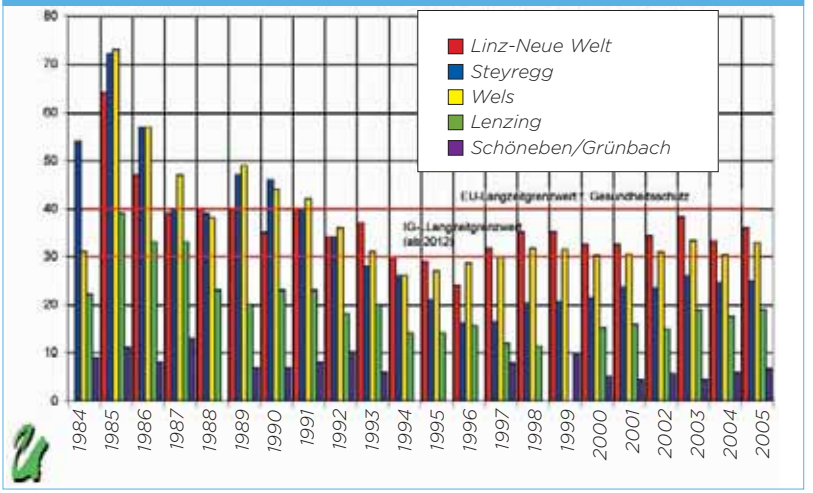
Dust (PM10)

Dust caused by big industries has always been the main problem for the air in Linz. Meanwhile the dust burden in Linz is the same as that in other cities. However, the exposure to fine dust and its components, for example diesel exhaust particulates, is still alarmingly high. In 2001 the measuring PM10 (fine dust with particle sizes smaller than 10 micrometers) was started.

Whereas the limit value for the annual mean value has been maintained, the limit value for the daily mean value in Linz and Wels was exceeded more frequently than permissible.

TREND OF ANNUAL MEAN VALUES OF NO2

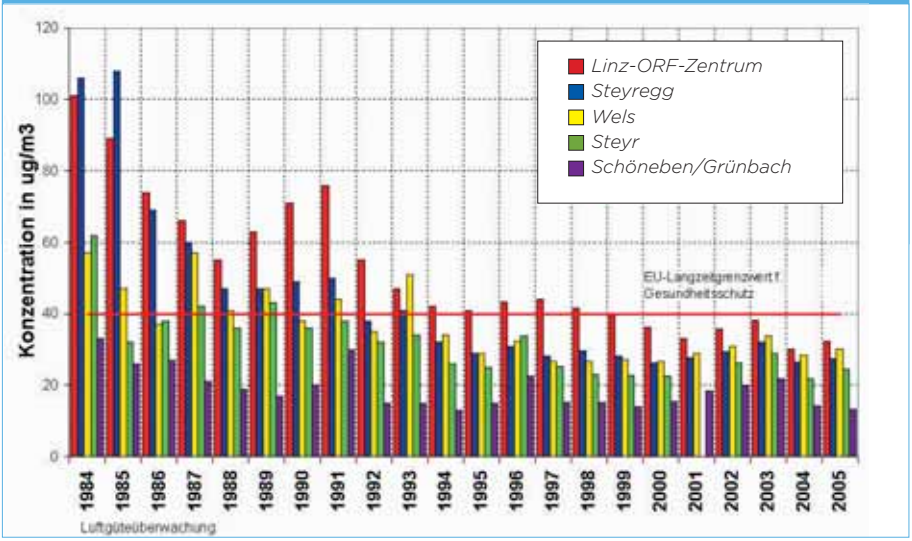
Concentration in µg/m³



Jahresmittelwerte Stickstoffdioxid = Nitrogen oxide annual mean values
EU-Langzeitgrenzwert f. Gesundheitsschutz = EU long-term limit value f. health protection
IG-Langzeitgrenzwert = IG-L long-term limit value / (ab 2012) = (as of 2012)
Luftgüteüberwachung = Ambient air quality monitoring

TREND OF ANNUAL MEAN VALUES FOR DUST/PM10

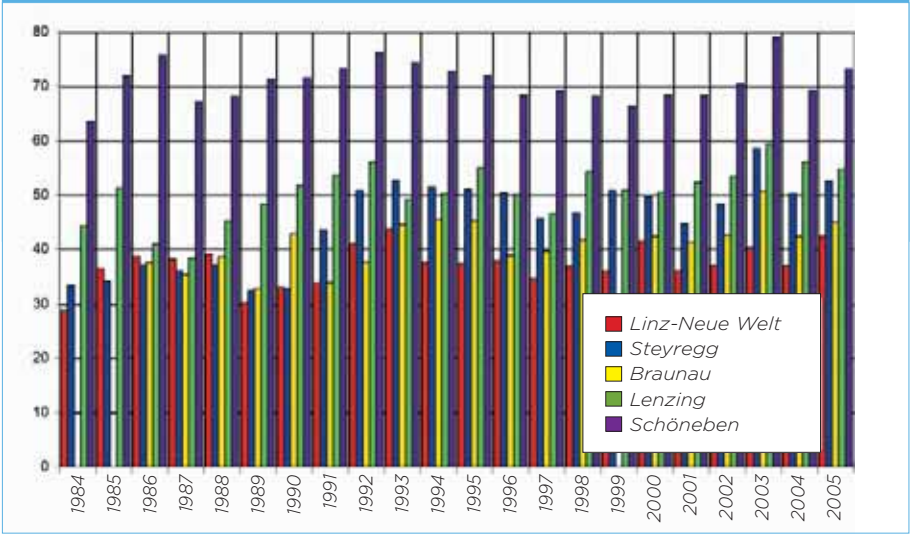
(as of 2001) *Concentration in µg/m³*



Jahresmittelwerte Schwebstaub / PM10 (ab 2001) = suspended particulate matter/PM10 annual mean values (as of 2001); EU-Langzeitgrenzwert f. Gesundheitsschutz = EU long-term limit value f. health protection; Luftgüteüberwachung = Ambient air quality monitoring

TREND OF ANNUAL MEAN VALUES FOR OZONE

Concentration in µg/m³



1.0 | AIR QUALITY, NOISE AND RADIATION

Ozone
Ozone is not emitted directly but develops from the „precursor substances" nitric oxides and hydrocarbons under global insolation. The nicer and hotter the summer the richer in ozone it is usually. Ozone disintegrates when it gets in contact with other pollutants. This is why the mean values are lowest in city locations such as Linz-Neue Welt, where the ozone is completely disintegrated every night, whereas the highest mean values of ozone are found in remote clean air measuring stations, for example in Schöneben. The peak values on hot summer days are more or less the same throughout Upper Austria.

Carbon monoxide
Carbon monoxide is emitted above all along busy roads such as the Freistädterstrasse in Urfahr. The concentration decreases quickly with the distance. The decrease recorded in all measuring sites since the 1980s is attributable to the improved exhaust emission standards for motor vehicles – as with nitric oxides.

Hydrogen sulphide
The major sources for this pollutant in Upper Austria are the viscose fibre production in Lenzing and the steel industry in Linz. The emission in Lenzing was reduced to a fraction compared to the 1980s. Since the threshold odour concentration of H2S is extremely low, odour pollution still occurs sometimes. In Linz several sources, for example the pumice plant, have been shut down, and the coke units have been renewed, so that unpleasant odour rarely occurs.

Carbon disulphide
Carbon disulphide is used in the production of viscose fibres and occurs, therefore, as industrial air pollution only around Lenzing. Thanks to an air pollution control project of the company Lenzing AG the immission burden was reduced to less than 1/10.

Benzene and aromatic hydrocarbons
Since the year 2000 benzene und aromatic hydrocarbon measurements (BTEX = benzene, toluene, ethyl benzene and xylene) have been performed in Linz and its surroundings. In 2004 the measuring was extended to the rest of Upper Austria in order to survey the situation exhaustively.
Benzene is mainly emitted by petrol-powered cars that are caught up in a traffic jam. The highest burden was measured at the location Bernaschekplatz, Rudolfstraße in Urfahr, although it is clearly below the limit value and shows a falling trend.

„Acid rain"
Whereas the decreasing nitrogen and sulphur readings already described in the environmental report 2000 continued the chloride readings did not change much. From 2003 to 2005 the annual sulphur reading in Upper Austria is 2.5 to 6.3 kg/ha, nitrogen 5.7 to 11.8 kg/ha, and chloride 2.5 to 7.6 kg/ha.
At none of the measuring stations, with the exception of Steyregg, were the critical values exceeded in the past three years.

FOCUSES OF ACTION AND SUCCESSES

The currently valid considerably lower limit values require an even greater reduction of the emission of contaminants. According to the Law on ambient air protection the heads of the provincial governments are obligated to survey the status, defining the parties responsible for the exceeding of the limit values. This compilation of data is the basis for the resulting action programmes.

Emissions reduction in Linz and Steyregg - Action Programme 2003

Hand in hand with the environmental impact assessment procedure (UVP) „voest 2010", which was completed in 2004, and the associated technical improvements of the Voest plants the emissions have been reduced continuously.

Selected steps for cause-related prevention of air pollutants

In addition to the activities described above the state of Upper Austria has taken many steps to improve the air quality:

- **Industry and trade**
  - Management consulting on pollution reduction potentials
  - Promotion of replacement of old firing plants by modern heating systems
  - Thermal refurbishment of buildings
  - Ordering dust-reducing measures in building, e.g. wetting
- **Domestic fuel**
  - Use of district heating
  - Replacement of old solid-fuel stoves by modern heating systems
  - Solar plants and heat pumps
  - Heat insulation measures to reduce the amount of energy involved
- **Traffic**
  - Promotion of retrofitting of passenger cars with particulate catalytic converters
  - Speed limits in almost the whole urban area
  - winter maintenance – gritting causes fine dust
  - Optimisation of street cleaning by using wet sweepers
- **Agriculture**

Since the beginning of the 1990s the ground-level spreading of liquid fertilizers (liquid manure) with so-called drag hose spreaders has been promoted by the Upper Austrian Soil Conservation Office and subsidized with funds by the provincial government.

Federal initiatives

The federal government has implemented the following measures:

- Sulphur-free diesel
- Tax bonus for particle filters
- Development programme for dust-reducing measures in industrial plants
- Raising people's awareness through various mobility management initiatives

Expert service for air pollution control and waste treatment

In the subdivision Environmental Engineering an expert service has been established to obtain an enhanced air quality by reducing the exhaust emissions at the level of the polluters (emitters) in accordance with the statutory provisions. The expert service in the chemistry and air pollution control group also assesses and evaluates emissions and immission of odours.

1.0 | AIR QUALITY, NOISE AND RADIATION

1.2. INDOOR AIR QUALITY, ROOM CLIMATE

Ecologically questionable building material, mould, and stale air in rooms can affect the quality of life considerably. In many cases simple measures are sufficient to get fresh air. The state of Upper Austria offers comprehensive support in these issues to people who want to build a house and other interested parties.

ECOLOGICAL MINIMUM REQUIREMENTS IN SUBSIDIZED HOUSING – EMISSION OF CONTAMINANTS FROM BUILDING MATERIALS

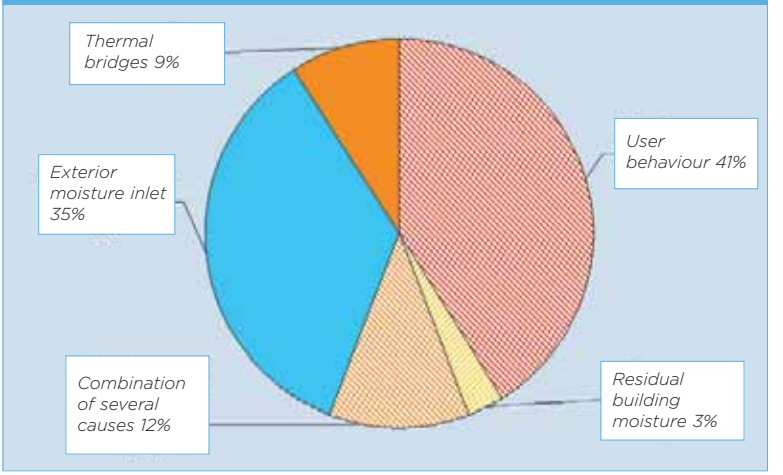
To promote a sustainable, long-lived and ecological building method, binding minimum ecological criteria with regard to the building materials and chemicals used in subsidized housing have been prescribed since April 2005 in addition to the energetic differentiation of a building.

TECHNICAL ADVISORY SERVICE FOR PREVENTION OF INDOOR MOULD

In fall 2000 the state of Upper Austria established a service centre for technical advisory service on mould because more and more cases of mould in living rooms and recreation rooms have been reported. In many cases mould is caused by inadequate heat insulation of the shell of a building but also by the installation of new windows which shut tight and inadequate airing.

At first support is provided over the phone. In most cases on-site inspection is necessary, however. Between April 2000 and January 2006, 951 on-site consultations were performed.

CAUSES OF MOULD IN HOUSING SPACES



GOOD AIR FOR UPPER AUSTRIA'S CHILDREN AND YOUNG PEOPLE

With the inter-departmental project „Good air for Upper Austria's children and young people" the state of Upper Austria made a comprehensive survey of the indoor situation and thus created the basis for a further quality improvement.
In the course of the project the indoor air quality, the acoustic situations, and the building physics quality factors were assessed and evaluated in Upper Austria's childcare centres, preschool centres and statutory schools and provincial schools in the years 1999 to 2003. One focus was on the natural noble gas radon.
The combination and evaluation of the data collected showed that in more than 95 percent of the childcare centres, in 86 percent of the preschool centres, and in 90 - 95 percent of the statutory schools and provincial schools participating no health risks in terms of mould, chemical indoor contaminants and radon existed.

MATHEMATICAL MODEL CARBON DIOXIDE (CO2) IN CLASSROOMS

One goal of a sub-investigation in the framework of the project „Good air for Upper Austria's children and young people" was to develop a mathematical CO2 model for school classes as a basis for users and planners. To collect sound data for the development of such a model, two representative schools were examined in summer and in winter. In each school, the parameters carbon dioxide (CO2), temperature, and relative air humidity were measured from the beginning of classes to the end in two rooms.

In all rooms which were examined increased carbon dioxide (CO2) concentrations were detected after a short period of classes; if the windows remained closed, these concentrations continued to increase considerably within the monitoring time. The results showed that airing the classroom once per unit and in the breaks is absolutely necessary to maintain the hygienic conditions during classes.

ECOLOGICAL REQUIREMENTS IN SCHOOLS PROVIDING GENERAL EDUCATION, PRESCHOOL NURSERIES AND AFTER-SCHOOL CARE CENTRES

According to the Upper Austrian Ordinance regulating buildings and furniture for schools providing general education, preschool nurseries and after-school care centres the institutions responsible are required to preferably use such building materials and objects in the building, equipment and furnishing which are economical in purchase, maintenance and operation. Moreover they must meet the requirements of the latest findings of technical engineering, including aspects of organic architecture, the sanitary and educational requirements and the requirements of the curriculum as well as the actual need.

1.3. NOISE REDUCTION AND NOISE PROTECTION

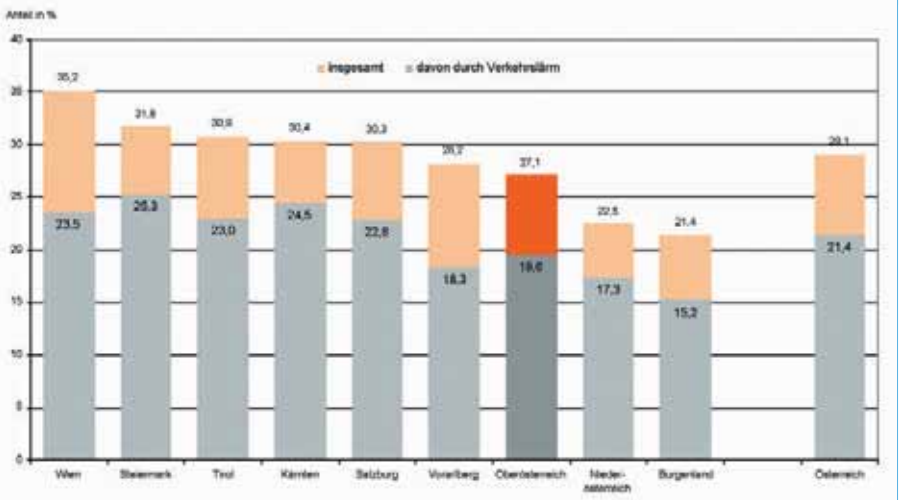
Noise is an environmental stress which affects both the health and the well-being of humans. Traffic is the major noise source at 72.1 percent, especially road traffic, but also the railway and air traffic.

NOISE PROTECTION IN STRUCTURAL ENGINEERING

The noise protection provisions in structural engineering have been embodied in the Upper Austrian laws on building legislation for decades.

1.0 | AIR QUALITY, NOISE AND RADIATION

NOISE INTRUSION IN RESIDENTIAL AREAS IN 2003 ACCORDING TO STATES



(Quelle: Statistik Austria, Mikrozensus Dezember 2003, eigene Berechnungen)

(tagsüber und/oder nachts...) = During day and/or night, proportion of persons > 15 years of age
Anteil in % = Share in %; Insgesamt = Total; Davon durch Verkehrslärm = of which traffic noise
Wien = Vienna; Steiermark = Styria; Tirol = Tyrol; Kärnten = Carinthia; Salzburg = Salzburg; Vorarlberg = Vorarlberg; Oberösterreich = Upper Austria; Niederösterreich = Lower Austria; Burgenland =Burgenland; Österreich = Austria; Quelle: Statistik Austria.... =Source: Statistik Austria, micro-census December 2003, internal calculations; Land Oberösterreich..... = State of Upper Austria/Statistics Department

Noise protection in structural engineering

The noise protection provisions in structural engineering have been embodied in the Upper Austrian laws on building legislation for decades.

Noise protection – a matter of concern for the Quality Board

On the initiative of the Subsidized Housing Department the state of Upper Austria offers the municipalities which have no design board, but also the property developers, the services of a quality board. This board serves as advisory body for the municipalities, developers and the housing consultants.

Noise protection in subsidized housing

The goal is to monitor the developers who are active in Upper Austria as to the quality of noise protection in building. This monitoring has also been embodied in the framework of accreditation with regard to the acoustic testing of buildings since September 2000. On the average the Environmental and Systems Engineering Department tests about 70 properties on behalf of the Subsidized Housing Department. This is about half of the subsidized properties built in Upper Austria.

Promotion of passive noise protection measures

Passive noise protection measures, i.e. noise-insulated windows, noise-insulated exterior doors and acoustic ventilators, were subsidized by the road administration with a total of

nearly 4.8 million Euros in the years 2000 to 2005. With these funds the purchase and installation of 12,021 noise-insulated windows, 1.588 noise-insulated exterior doors and 90 acoustic ventilators were subsidized.

Music schools

For the construction of provincial music schools the state of Upper Austria outlined recommendations concerning architectural and room acoustics.

Room acoustics – project „Good air for Upper Austria's children and young people"

Between the year 2001 and 2003 the quality factors as to acoustics and construction physics in Upper Austria's statutory schools and vocational schools as well as agricultural colleges were surveyed and evaluated.

LEISURE-TIME NOISE

Studies have shown that there is a clear connection between the music listening habits of adolescents and the resulting diminished or impaired hearing. Such impaired hearing is usually caused by prolonged exposure to excessively high sound levels and/or too short recovery phases. It limits the choice of career and makes communication more difficult.

Noise not only affects hearing, however. It leads to increases in blood pressure, increases in heart and respiratory rates, changes in brain activity, changes in blood flow and muscle tension, the hormonal balance, sleep disorders, nuisance or impairment of performance.

To meet this challenge Upper Austria increasingly emphasizes the educational aspect, especially with regard to the mainly young audiences. The Environmental and Systems Engineering Department, subdivision Environmental Technology, has therefore provided a hearing adventure pavilion to Upper Austrian schools since the school year 2004.

New sound limit values at events

As to the limitation of sound levels at events Upper Austria has decided to prescribe and check limit values. The Federal Environment Office worked out and published the noise protection guideline for open-air events in the year 2000. The provincial government of Upper Austria supplied all district authorities with this guideline for passing it on to municipalities.

MEASURES FOR REDUCING TRAFFIC NOISE

Sonic remediation for railway lines

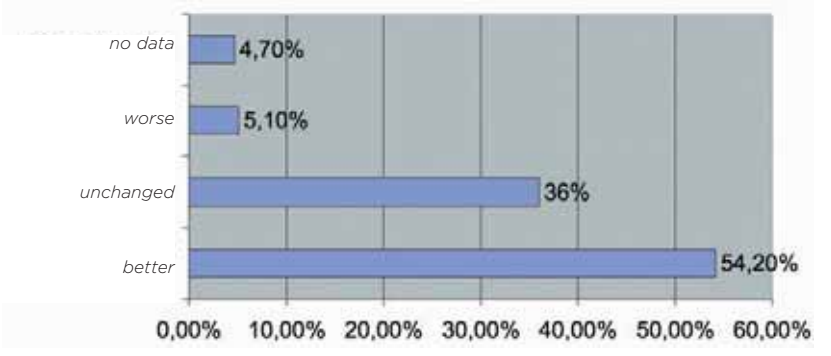
In November 1998 the federal government and the provincial government of Upper Austria signed a policy agreement on the planning, implementation, maintenance and financing of noise protection measures on lines of the Austrian Federal Railways ÖBB in Upper Austria. Out of 90 municipalities affected by railway noise in Upper Austria 36 have tackled planning and 25 the implementation of noise protection measures so far.

In the course of the implementation, sound-absorbing barriers with a visible area of 247,279 m_, 2,148 windows, 338 doors, and 341 anti-noise ventilators were installed in Upper Austria until 2005.

In the year 2000 the state of Upper Austria initiated the research project „Evaluation of the acceptance of noise protection measures on railway lines". A survey was carried out in eight Upper Austrian cities and municipalities to assess what the population affected thinks about the construction of sound-absorbing barriers along the railway lines and their effectiveness. One of the results of this research project was that the importance attached to noise protection measures increases following the construction of the sound-absorbing

1.0 | AIR QUALITY, NOISE AND RADIATION

CHANGE OF RAILWAY NOISE SITUATION AFTER CONSTRUCTION OF SOUND-ABSORBING BARRIERS



barriers, and that the objective noise nuisance level does not influence the importance and the perceived enhancement. This evaluation serves as basis in the counselling of the communities for information and decision-making processes

CONSTRUCTION OF SOUND-ABSORBING BARRIERS ALONG SECONDARY ROADS

To reduce the noise ambient impairment in residential areas bordering on secondary roads around 35,000 m^2 of sound-absorbing barriers (more than 12 kilometres) were built in Upper Austria in the years 2000 to 2005 along secondary roads including the former federal roads (provincial roads B).

Noise emission test track for new road surfaces

In the year 2005 the provincial road authority and the Federal Ministry of Transport, Innovation and Technology carried out a sonic analysis programme to reveal the noise reduction potentials of different road surfaces.

On the test track B 1 Wiener Strasse in eight segments of about 300 meters length each different road surfaces consisting of conventional surfaces and state-of-the-art surfaces were applied.

The results show basically a uniform trend and clear differences between the individual surfaces. The two-layer open-structure asphalt 2OPA turned out to be the noticeably „softest" road surface.

The intention is to extend the analysis or measurement programme to a representative observation period of about five years to be able to determine the actual, lasting, surface-specific noise reduction.

REGIONAL PLANNING AND NOISE PROTECTION

Regional planning with the instruments of the land development plan and the building development plan is one of the most effective measures of noise prevention. In Upper Austria each municipality is obligated to work out a local development concept (ÖEK).

This concept must also take into account and prove desired future developments. In the area of large infrastructure projects there are the so-called corridor projects, where the optimal route is worked out and laid down for building projects. In Upper Austria the so-called enterprise classification guideline was issued, which specifies the type of enterprise, e.g. joinery, may be established in which category of development area.

1.4. RADIATION PROTECTION AND RADIOECOLOGY

Radiation comes both from natural and from technical sources. In both areas the state of Land Upper Austria is active in taking steps for reducing radiation which is harmful to health.

RADON IN UPPER AUSTRIA

The noble gas radon, which originates from the soil, accounts for about half of the natural radiation concentration. As early as in 1993 the subdivision Environmental Engineering launched an analysis in Upper Austrian households in the framework of the national radon project. Subsequently a series of radon projects were carried out:

- Subsidized measuring in nonbasement buildings
- Subsidized radon renovation measures and measures in construction of new houses
- Collection of data on radon exposure in preschool nurseries and statutory schools and expert counselling for redevelopment
- Collection of data on radionuclides in drinking water, on radiation exposure of employees in waterworks, recommendations for preventive and redevelopment measures

In risk assessment guide values are used for the mean annual radon concentration:

Intervention guide value for existing buildings:

400 Bq/m^3 radon-222

Planning guide value for new buildings:

200 Bq/m^3 radon-222

If the mean annual values exceed the intervention guide value, redevelopment measures should be taken, including, but not limited to

- Repeated airing throughout the day
- Airing of the basement
- Elimination of leaky spots
- Mechanical airing or ventilation

MOBILE RADIO ACTIVITIES OF THE STATE OF UPPER AUSTRIA

Mobile radio installations have been on the agenda for years. In addition to aspects of building regulations especially health protection with regard to impairment through electromagnetic radiation has been a major concern. Mobile radio antennas are approved by decree on the basis of the Telecommunication Act. In the framework of this procedure also the aspects of health are taken into account; in Austria, the limit values of the ÖNORM E8850, which largely correspond to the recommendations of the International Commission on Non-Ionising Radiation Protection (ICNIRP), are used as the basis of assessment.

Since the legal framework grants residents and municipalities hardly any position as parties involved, the provincial parliament repeatedly asked the Minister of Transport in reso-

1.0 | AIR QUALITY, NOISE AND RADIATION

lutions to issue an ordinance regulating the implementation of the following steps:

- Limit values to meet the principle of prevention requirement should be issued, and a minimisation requirement should be embodied in a law when a location is selected.
- The population should be informed about potential health hazards
- Residents and municipalities must be granted a better legal position.
- The multiple-use requirement for mobile phone aerials should be replaced by more binding regulations.

The subdivision Environmental Engineering supports local authorities and citizens through consultations and information.

POWER FLUX DENSITY DISTRIBUTION OF A TYPICAL GSM TRANSMITTING INSTALLATION

Upon request by local authorities, radiation measuring in selected locations including interpretation of the measuring results and evaluation according to guidelines are performed.

THE ORDINANCE REGULATING MEDICAL RADIATION PROTECTION

The new ordinance introduces above all the radiation protection policies, justification, optimisation and responsibility according to the Patient Protection Guideline. This ordinance results in a series of new obligations for physicians and hospitals as operators of radiation facilities and for the competent authorities.

One of the basic prerequisites for minimising the radiation dose is the technically perfect condition of radiation facilities. Comprehensive quality control is, therefore, an integral part of optimisation.

As competent radiation protection authority for all districts of Upper Austria the subdivision implements the Ordinance Regulating Medical Radiation Protection by providing expert's opinions, measuring, acceptance tests, counselling and information.

RENEWAL OF THE EARLY RADIATION WARNING SYSTEM

To protect the population throughout Austria the Federal Ministry for Agriculture and Forestry, Environment and Water Industry operates a monitoring network on the basis of the Radiation Protection Act. To keep the level of radioactive contamination as low as possible in the case of a nuclear disaster and to be able to alert authorities, experts and emergency organisations the Upper Austrian Radiation Alert Plan was established.

The early radiation warning system has 51 measurement stations in Upper Austria.

ACTIVITIES OF THE ANTI-ATOMIC POWER OFFICER

The activities of the anti-atomic power officer are implemented via the offices in Linz and Prague.

Linz

- Contact to the provincial government and other provincial administrative authorities
- Contact to relevant federal offices and EU institutions
- Information of the public through media work and Internet appearance
- Preparation, coordination and accompanying supervision of NGO projects carried out in the framework of the anti-atomic power action programmes

Prague

- Critical information of the Czech public through media work and information cam paigns
- Direct contact to relevant Czech organisations and institutions
- Coordination and management of the NGOs from the Czech Republic and Slovakia which were active in the framework of the action programmes.

In the period 2000-2005 the following EIA procedures concerning nuclear plants in the neighbouring countries were managed.

Czech Republic:	Nuclear power station (NPS) Temelin	NPS Dukovany
Slovakia:	NPS Bohunice	NPS Mochovce
Hungary:	NPS Paks	
Germany:	NPS Isar	

AIR QUALITY, NOISE AND RADIATION - UPPER AUSTRIA 2015

Upper Austria's goals for the years to come are:

- to meet the limit values for air pollutants in Upper Austria, including the reduced nitrogen oxide limit values, which will be valid as of 2010/12;
- to develop big industry in an environmentally-compatible and sustainable manner;
- to improve noise control at the source substantially;
- to further develop our position as trailblazer against the use of nuclear energy and for gradual opting out of nuclear energy programmes;
- to minimise radiation exposure in all areas;
- to intensify information about environmental issues so that the inhabitants can develop their power as responsible consumers;
- to intensify the influence of the state of Upper Austria on the federal government and on the European Union in environmental issues.

2.0 | WATER

TARGETED ELIXIR OF LIFE

2.1. DEVELOPMENT OF THE LEGAL/TECHNICAL REQUIREMENTS

The European Water Framework Directive, the Austrian Law on Water, and the Upper Austrian Wastewater Disposal Act 2001 constitute the central legal framework for water pollution control.

THE EUROPEAN WATER FRAMEWORK DIRECTIVE

In December 2000 the European Water Framework Directive was adopted. The goal of this directive is to establish a good condition for all bodies of water within the European Union by 2015 or no later than 2027. „Good" is to mean about the same thing in each Member State. The goals of the WFD are to be reached through management plans and action programmes for river basins.

AMENDMENT 2003 TO THE LAW ON WATER

The requirements of the Water Framework Directive were implemented into Austrian law by Amendment 2003 to the Law on Water.

MAJOR INNOVATIONS

The environmental targets for surface waters and ground water are defined

Surface waters are in a good condition if their organisms, their structure and their chemical ingredients are little influenced by humans. Thus not only good water quality but also an adequate habitat for the water organisms must be ensured. For groundwater the good chemical condition is defined by limit values for various chemical substances.

Enhancement requirement and ban on deterioration

According to the Water Framework Directive all bodies of water must be protected, improved and redeveloped in such a way that the good condition is established by December 22, 2015 at the latest. Another innovation is the express ban on measures that cause a deterioration of the condition of bodies of water.

River basin-related planning, national water management plans and action programmes

For every river basin (Danube, Rhine, Elbe) a water management plan must be worked out. Public participation is required.

The Upper Austrian planning area is divided into three sections:

- Danube upstream Jochenstein
- Danube downstream Jochenstein
- Elbe

Public participation in preparation of national water management plans

The state of Upper Austria attached great importance to informing all parties interested. The draft investigation and the results of the revision were presented in two information events. Representatives of hydropower, fishing and industry were additionally informed and integrated into the surveys.

Water information system Austria (WISA) and electronic register of pollution and impacts

At present the federal government is in the process of establishing the water information system Austria (WISA), which is to collect and provide this data. The state of Upper Austria has already been running a water information system (WIS) for several years.

THE UPPER AUSTRIAN WASTEWATER DISPOSAL ACT 2001

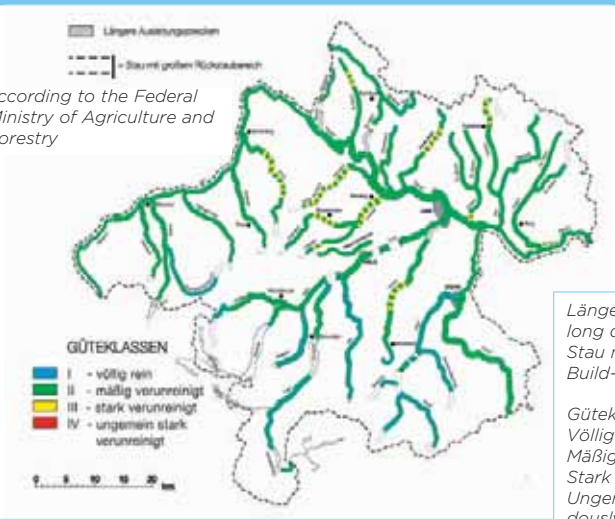
Since July 1, 2001 the municipal wastewater management has been regulated by the Upper Austrian Wastewater Disposal Act 2001. Under this law the local authorities are obligated to work out wastewater disposal plans; it also contains an obligation to inspect old and non-approved cesspits.

2.2. SURFACE WATERS

The degree of pollution with easily degradable organic substances (saprobic) and the water pollution with nutrients (eutrophic) were classic pollution parameters in the phase of quality redevelopment. The quality cards, which have been prepared regularly in our state since 1966, are now obsolete through the new assessment methods of the EU Water Framework Directive.

The saprobic or eutrophic conditions are still part of water assessment, although in a different form. The water structure (formerly „ecomorphology") is also still integrated into the assessment. The river patency for fish (up- and downstream migration) is also a requirement of the EU Water Framework Directive.

THE WATER QUALITY OF UPPER AUSTRIAN FLOWING WATERS



according to the Federal Ministry of Agriculture and Forestry

Längere Ausleitungsstrecken = long drainage areas
Stau mit großem Rückstaubereich = Build-up with extensive backwater

Güteklassen = Grades
Völlig rein = completely clean
Mäßig verunreinigt = moderately polluted
Stark verunreinigt = heavily polluted
Ungemein stark verunreinigt = tremendously heavily polluted

THE WATER QUALITY OF UPPER AUSTRIAN FLOWING WATERS

A large part of the running waters in Upper Austria has Grade II or even better quality. Major rivers such as the Traun river between the lakes Hallstättersee and Traunsee, the Alm and the Steyr rivers including their inflows Krumme Steyrling, Steyrling and Teichl even reach Grade I-II quality, ranking among the cleanest running waters of Upper Austria. The lakes of Upper Austria have bathing water quality.

TROPHY IN UPPER AUSTRIAN RUNNING WATERS

The nutrient-poorest rivers are the rivers of the foothills of the Alps and the Enknach, Mattig and Schwemmbach rivers in Innviertel region, which fall into the two low categories one and two. Also the rivers of the Mühlviertel region fall mostly under category two. In addition to individual river segments in the Mühlviertel region (Kleine Mühl, Gusen, Feldaist), especially the rivers in the regions Inn- and Hausruckviertel and also the middle and the lower course of the Krems river are clearly affected more seriously.
A comparison between grade card and trophy card shows that organic pollution and nutrient load still go hand in hand. Since in the past clear successes were achieved in municipal and industrial wastewater treatment, the introduction of nutrients from the surface increasingly plays a major role.

PATENCY OF RIVERS, AND RIVERBANK STRUCTURES

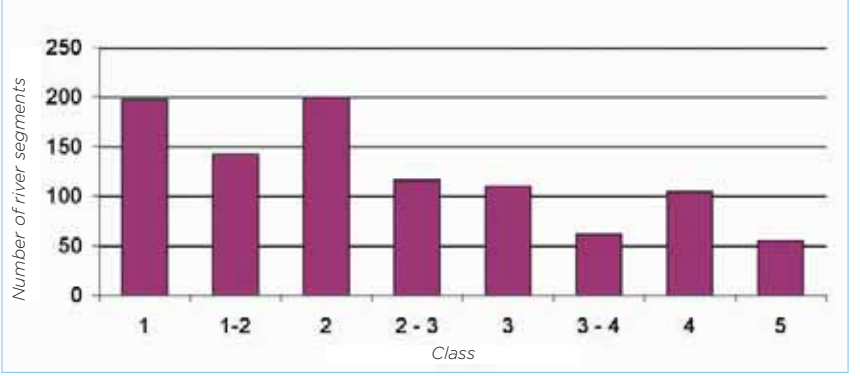
The so-called „weir map", which has been worked out for several major rivers including their inflows since the year 2000, is a detailed full survey on the patency of the structures for the organisms which live in the water.

For the following rivers including inflows a weir map is available:

- Aschach
- Innbach
- Mondseeache
- Antiesen
- Krems
- Pram
- Gusen
- Maltsch
- Trattnach

In addition to the transverse installations riverside buildings were surveyed. The riverbank interventions can be represented in a system ranging from close to nature (Class 1) to out of touch with nature (Class 5).

RIVERSIDE INTERVENTIONS IN UPPER AUSTRIA



USE OF HYDROPOWER IN WAYS COMPATIBLE WITH THE WATER INDUSTRY AND ECOLOGY

As the surveys for the analysis of the actual situation 2004 showed, the use of hydropower has an essential impact on the condition of our lakes and rivers. From the perspective of water management several ecological factors must be taken into account in the planning of future hydropower plants and the renovation of existing plants:

- Fish and microorganisms must be able to migrate up- and downstream
- Adequate residual water outlets
- Flooding must not become worse
- Groundwater must be conserved
- Protection especially of marshy areas

The goal of the water industry is the use of hydropower using plants with a favourable energy yield: water consumption ratio, located at river segments where this is compatible with the water quality targets and the ban on deterioration.

ANALYSIS OF THE ACTUAL SITUATION 2004

In the analysis of the actual situation 2004 of the Federal Ministry for Agriculture and Forestry, Environment and Water Management in cooperation with the states Austria's lakes and rivers of a minimum size and above were categorized into so-called „bodies of water". For these bodies of water the existing impacts of human activity were illustrated and it was assessed whether a good condition as defined by the Water Framework Directive can be expected or not.
The result of this analysis is a preliminary risk assessment. In 2008/2009 monitoring programmes are to allow an evaluation of the actual ecological condition. On the basis of that management plans and action programmes will be drawn up.
The analysis of the actual situation 2004 showed that in the larger running waters only few segments are still in a very good condition, i.e. close to nature. These few segments will have to be conserved for the future. The largest demand for redevelopment measures will be found in the structural impairments of the running waters through hydroelectric power plants and flood control constructions as well as in diffuse introduction of nutrients.

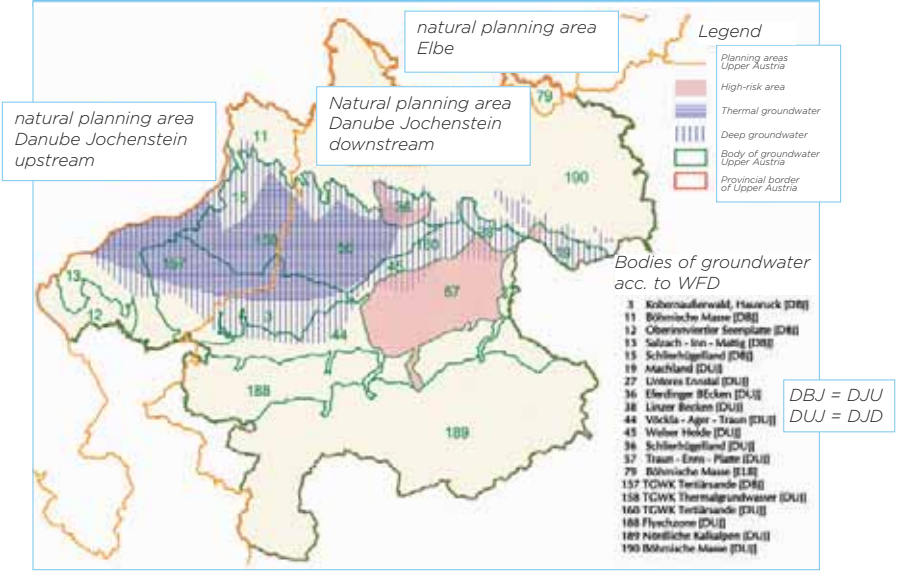
2.3. GROUNDWATER

Upper Austria has 20 bodies of groundwater (GWK), which are all in a very good condition as to quantities, and most of them are also in an excellent chemical condition. The high-quality Upper Austrian groundwater resources are used for assuring the drinking water supply throughout the state.

RESULTS OF THE ANALYSIS OF THE ACTUAL GROUNDWATER SITUATION 2004

When the Water Framework Directive (WFD) entered into force on December 22, 2000, water protection standards applicable throughout Europe were formulated. The main goal with regard to groundwater is to reach a good chemical and quantitative condition of the bodies of groundwater by the year 2015.
In a first step the current condition of the groundwater resources were documented.

BODIES OF GROUNDWATER IN UPPER AUSTRIA



TRENDS IN WATER QUALITY

The problem parameters, which are closely linked to agricultural land use, are nitrate and pesticides, including, but not limited to, atrazin and desethyl atrazin. After the ban on atrazin had entered into force in the mid-1990s the number of samples containing atrazin and/or desethyl atrazin beyond the limit value of 0.1 Qg/l decreased noticeably.
Also with regard to the nitrate pollution of Upper Austrian groundwater the situation has improved slightly, although the situation depends on the location. Generally a clear reduction in nitrate pollution since the year 1992 can be seen.

GROUNDWATER REDEVELOPMENT

Although a large portion of the groundwater resources are in a good chemical condition, the agricultural land use has a strong impact on groundwater quality. Especially in the south of the Eferding basin, in the Wels heathland, the Traun-Enns plateau and the Machland region nitrate pollution is found.
The efforts to enhance the groundwater quality in heavily affected regions includes the promotion programme „Groundwater 2000 NEW“ and the establishment of the „Upper Austrian Water Protection Service“.

ÖPUL and Nitrate Action Programme: subsidies for water-compatible agriculture

The agricultural environmental programme for the promotion of environmentally compatible, extensive farming which protects the natural environment (ÖPUL) promotes environmentally-acceptable cultivation. The programme ÖPUL is going to see its fourth edition in fall 2006 and in 2007.

Groundwater-2000 NEW
In the framework of ÖPUL the Upper Austrian regional preventive water protection project (Groundwater 2000 NEW) was established. It includes the promotion of farming methods which do not pollute the groundwater in the nitrate-polluted groundwater regions in Upper Austria and covers the following groundwater regions: Machland, the south of the Eferding basin, the Traun-Enns plateau, the Wels heathland, and the lower Enns valley. In the year 2005, 2,269 enterprises participated in the Groundwater 2000 NEW programme. Currently a total of about 62,480 ha of farmland, i.e. about 68 percent of the eligible farmland, are cultivated in accordance with the specifications of the regional programme. What is especially encouraging is the high participation in voluntary additional measures such as planting of grass and ground-level spreading of manure. Currently the preparation of a follow-up programme - duration 2007 to 2013 – under the title „Groundwater 2010" is under way.

Water protection counselling
In the year 2000 the „Upper Austrian Water Protection Service" (WSB) was established as an association. It focuses on counselling and training farmers with the goal to enhance the water quality and secure the resource-bound water supply. The association is supported by the state of Upper Austria and the Chamber of Agriculture for Upper Austria.

PRIORITY GROUNDWATER AREAS

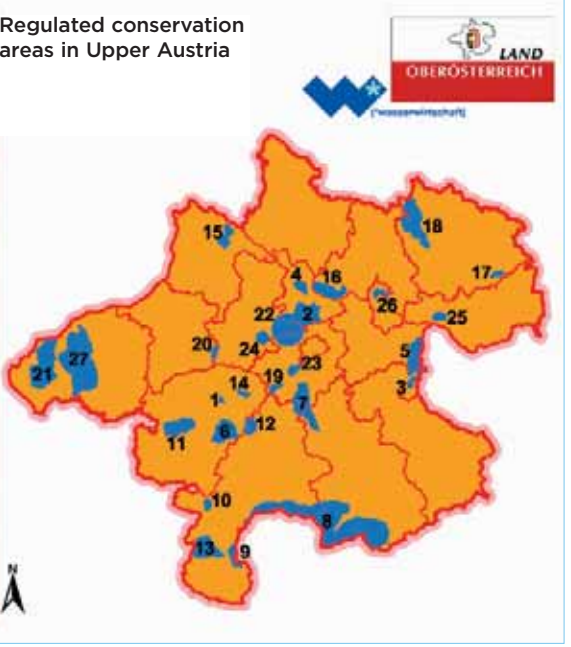
The most important groundwater areas in Upper Austria, where the conservation of the quality is particularly important for the current and the future assurance of drinking water supply, are designated priority groundwater areas (GWVF) and comprise approx. 23 percent of the area of the state of Upper Austria.

Through a zoning into core and peripheral zones the impact of other groundwater-relevant uses can be controlled and limited to the necessary extent.

Water protection areas and water conservation areas
Water protection areas and water conservation areas are instruments for the protection of the water resources which are important for the assurance of the drinking water supply. Currently Upper Austria has 27 regulated groundwater conservation areas. In 2006 three further areas will be added. At a total area of approx. 1,120 km^2 the regulated conservation areas cover 9.34 percent of the state.
Regional planning and priority groundwater areas
In the framework of the regional planning programmes priority groundwater areas are taken into account.
Raw material generation und priority groundwater areas
The use conflict between assurance of drinking water supply and raw material generation can best be solved if raw material generation and drinking water recovery are carried out in separate regions. To this end the existing priority water industry areas vis-à-vis gravel extraction are shifted to the GWVF concept including designation of core and peripheral zones. In the gravel terraces of the central area between Enns and Lambach this designation was carried out in the year 2005 when the gravel guideline was revised.

REGULATED CONSERVATION AREAS IN UPPER AUSTRIA

Nr.	Name of conservation area
1	Waldabruck
2	Leopersdorf
3	Steyr
4	Hartkirchen, Hinzenbach, Pupping und Stroheim
5	Dietach, Enns, Hargelsberg und Kronstorf
6	Grafenbuch
7	Pettenbachrinne
8	Totes Gebirge (oö.Teil)
9	Sarstein, Sandling u. Loser
10	Bad Ischl
11	Ranchrinne
12	Aurachrinne
13	Bad Goisern und Gosau
14	Schwanenstadt
15	Sauwald
16	Nördl. Ellendinger Bucken
17	Königswiesen
18	Jauntztal- Freistadt
19	Stadl-Paura
20	Haager Rücken
21	Weilhartsforst
22	Bad Schallerbach
23	Edt, Gunskirchen
24	Gallspach
25	Zirking
26	Urfahr
27	Lichforst



GROUNDWATER MANAGEMENT

In the management of our groundwater resources especially the aspects of sustainable use and groundwater protection throughout the country must be taken into account.

Sustainable thermal water management in Upper Austria

In the past few decades the use of thermal water has become a significant sector in our economy. To ensure a cross-border sustainable use of the thermal water resources management measures in close cooperation with Bavaria are required.

Successes in our cooperation:

- A deep groundwater model was worked out to provide an assessment basis for Upper Austria and Bavaria.
- Management policies were agreed for joint management.
- All geothermic plants in Upper Austria and in Bavaria reinject the thermal water withdrawn into the withdrawal horizon.

Deep water

The sand resources dating from the neogen contain high-quality deep waters, some of which are used intensively for the drinking water supply. To ensure a sustainable protection of the deep waters the three biggest artesian wells in the area Haag - Rottenbach are being adapted to the state of the art.

Thermal use in the Linz area

The study „Groundwater- Management Linz" surveyed the size, the yield and the characteristics of the body of groundwater, establishing an essential basis for water management planning. It is used in the coordination of each thermal use to ensure that the natural groundwater conditions can be re-established.

2.4. THE WATER SUPPLY AND ASSURANCE OF THE DRINKING WATER SUPPLY

In Upper Austria, the drinking water is supplied almost exclusively from groundwater. Basically there is enough groundwater in good quality available in all regions of Upper Austria.

STATUS OF THE DRINKING WATER SUPPLY

At approx. 22 percent, which corresponds to about 300,000 persons, the share of individual water supply is relatively high in Upper Austria. The rate of connections to a central water supply rose from 74 percent to 78 percent versus the year 2000.

The big water supply companies are organised as companies but with the public authority having majority shareholdings. The goal is to increase and optimise the rate of connections to central water supply. The target is about 90 percent.

In the years 2000 to 2005 further 162 water supply cooperatives were established, which converted the drinking water supply from individual „house wells" to a public, collective and quality-assured water supply system in towns and housing estates.

Climatic extreme event, especially flooding and drought, have been challenges for the drinking water supply. The heavy rains in August 2002 destroyed part of the infrastructure of the public water supply. The drought in 2003 did not lead to serious restrictions in supply.

INSPECTION OF HOUSE WELLS

The inspectors of Upper Austrian WATER examined 7,523 house wells in more than 330 towns, and the chemists from water protection analysed it for drinking water quality.
The main problems with the drinking water quality of house wells are still inadequate constructive conditions, lack of protection areas and unsuited locations.

PROTECTION OF DRINKING WATER SUPPLY FACILITIES

Upper Austria has 4,500 protection areas, which correspond to approximately one percent of the provincial area, to protect drinking water supply facilities.

THE UPPER AUSTRIAN „FUTURE DRINKING WATER" STRATEGY

The project was launched in 2002 to develop solutions for international and national developments such as globalisation, liberalisation, privatisation and growing financial pressures on the municipalities and the questions of the citizens on the subject of drinking water. The goal was a political positioning of the state of Upper Austria, which is the basis of self-determined and sustainable drinking water supply.

2.0 | WATER

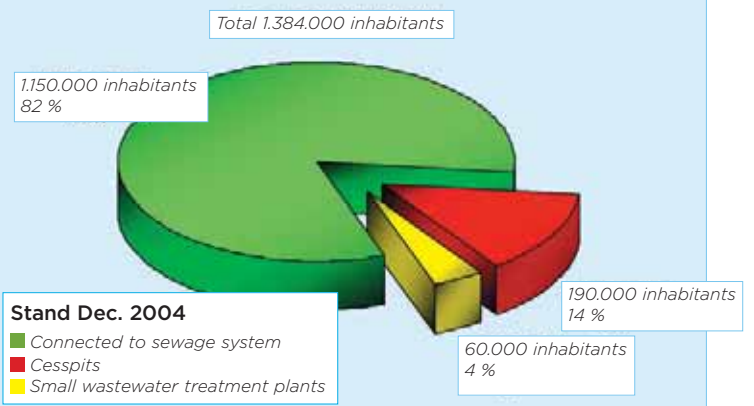
The goal of the project was to formulate for Upper Austria a common policy in water protection and water supply for the future in the form of a provincial strategy.

The following goals were agreed with regard to drinking water recovery:

- Drinking water in sufficient quantity and quality
- Securing groundwater resources and managing them in a way that these resources are protected
- Environmentally acceptable use
- Socially acceptable and low-price water rates

2.5. WASTEWATER DISPOSAL

TYPE OF WASTEWATER DISPOSAL



WASTEWATER TREATMENT PLANTS, SEWERAGE AND CONNECTION RATES

From 1960 to 2005 around 3,540 million Euros were invested in the construction of canals and wastewater treatment plants, increasing the connection rate from approx. 75 percent (2000) to approx. 83 percent (2005). By the year 2015 the connection rate is to be 90 percent.

In addition to connecting to a central wastewater disposal plant the options of an own separate small wastewater treatment plant and disposal in cesspits are possible.

Rural area

Due to the thin population or urban sprawl the wastewater industry is facing big challenges. In recent years innovative solutions like the construction of purification systems using plants were promoted. Also the wastewater cooperatives (approx. 100) which were increasingly established in the last six years can be a cost-effective organisation for the disposal in remote towns and housing estates.

(For more information please visit www.ooewasser.at)

Wastewater disposal concepts

For the disposal of the wastewater in a municipality the Upper Austrian Wastewater Disposal Act 2001 lays down that each municipality must draw up a wastewater- disposal plan. In the wastewater disposal plan the local authorities have to survey the actual wastewater disposal situation and then define in detail the ecological targets of the local wastewater disposal on the basis of the local development plan.

Since then over 400 municipalities have presented such a wastewater disposal plan and partly revised and updated it. These plans have been the basis of the further development of the public sewage system for contaminant-free disposal of wastewater. The wastewater disposal plans must be revised and updated every five years.

MONITORING OF WASTEWATER TREATMENT PLANTS AND WASTEWATER SYSTEMS

The Upper Austrian wastewater treatment plants meet the requirements of EU directive 91/271/EEC, including the requirements for systems located in so-called „sensitive areas", i.e. which have to remove nitrogen and phosphorus.
In the year 2005 the environmental impact assessment and monitoring office of the provincial government of Upper Austria inspected about 98 percent of the municipal wastewater treatment plants with a capacity of over 50 EW60; in the last five years trend for improvement has been showing. The defects which were identified were by and large not serious and hence had no impact on any body of water.

New regulations for indirect dischargers since 1997

With the amendment to the Law on Water 1997 the prerequisites for indirect dischargers' obtaining approvals changed fundamentally. Now the monitoring obligation for discharges which are not subject to approval is primarily incumbent on the canalisation companies, i.e. on those operators of wastewater treatment plants who set forth the conditions for discharge in private-law agreements with the dischargers.

Canal maintenance and development

In the past years the municipalities invested huge amounts in the wastewater -infrastructure and mainly in canalisation systems. On the basis of a canal maintenance plan the municipalities are regularly advised by specially trained staff from the provincial government of Upper Austria.

Increase in operating efficiency

The provincial government of Upper Austria commissioned a study examining how intercommunal cooperation can lead to cost and efficiency optimisation. In the past cooperation models were already implemented with the support of the provincial government of Upper Austria. In the years to come such coopera-tion is to be explicitly promoted.

CESSPIT MANAGEMENT

Every owner of a cesspit is obligated to dispose of their wastewater according to the rules. According to the Upper Austrian Wastewater Disposal Act 2001 the Upper Austrian municipalities were obligated to check by July 31, 2004 whether the cesspits within their area were in a proper condition and to order redevelopment measures, if necessary.

The number of cesspits that have to be checked is about 20,000. These works are under way.

SEWAGE SLUDGE TREATMENT IN UPPER AUSTRIA

Municipal sewage sludge 2000 to 2005
As a result of the development of the wastewater treatment plants and the increase in the connection rate the quantity of municipal sewage sludge increased from 38,259 to dry solid matter in the year 2000 to 44,164 to dry solid matter in the year 2005.

- **Use in agriculture**
  At 17,546 to dry solid matter or 39.7 percent, spreading of sewage sludge by farmers is an important use in Upper Austria.
- **Landfilling**
  In the year 2005 16,708 to dry solid matter or 37.8 percent were landfilled.
- **Composting**
  In the year 2005 949 to dry solid matter or 2.2 percent were composted.
- **Combustion**
  7,096 to dry solid matter or 16.1 percent from Upper Austrian wastewater treatment plants were subjected to thermal treatment.

Industrial wastewater sludge
In the year 2005 69,087 to dry solid matter of industrial wastewater sludge were produced in Upper Austria, of which 62,698 to dry solid matter were subjected to thermal use. The remaining 6,389 to dry solid matter were subjected to materials recycling and used in the brick industry.

2.6. FLOOD CONTROL MANAGEMENT AND HYDROGRAPHY

FLOOD CONTROL MANAGEMENT

Between 2000 and 2005 Upper Austria experienced several floods with partly disastrous consequences. On the basis of drainage basin-related plans flood control management measures have been worked out in the form of master plans. In recent years a number of flood protection works were planned and built. Currently the flood prevention project Machland-Nord, which is 35 kilometres long and will protect 1000 properties, is the biggest flood control management project in Upper Austria.

In response to the flood events, the 2005 Amendment to the Upper Austrian Regional Planning Act provided for a prohibition to turn land located in the 30 year flood level area into development area.

UPPER AUSTRIAN FLOOD CONTROL PLAN

In August 2002 the „Upper Austrian Flood Control Plan“ was drawn up and its implementation was adopted. The goal of this plan is the permanent reduction of the risk of floods and the disastrous impacts of floods.

Active and passive flood control
The goal of active flood control is to protect settlement areas against flood damage

through engineering measures such as dikes, detention reservoirs or mobile flood control structures.
Passive flood control is aimed at the prevention of damage by keeping high-risk areas free of buildings and by securing the natural water resources.

Water Care

The goal of water care is to intervene with the water as little and as cautiously as possible. One important measure is the purchase of river-adjacent land in the framework of the riverbank programmes of the provincial government of Upper Austria. Such additional land allows independent development of bodies of water.

Flood control management and ecology

In addition to the goal of effective flood control, flood control management also endeavours to reclaim more land for brooks and rivers again, to reconnect the bodies of water with their environments, and to make them passable for fish and micro-organisms.

Area management for flood control works and natural development of bodies of water

Land is needed for river revitalization, detention reservoirs or additional riverbank plants. Early purchase of land provides room for planned flood control works. In recent years the cooperation between the regional agricultural authorities and the individual water districts has intensified.

DIE.WILDBACH - THE FOREST SERVICE FOR REGULATION OF TORRENTS AND AVALANCHES IN UPPER AUSTRIA

Prevention

Danger zone planning as the most important instrument of passive flood control celebrated its 30th anniversary in the year 2005. All municipalities with torrent drainage areas in Upper Austria are covered.

Avalanche information system

With the „avalanche information system Inneres Salzkammergut", a unique instrument was created for avalanche forecasting and accurate planning of protective and preventive measures.

HYDROGRAPHY, A SPECIAL FIELD

The hydrologic cycle is systematically surveyed on the basis of a comprehensive monitoring network which includes:

- 131 Precipitation measuring locations
- 123 Air temperature measuring locations
- 3 Evaporation measuring locations
- 167 Water level measuring locations
- 76 Water temperature measuring locations
- 9 Suspended particle measuring locations
- 695 Groundwater measuring locations
- 11 Source measuring locations

The data collected serve as basis for the solution of hydrologic and economic problems and for risk assessment.

2.0 | WATER

BIGGEST FLOOD CONTROL PROGRAMME IN THE HISTORY OF UPPER AUSTRIA: LESSONS DRAWN FROM THE 100 YEAR FLOOD OF 2002

Since 2004 the biggest flood control programme in Upper Austria's history has been partly under construction and partly already implemented up and down the country. The programme focuses on prevention. The central aspects of improved flood control include:

- *the Upper Austrian climate and soil protection offensive*
- *the early-warning programmes: an early-warning type of system has been worked out for the Danube but also the Steyr and other, smaller rivers to improve the advance warning periods considerably; it will be started up in 2006.*
- *Renaturalisation and ecologisation of running waters: More space for running waters will be provided, and their outflow will be decelerated.*
- *Danger zone maps for communities showing the areas directly threatened by floods will be created. The danger zone maps covering Upper Austria's mountain torrent drainage areas are already available. Along the bigger rivers these documents will be completed by the federal hydraulic engineering authority in the next few years. Additionally waters approx. 460 km in length need to be covered in detail in the years to come.*
- *The amendment to the building and the regional planning regulations prohibits building activities in these danger zones in the future on the initiative of the Environmental Department, to avoid additional risks.*

Since 2004 a comprehensive programme of specific 385 flood control projects for Upper Austria has been worked out. These projects are at the planning stage or in preparation, and some are already being implemented rapidly. In the 4 water districts Braunau, Gmunden, Grieskirchen and Linz no fewer than 62 have already been completed.
91 projects are under way, and further 69 should be started in 2006. The analysis of the flood event of 2002, which was published by the Ministry for Agriculture and Forestry, Environment and Water Management in the so-called flood risk study, clearly showed that comprehensive environmental action is required for better handling of natural disasters.
Adequate risk management including heightened awareness of dangers is as important as adequate regional development measures, danger zone planning, renaturalisation, soil protection and targeted flood control projects to provide better flood protection for existing residential areas.
The current draft of the EU flood directive confirms Upper Austria in its approach to increasingly take the impact of the change in climate into account and intensify its measures in this respect. Another important lesson from the 2002 flood disaster is that it is absolutely necessity to increase the funds for preventive flood control in order to reduce the suffering and the high amount of damage in the future, although 100 % protection cannot be achieved no matter how high the cost.
Upper Austria has been increasing its capital resources considerably as of 2004 and obtained a long-term increase in federal funds in negotiations with the federal government, so that the planned 385 projects can actually be implemented without delay.

The avalanche office
In 1976 an official avalanche office was established in the office of the Upper Austrian provincial government. In recent years increasingly automatic meteorological measuring stations were set up.

THE AVALANCHE SERVICE

The Upper Austrian avalanche alert plan is an instrument which guarantees the optimal coordination of emergency measures. The local avalanche warning commissions have an important preventive function.

In the 2005/2006 winter period a total of 73 persons worked as volunteers in these 14 avalanche warning commissions; the provincial government of Upper Austria provides third-party- and accident insurance cover for them.

WATER - UPPER AUSTRIA 2015

Upper Austria's goals for the years to come are:
- to implement and successfully complete the adopted groundwater redevelopment measures in Upper Austria;
- to implement the ecologisation of the Upper Austrian flowing waters as defined by the Water Framework Directive and to enhance the quality standards;
- to maintain the high quality standards of the Upper Austrian lake district;
- to safeguard the regional drinking water supply structure and definitely reject any commercial sellout interests;
- to let the 2002 flood disaster be a lesson to us and implement as far as possible the eco-oriented Upper Austrian flood control programme.

3.0 | SOIL CONSERVATION

SOIL – UNNOTICED TREASURE UNDER OUR FEET

3.1. SOIL CONSERVATION AND LAND USE

Soil conservation is an undertaking which can only be effective if interdisciplinary cooperation is ensured. According to § 32 Upper Austrian Soil Conservation Act 1991 a soil development programme is to be prepared on the basis of the soil information report, which must contain goals and steps to conserve the soil and protect soil health.

Soil is an irreplaceable basis for the humans, animals and plants. Therefore, careful use of the resource soil and the reduction of land use for settlements and mobility are integral parts of a sustainable land development.
As early as in March 2004 the Provincial Government decided to reduce the annual land use for settlement purposes. Within the scope of local land development the Upper Austrian municipalities play a key role in land-saving settlement development.

LAND USE IN UPPER AUSTRIA – SOIL BALANCE 2004

The main results of the Soil Balance 2004, drawn up for the period 2001–2003, are:

Land use

11.5 percent of the permanent settlement area, i.e. about 75,650 ha, is currently used for settlement and transportation purposes.

Land dedication

At present 57,000 ha are dedicated as building land, of which 19,000 ha have not yet been used (building land reserves). Currently each Upper Austrian uses a statistical average of more than 400 m^2 of building land. 50 percent of all dedicated building land areas are dedicated as residential areas.

Land development

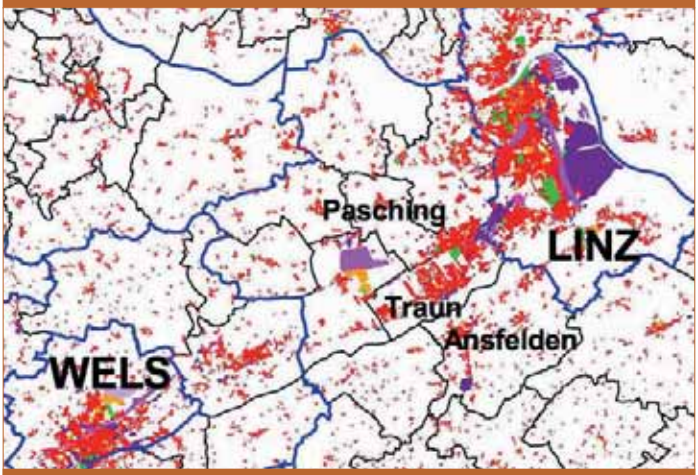
Between 650 ha and 775 ha of land are sealed annually. Every year the settlement and transportation areas grow by about 2,500 ha. The building areas dedicated in the municipalities' land dedication plans were reduced between 2001 and 2003.

This development is also a result of the affluence our country has been experiencing. Today, the individual person needs more space. For example, the average size of new apartments in Upper Austria increased from 72 m^2 in the year 1971 to 110 m^2 in the year 2001. The increase in the number of single-person and two-person households and the increasing demand for roads etc. for the growing number of automobiles have contributed to this development.

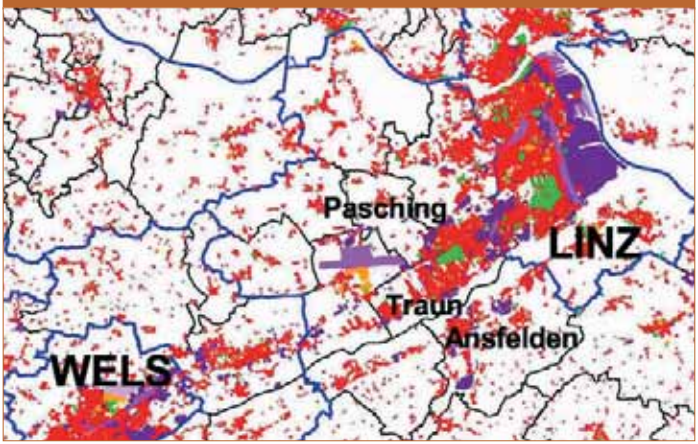
The most important impacts of built-up areas and sealing are:

- Loss of fertile soils
- limited regeneration of bodies of water
- Cutting up of countryside
- Increase in costs of infrastructure
- Increase in commuter traffic and leisure-time traffic

SETTLEMENT STRUCTURE IN 1965



SETTLEMENT STRUCTURE IN 2001



(Source: GeoVille/ Systems research, 2003)

3.2. LAW ON SOIL CONSERVATION

The Upper Austrian Soil Conservation Act 1991 entered into force on January 1, 1992 and has been amended several times.
The 2005 Amendment to the Upper Austrian Soil Conservation Act created the basis for an Upper Austrian ordinance regulating soil limit values. The goal is to boost preventive soil conservation and to make the actions of the administrative authorities definite and unified. Furthermore requirements with regard to compost spread on soils in Upper Austria were defined. The Upper Austrian ordinance regulating soil limit values will be issued in the near future.

3.0 | SOIL CONSERVATION

The 2006 Amendment to the Upper Austrian Soil Conservation Act, which is currently being prepared, is to implement the federal basic law on plant protection.

Convention on the Protection of the Alps
The Alpine countries (Federal Republic of Germany, Principality of Liechtenstein, Republic of Austria, Swiss Confederation) and the European Union signed the Convention on the Protection of the Alps on November 7, 1991. Since then Austria signed and ratified all of the nine already negotiated implementing regulations, and hence these are applicable in the areas alpine agriculture hill farming, nature conservation and conservation of the countryside, tourism, soil conservation, Alpine forest, energy, regional planning and sustainable development and transportation.

3.3. CONTINUOUS SOIL OBSERVATION AREAS

According to the Upper Austrian Soil Conservation Act 1991 the Provincial Government is installing continuous soil observation areas (BDF) for the purpose of comprehensive basic research, investigation of soil health and research on the impact of farming methods on the soil condition.

BDF Steyregg (photo by Sylvia Jahn)

In the year 2003 the Agriculture and Forest Law Department of the Office of the Upper Austrian Provincial Government launched the establishment of BDFs in Upper Austria. In the years to come a network of continuous soil observation areas is to be built. The goal is to establish about ten locations.

At present four continuous soil observation areas locations exist: Schöneben, Steyregg, Kremsmünster and Auerbach.

3.4. INFORMATION ABOUT THE SOIL CONDITION

Access at all times to information about the condition, pollution and stress capacity of our soils facilitates the implementation of soil conservation in many cases.
In the years 1990 to 1993 exhaustive soil condition stocktaking was performed in Upper Austria. In this initial investigation 880 locations were included.
For the continued development of the soil map a soil sampling was performed in 30 locations in fall 2005.
Austria-wide information about the condition of our soils was made available by the Federal Environment Office by means of the soil information system BORIS. It is retrievable on the Internet for many user groups. BORIS contains data on location, soil profiles and chemical, physical and microbiological analyses. Currently the BORIS database covers 10,000 locations in Austria.

3.5. SOIL CONSERVATION IN AGRICULTURE

Austria's agriculture plays a key role in the conservation of grassland and active soil conservation. Environmentally acceptable farming methods, for example organic farming and far-reaching measures in erosion protection show how important our farmers are in this context.

ORGANIC FARMING

In Upper Austria around nine percent of the agricultural undertakings use methods in accordance with biological principles, cultivating around ten percent of the agricultural land. The average size of our organic farms is approx. 17.4 hectare. Their contribution to the conservation of grassland is very important.
According to a survey carried out among organic farmers in the year 2004 63 percent of the undertakings covered by the survey switched to organic farming already before 1996. As decisive reasons the importance of wholesome food, the idea of environmental protection and the personal attitude were put forward. 42 percent of the organic farmers sell their produce via direct marketing, 43 percent sell their produce via an association of organic farmers.

EROSION PROTECTION

In erosion protection the focus is and will continue to be on long-term soil covering and adequate soil working and cultivation techniques.

AUSTRIAN PROGRAMME FOR ENVIRONMENTALLY-ORIENTED FARMING - ÖPUL

The environmentally relevant main measure in rural development is the ÖPUL. In the year 2004 27,301 agricultural undertakings covering more than 92 percent of Upper Austria's agricultural acreage participated in ÖPUL measures, implementing a particularly environmentally-oriented production. The central points of the programme include site-related fertilization meeting the needs of the respective plants, selective use of manure, and planting of grass or trees throughout the year and everywhere, if possible.

3.0 | SOIL CONSERVATION

SOIL CONSERVATION SERVICE

The soil conservation counsellors focus on projects of soil analysis for nutrient supply, reduced soil working, erosion protection and reduction of pesticides. In addition to that the soil conservation service is active in public relations in the framework of soil conservation days and events for raising people's awareness.

3.6. AGRICULTURAL USE OF SECONDARY RAW MATERIAL

In wastewater treatment plants, composting plants, biomass heating installations and in biogas installations products or residues such as sewage sludge, compost, ashes or fermentation residues are produced.

AGRICULTURAL USE OF WASTEWATER SLUDGE

At 17,546 tons of dry solid matter or 39.7 percent of the total volume, the spreading of wastewater sludge by farmers is a major way of utilizing this material in Upper Austria. This use is limited by development programmes (ÖPUL 2000) and statutory provisions.

Spreading of wastewater sludge

The compulsory soil analysis as defined by § 4 Soil Conservation Act before spreading wastewater sludge determines whether the spreading of wastewater sludge is an appropriate fertilizing method for the respective soil.

COMPOST QUALITY AND USE OF COMPOST IN UPPER AUSTRIA

In Upper Austria composting by farmers is still predominant. The 94,000 to of processed compost produced in the year 2004 are subject to strict quality criteria defined by the federal compost ordinance. According to the compost ordinance compost which is produced according to the ordinance may be designated as „product" and is no longer subject to waste regulations. The quality of Upper Austrian compost had already been excellent before the compost ordinance entered into force. In the year 2004 no less than 85 percent of the analysed in an accidental sampling were quality class A+ as defined by the compost ordinance. Around 80 percent of the processed compost produced in 2004 was used on agricultural acreages, which is very positive in terms of a sustainable recycling economy

USE OF ASHES FROM BIOMASS HEATING INSTALLATIONS

In Upper Austria, about 270 biomass heating installations for short-distance heating have been built. The volume of ash produced in urban district heating annually can only be roughly estimated. On the basis of the capacity of the biomass heating installations – a total of 240 MW – it is estimated that the total volume amounts to at least 4,896 to of ash per year. In Upper Austria the spreading of ashes on agricultural acreages is not regulated by law at present. Many administrative decisions order landfilling of the ashes, but in practice this is not a popular measure.

USE OF FERMENTATION RESIDUES FROM BIOGAS INSTALLATIONS

In Upper Austria currently (2005) 81 approved biogas installations are in operation, and five further plants are under construction. The annual volume of fermentation residues cannot be estimated because the volume of input material can be determined only in some plants.

Currently Upper Austria has no control regime for fermentation residues. In most cases only nitrogen analyses ordered by administrative decision are performed. The results of an analysis performed by the Office of the Upper Austrian Provincial Government in the years 2000–2002 showed that the analysed residues contained only little heavy metal. Analyses for nitrogen showed, however, that the nitrogen content of fermentation residues can be very high.

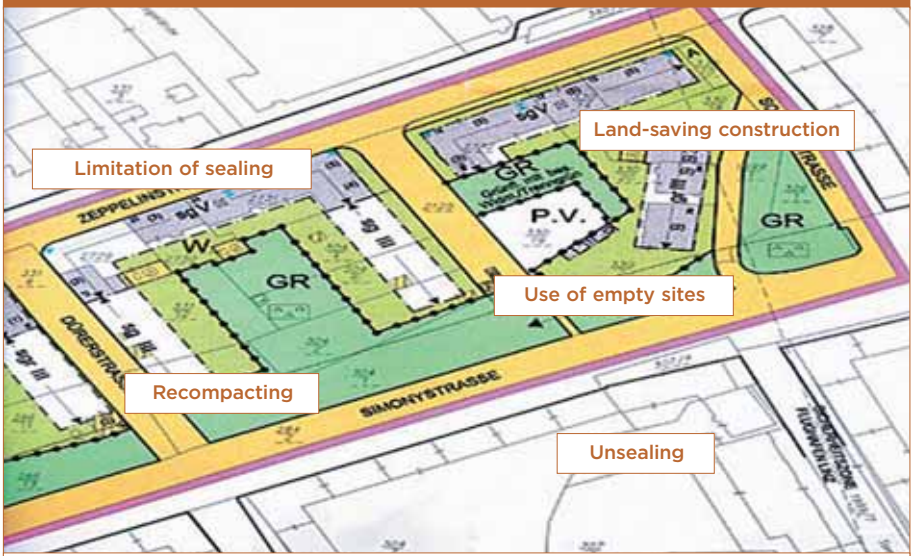
3.7. ADDITIONAL SOIL CONSERVATION MEASURES IN UPPER AUSTRIA

In March 2004 the Upper Austrian Provincial Government decided to reduce the annual land use for residential purposes continuously. A special support programme for land-saving developments and activities to raise the awareness of citizens with regard to the „resource soil" are to help us to reach this ambitious goal.

DEVELOPMENT PROGRAMME FOR LAND-SAVING MUNICIPAL BUILDING DEVELOPMENT

In close cooperation the Departments Regional Planning and Environmental and Systems Engineering worked out a development programme for communal land resource management. The goal is to provide committed municipalities in Upper Austria with the means to work out a land-saving development action programme which meets the specific needs of the respective community.

PROMOTION OF „LAND-SAVING BUILDING DEVELOPMENTS"



More information is also available on the Internet at: http://www.land-oberoesterreich.gv.at Subjects/Environment/Soil/Initiatives in the area soil protection.

3.0 | SOIL CONSERVATION

SOIL CONSERVATION MEASURES IN LAND CONSOLIDATION AREAS

Comprehensive soil conservation means a qualitatively and quantitatively careful use of the resource soil. An optimal availability of land is only possible if a harmonisation of the different interests in land use is achieved.

When projects concerning traffic are planned, the different interests of users and functions are harmonized. In the framework of land development the district agricultural authorities participate in route planning in the course of an agro-technical planning and shows where the compensation areas required by the different sectoral divisions such as forestry or conservation must be.

SUBSIDIES FOR PURCHASE OF GROUND-LEVEL LIQUID MANURE SPREADERS

For several years the Environmental and Systems Engineering Department has been accelerating the purchase of ground-level liquid manure spreaders. In 2005 the purchase of 12 of these spreaders was subsidized.

PUBLIC RELATIONS SOIL CONSERVATION IN UPPER AUSTRIA

The awareness of citizens and decision-makers with regard to soil as a resource is the basis of a permanently successful soil conservation. Therefore the Provincial Government of Upper Austria has been taking actions which deal intentionally with soil and soil conservation and has been promoting such actions since mid-2005. People's awareness is raised by soil days, exhibits, seminars, didactic trails etc. All this is to increase the population's acceptance and understanding of soil conservation and strengthen their sense of personal responsibility.

SOIL CONSERVATION - UPPER AUSTRIA 2015

Upper Austria's goals for the years to come are:

- to stop the trend towards increasing land consumption and open people's eyes to the problems associated with large-scale land sealing;
- to improve the storage capacity of our soils through sustainable cultivation methods, also to minimise the risk of floods;
- to implement the goals of the Convention on the Protection of the Alps in Upper Austria;
- to develop soil conservation counselling and thus win the active support of many inhabitants for reaching the goals of the state of Upper Austria.

4.0 | FOOD QUALITY AND GM-FREE PRODUCTS

YOU ARE WHAT YOU EAT

The rapid development of genetic engineering and biotechnology, but above all the use of genetically manipulated organisms and/or plants („GMO") in agriculture and the associated inevitable arrival of genetic engineering in the food sector is an enormous challenge for environmental policy.

A panel of experts was set up to advise the Provincial Government and the Provincial Parliament competently in all issues of genetic engineering. The „Upper Austrian Board of Experts for Genetic Engineering" consists of 20 representatives from different fields, including experts from science and research as well as experts who are confronted with testing whether products are GM-free in the course of their daily work in the food industry, testing labs, or in food inspection.

4.1. GENETIC ENGINEERING AND AGRICULTURE

Whether or not and how genetic engineering may be used in agriculture is a question the government of Upper Austria has been dealing with for many years. In recent years Upper Austria established itself as leading EU region in the battle against the cultivation of genetically modified seed. To keep Upper Austria's agriculture GM-free the Environment Department of the Provincial Government in cooperation with the Federal Ministry for Social Security and Generations commissioned the study „GM-free cultivation areas: Concepts and Analysis of Scenarios and Implementation". The results of this study show that GM-free cultivation methods used next to land used for cultivating genetically manipulated plants would clearly be at a disadvantage.

Upper Austria responded to the study

As a result of these events it was decided in an all-party agreement to issue a statutory regulation for the whole state. The goal of this „Upper Austrian Ban on Genetic Engineering Act 2002", which was submitted to the EU Commission for notification in spring 2003, was to prevent the cultivation of genetically manipulated seeds and plants and the use of transgenic animals for breeding purposes and/or hunting and fishing.

Based on results of examinations performed by the European Food Safety Authority (EFSA) the EU Commission's issued a negative reply to the Upper Austrian bill in fall 2003 for the time being, referring to the „guidelines on co-existence" which had been published by the Commission.

Genetic Engineering Prevention Act 2006

Since still no reliable results from long-term studies are available, the provincial lawmaker has chosen a double strategy which provides for a preventive statute as second safety net until a final decision on the blocking statute is made, to set up effective barriers against the use of GM seed. This „Upper Austrian Genetic Engineering Prevention Act 2006", which was adopted in the sitting of the Upper Austrian Parliament on May 11, 2006, obligates the farmers to notify the authorities of GVO cultivation, contains regulations for the establish-

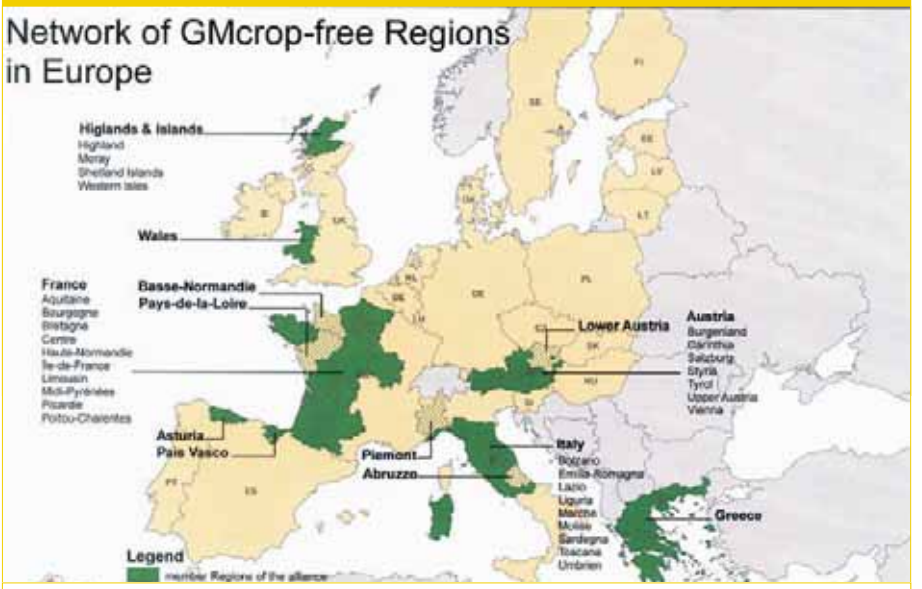
4.0 | FOOD QUALITY AND GM-FREE PRODUCTS

ment of the lawful condition in the case of unlawful cultivation and reasons for prohibiting the cultivation in particularly sensitive areas and in the case of a risk of outcrossing.

GM-free Europe-partnership

Upper Austria is the leading region against the use of GM seed in Europe. Due to the structure of agriculture in Upper Austria - small farms are predominant - sowing GM organisms is not feasible. Therefore the State contacted like-minded regions in other European countries. On November 4, 2003 an alliance of regions which refuse to allow cultivation and sowing of GM organisms was founded in cooperation with Tuscany. This network has been growing continuously and included no fewer than 36 regions in Europe in November 2005. At the same time Upper Austria launched a number of further anti-GM initiatives and measures: In the year 2004 the „We are free - Agriculture turns down GM crops" campaign was carried out. A total of approx. 5000 Upper Austrian farmers who voluntarily use no GM seeds participated in the campaign.

MEMBERS OF THE VOLUNTARY NETWORK OF GM-FREE REGIONS



(as per November 2005, Prov. Gov. of Upper Austria)

4.2. „UPPER AUSTRIA – A COUNTRY FOR ENJOYMENT“ – MORE PRODUCTS FROM UPPER AUSTRIAN FARMERS – FOR THE SAKE OF CLIMATE, ENVIRONMENT AND ECONOMY

The campaign „Genussland Oberösterreich (Upper Austria – a country for enjoyment)“, which was launched by the agricultural department, comprises a network of partners from agriculture, the catering trade, tourism, the food industry and schools. The goal is to promote the consumption of regional, environmentally-oriented and wholesome products and services.
This initiative shows that even the weekly shopping of food can promote desirable developments: A study conducted by the Johannes Kepler University of Linz shows that by deciding to buy domestic food the consumers can make a substantial contribution to climatic protection and safeguarding of regional creation of value and of jobs. A survey conducted by the market-Institute showed that the farmers' work is held in high esteem in Upper Austria. 56 percent of the interviewees said that our farmers do a great job in conservation of the countryside, food production and local supply of products. Moreover, the Upper Austrians have many arguments in favour of buying domestic products.

4.3. FOOD SAFETY IN UPPER AUSTRIA

To ensure that the Upper Austrians always know what they eat the food quality control authority permanently checks the goods which are on the market and the domestic drinking water. The goal is to safeguard good food, i.e. to protect the consumers' health and to protect them against fraudulent misrepresentation. The legal setting is provided by the new Food Safety and Consumer Protection Act and EU regulations.
The new Food Safety and Consumer Protection Act (LMSVG) leads to increased consumer safety through increased personal responsibility of the entrepreneurs and increased transparency of independent quality control. It covers the complete food chain, i.e. „from the soil to the table“, including primary production.
Food entrepreneurs (i.e. all manufacturers, producers, processors, dealers, forwarders) are now obligated to register their enterprises with the authorities.
The responsibility of food entrepreneurs was extended insofar as self-monitoring has gained in importance and they have to guarantee the traceability of food.

Organisation of authorities responsible in food matters
The Federal Ministry for Health and Women (BMGF) is the competent authority for drawing up regulations and coordinating their implementation. The BMGF supplies the annual sampling and auditing plans for the food quality control authorities of each state. The provincial food quality control authorities monitor all enterprises which manufacture and market food, articles of consumption and cosmetics. They also carry out selective actions and checks on the basis of the EU express warning systems. In Upper Austria approx. 5000 samples per year are withdrawn and analysed in the labs of the Austrian Health and Alimentation Agency (AGES). This agency was established in the year 2002 by amalgamating several individual labs (including the former „Federal Institute for Food Analysis“).

4.0 | FOOD QUALITY AND GM-FREE PRODUCTS

4.4. DRINKING WATER QUALITY SURVEILLANCE

Safe, good drinking water is vital for human health. It is the most important nutriment and must therefore be protected against any contamination. The quality requirements for drinking water are laid down in the drinking water ordinance. Water supply companies must ensure that they meet these requirements at all times by taking adequate measures of self-monitoring. The food quality control authorities check whether these companies comply with the quality specifications and whether their measures of self-monitoring are effective.

4.5. BIO-FOOD IN UPPER AUSTRIAN PUBLIC KITCHENS

Offering wholesome, good meals to the customers and employees of the provincial government is an important contribution to public health. Bio-products are more wholesome as they contain more vitamins and mineral nutrients, fewer toxicants, are not given ray treatment, and contain no genetically modified ingredients. For increased use of regional bio-food in Upper Austria's 45 public canteens the project „Bio-food in Upper Austrian public kitchens" was started in mid-2001. The project also enhances the marketing opportunities for the Upper Austrian farmers.

Thanks to the enormous commitment of the kitchen managers in the institutes and enterprises of the State of Upper Austria the share of bio-food in total expenditure has reached nearly 19 percent. The agricultural vocational schools and technical colleges, which spend no less than 31 percent of food expenditure on bio-food, are leading in this project.

FOOD QUALITY AND GM-FREE CROPS - UPPER AUSTRIA 2015

Upper Austria's goals for the years to come are:

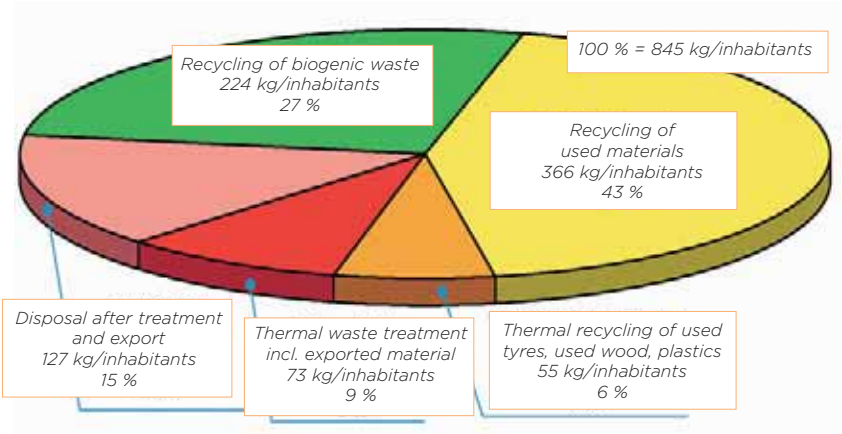
- to ensure that exclusively GM-free crops are cultivated on Upper Austrian soil also in the future;
- to enhance food safety through intensive control and farseeing planning;
- to increase the share of regional food and organically grown food as well as Fair Trade Products considerably in Upper Austria;
- to develope international alliances for wholesome, GM-free food and increased food safety;
- to form an alliance between food producers and consumers to raise the inhabitants' awareness so that they make responsible daily purchase decisions.

5.0 | REFUSE – VALUABLE SUBSTANCES AND RESIDUES

AVOIDANCE, RECYCLING, TREATMENT

By optimising the organisation of waste-management high recycling rates were obtained in economical ways. The waste site ordinance established new rules, so that no untreated waste is stored on Upper Austrian landfill areas anymore. In the course of the clean-up of contaminated sites and processing of old sites doubtful sites are explored, environmentally hazardous deposits and contaminated sites are identified and decontaminated according to the rules.

TREATMENT AND RECYCLING IN 2004



Quantities in kilograms per inhabitant or weight %

5.1. WASTE MANAGEMENT IN UPPER AUSTRIA - QUANTITIES, COMPOSITION, ORGANISATION

The total volume of Upper Austrian waste is 1,174,511 Mg (845 kg per inhabitant and composed of:

- Waste from households and comparable places (489 kg/inhabitant),
- Waste from enterprises and comparable institutions (322 kg/inhabitant)
- Other refuse such as wrecks, used tyres, batteries
- Biogenic waste (around 34 kg/inhabitant)

77 percent of the total refuse were recycled, and 23 percent were subjected to further treatment.

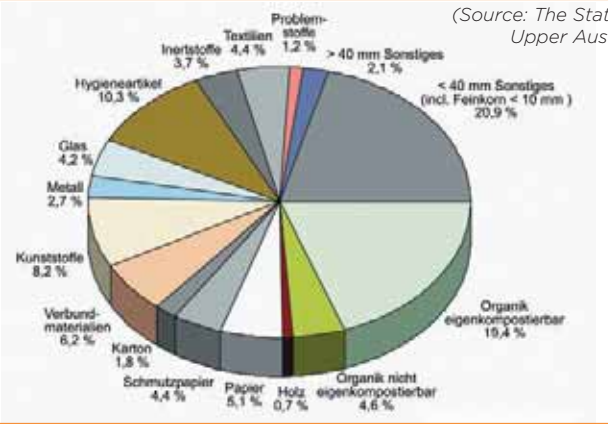
5.0 | REFUSE – VALUABLE SUBSTANCES AND RESIDUES

MUNICIPAL WASTE VOLUME

Since 1998 the volume of municipal household waste increased 16 percent to 680,000 Mg (= to). The volume deposited decreased by ten percent to 175,000 Mg, and the share of the recycled quantity increased 30 percent to 505,000 Mg. In the same period 52 percent more recyclable waste was collected and biogenic waste increased by 13 percent.

COMPOSITION OF HOUSEHOLD WASTE IN PERCENTAGE OF VOLUME

(Source: The State of Upper Austria)



Problemstoffe = Hazardous substances; Sonstiges = other; Sonstiges (incl. Feinkorn < 10 mm) = other (incl. Fine grain < 10 mm); Organik eigenkompostierbar = Organic on-site composting; Organik nicht eigenkompostierbar = Organic not on-site composting; Holz = Wood; Papier = Paper; Schmutzpapier = Dirty paper; Karton = Cardboard; Verbundmaterialien = Composite materials; Kunststoffe = Plastic; Metall = Metal; Glas = Glass; Hygieneartikel = Sanitary items; Inertstoffe = Inert waste; Textilien = Textiles; Angaben in Masse % = in weight %

OÖ. ANALYSES ON RESIDUAL WASTE 2004

The State of Upper Austria in cooperation with the Upper Austrian Waste Management Association commissioned a state-wide analysis of residual waste to represent the development towards efficiency control and the derivation of new goals.

Comparison residual waste analyses 1998/99 and 2004

In the period between 1998 and 2004 the non-recycled household waste quantity of 118 kilograms/inhabitant/year increased slightly to 121.5 kilograms/inhabitant/year. A comparison of the groups of material in household waste shows:

- Biogenic waste and sanitary articles are still the quantitatively most important groups of substances
- A clear reduction in paper, plastic and metal packaging, textiles, electric and electronic appliances, wood, sanitary articles
- A clear increase in biogenic waste, composite packaging, hazardous material
- Minor changes in paper-others, glass packaging and metal-others

The analysis of residual waste 2004 shows that considerable recycling potentials have not been exhausted yet, especially in the area of biogenic waste.

BIOGENIC WASTE

The total volume of 311,130 Mg (226 kg/inhabitant) in the year 2004 corresponded to an increase of 5.3 percent versus the preceding year. Around 80 percent (249,675 Mg) of the biogenic waste comes from households and comparable institutions. This waste includes waste from kitchens and gardens composted in private gardens, the Green Container, and the green household waste.

NOTIFICATION OF WASTE

The Federal Ministry of Agriculture and Forestry, Environment and Water Management (BMLFUW) set up a register for important waste management data, eRAS, within the scope of the electronic data management (EDM). This register is being developed step by step and adapted to new statutory regulations, so that in the future all registration requirements for waste owners can be met electronically.

Since 2005 refuse collectors and processors have been obligated according to the Waste Management Act (AWG) 2002 to enter and update their plant and historical data in this register.

REFUSE MANAGEMENT IN UPPER AUSTRIA

Municipal waste management in Upper Austria includes the Provincial Government of Upper Austria, the municipalities, the district waste management associations, and the provincial waste management association.

Municipalities

- Drawing up of a waste management ordinance
- Regular collection of household waste (kerb-side collection system)
- Collection of bulky waste by kerb-side collection one annually
- Obligation to support the BAV in its work
- Installation of composting plants

Industrial waste can be included in the collection if it is economically reasonable.
The municipalities are counselled by the environmental Law Department and other agencies, especially concerning the waste management schedules and the charge schedules. With these regulations the local authorities regulate the waste management in their municipalities and are thus afforded the opportunity to lay down the waste management charges.

District waste management associations

In the year 1991 the district waste management associations were founded on the basis of the Upper Austrian Waste Management Act 1990. A district waste management association (BAV) covers all municipalities of a political district or the administrative district of a city having its own statute. The bodies of the BAV include the association's meeting, the managing board, the chairperson and the examining board.

The district waste management associations provide:

- Information and counselling on waste avoidance and waste utilization
- Organisation of communal waste material collection, operation of ASZ and ASI
- Organisation of waste material utilization

5.0 | REFUSE – VALUABLE SUBSTANCES AND RESIDUES

- Installation and operation of waste treatment plants (new plants or contracts with plant operators)
- Installation and operation of regional composting plants (new plants or contracts with plant operators)
- Waste data collection

BAVs can merge and form special-purpose associations by written agreement.

Provincial waste management association

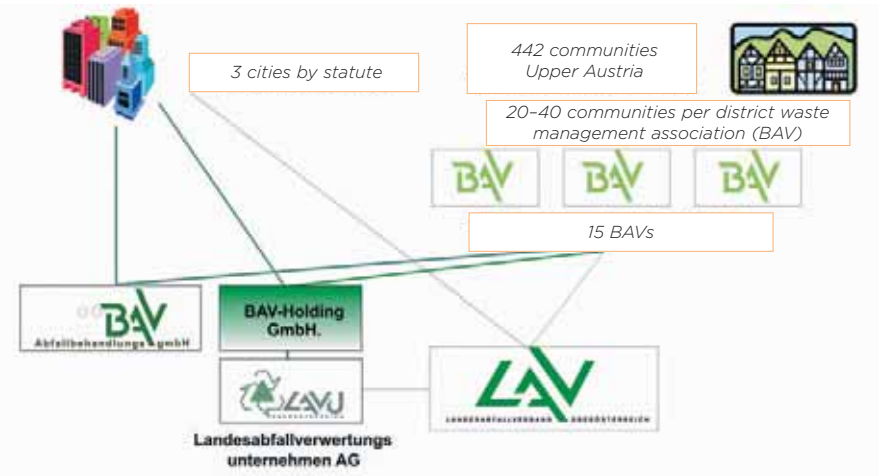
All district waste management associations and the cities which have their own statute make up the provincial waste management association.

The LAV's duties include:

- Coordinated opinion-forming of the BAVs
- central lobbying of the member associations and coordination of external negotiations
- Awarding of residual waste to contractors throughout the state (meanwhile by the hived-off Upper Austrian BAV-Abfallbehandlungs GmbH, short: „BAVA"), allocation of costs among the BAVs
- Coordination of waste material collection in Upper Austria
- Co-counselling concerning legislation
- Public relations in Upper Austria
- Central information for the members

Furthermore the provincial waste management association provides the management and the office infrastructure for BAV Holding and BAVA.

RESPONSIBILITIES



COST AND FINANCING OF WASTE MANAGEMENT IN UPPER AUSTRIA

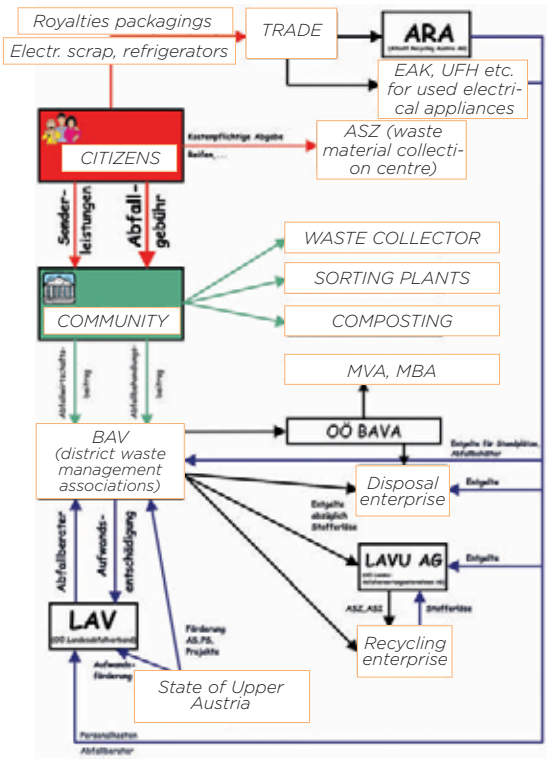
The estimated costs of waste management in Upper Austria on the basis of the year 2004 is a refuse charge-relevant total of approx. 64 million Euros, which corresponds to approx. 121 Euros/household/year. After deducting the revenue from recycling the following costs were incurred:

- Residual waste 38.6 million Euros
- Bulky waste 5.8 million Euros
- Biogenic waste 5.8 million Euros
- Shrub clippings 3.3 million Euros
- Waste paper without packaging (kerb-side collection) 0.4 million Euros
- Used material collection system 7.2 million Euros
- Administration LAV and BAVs 3 million Euros

Furthermore, 13.8 million Euros for the ARA packaging system.

The Upper Austrian waste management is financed as follows:

CLEARING OF THE UPPER AUSTRIAN WASTE MANAGEMENT (SOURCE: PROVINCIAL REFUSE ASSOCIATION OF UPPER AUSTRIA)



Kostenpflichtige Abgabe = Delivery with cost
Reifen = Tyres
Sonderleistungen = Special TAX
Abfallgebühr = Waste disposal fee
Abfallwirtschaftsbeitrag = Waste management contribution
Abfallbehandlungsbeitrag = Waste treatment contribution
Abfallberater = Waste counsellors
Aufwandsentschädigung = Expense allowance
LAV (OÖ. Landesabfallverband) = LAV (Upper Austrian provincial waste management association)
Förderung AS, PS Projekte = Subsidies for AS, PS projects
Aufwandsförderung = Subsidies for expenses
Personalkosten = Personnel costs
Abfallberater = Waste counsellor
OÖ BAVA = Upper Austrian BAVA
Entgelte für Standplätze, Abfallbehälter = Fees for sites, waste containers
Entgelte abzüglich Stofferlöse = Fees minus revenue from recycled materials
Entgelte = Fees
LAVU AG (OÖ. Abfallverwertungsunternehmen AG) = LAVU AG (Upper Austrian Landes-Abfallverwertungsunternehmen AG)
ASZ, ASI (Waste material collection centres and islands)
Stofferlöse = Revenue from recycled materials

5.0 | REFUSE – VALUABLE SUBSTANCES AND RESIDUES

THE UPPER AUSTRIAN WASTE MANAGEMENT PLAN

In 1999 the Upper Austrian Waste Management Plan was reviewed and re-issued as ordinance. The AWG 1997 provides for a review of the Waste Management Plan no later than every five years; if necessary it must be adapted to the situation of waste management. This review was performed in time in the year 2004, and no requirement for adaptation was found.

5.2. WASTE AVOIDANCE UND WASTE UTILIZATION

Upper Austria has a well-developed waste material collection network. The system of waste material collection centres and islands for separate collection of different types of waste has become excellently established. The main feature of this collection system is the resulting high utilization rate. Such a recovery by type allows ecologically and economically reasonable recycling. In cooperation with social projects the concepts of repairing and doing up used appliances.

SPECIAL COLLECTION AND RECYCLING PROJECTS

Used electrical appliances – collection in the ASZ (waste material collection centres)
Since August 13, 2005 the Upper Austrians – private persons and firms - have had the possibility to leave their used electrical appliances free of charge at the existing waste material collection centres. The ecological goal of collecting and recycling used electrical appliances is to separate contaminants, recover spare parts, and the repair and sale of usable used alliances after checking and repairing.

Social project BASAR for dismantling, repair and contaminant separation of used electrical appliances
In the economic social enterprise „Recycling of used electrical and electronic appliances“ of Basar GmbH in Steyr jobs exclusively for persons less-favoured in the employment market have been created. 97 percent of the secondary resources recovered in the dismantling process such as copper, iron, aluminium, glass, wood, cables and various plastics are used as secondary resource again.

Social project RETURN
In October 2005 the non-profit bulky waste & recycling project „RETURN“ was established by the educational centre Salzkammergut in Altmünster next to waste collection centre. The ecological and socio-political goals are waste avoidance through recycling, reduction of disposal expenditure, and reduction of environmental stress.

TechnoTeam Elektrorecycling
The project "TechnoTeam – Elektrorecycling“ combines the recycling of used electrical appliances and the qualification of jobseekers.
1,089 appliances with a total weight of approx. 55 to were collected in the waste material centres of the districts Wels City, Wels surroundings, Eferding, Grieskirchen and Perg in the year 2005, about two thirds of which were resold after repair.

Collection of hearing aids
The collection of hearing aids was started in July 2003 and continued in 2004. So far a total of 112 hearing aids have been delivered to Gaza for use.

Collection of glasses
In 2004 a collection of glasses was started in all ASZ for the benefit of the Third World. On

July 1, 2004 around 8,000 glasses were delivered to the project partners ORA/ Andorf and Hans Veit/ Aigen for reuse in Albania and Sri Lanka.

WASTE MANAGEMENT IN THE PROVINCIAL ADMINISTRATION

As early as 12 ago a structured and centrally coordinated preparation of a comprehensive waste management concept for all offices and facilities of the state of Upper Austria was launched.

For the development of strategic goals of internal waste management the Provincial Waste Management Officer set up the advisory board „Waste Management" last year, which includes the building and procurement management department and all „environment departments" of the state.

Activities of the Provincial Waste Management Officer

The duty of the Provincial Waste Management Officer is to develop, jointly with the advisory board „Waste Management", strategies and targeted measures especially for the following main points:

- Overall coordination of waste management in the departments of the provincial government
- Drawing up, updating and implementation of the provincial waste management concept, covering all departments and institutions of the State of Upper Austria
- Installation and continuous optimisation of logistics systems, evaluation of existing structures, taking social, ecological and economic aspects into account
- Information, counselling and instructing more than 300 waste management officers in the departments

Some of the measures implemented in the provincial administration are:

- New awarding of waste disposal contracts in the departments of the Way and Structures Department
  On the whole this measure reduced the annual total disposal expenditures of the road maintenance depots, autobahn maintenance depots and maintenance workshops were reduced from 238,500 Euros auf 146,500 Euros per year.
- Drawing up of a „grit disposal guideline" (March 2005)
  Since the last springtime road sweeping the used grit will be treated in a special washing plant in Linz and can then be used again. Compared to the disposal of grit on mass waste sites the landfilling cost has been reduced to one third since the cleaning in the washing plant.

GUIDE „HANDLING OF CONSTRUCTION AND DEMOLITION WASTE"

The Environmental Law Department ordered the subdivision Environmental Engineering to draw up a „guide for proper handling of construction and demolition waste" which focuses on recycling.

The guide deals especially with foreign material (construction and demolition waste should contain no wood, metal, or plastic if possible) and the chemical-analytical tests.

The guide addresses authorities (local authorities, regional authorities, legal and technical departments of the State of Upper Austria), district waste management associations and the construction industry. The goal is careful handling of the resource „construction and demolition waste".

5.0 | REFUSE – VALUABLE SUBSTANCES AND RESIDUES

5.3. WASTE COLLECTION UND WASTE TREATMENT

Domestic waste is collected by the local authorities in compliance with the provisions of the Upper Austrian Waste Management Act 1997. They run their own collecting facilities or use the services of third parties. Since January 2004 no untreated residual waste has been landfilled on the Upper Austrian disposal sites anymore. The Upper Austrian waste management solution guarantees safe disposal at a high ecological level for the future.

COMMUNAL WASTE MATERIAL COLLECTION FACILITIES AND COLLECTING SYSTEMS

Upper Austria has a well-developed collecting network, especially for waste material, which covers the whole state. 41 percent of municipal waste is collected by kerb-side collection, 30 percent are brought to the ASZ/ASI and 17 percent to the container collection sites.

The system of waste material collection centres and waste material collection islands in Upper Austria

In Upper Austria there are 182 ASZs, which are characterised by the following special features:

- Same look throughout the country
- Acceptance of 80 different waste fractions, high recycling rate
- For use by private persons and enterprises
- High economic efficiency

The biggest advantage of the ASZ collection system is the high recycling rate of around 90 percent.

On the 182 central waste material collection sites (ASZ/ASI) of Upper Austria a total of 151,446 to of waste were collected in the year 2004. The number of ASZ has not changed since 1998, but the sites have been developed on the basis of criteria such as catchment area and volume; furthermore, the range of waste types collected, the services and the opening hours have been increased.

92 percent of the Upper Austrians are familiar with and use the ASZ. Since 2000 net profits have been generated in the recycling and disposal of ASZ collections in Upper Austria. These profits are distributed to the district waste management associations and used inter alia for covering the rising personnel expenses.

Decentralised collecting sites for waste material (container collection)

In the year 2004 the following facilities were available on public and partly on private sites in Upper Austria:

- 51,760 paper banks
- 7,501 bottle banks
- 31,052 plastic banks
- 179,282 households connected to bag collection („yellow bag“)
- 3,097 metal banks

WASTE TREATMENT PLANTS FOR RESIDUAL WASTE

In the year 2004 several statutory changes in waste disposal were introduced. The most important innovation was the disposal site ordinance 1996. According to this ordinance any waste must be pretreated and processed or recycled in the future.

The landfill location requirements contain fundamental aspects of water management. Great importance is attached to the exclusion criteria, which qualify a potential location as ineligible and emphasize the protection of the environment and of groundwater. In the first place groundwater reserves and groundwater priority areas are excluded.

For the pretreatment of waste from households, institutions, enterprises and comparable institutions one mechanical-biological waste treatment plant, MBA in Linz, and the refuse incinerators WAV I and WAV II in Wels of Energie AG Upper Austria are available in Upper Austria.

ASZ VOLUMES COLLECTED 2000–2004

	2000	2001	2002	2003	2004
PACKAGINGS	16.509	17.661	19.878	21.119	23.063
WASTE MATERIAL	41.410	51.504	59.560	61.957	65.291
USED ELECTRICAL APPLIANCES	4.499	5.054	5.220	5.243	5.696
HAZARDOUS WASTE	3.907	4.648	5.171	5.305	5.418
OTHER WASTE	33.505	38.711	42.790	45.800	51.979
WASTE total	**99.830**	**117.579**	**132.620**	**139.424**	**151.446**

Development and status of the „Upper Austrian waste management solution“

For the purpose of preventive environmental protection Upper Austria planned to get ready for the ban on landfilling according to the federal waste site ordinance in good time starting in 2004. The disposal of residual waste on waste sites had to be complemented throughout the country by thermal and mechanical-biological pretreatment methods. To explore the required and optimal plant capacities in the State cooperation between the district waste management associations and cities having their own statutes was agreed.

With the support of all political parties an „Upper Austrian solution“ was reached in fall 2003. The associations and the BAVA awarded the contract to Energie AG and Linz Service GmbH; thus the capacity utilisation of the plants MVA in Wels and MBA in Linz was secured.

The Upper Austrian waste solution guarantees up to 2021:

- disposal safety and self-sufficiency at a high ecological level
- waste treatment ensuring no post-closure monitoring for future generations
- Economic disposal costs as basis for socially acceptable charges
- Creation of value in Upper Austria
- Efficient organisation and control by cooperation throughout Upper Austria

5.0 | REFUSE – VALUABLE SUBSTANCES AND RESIDUES

COMPOSTING PLANTS AND BIOGAS INSTALLATIONS

As a result of massive endeavours by the Provincial Government and the joint venture ARGE On-farm Composting in Upper Austria, on-farm composting according to the aerated static pile method is still predominant. The number of composting plants decreased from 232 to 190 since 1998 because farmers operating so-called small composting plants have been subject to stricter requirements since the AWG 2002 entered into force. Thanks to composting approx. 172,000 to of biogenic waste which would have to be disposed of together with residual waste are recycled in a cost-effective manner throughout Upper Austria. For composting only around one quarter of the expenditure that would incur with disposal (MBA, incineration) is required.

Fermentation of waste in biogas installations

In 2004 50,000 to of biogenic, agricultural and other wastes were fermented to biogas in 32 biogas installations. As a result of the green power offensive on the one hand and the entry into force of the so-called EU hygiene regulation further 42 installations were permitted in addition to the existing 35 installations in Upper Austria in the year 2004. Heat and power for approx. 18,000 households is to be generated this way in the future.

WAST PLANTS AND LOCATIONS

5.4. CLEAN-UP AND SECURITY OF CONTAMINATED SITES

The goal of cleaning up and securing contaminated sites is to explore and dispose of environmental endangerment which goes back to the past. The number of known areas of potential pollution in Upper Austria shows the high notification morale in the communes and the systematic registration on the provincial level.

TERMS

Contaminated site: Old deposits and old sites which are a considerable danger for human health or the environment.
Old sites: Locations of plants in which environmentally hazardous substances were handled.
Areas of potential pollution: Defined areas of old deposits and old sites which can be the source of considerable danger for human health or the environment due to their use in the past.

CLEAN-UP OF CONTAMINATED SITES AND AREAS OF POTENTIAL POLLUTION

The goal of cleaning up contaminated sites is to eliminate environmental endangerment by old deposits or contaminated sites of enterprises. If a clean-up is not possible for technical reasons or unjustifiable due to the cost, security measures can be carried out.

The project „ASTAWAKON" (Altstandorte – Abschätzung der Wahrscheinlichkeit von Kontaminationen)
The goal of the Astawakon project is to work out evaluation criteria and methods so that the probability of contaminations can be estimated and suggestions and recommendations for the registration and a first assessment of old sites in Austria can be made. The project is to be completed by the end of 2006 with the publication „Registration and first assessment of old deposits".
Projekt „EVAPASSOLD" (Evaluation and Preliminary Assessment of Old Deposits)
Emissions from deposited waste can lead to polluted soil, polluted groundwater and surface water and polluted air through gas discharge. Some big deposit sites were identified as harmful to the environment and cleaned up long ago. Still many, usually small domestic waste deposit sites were left. Little was known about the impact of these deposit sites on the environment. In Upper Austria the number of such former sites (old deposits) is about 1,200; they were only registered in the areas of potential pollution map. The project „EVAPASSOLD" was started to allow standardised a risk assessment of these areas at reasonable cost. According to the project mission systematic examinations were performed for three years in a total of 34 typical locations, of which 17 are in Upper Austria.
The results of the project are an important basis for risk assessment.
The project „INNOSAN" (Innovative Sanierung von CKW-Schäden)
Chlorinated hydrocarbon has been used in industry and trade as solvent and degreasing agent; it plays a key role as pollutant in the ecosystem. The project „Innosan" is a plan for innovative biological clean-up of chlorinated hydrocarbon-contaminated groundwater by reinforcing the natural microbiological destruction processes in the subsoil.

AREAS OF POTENTIAL POLLUTION IN NATIONAL PARK MUNICIPALITIES

The areas of potential pollution map contains several old sites which are located in national park municipalities. To be able to identify the size, extent and potential danger of each of these old landfills data a company was entrusted with the collection of relevant data, which is to be completed by fall 2006.

5.0 | REFUSE – VALUABLE SUBSTANCES AND RESIDUES

WASTE – SECONDARY RESOURCES AND RESIDUES - UPPER AUSTRIA 2015

Upper Austria's goals for the years to come are:

- to reduce the volume of residues noticeably, to increase the rate of biological waste collection, and to use most of the construction and demolition waste as secondary resources;
- to cooperate more closely with social projects for repair and recycling of used appliances in socio-economic projects;
- to clean up the most important contaminated sites in Upper Austria.

6.0 | CLIMATE PROTECTION, ENERGY AND MOBILITY

KEY FACTORS FOR THE WORLD OF TOMORROW

6.1. CLIMATE PROTECTION IN UPPER AUSTRIA

THE KYOTO PROTOCOL – GREENHOUSE GAS BALANCES FOR UPPER AUSTRIA

At the climate summit in Kyoto in the year 1997 the industrialised countries committed themselves to the reduction of greenhouse gas emission by an average of 5.2 percent (Austria: -13 percent) by 2012. In 1990 the CO2 equivalents emissions in Upper Austria amounted to 21.9 million tons. This means that by 2012 a reduction of 19 million tons is required. The most recent emission data for our State from the year 2003 show that at an emission volume of 24.4 million tons we are far from reaching this goal. Upper Austria explicitly stands up for the Kyoto Goal and endeavours to reach the goals of climate protection with its own priority programme.

Key developments in recent years:

- Energy consumption in Upper Austria increased 40.5 percent from 1990 to 2003. Fuel consumption increased almost 80 percent from 1990 to 2003, of which approx. 30 percent of the fuel is attributable to „filling-up tourism". What is very positive is the 27 percent increase in renewable energy sources.
- As to heating, in spite of an increase in heated area a slight decrease in carbon dioxide emissions was recorded, which is attributable to the use of district heating and renewable energy sources and to energy efficiency measures.

MEASURES FOR CO2 EMISSIONS REDUCTION

A number of measures have been taken to ensure that CO2 is reduced in the years to come. For example, the comprehensive Climate Pact 2005/06 was introduced in the Provincial Government in March 2005. Its priorities are:

- Eco-energy and energy efficiency programme to reduce CO2 emissions effectively by reducing energy consumption by about 1 percent/year
- Working out an Upper Austrian overall traffic concept which is geared towards the Kyoto Goal
- Ecological subsidized housing (goal: annual reduction by 300,000 tons of CO2 equivalents)
- Climate alliance and climate rescue
  Currently the participants in the climate alliance are:
  111 municipalities, 109 enterprises, 40 schools
- Environmental offensive of companies (advisory service for business and industrial enterprises)
- Climate protection-relevant subsidies from the provincial environmental fund
  In the years 2000 to 2005 one priority in promoting environmental protection was

climate protection - relevant measures to the cash value of 17.80 mil-li-o-n Euros were taken.
- Priority programme changes in climate
  The State of Upper Austria launched its own climate research programme to deal with this issue.

6.2. INCREASING ENERGY EFFICIENCY

ENERGY-SAVING HOUSING CONSTRUCTION

Subsidized housing NEW

Property subsidizing in the framework of subsidized housing allows the promotion and implementation of
- energy-saving construction
- use of environmentally compatible building material
- Minimum standards of barrier-free architecture
- Minimum standards for housing areas suitable for children, young people and families

Subsidized housing NEW, which entered into force in 2005, is focusing on ecologization and energy efficiency. The prerequisite for any subsidy is compliance with the effective heating energy indexes or the use of specified building materials. Today each environmentally aware citizen can have access to a subsidized solar plant, a heat pump, connection to district heating etc.

Energy efficiency in multi-storey residential buildings

In the year 2005, after comprehensive refurbishment to save energy in multi-storey buildings (geometry-corrected) the average effective heating energy index was 49.1 kWh/m2/year. With a graduated subsidizing system, which provides massive support for energy-efficient refurbishment, the energy indexes were brought down to a low level without any loss in the rate of refurbishment.

Energy-saving construction of homes

Energy-saving construction has been subsidized since the year 1993. In the year 1999 the Upper Austrian low-energy home was introduced as new category of subsidization, in March 2001 the passive house, and in 2005 the very low energy house.
The amendment to the housing subsidization 2005 laid down new criteria: The subsidized mortgage loan depends on which energy index is reached:
- 37.000 Euros in case of an effective heating energy index (NEZ) up to 60 kWh/m^2/year (energy-saving house; as of January 1, 2007: max. 50 kWh/m^2/year)
- 47.000 Euros in case of an effective heating energy index (NEZ) up to 50 kWh/m^2/year (low-energy house)
- 54.000 Euros in case of an effective heating energy index (NEZ) up to 30 kWh/m^2/year (very low energy house)
- 57.000 Euros in case of an effective heating energy index (NEZ) up to 10 kWh/m^2/year (passive house)

Additionally, the criterion of absence of barriers was introduced, which is also verified by the Energy Saving Association and subsidized by the housing subsidization programme with a premium of 3.000 Euros. The average effective heating energy index which had

been reached in new buildings, namely approx. 63 kWh/m²/year, had been lowered to an average of approx. 51 kWh/m²/year in the year 2005. If as a result of refurbishment a specified energy index is reached or undercut, the interest and redemption subsidies of principally 25 percent is currently increased to:

- 30 percent in the case of NEZ = 80 kWh/m² , a.
  35 percent in the case of NEZ = 65 kWh/m² , a.
  40 percent in the case of NEZ = 45 kWh/m² , a.

In the year 2005 the Upper Austrian Energy Saving Association provided advisory service to approx. 3.000 homes by order of the Housing Subsidization department, Energy Counselling Division, and on organic architecture.

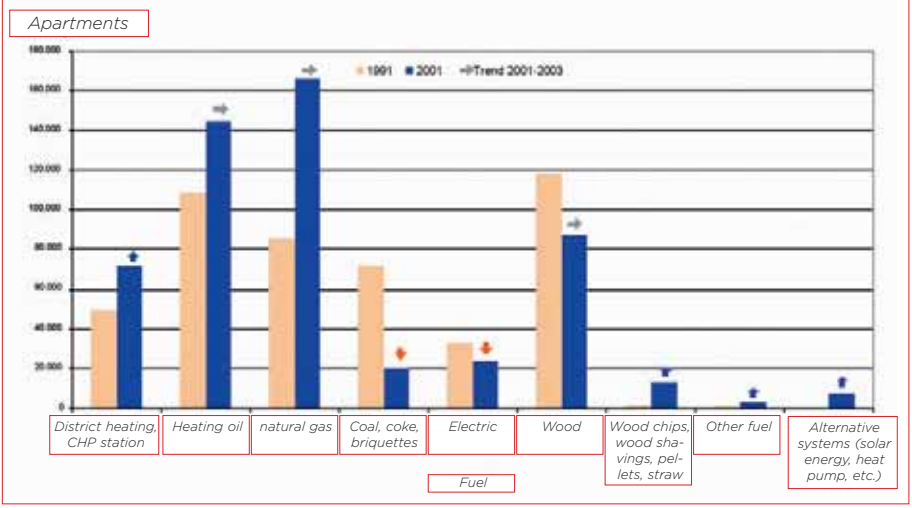
solarCity Pichling - a successful example for increase in energy efficiency

solarCity, a new part of the town Pichling, is a textbook case of future-oriented urban planning. For the first time a new part of town was built according to ecological criteria in economical low-energy construction.

HEATING OF APARTMENTS

Whereas the number of fuel- and gas-heated apartments in Upper Austria strongly increased from 1991 to 2001, it began to stagnate slowly after 2001. The number of apartments heated with alternative combustible materials or systems increased sharply until 2001 – and this trend has been increasing since 2001.

HEATING OF APARTMENTS



THE ENERGY EFFICIENCY PROGRAMME

On November 8, 2004 the Provincial Government adopted the energy efficiency programme Energy STAR 2010. The goal is to save an amount of energy which corresponds to about 1 percent of the energy consumption per year. In the public sector at least 1.5 percent is to be saved annually

6.0 | CLIMATE PROTECTION, ENERGY AND MOBILITY

6.3. RENEWABLE ENERGY AND ECO-ENERGY

THE UPPER AUSTRIAN ENERGY CONCEPT – ENERGY 21

The second phase of the energy concept, Energy 21, was adopted by the Provincial Government of Upper Austrian on March 27, 2000. It defines goals which are to be reached through appropriate measures by the year 2010:

- Increase in total energy efficiency by 10 percent of final energy consumption
- Reduction of use of energy for room heating and hot water
- 10 percent increase in specific energy efficiency by 2010
- 30 new enterprises in the segment renewable energy technologies and energy efficiency by 2010, creation of 1,500 new jobs
- 15 new energy, research and development projects per year

THE USE OF RENEWABLE ENERGY SOURCES

Upper Austria has become a pioneer as far as development of renewable energy is concerned: In all about 30 percent of total energy consumption from renewable energy sources and already more than 10 percent of electricity consumption are covered by ecopower (without big hydroelectric power plants).

Energy source hydropower

In Upper Austria there are more than 800 hydroelectric power plants. 95 percent of the power comes from no more than 28 hydroelectric power plants. 525 small hydroelectric power plants generate a total of 600 GWh/a, and further 300 microhydroelectric power plants mainly supply their owners.

Energy source wood

According to the energy of Statistik Austria in Upper Austria around 11 percent of the primary energy consumption was covered by biomass in the year 2003. For the combined generation of power and heat, cogeneration plants are using around 250,000 to 300,000 cubic metres of wood at present.

Biomass heating

Approx. 30 percent of Austria's wood-chip heating systems were installed in Upper Austria, and thus Upper Austria is at the top of all states in this modern heating technology.

Biogas

In the course of the „biogas boom" in the second half of the year 2004 more than forty biogas permit procedures were completed.

Ecopower

Ecopower has been generated in an eco-friendly way by small hydroelectric power plants, wind turbine generators, photovoltaic power plants, geothermal power plants, biogas and biomass plants. In the last two years Upper Austria experienced a real boom: thanks to the Provincial Government's ecopower offensive we have 900 photovoltaic power plants, 12 biomass electricity generators, 80 biogas plants and 23 wind power plants today.

Solar plants

In the year 2005, 51,300 square metres of new solar collectors were installed in Upper Austria, and thus 773,000 square metres of thermal solar collectors are mounted on Upper Austrian roofs and in enterprises at present. They generate more than 270 million kilowatt hours per year and reduce carbon dioxide by more than 120,000 tons. One quarter of the

collector surface area installed in Austria is in Upper Austria. With more than 550 square metres of collector surface per 1,000 inhabitants Upper Austria ranks among the leading solar regions worldwide.

SUBSIDIZATION OF USE OF RENEWABLE ENERGY SOURCES

Biogas plants

The construction of new biogas plants up to 1 MW electrical bottleneck capacity of the total plant is subsidized.

Small hydroelectric power plants

Small hydroelectric power plants up to 1 MW extension capacity which are to be modernized or enlarged, and the construction of new small hydroelectric power plants up to 1 MW are subsidized.

Grid-coupled photovoltaic power plants

Future operators of grid-coupled photovoltaic power plants located in Upper Austria are eligible for this subsidy.

For more information on the subsidization of energy efficiency please visit us on the Internet at www.land-oberoesterreich.gv.at „Topics/Subsidies".

A COMBINATION OF FUTURE-ORIENTED ENERGY POLICY AND ECONOMIC POLICY

Eco-energy cluster

Upper Austria is a pioneer in the area of renewable energy technologies. To secure the technological edge of Upper Austrian enterprises in the future the eco-energy cluster was set up. It is a network of enterprises and institutions which are active in the area eco-energy.

Energy technology programme

The purpose of this investment financing is to promote innovative projects, methods and products aims at increase in energy efficiency and intensified use of renewable energy.

Energy contracting programme

Under this programme the funding of investments in refurbishment of buildings to reduce energy consumption and the funding of energy plants which use predominantly renewable energy sources is subsidized.

Energy consulting for business enterprises

The goal is to support the implementation of measures to increase energy efficiency and the use of renewable energy sources by business enterprises.

6.4. ENERGY MANAGEMENT AT THE UPPER AUSTRIAN PROVINCIAL ADMINISTRATION

Since 1994 energy records have been kept for all buildings of the Upper Austrian provincial administration. Moreover, the contracting model has been applied in all buildings which have been refurbished to reduce energy consumption.

In the period 1994 to 2004 the use of energy for heating and hot water production in all buildings of the provincial administration was reduced by 18 percent (area- and climate-adjusted). In this period also a clear shift from heating oil (-53 percent) to district heating (+ 72 percent) and natural gas (+36 percent) was observed. This reflects the endeavours

to shift to biomass-powered district heating. In the years 2000 – 2004 six plants were changed over to district heating.
In the period 2000 - 2005 eight new solar plants were completed. Two further plants are under construction, and three are in the planning stage. In addition to the three existing photovoltaic power plants the construction of seven new plants is planned.

6.5. ENVIRONMENTALLY ACCEPTABLE MOBILITY

THE TRAFFIC SITUATION AT PRESENT

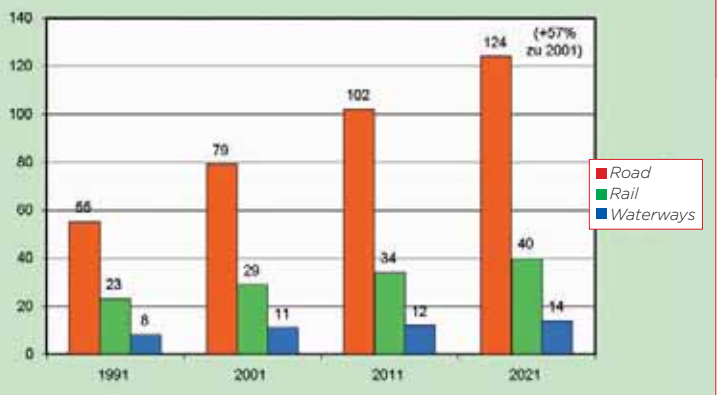
Goods traffic/Transit traffic

Although according to forecasts transit traffic will increase, „homemade" traffic, i.e. Austrian inland traffic, originating and terminating traffic, will continue to predominate the goods traffic in Upper Austria. In the future the maximal traffic intensity in the Upper Austrian transit route road system will be found on the segment Haid - Knoten Linz on the West-Autobahn. In the year 2010 the total transit traffic rate will amount to around 80,000 cars per day.
The possibilities to influence transit traffic by changing the general conditions in traffic policy are limited by the fact that Austria is a Member of the EU.
The development of organisation structures in the logistics sector promotes an overall logistic thinking which takes the ecologic dimension into account. The extension of the Enns river port as logistics hub supports an optimal networking of rail, truck and shipping.

Passenger traffic / Mobility

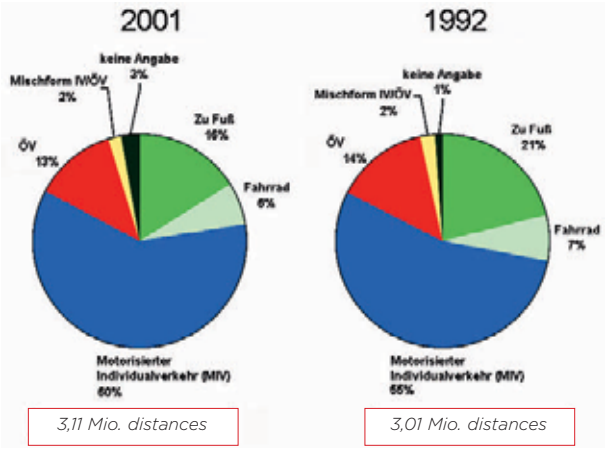
According to a 2001 traffic survey the Upper Austrians cover around 3.11 million distances per day. For more than 60 percent of these distances they use a car. The proportion of cars in total traffic increased and will increase even more if the current trend continues. By contrast, the proportion of users of public transportation has decreased slightly.

DEVELOPMENT AND TREND FORECAST FOR GOODS TRAFFIC



(Source: Land OÖ, Höfler)

DISTANCES COVERED ACCORDING TO MEANS OF TRANSPORTATION USED



Keine Angabe=no answer; Mischform IV/ÖV = combination private/public transportation
ÖV = public transportation; Zu Fuß = on foot; Fahrrad = bicycle
Motorisierter Individualverkehr = motorised private transportation

REGIONAL TRAFFIC CONCEPTS FOR PUBLIC TRANSPORTATION

The state of Upper Austria has always pursued the goal of enhancing and securing public transportation throughout Upper Austria. Regional traffic concepts are aimed at enhancing access by public transportation.

MOBILITY MANAGEMENT

Mobility management is widely regarded as software of a sustainability-oriented policy which is aimed at promoting transportation provided by the Environmental Association. It is based on an attractive electronic timetable directory via the homepage of the Upper Austrian Public Transport System. Additionally municipality-related timetable folders are provided which offer clear representations of transport links.

Mobility management in the Upper Austrian administration

Since October 2004 the state of Upper Austria has been implementing the project „Mobility management in Upper Austrian civil service". The goal of this project is to promote environmentally friendly mobility of the employees of the provincial administration. A mobility officer was appointed to implement this project. The provincial administration also uses bicycles for covering in-town distances.

SUCCESSFUL UPPER AUSTRIAN PUBLIC TRANSPORTATION SYSTEM

The Upper Austrian public transportation system (OÖVV) was extended substantially in the past few years. As organisational basis the Upper Austrian public transportation system organisation company (OÖVG) was established in the year 2000. Its first task was to review the OÖVV rates. The review resulted in a clear rates structure and eliminated the problems associated with the ticket selling system.

6.0 | CLIMATE PROTECTION, ENERGY AND MOBILITY

In the school year 2003/04 the integration of free rides for pupils and apprentices was a further progress in public transportation. Pupils and apprentices make a single application and receive a free access card for the complete distance.
Between 2000 and 2004 the number of rides increased from 142 million to nearly 148 million.

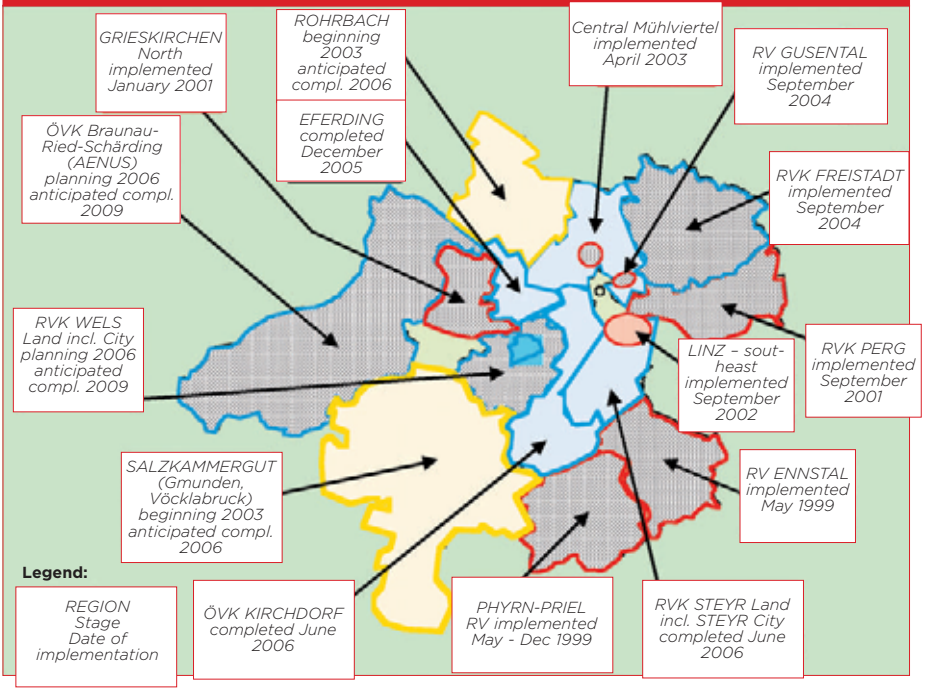
MORE ATTRACTIVE ÖV INFRASTRUCTURE

The elimination of existing barriers to public transportation is an important factor for the long-term implementation of the regional traffic concepts.

The most important points are:

- Easy access to information about what the ÖV offers
- Improvement of the standards of stops
- Use of modern, user-friendly vehicles without any barriers
- ÖV acceleration and prioritisation measures
- Timing models

IMPLEMENTATION OF REGIONAL TRAFFIC CONCEPTS IN UPPER AUSTRIA



DEVELOPMENT OF LOCAL TRANSPORTATION IN THE LINZ AREA

To solve the traffic problems programmes to work out a future-oriented development of public transportation in the Linz area have been worked out for quite a long time. The following parts of the local traffic programme have already been realised:

- Extension of the tram line 2 to Ebelsberg and to SolarCity
- Start-up of the local traffic hub Central Station (2005)
- Implementation of the junction Linz with integration of the Linz local railway with the Central Station and concentration of all regional bus routes in the bus terminal (2005)
- Construction of the horseshoe bend Ennsdorf (connection of the Danube river railway over the Westbahn line to Linz)

BICYCLE TRAFFIC

According to the traffic survey 2001 the Upper Austrians cover around 200,000 distances per day by bike in the daily traffic, which corresponds to about 6.4 percent of all distances covered.

To select priority cycle tracks which play a role in tourism Upper Austria worked out the Upper Austrian Provincial Cycle Track Concept NEW was worked out, which covers 31 main routes and seven connecting tracks or a total of about 2,100 kilometres. Since the routes relevant to local daily traffic are usually located in the secondary road system, the local authorities are responsible for bicycle-relevant infrastructure and traffic safety. For the bicycle traffic along provincial roads, walkways and cycle tracks have been planned and installed jointly with the building department upon the initiative of the local authorities. In the years 2001 to 2005 total expenditure amounted to 24 million Euros.

ENVIRONMENTAL PROTECTION MEASURES IN ROAD CONSTRUCTION AND ROAD MAINTENANCE

Winter service

As a result of the grit disposal guideline for the first time grit and road sweepings are subjected to an ecologically acceptable treatment and reuse at reasonable cost in Upper Austria.

All of the 220 winter maintenance vehicles used by the road maintenance depots of the state of Upper Austria were adapted to wet salting. This reduces salting by 15–20 percent per winter season.

Lawn management

In the last two years the road maintenance depots increasingly replaced suction mowing by mulching. Thus the volume for composting is reduced by about 50 percent.

Subsidizing of noise protection walls and noise protection windows

To reduce noise immissions in residential areas adjacent to provincial roads noise protection walls about 35.000 m^2 in size and 12 kilometres long were built in the years 2000 to 2005 beside provincial roads, including former „federal roads", in Upper Austria.

Noise protection windows, noise protection exterior doors and sound-insulated ventilators were subsidized by the Road Management Department with a total of almost 4.8 million Euros in the years 2000 to 2005.

6.0 | CLIMATE PROTECTION, ENERGY AND MOBILITY

THE OVERALL TRAFFIC CONCEPT UPPER AUSTRIA 2005

The Overall Traffic Concept Upper Austria is a guide for the future traffic development. The top priority of the Overall Traffic Concept is sustainable traffic development in Upper Austria and providing a sustainable traffic policy. The Overall Traffic Concept endeavours to balance the requirements of environmental protection and the requirements with regard to the locational conditions.

Another objective of the Overall Traffic Concept Upper Austria 2005 is to slow down the downtrend of non-motorized traffic and public transportation by 2011 or 2021 and then stabilise it at least at the level of 2001.

CLIMATE PROTECTION, ENERGY AND MOBILITY - UPPER AUSTRIA 2015

Upper Austria's goals for the years to come are:

- to try and reach the Kyoto Goal in as many areas as possible, and to break loose from the negative nationwide trend as far as possible;
- to implement the turnaround in energy use, away from oil and nuclear energy towards energy efficiency and utilisation of eco-energy, in central areas as European model region;
- to reduce energy consumption one percent per year following the European Energy Efficiency Directive;
- to implement an environmentally compatible Upper Austrian overall transport plan.

7.0 | NATURAL LANDSCAPE CULTIVATED BY MAN

PROTECTING, UTILISING AND ENJOYING IT

Upper Austria is natural landscapes and land developed and cultivated by man. It is the basis of life and maintenance, habitat for a host of species, and an invaluable recreation area. To protect the beauty of the countryside, the health of the forests and the survival of the rich animal and the plant world is an important duty of the Provincial Government of Upper Austria and the inhabitants. A number of projects and measures for the protection of nature and endangered species and for sustainable protection of the forests and their functions - also in coordination with the EU – ensure that also future generations will be able to experience nature in its natural splendour and variety.

7.1. PROTECTION OF NATURE AND COUNTRYSIDE

There is no doubt that the appointment of protected areas, various projects to protect endangered species and promotion measures are a core responsibility of the Nature Conservation Department. In Upper Austria 125 national protected areas have been appointed so far, and 24 areas totalling 73,000 ha were notified to Brussels as Natura 2000 areas.

GEOGRAPHIC NATURE CONSERVATION INFORMATION SYSTEM (GENISYS)

The Geographic Nature Conservation Information System provides an overview of nature conservation-relevant geological data on the Internet. The information, which can be retrieved in four main categories at present, includes:

1. Nature reserves
2. EU protected areas
3. Eco-areas
4. Basic data

PROTECTION OF SPECIES AND THEIR HABITATS

In Upper Austria the goal of protection of endangered species is to preserve the animal and plant species in their habitats in populations which guarantee their long-term survival. The new Upper Austrian Ordinance Regulating the Protection of Endangered Species of June 30, 2003 is an appropriate legal basis for this endeavour.

In recent years not only natural and old man-made landscapes have been the focus of activities. Increasingly young or even new parts of the landscape have been used for a variety of species which for whatever reasons can be no longer survive in their previous habitats or only in small numbers.

International protection of endangered species

Today we understand that the protection of habitats, animals and plants also requires international cooperation. Therefore a number of international conventions were agreed in the past few decades, some of which have very specific goals. Although Austria joined

7.0 | NATURAL LANDSCAPE CULTIVATED BY MAN

such conventions long ago, our accession to the EU in 1995 brought generally a new situation as far as nature conservation is concerned. The most recent convention Austria joined was the Bonn Convention 2004. Examples of protection projects:

Protection and conservation of the river pearl oyster
In the years 2003 to 2005 especially the drainage areas of Waldaist, Mühl and Stampfenbach were stocked with indigenous brook trout which had been inoculated with glochidia (mussel larvae) in Upper Austria.

Protection of endangered species, the brook crayfish project
On the basis of maps of the crayfish species which occur in Upper Austria, including the signal crayfish, which is regarded as transmitter, priority programmes targeted protective and stocking measures in selected bodies of water were launched.

Survey and protection of owl populations
This monitoring programme covers all owl species which occur in Upper Austria except long-eared owl and tawny owl.

Conservation of corncrake breeding places
This protection of endangered species programme has been implemented in the Freiwald region in Mühlviertel and in the Alpine foothills. In addition to mapping activities, subsidizing contracts have been concluded with the farmers who cultivate the breeding places.

Protection of calcareous grasslands
In this project in the Upper Austrian Alpine foothills, landowners are requested to cooperate on the basis of private-law contracts, ÖPUL subsidization; other options are buying land or third-party cultivation (landscape conservation firms).

Protection of Ascalaphus libelluloides
In the Eisenwurzen area a calcareous grasslands protection project developed, as this beautiful insect needs sufficiently big, sunny grasslands for survival.

The Mühlviertel protection of endangered species programme
In cooperation with Nature Conservation Youth Haslach, a concerted search for the last sites of endangered plant species was launched in 2004.

Nature on industrial estates
In cooperation with the Commercial Chamber of Upper Austria a project which has been unique in Austria was launched in 2004: business enterprises are to be encouraged to use their – sometimes very large – estates for the development of habitats with a rich flora and fauna.

Natural meadows seeds
The goal of this project, which was launched in cooperation with the Upper Austrian Agricultural Chamber, is to produce an adequate range of grasses and herbs of domestic origin in sufficient quantities for landscaping (road embankments and dikes, recultivation areas, industrial estates, planting of grass on roofs, gardens, etc.).

CONSERVATION AREAS AND ENVIRONMENTALLY SENSITIVE ZONES, NATURE RESERVES, PROTECTED ZONES

The number of protected areas in Upper Austria increased continuously in recent years. At present 104 areas are designated „conservation areas" and 14 areas as „environmentally sensitive zones" based on an ordinance issued by the Provincial Government. Additionally there are seven „protected zones". The strategy of the Nature Conservation Department in the Office of the Upper Austrian Provincial Government has been to safeguard or enhance quality standards in existing conservation areas.

Protected areas convey values

Protected areas play a significant role in conveying values. They demonstrate the necessity to handle our environment including its organisms carefully.

Conservation areas

Interventions in this strictest of all categories of protected areas in Upper Austria are prohibited, with the exception of „interventions permitted" expressly on the basis of an ordinance.

CONSERVATION AREAS BASED ON AN ORDINANCE 2000–2005 BASED ON AN ORDINANCE:

Tal der Kleinen Gusen
Warscheneck-Süd – Wurzeralm
Richterbergau
Laudachsee und Laudachmoore
Warscheneck-Süd – Stubwies
Dachstein
Grünberg/Frankenburg
Nordmoor am Mattsee
Blumau
Moorwiesen in Waldhausen
Predigtstuhl
Planwiesengebiet in Leonstein
Seeleithensee und angrenzende Streuwiesen
Nordmoor am Grabensee
Traunauen bei St. Martin
Rannatal
Irrsee-Moore
Warscheneck-Süd Purgstall – Brunnsteiner Kar
Kremsauen
Unterer Inn
Quellflur bei Grueb
Stadlau
Haslauer Moos
Aschachtal
Jackenmoos am Mühlberg
Feuchtgebiet Teichstätt
Traun-Donau-Auen
Hollereck
Koaserin
Schlossberg Neuhaus
Frankinger Moos
Neydhartinger Moor
Almauen bei Bad Wimsbach
Moor bei Vorderweißenbach
Schwarzenbergwiese
Ettenau

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Environmentally sensitive zones
Environmentally sensitive zones are zones which are of special value because of their specific landscape character, beauty or recreational value.

ENVIRONMENTALLY SENSITIVE ZONES 2000–2005 BASED ON AN ORDINANCE:	
Tal der Kleinen Gusen	Kulturterrassen in Ödenkirchen
Warscheneck-Süd – Wurzeralm	Warscheneck Süd – Frauenkar
Puchheimer Au	Wiesmoos
Weyr-Welsern	

Nature reserves
Nature reserves are special environmentally sensitive zones which must be accessible to the general public and are especially suitable for recreation or educational purposes with regard to nature.

NATURE RESERVES 2000–2005 BASED ON AN ORDINANCE:	
Naturpark Scharten	Naturpark Mühlviertel

Protected zones
They are comparable to environmentally sensitive zones but are smaller.

PROTECTED ZONES 2000 – 2005 BASED ON AN ORDINANCE:	
Pfarrerhölzl	Moosleithen
Krottensee	

NATURE AND LANDSCAPE – MODELS FOR UPPER AUSTRIA („NALA“)

The models are not forced on the population but form the basis for a constructive dialogue among the stakeholders. The goals for 41 Upper Austrian regional units are formulated, disclosing the development to be aimed at from the perspective of nature and countryside conservation. Possibilities for implementation of the respective goals are also presented. (Please visit us on the Internet at www.land-oberoesterreich.gv.at Topics>Environment>Nature and Landscape>LaLa)

NATURAL MONUMENTS IN UPPER AUSTRIA

Upper Austria boasts 578 natural monuments, about two third of which are trees and groups of trees. The remaining third consists of geological natural monuments including pitchstone, rock formations, gorges, waterfalls, but also ponds and river segments. The natural caves, which were registered in the cave register, have now been taken over as natural monuments.

NATIONALPARK KALKALPEN

The national park area comprises 20,825 ha in the Sengsengebirge and Reichraminger Hintergebirge. It is situated between the rivers Enns and Steyr in Southeast Upper Austria, forming a colourful mosaic of extensive forests, clear mountain streams, precipitous cliffs and charming alpine pastures. 89 percent of the Nationalpark Kalkalpen is nature zone and 11 percent conservation zone. The nature zone, the heart of the national park, is an area in which man has interfered little and will not intervene at all in the future. The conservation zone covers e.g. alpine pastures.

The international touch of the National Park Kalkalpen

In 1998 the National Park Kalkalpen was internationally recognised as protected area category II of the IUCN, the World Conservation Union, and appointed Natura 2000 area, and Ramsargebiet in the year 2004. By an ordinance issued by the Upper Austrian provincial government the „Nationalpark Oö. Kalkalpen - Reichraminger Hintergebirge/Sengsengebirge" region was named „European Protected Area Nationalpark Oö. Kalkalpen".

Forests and water in the Nationalpark Kalkalpen

In the national park an official permit is required to relinquish stringent measures against the bark beetle, e.g. in the case of blow-downs, according to §32a Forestry Act. By relinquishing such measures of forest management more than 15,000 ha of wilderness are created in the national park. Only on the borders of the national park were insect control zones installed. In 2004 the documentation of the bodies of water was started. Headwater regions are particularly sensitive biotopes. Targeted measures in the framework of a LIFE project have led to a clear increase in the population rate of organisms which typically occur in spring-water.

Forest fires and assessment of their ecological impact

In August 2003, in an extraordinarily dry summer, 15 ha of forest, mainly dwarf pine and larch, burned down at a sea level of about 1,400 to 1,670 metres. It will take several centuries until a full forest will be seen on the burned land again. Fires are part of nature; they are beneficial and increase biodiversity.

Lynx in the Nationalpark Kalkalpen

Since 1996 the lynx has returned to the region of the national park. The number of lynxes has been declining in recent years, however.

The National Park is of educational value

For the education and visitor programme of the Nationalpark Kalkalpen 60 national park guides were trained. They show the visitors the beauty spots and help them to see contexts. Additionally, event programmes including cave tours, game observation and events for schools are offered. From 2001 to 2005 the national park visitor centre Molln showing the exhibition „Hidden waters", the national park visitor centre Ennstal showing the exhibition „Wonderful world of forest wilderness", and the national park Panorama Tower on the Wurbauerkogel in Windischgarsten showing the exhibition „Fascinating rock" were built. In 2003 the national park seminar hotel Villa Sonnwend in the Nationalpark municipality Roßleithen was opened.

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Climate protection, traffic avoidance, wastewater disposal
In the reporting period purification systems using plants were installed at the alpine huts Hengstpasshütte, Zickerreuth, Spitzenbergeralm and Puglalm. Traffic calming measures were implemented in Bodinggraben, in Molln and in Steyrsteg, municipality of Rosenau. The national park visitor centres in Molln and in Reichraming are connected to short-distance heating. In the visitor centre Molln additionally a grid-coupled photovoltaic plant was installed (6000 KWh/year). The hot water in the seminar hotel Villa Sonnwend is generated by a 30 m^2 solar plant.

The panorama tower on Wurbauerkogel, a wood-and-glass construction, is heated with geothermal energy from ten drilled holes of 100 m depth each.

NATURA 2000

„Natura 2000" is the European Union's most ambitious nature conservation project. Its goal is long-term conservation of biodiversity through a network of conservation areas for endangered or rare habitats, animal and plant species in Europe and through special provisions on protection of endangered species.

Legal background
- Bird Protection Directive (SPA)
- Fauna-Flora-Habitat-Directive (FFH-RL)
- Upper Austrian Nature and Landscape Conservation Act 2001

With the amendment to the OÖ NSchG 2001 the provisions of the EU nature conservation- directives were implemented.

European Protected Areas in Upper Austria
As of February 2006 24 European Protected Areas with a total area of approx. 73,000 ha were appointed in Upper Austria.

So far ordinances have been issued for three European Protected Areas:
- Unterer Inn
- Dachstein
- Nationalpark Kalkalpen.

As far as necessary landscape management plans will be worked out for the European Protected Areas.

INTEGRATED BIOTOPE SYSTEMS

In land consolidation procedures agricultural land is reshaped, consolidated and developed in keeping with the times. The goal of any such procedure is to improve the farm structure and to protect or redesign the variety and structures of land cultivated by man.

The amendment to the provincial law on land structures (FLG) in the year 2001 laid down defined ecological goals and objectives for land consolidation procedures.

Active land management with foresight gives us the chance to implement landscape concepts such as integrated biotope systems. By buying farmland with foresight, so-called

land stockpiling, adequate areas are provided for the installation of new biotopes such as hedgerows, rows of trees or humid biotopes in land restructuring areas.

With the support of the EU rural development programme, which runs from 2000 to 2006, a number of landscape projects have been implemented in farmland restructuring areas.

LIST OF UPPER AUSTRIAN EUROPEAN PROTECTED AREAS:

Area	Size (ha)
01 Dachstein (FFH + SPA)	14.627
02 Frankinger Moor (SPA)	48
03 Pfeifer Anger (SPA)	140
04 Radinger Moorwiesen (FFH)	3
05 Unterer Inn (FFH + SPA)	864
06 Reinthaler Moos (FFH)	16
07 Tanner Moor (FFH)	120
08 Tal der Kleinen Gusen (FFH)	346
09 Unteres Trauntal (FFH)	213
10 Ettenau (FFH + SPA)	574
11 Nationalpark Kalkalpen (FFH + SPA)	21.454
12 Oberes Donautal (SPA)	924
13 Untere Traun (SPA)	2.454
14 Traun-Donau-Auen (FFH + SPA)	664
15 Maltsch (FFH + SPA)	348
16 Kalksteinmauer Laussa (FFH)	103
17 Mond- und Attersee (FFH)	6.135
18 Salzachauen (FFH)	312
19 Auwälder am Unteren Inn (FFH)	550
20 Waldaist-Naarn (FFH)	4.158
21 Böhmerwald und Mühltäler (FFH)	9.797
22 Oberes Donau- und Aschachtal (FFH)	7.119
23 Wiesengebiete/Seen im Alpenvorland (FFH)	1.375
24 Wiesengebiete im Freiwald (SPA)	2.410

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THE NATIONALPARK KALKALPEN IN BRIEF

Region:	Sengsengebirge and Reichraminger Hintergebirge
Size:	20,843 ha, of which
	81 percent forest
	11 percent alpine pastures and rocks
	8 percent dwarf pine
	89 percent nature zone
	11 percent conservation zone
Sea level:	385 to 1,963 metres (Hoher Nock)
Ownership:	88 percent Republic of Austria (ÖBf AG)
	11 percent private persons
	1 percent municipalities
Inaugurated:	July 25, 1997

Natural features:

200 kilometres of natural brooks
800 springs
30 forest communities
50 mammalian species, 80 breeding bird species
1,000 flowering plants, mosses and ferns
1,400 butterflies

Visitor facilities:

Seven designated hiking areas
240 kilometres of marked hiking and cycle tracks and bridle paths in and next to the National Park Kalkalpen
Five theme trails
15 alpine huts and bases for hikers open to the public

(Source: „Natur im Aufwind" magazine, Number 54, Winter 2005)

THE UPPER AUSTRIAN NATURE GUARDS

With the Upper Austrian Nature and Landscape Conservation Act 2001 the institution of the voluntary nature guards has been upgraded. Supporting the authorities and informing the population and increasing their awareness were laid down as essential aspects.

Around 20 percent of the approx. 270 Upper Austrian nature guards work in the Nationalpark Kalkalpen.

NATURE CONSERVATION AND REGIONAL PLANNING

Consideration of the natural environment in the Regional Development Concept

On the basis of the Amendment to the Regional Planning Act 1994 (ROG 1995), the majority of the Upper Austrian municipalities worked out a regional development concept. These concepts contain regional planning measures which are geared towards long-term goals and needs. They also make allowances for restrictions resulting from

supra-regional conservation needs (groundwater conservation and flood control, nature and landscape conservation).

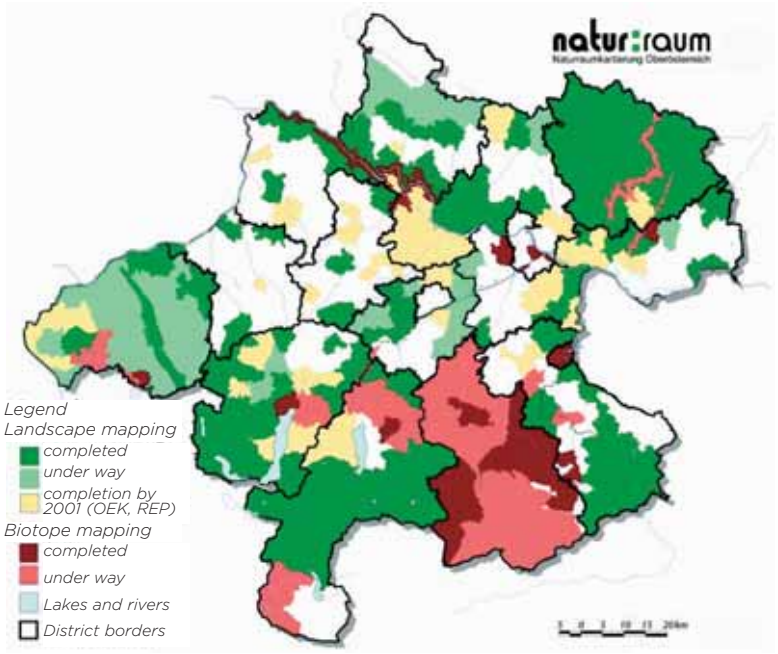
Regional planning and NATURA 2000

On the basis of the adaptation of the OÖROG to Community law requirements (ROG amendment 2005) the development plans have been reviewed for compatibility with the protected nature objects (of the FFH- and bird protection directives) in the appointed or decreed NATURA 2000 areas and their surroundings.

NATURAL ENVIRONMENT MAPPING IN UPPER AUSTRIA

Natural environment mapping in Upper Austria is providing the means for different user groups to get access to the comparable basic natural environment data, covering the whole of the state (to be completed by 2010). The core of natural environment mapping in Upper Austria are biotope mapping and landscape surveys, which have been carried out systematically throughout Upper Austria.

OVERVIEW OF NATURAL ENVIRONMENT MAPPING IN UPPER AUSTRIA



More information on natural environment mapping in Upper Austria is available on the Internet at www.land-oberoesterreich.gv.at at Topics > Environment > Nature and Landscape > Natural environment mapping.

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PUBLIC RELATIONS IN NATURE CONSERVATION

The transparency requirement, which applies to all administrative procedures, is supplemented by a publicity programme to help the population to appreciate nature conservation and to eliminate the existing gaps in our knowledge. The Nature Conservation Department participates in events and fairs, for example „Nature Day", „Flowering Austria", and „Townscape Fair".

In addition to a number of brochures and folders on nature conservation-relevant topics the nature conservation magazine „Informativ" should be mentioned here, which enjoys great popularity also among experts. The publications of the Institute for Nature Conservation (Upper Austrian Academy for Environment and Nature) „Wandererlebnis Oö. Schutzgebiete" (published in 2003) and „Wandererlebnis Oö. Kulturlandschaften" (published in 2005) have been very successful. Embedded in descriptions of hiking paths fundamental aspects of the „nature" are presented to the reader.

NATURE CONSERVATION DEVELOPMENT PROGRAMMES

The purpose of the nature conservation development programmes are raising people's awareness and re-orientation in terms of enhanced adaptation of farming to ecological requirements.

Compensation for limited use of ecologically valuable farmland

This development action focuses on relinquishment of factory farming. The reduction of profit and the added burden resulting from extensive farming are compensated by bonuses up to 872 Euros per hectare and year. With Austria's accession to the EU a parallel subsidization via the Austrian programme for environmentally-oriented farming (ÖPUL) was installed in addition to the provincial programme, which had been launched in 1986. These development programmes cover around 4,000 hectares of farmland farmed by contract farmers.

Upper Austria active for nature – new biotopes in each municipality

In the framework of this development action the installation of a variety of biotopes has been subsidized. An integrated system of biotopes in the landscape is to be created in the long term especially through structure-building elements such as humid biotopes and hedges, ponds, rows of trees, and renaturalisation of existing ponds, planting of old fruit varieties which are worthy of conservation. In recent years this development programme has further developed continuously; in the year 2004 alone, 40 pond projects created around two ha of water surface, 34 kilometres of hedges were planted and over 3,600 fruit trees were newly planted in existing orchards with different varieties of fruit trees.

7.2. FORESTS AND FORESTRY

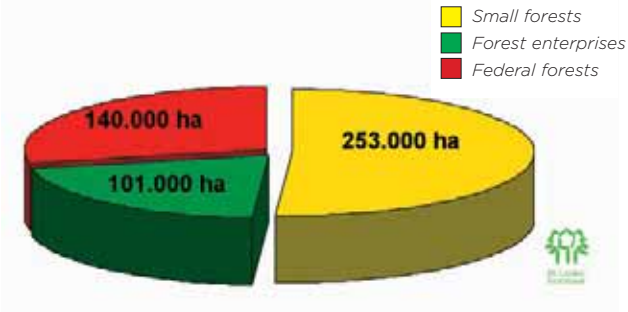
The forest is one of the most important components of our biosphere. Although it has been used and affected by man for many centuries, compared to other forms of land use it still is a largely intact ecosystem today. In addition to the production of the ecological raw material wood the other, non-economic, functions of the forest are becoming increasingly important especially in a densely populated country like Austria: protection against natural disasters, balancing effect on the water resources and recreational value.

FOREST IN UPPER AUSTRIA

Wooded areas

Upper Austria has 494,000 hectares of forests, which means that 41.2 percent of Upper Austria is covered with forests. It ranks third behind Styria, Carinthia and Salzburg, Austria's biggest tree-covered states.

TYPES OF FOREST OWNERSHIP IN UPPER AUSTRIA

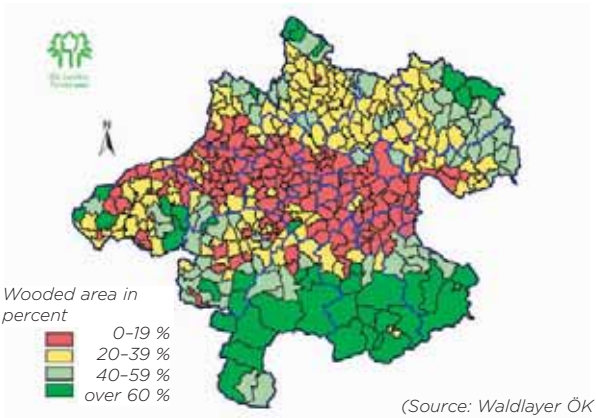


(Source: Austrian Forest Inventory 2000 / 2002)

Uneven distribution

In the last 10 years the wooded area in Upper Austria increased by approx. 2000 hectares. The forests in Upper Austria are distributed very unevenly. At only around 14 percent the district Linz-Land is the most sparsely wooded district of Upper Austria. Whereas some municipalities in the Alpine foothills show forest covers of less than 10 percent, northern Mühlviertel and most of the southern mountainous districts have forest covers of more than 60 percent.

FOREST COVERS IN UPPER AUSTRIA



(Source: Waldlayer ÖK 50)

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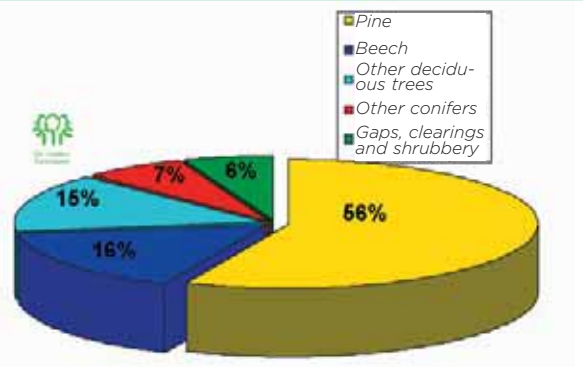
In Upper Austria 43 different forest communities occur, from the oak-forest of the plains and the lower hilly country over the beech forest of the hilly country and the highlands, and from the pine-fir-beech forest over the larch-pine forest to the alpine arolla pine and dwarf shrub communities. This variety is completed by gorge and riparian forests.
In the mountains the woods still show by and large a natural composition of mixed species. The forests of the alpine foothills and the Mühlviertel have been changed the most, especially by reafforestation with the non-native but rapidly growing pine.

DISTRIBUTION OF TREE SPECIES ACCORDING TO FOREST TYPE IN UPPER AUSTRIA



(Source: Austrian Forest Inventory 2000 / 2002)

Shelter forest
70,000 hectares or 14 percent of the Upper Austrian Forest are shelter forest. To maintain its protective function shelter forest requires special care and protection. Vigorous shelter forests also have important functions in flood control and sustainable provision of clean drinking water.

Shelter forest improvement concept
Around one third of Upper Austria's shelter forests are more than 120 years old. Natural forest rejuvenation is adversely affected by high browsing pressure (deer and chamois).

According to the provincial concept for enhancement of the protective effects of forest about 10,000 hectares of shelter forest in Upper Austria are urgently in need of remediation. The required measures range from thinning out old forest stands to initiate rejuvenation to engineering measures for the protection of settlement areas or roads. Currently about 50 shelter forest remediation projects are under way.
In addition to the forest owners and hunters everyone who enjoys winter sports or recreation must make a contribution to a healthy development of the alpine forests.

WOOD UTILISATION

Wood growth and utilisation

In Upper Austria's forest a wood inventory amounting to 157.5 million cubic metres is in stock. The annual growth is around 4.7 million cubic metres. Only 2.5 million cubic metres or 53 percent of the new growth are used.

Increase in wood waste left after harvest operations

Since the last forest inventory in Upper Austria build-up of wood waste left after harvesting operations has continued to increase to around 11 million cubic metres, of which about 7.4 million inventory cubic metres or 5.6 million harvest cubic metres are located in small forests. Without affecting sustainability in Upper Austrian small forests about 1.7 million harvest cubic metres more could be used annually.

The use of wood as energy source

According to the energy balance of Statistik Austria about 11 percent of the primary energy consumption was covered by biomass in Upper Austria in the year 2003.

DANGERS FOR THE FOREST

High rate of wood injured by storm, snow and bark beetle infestation

About one third of the total wood harvested in Upper Austria is injured wood. Storm and snow are the major damaging factors. The storm damage in the years 1990 and 1991 and the subsequent dry summers led to a strong increase in bark beetle infestation. Expenditure on bark beetle prevention and control has increased considerably in recent years.

Climate change, caused by worldwide unlimited greenhouse emission, has led to an increase in damage events with high rates of injured wood. It is therefore absolutely necessary to increase the vigour of our forests. The most important permanently effective measure in this connection is to increase the proportion of mixed-tree forests and deciduous trees in forestry rejuvenation and to pay attention to natural forest communities. Thanks to their better structure mixed-tree forests are considerably more resistant to snow and storm.

The condition of the forest, and bioindication

Chemical analyses of pine needles show that in Upper Austria the decrease in classical air pollutants which are harmful to forests (sulphur, fluorine and chloride) continues.

Damage caused by game

Since the year 1994 Upper Austria has been trying a new track in determining the shooting rates for hoofed game. The shooting rates are no longer based on the game population reported by the hunters but on the status of forest rejuvenation. Every year the damage caused by browsing is assessed on mutually agreed representative areas and bioindicator areas. The overall assessment of a hunting ground is the basis for the change in shooting rates compared to the shooting plan or shooting rate of the preceding year.

In the course of the last ten years the shooting regulation has been further adjusted on the basis of new experiences. On January 1, 2005 the new ordinance regulating the shooting plan entered into force.

8.0 | SUSTAINABLE MANAGEMENT

IN ACCORDANCE WITH ECONOMY AND ECOLOGY

8.1. BUSINESS ECOLOGY AND ENVIRONMENTAL MANAGEMENT

The Upper Austrian strategy to implement sustainable development as defined by the provincial environmental programme also includes close cooperation with the business enterprises in our state. Exchange of know-how, development and counselling programmes and business networks are to help Upper Austria on its way to becoming the leading region in environmental technology.

ENVIRONMENTAL OFFENSIVE OF BUSINESS ENTERPRISES (BUO)

All environmentally relevant counselling services for business enterprises which exist in Upper Austria are listed and coordinated as to their contents. Each enterprise can choose.

The environmental offensive of business enterprises programme promotes qualified counselling for Upper Austrian enterprises on the following environmental topics:
1. Climate protection
2. Energy
3. Agenda 21
4. Environmental and Mobility management
5. Resources & noise
6. Environmental logos

PROMOTION OF TRADE AND INDUSTRY FOR ENVIRONMENTAL PROTECTION AND PREVENTION

The Upper Austrian Promotion of Trade and Industry comprises a wide range of actions and programmes to connect ecological and economic goals.

The energy technology programme:
This investment assistance covers innovative projects, procedures, methods and products to increase energy efficiency and increased utilisation of renewable energy.

The energy contracting programme
The funding of investments for refurbishment of buildings to save energy and funding of energy plants is subsidized.

Energy counselling for business enterprises
The goal of this measure is to support energy efficiency measures and utilisation of renewable energy sources.

Ecology counselling for industrial enterprises
Ecology counselling for business enterprises is aimed at small and medium-sized industrial enterprises. It focuses on the question how environmental stress can be minimised by production processes, operations and ultimately by the manufactured products.

Eco-energy cluster
The eco-energy cluster is the Upper Austrian network of enterprises which are active in the area of eco-energy.

Competence centre Logistics, network Logistics
The focus is on development of competence in logistics research, which also contributes to traffic reduction by optimisation of the supply and disposal processes.
The development of the Enns port as logistics hub is important for an optimal connection of railway and trucking with the economically and ecologically advantageous waterway Danube as alternative to the road.

The eco bonus
In the framework of the research initiative of the State of Upper Austria also ecological criteria play an important role. Environmental enhancement projects receive eco bonuses.

Information material for business enterprises
Enterprises which apply for subsidies in the framework of the business promotion programme are informed about possibilities to receive support in connection with energy efficiency and eco-energy.

The environmental technology network
The purpose of this network is to increase the competitiveness and innovative power of the enterprises and thus support Upper Austria on its road to becoming the leading region in environmental technology.

SUSTAINABLE BUSINESS DEVELOPMENT

PREPARE-Roundtable
To reinforce the policy of information sharing, exchange of know-how and motivation for preventive industrial environmental protection in Upper Austria's showpiece enterprises, so-called „PREPARE-Roundtables" have been organised once annually in the past few years. The topics discussed also include innovative materials made from renewable raw materials, climate protection as competition factor, and sustainable methods of product development.

Business Agenda 21 – Sustainability Report
This is a subsidized training and counselling programme for innovative entrepreneurs and management staff in sustainable management.

THE ECO-ENERGY CLUSTER

The Eco-energy Cluster (OEC) is a network of enterprises which are active in the areas eco-energy and energy efficiency technologies. The current partners of the OEC include 140 enterprises with nearly 2,800 employees, with sales amounting to approx. 390 million Euros in the core area (total sales 1.2 billion Euros), and an export share of more than 50 percent.

OEKOENERGIE OEC CLUSTER

8.0 | SUSTAINABLE MANAGEMENT

Booming eco-energy sector
Solar collectors, photovoltaic systems, biomass heating or biogas plants – renewable energy technologies have been growing at rates of over 30 percent in Upper Austria. The goal is to increase the rate of start-ups of eco-energy enterprises by 20 percent by the year 2010.
The Eco-energy Cluster is also involved in training. For example, the Fachhochschule study programme Eco-Energy Technology (OET) was founded. The area of concentration Environment & Energy at the Fachhochschule Wels also offers bioengineering and environmental engineering specialists and energy experts.

New teaching subject
The new teaching subject „eco-energy installation" has been implemented for the first time in Austria to meet the increasing demand of domestic enterprises for experts.

ECONOMIC PROJECTS FOR SUSTAINABLE REGIONAL DEVELOPMENT

Eco-economic region Mühlviertler Alm
The goal of the „Eco-economic region Mühlviertler Alm" project is to bring together business, agriculture, the distributive trades, industry and consumers as well as cultural and social initiatives on a basis of cooperation.
The following goals have been defined:
- Promotion of easy access to shopping
- Securing and creation of jobs
- Retention of spending power by developing aggregate supply in the region
- Development and implementation of regional qualification possibilities

The project „Das GUUTE liegt so nah"
Since 1998 the district office Urfahr-Umgebung of the Economic Chamber has been advocating spending power retention, conservation of small economic structures, creation of new jobs and sustainable development in the district Urfahr-Umgebung in the framework of the association „GUUTE".

ENVIRONMENTAL MANAGEMENT IN THE PROVINCIAL ADMINISTRATION

The Building and Procurement Management Department has always endeavoured to take the idea of environmental acceptability into account in the respective tenders as far as possible.
As to articles of stationery, recycling-friendly products are preferred, and PVC products are relinquished. Glues, text markers and different fibre and other pens must be solvent-free and water-soluble. Exclusively toilet tissue made of recycled fibre is used.

Experience and economic feasibility speak for non-chlorine bleached paper
The use of white bleached recycling paper would increase the cost considerably, and thus for printing and photocopying purposes highly white paper made of totally non-chlorine bleached primary fibre (TCF) is used.

Strict criteria for new copying machines
To allow an optimal degree of environmentally sound procurement only big cartridges

holding up to three times as much toner are used to reduce waste, and containers have been installed for the empty cartridges. New copying machines must meet strict criteria such as ozone filters, low noise generation and low energy consumption.
To guarantee environmentally acceptable disposal an agreement with the provincial recycling enterprises (LAVU) was concluded to the effect that the empty cartridges are accepted unsorted and free of charge.

Careful waste separation
In view of the enormous volume of packaging waste great importance has always been attached to consistent waste separation in order to ensure environmentally acceptable disposal.

8.2. PLANT ENGINEERING, LAW ON PLANTS, LOCATION DEVELOPMENT

Compliance with the environmentally relevant statutory provisions for enterprises and the obligation to meet the state-of-the-art requirement is checked by the environmental inspectorate, which was established by the provincial administration. Minimum standards are defined by the European Union.

Environmental inspections
Environmental inspection applies primarily to industrial plants and other enterprises whose emissions into the air, discharges into bodies of water and/or recycling activities are subject to authorisations. In Upper Austria this applies to approx. 350 plants at present.

The Waste Management Act 2002:
Conservation of resources and procedural simplification
The express goal of the Waste Management Act (AWG) 2002 is conservation of resources. The AWG 2002 is designed in such a way that in one authorisation process an authority (the head of the provincial government) applies not only several federal regulations but also provincial regulations which would otherwise have to be applied by separate authorities in separate procedures. The benefit for the applicant is that all authorisation requirements are met with a single authorisation.

8.3. TOXIC SUBSTANCES CONTROL

In order to prevent serious industrial accidents with dangerous substances in the future and confine the consequences of accidents for man and the environment, the EU „Seveso II directive“ was adopted. Its implementation ensures a high level of safety for man and environment on locations where hazardous substances may be present or develop in case of an accident.

So far the directive has been implemented on the federal level by laws and ordinances, for example in the Industrial Code, the Waste Management Act, or the industrial accident ordinance; at the provincial level in the Upper Austrian Environmental Protection Act, the Upper Austrian Regional Planning Act, and the Disaster Emergency Service Act.

8.0 | SUSTAINABLE MANAGEMENT

Europe-wide standardisation

The purpose of quantity thresholds for specific substances is to standardise the categorisation of enterprises throughout Europe. In Austria the terms „threshold-1-enterprise“ and „threshold-2-enterprise“ have come into use.

For threshold-2-enterprises the district administration authorities have to work out external emergency plans regulating the measures which are required to confine damage and coordinate the required works optimally. The emergency plan also prescribes how the public is to be informed.

As of December 22, 2005 a total of 39 enterprises in Upper Austria fell under the Seveso II directive, of which 12 are so-called „threshold-1-enterprises“ and 24 „threshold-2-enterprises“.

Agreement between enterprises, the state of Upper Austria and cities

On the premises of the Linz Chemiepark several Seveso enterprises are located. Therefore in the year 1999 an agreement which is unique in Central Europe was concluded between the enterprises of the Chemiepark Linz, the state of Upper Austria, the capital of Upper Austria, Linz, and the municipality of Steyregg. It is an effective means of further development of safety measures.

SUSTAINABLE MANAGEMENT - UPPER AUSTRIA 2015

Upper Austria’s goals for the years to come are:

- to intensify the relations between environment and business;
- to take calculated measures for creating jobs by investing in modern environment-related projects;
- to turn our state into a model region for environmentally-oriented management;
- to develop the successful eco-energy cluster massively to enable Upper Austria to utilise the opportunities of the turnabout in energy use;
- to strengthen and further develop the environmental technology network;
- to bolster environmental and eco-energy research via the eco-bonus of the research loan.

(Foto: L. Eidenhammer)

9.0 | SUSTAINABILITY

A CHALLENGE FOR OUR SOCIETY

Sustainability means taking care that all of our decisions and activities have a positive ecological, social and economic impact in the long run without causing any irreversible damage and defects.

9.1. EDUCATION AND INFORMATION FOR ENVIRONMENT, NATURE AND SUSTAINABILITY

UN Decade of Education for Sustainable Development

The period 2005 to 2015 was designated as the UN Decade of Education for Sustainable Development. The goal is public understanding what responsible action means, namely ecological compatibility, social justice and economic performance.

The Upper Austrian Guide to Environmental Education, which is published quarterly, provides an overview of what the state of Upper Austria offers to the target groups of the environmentally, nature and sustainability-oriented educational possibilities.

On specific conditions educational environment-relevant projects are subsidized with monies from environmental and conservation funds.

EDUCATIONAL PROGRAMME OF THE UPPER AUSTRIAN ACADEMY FOR ENVIRONMENT AND NATURE

The Upper Austrian Academy for Environment and Nature organises events which are aimed especially at decision-makers, multipliers and players.

Approx. 100 conferences, seminars, courses, workshops, meetings and congresses are held annually, which are announced in the programme and on the homepage www.land-oberoesterreich.gv.at/Topics/Events twice per year.

At specialist meetings current and future-oriented issues are discussed. Informational events are organised regularly in cooperation with the sectoral divisions. The highlight of the events is the annual Upper Austrian Environmental Congress, which takes place in fall.

THE FORUM ENVIRONMENT AND SCHOOL

The Forum Environment and School is a special partnership between the Upper Austrian provincial school inspectorate and the Upper Austrian Academy for Environment and Nature.

The Forum Environment and School offers the following services inter alia:

- Training programmes for teacher
- Teaching materials (audiovisual media, action packages, brochures, etc.)
- Information services (newsletters, contribution in the Education Highway www.eduhi.at)
- Counselling (projects, literature).

In the area environment and school the following focuses have priority:

ÖKOLOG – Education for sustainability, environment logo

The nationwide ÖKOLOG programme champions a sustainable and ecologically sound school culture. At the end of 2005, 20 of 175 ÖKOLOG schools in Austria were in Upper

Austria. The Austrian environment logo for schools is awarded by the Republic of Austria. The prerequisites are criteria from environmental management, environmental education, health promotion, use of energy, mobility, procurement, food, chemistry and cleaning, water/wastewater, waste and outdoor environment.

Climate rescue schools

The climate rescue schools submit climate protection projects and document their climate protection activities. Schools which participate as so-called climate pioneers implement the BONUS (Reward for ecological user behaviour in schools) project.

ÖKOFIT food in schools

The Upper Austrian certificated ÖKOFIT schools implement the principles of use of organically grown and regionally produced food in school canteens and buffets.

INFORMATION CAMPAIGNS AND EVENTS

Climate rescue

With climate rescue a unique programme was launched throughout Europe which offers concrete possibilities of participation to small households and schools, organisations, housing developers, communities to big enterprises (www.klimarettung.at).

Be an environmentally aware consumer – have a pleasant life!

From 1999 to 2003 action days around the International Environment Day (June 5) informed consumers about the benefits of wholesome regional and seasonal food.

The Kalkalpen Hay Party, 1st Austrian landscape fair

The region around Nationalpark Kalkalpen offers a variety of landscape elements, which led to a close bond of the population with their „home region", and a high leisure-time and recreation potential. These connections were staged as hay party for the population.

Nature festival

An informative and entertaining nature adventure programme for the whole family was offered already at the first Nature festival in the Linz Donaupark. In July 2005 more than 15,000 visitors participated in the 2nd nature festival.

PROJECTS FOR BRINGING NATURE CLOSER TO MAN

„Experiencing nature on Bavarian - Upper Austrian roads along the Danube"

The focus of attention is the forest on the slopes and in the gorges along the Danube between Hofkirchen and Aschach, the Aschach valley and the lower courses of Vils and Ilz. (www.donaunatur.com)

Educational focus Agriculture and conservation

The goal is to demonstrate mutual understanding between conservation and agriculture.

Nature and landscape guides in Upper Austria – „We show you nature"

Currently more than 120 trained nature guides are active in Upper Austria (visit www.verein-naturfuehrer.at).

„Natural reserve ObstHügelLand"

On April 30, 2005 Upper Austria's second nature reserve was inaugurated in the communities Scharten and St. Marienkirchen a.d.P.

Platform Showing nature

The platform Showing nature was established in 2005 jointly by the Upper Austrian Academy for Environment and Nature, the environment umbrella organization and the Agricultural Chamber of Austria. It unites organisations and institutions which are commit-

ted to comprehensive and careful understanding of nature and responsible handling of nature.

Natura 2000 – dialogue with the population

Goals and focuses of this campaign were the elimination of information gaps, building of acceptance and confidence, and excursions and events.

INFORMATION SERVICES

Brochures on environment, nature conservation and sustainability are still in demand. The state of Upper Austria offers about 200 publications on these topics.

List of publications: see www.land-oberoesterreich.gv.at Topics / Publications). To meet the demands of today's informed society the state of Upper Austria also uses the Internet (www.land-oberoesterreich.gv.at). For specific target groups electronic newsletters are available (UAK news, climate rescue news, Agenda 21 news, Natura 2000 news, environment and school news).

EXHIBITS

Travelling exhibitions are a popular element to enrich environment action days and weeks in Upper Austrian schools and communities.

UHDERTUT – the nature and environment train

This exhibition presents basic environmental knowledge in kindergartens.

Our eco-village

The exhibitions „In the eco-village" and „Around the eco-village" give elementary school kids an insight into environmentally sound ways of life and developing our environment.

Experiencing and living climate rescue

This exhibition provides information about the energy balance, renewable energy sources, saving of energy and heat insulation.

Living structures

Pictures show the value of man-made landscape for man, animals and plants.

The course of a river

The exhibition also makes the segments of a river course audible.

I love soil

This exhibition shows the major functions of soils.

The noise pavilion

In the audio pavilion students can vividly experience noise, silence, everyday noises and sound phenomena.

THE UPPER AUSTRIAN ENVIRONMENT AND NATURE AWARD

The Upper Austrian Environment and Nature Award is awarded in recognition of special achievements and innovative ideas regarding environmental protection and conservation in the five categories communities, enterprises, schools and other educational institutions, associations and groups, and individuals. Since the first environmental protection awards were presented in the year 1982, out of a total of 1,625 submissions 857 winners received this award.

9.2. LOCAL AND REGIONAL AGENDA 21

At the UN Earth Summit 1992 in Rio de Janeiro 179 states adopted Agenda 21. Local Agenda 21 is an instrument for achieving sustainable development on a local and on a regional level. In 1998 „Living in an environment with a future – Local Agenda 21 in Upper Austria" was launched. Today, 76 communities and four regions participate in this campaign. Each community and each region works out an independent sustainability-related profile of the future and implements it through concrete projects.

Central office Agenda 21

Central office Agenda 21 of the Upper Austrian Academy for Environment and Nature coordinates the implementation and is the contact point providing information.

Development model

A Local Agenda 21 development model secures financial support for the LA 21 communities and regions. Since 1998 a total of 65 municipal and regional processes and 45 implementation and pilot projects have been supported.

Local Agenda 21 has also been linked with EU regional development. The Goal 2 Programme Upper Austria provided 925,000 Euros for Agenda 21 processes in the period 2000-2006.

AGENDA 21 IMPLEMENTATION PROJECTS

Sustainability training centre Steinbach on Steyr

The sustainability training centre Steinbach on Steyr was founded as learning and inspiration centre for local sustainability initiatives in cooperation with the municipality of Steinbach and the Upper Austrian Association for Development Promotion.

Agenda 21 course „Leb's"

The Agenda 21 course „Leb's" is a training for „Local environment- and future-moderators".

Community networks

48 of the 76 LA 21 communities work in LA 21 community networks and regional agendas 21.

Sustainability report

The district authority Kirchdorf is the first district administration authority to express responsibility for the future by presenting a sustainability report.

Mühlviertler Alm

The „Eco-business region Mühlviertler Alm" project originated from Regional Agenda 21 and wants to network business, agriculture, trade, industry and consumers as well as cultural and social initiatives on a basis of cooperation.

The project „Das GUUTE liegt so nah (the good things are so close)"

A future workshop was held for developing ideas on a closer networking of business with the Urfahr Umgebung region.

Aalborg Commitments

As common Europe-wide directive for the implementation of sustainable communal development the Aalborg Commitments, based on the Aalborg Charter of 1994, were adopted. Upper Austria also adopted the Aalborg Commitments in August 2004.

Local indicator system for sustainable quality of life (LISL)

47 LISL indicators are guides to sustainability and quality of life for communities.

Upper Austrian Zukunftsfenster (window to the future)
As a tool of self-assessment for sustainability processes, the „Upper Austrian Zukunftsfenster" was developed for Upper Austrian communities and regions.
„Innbrücke 21"
This cross-border future and training project was initiated in the districts Braunau, Ried im Innkreis, Rohrbach and Schärding and in the districts Altötting, Deggendorf and Passau.

9.3. GIVING A FRESH IMPETUS, NETWORKING, APPLIED ENVIRONMENTAL RESEARCH

SUSTAINABILITY CONCRETE – RETURN ON INVESTMENT FOR GENERATIONS

The Provincial Environmental Programme for Upper Austria (LUPO) was adopted in 1995. As a contribution to further development the project „Sustainability concrete – return on investment for generations" was carried out, which focused especially on exploration of self-interests, motives and needs of the players.

THE PROJECT „A-GENDER 21"

This project scrutinised the topics equal opportunity, environmental protection and sustainability.

„KASOLOGY - LOCAL SUSTAINABLE INITIATIVES"

„Kasology - local sustainable initiatives" was a trilateral project to exchange know-how on local sustainability strategies and rural development between Japan, the USA and Austria.

GLOBAL MARSHALL PLAN - UPPER AUSTRIA'S POSITION

The initiative „Global Marshall Plan" is aimed at the creation of an eco-social framework for a global economy. The State of Upper Austria stands up for the idea and the goals of a Global Marshall Plan.

SUSTAINABILITY COORDINATORS

The Upper Austrian Academy for Environment and Nature cooperates with the experts' conference of the provincial sustainability coordinators and with the committee for a sustainable Austria and uses this as an opportunity for networking with other states and with the federal government. Thus e.g. cooperation projects in the area quality management for sustainability were established, and the Austrian Agenda Summit 2004 „Beteiligung bewegt (participation gets things going)" was held in Linz with 260 participants.

PROVISION

This programme focuses on the subjects change in climate, quality of life and regional development. It was developed by the Federal Ministry for Education, Science and Culture, the Federal Ministry for Transport, Innovation and Technology, and the Federal Ministry for Agriculture and Forestry, Environment and Water Management. In the first round of invitations for competition, two projects from Upper Austria were submitted in 2004 and approved at the end of 2005:

„Agenda 21 and LEADER 2007 to 2013 in regional cooperation“
The goal is to detect differences and/or intersections in the programmatic orientation of Agenda 21 and LEADER and potential synergies between the two programmes.
„Social Software as tool for inter-community communication processes: A community network for Upper Austria's inhabitants“
The goal is to utilise the dynamics of the online communities for an inter-community project for Upper Austria's inhabitants.

MARS (MONITORING THE ALPINE REGIONS' SUSTAINABILITY) - INTERREG IIIB

22 partners from Austria, France, Germany, Italy, Slovenia and Switzerland decided to investigate regional sustainability in the Alpine regions in the form of an Interreg IIIB-project.

9.4. UPPER AUSTRIAN ENVIRONMENTAL PROTECTION ACT, ENVIRONMENTAL IMPACT ASSESSMENT, REPRESENTATION OF ENVIRONMENTAL INTERESTS

The legal and institutional embodiment of environmental protection shows how important this matter is to our society. The Upper Austrian Environmental Protection Act, the environmental impact assessment, and the Upper Austrian Counsel for Environmental Complaints are instruments which demonstrate this importance.

The is inter alia the basis for institutions promoting environmental protection, including, but not limited to, the Upper Austrian Academy for Environment and Nature, and the Upper Austrian Environmental Complaints Panel. This law also regulates the access to environmental data at the provincial level according to the relevant directive 2003/4/EC and the federal provisions.

The Upper Austrian Counsel for Environmental Complaints covers a wide range of duties, including the following:

- Position as party in environment-relevant permit procedures under provincial and/or federal law,
- Providing advice and support for the population and local authorities in environmental matters,
- Mediating conflicts, counselling in planning, project valuation, evaluation of legislation, Checking grievances, handling complaints

Comprehensive information about the activities of the Upper Austrian Counsel for Environmental Complaints is to be found at www.ooe-umweltanwaltschaft.at.

The environmental impact assessment procedure implements the EU directive, which is aimed at as comprehensive an integration of the public as possible. In addition to information of the public (also via the print media and electronic media) and taking the opportunity to submit a statement, the procedure includes the discussion of a host of arguments and objections.

OUTLOOK

For the Upper Austrians, environmental protection as the basis of health and quality of life is still an important objective. They expect professional problem solution and active development of the future from the politicians and administrations at the European, the Austrian and the provincial levels.

The model of sustainable development takes this requirement into account as it brings together ecological, social and economic aspects of an active policy which points the way ahead.

SUSTAINABILITY - A CHALLENGE FOR OUR SOCIETY - UPPER AUSTRIA 2015

Upper Austria's goals for the years to come are:

- to win at least 100 communities which commit themselves to sustainable regional development within the scope of the Local Agenda processes;
- to implement clear guidelines for curbing the negative impacts of globalisation;
- to actively support and implement the goals of the Global Marshall Plan for sustainable development.

(Foto: H. Kosina, Oö. Landespresse)

A1 | ORGANISATION OF ENVIRONMENTAL PROTECTION IN UPPER AUSTRIA

„Environmental protection“ includes a host of individual duties which fall under the sphere of responsibility of all departments and divisions of the provincial administration.
The complete and updated allocation of duties in the provincial government of Upper Austria can be found on the Internet at www.land-oberoesterreich.gv.at: section: „Politics > Provincial Government > Allocation of Duties Provincial Government of Upper Austria“ or „Politics > Provincial Government > Members“
The distribution-of-business plan of the Office of the Upper Austrian Provincial Government may be viewed online at www.land-oberoesterreich.gv.at. Section: Administration > Office of the Upper Austrian Provincial Government > distribution-of-business plan“. Under the same address also the organisation chart of the provincial administration may be viewed.
If you are searching an organisational unit which is responsible for a specific subject again the homepage of the state of Upper Austria www.land-oberoesterreich.gv.at is helpful. The „Subjects“ section points the way to a selection of the respective matter including a reference to the competent organisational unit. (e.g. „Subjects > Environment > Water > Wastewater“)

SELECTED ENVIRONMENTALLY RELEVANT ORGANISATIONAL UNITS

Environmental and Systems Engineering Department
Head: Dr^{in}. Ulrike Jäger-Urban
Stockhofstraße 40
A-4021 Linz
Tel.: (+43 732) 77 20-14550
Fax: (+43 732) 77 20-14559
E-Mail: u.post@ooe.gv.at

Upper Austrian Academy for Environment and Nature
Head: Dipl.-Ing. Wolfgang Rescheneder
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A-4021 Linz
Tel.: (+43 732) 77 20-14402
Fax: (+43 732) 77 20-14420
E-Mail: uak.post@ooe.gv.at
Internet: www.klimarettung.at;
www.lebensraum-mit-zukunft.at

Environmental Law Department
Head: Dr. Dieter Goppold
Waltherstraße 22
A-4021 Linz
Tel.: (+43 732) 77 20-13411
Fax: (+43 732) 77 20-13409
E-Mail: ur.post@ooe.gv.at

Upper Austrian Counsel for Environmental Complaints
Head: Environmental lawyer Dipl.-Ing. Dr. Johann Wimmer
Stifterstraße 28
A-4021 Linz
Tel.: (+43 732) 77 20-13450
Fax: (+43 732) 77 20-13459
E-Mail: post.uanw@ooe.gv.at
Internet: www.ooe-umweltanwaltschaft.at .

Water Management Department
Head: Dipl.-Ing. Peter Pfeffer
Kärntnerstraße 10-12
A-4021 Linz
Tel.: (+43 732) 77 20-12424
Fax: (+43 732) 77 20-12860
E-Mail: w.post@ooe.gv.at

Law on Water Department
Head: Dr. Herbert Rössler
Kärntnerstraße 10-12
A-4021 Linz
Tel.: (+43 732) 77 20-12599
Fax: (+43 732) 77 20-12825
E-Mail: wa.post@ooe.gv.at

A2 | ENVIRONMENTAL DATA, ENVIRONMENTAL INFORMATION

The duty to supply information on environmental data is regulated by the Ozone Act, the Environmental Information Act (UIG) and Law on Ambient Air Protection (IG-L). The Ozone Act regulates information of the population in emergencies. The UIG specifies that enquiries relating to air quality in Upper Austria must be answered in an appropriate manner. The IG-L prescribes that the inhabitants must be informed via daily air quality - and in summer also ozone - reports and via monthly and annual reports.

1. INFORMATION ON ENVIRONMENT, NATURE AND SUSTAINABILITY ON THE INTERNET

The state of Upper Austria publishes the following websites:

- www.land-oberoesterreich.gv.at (Subjects / Environment)
- www.lebensraum-mit-zukunft.at
- www.klimarettung.at
- www.natur-ooe.at
- www.natura-2000.at
- www.felixx.at
- www.temelin.com
- www.ooewasser.at

Additionally the state of Upper Austria cooperates closely with numerous organisations and associations:

- Oö. Landesabfallverband (Upper Austrian Waste Management Association): www.ooe-bav.at/lav
- Oö. Energiesparverband(Upper Austrian Association for Conservation of Energy): www.energiesparverband.at
- Klimabündnis Oberösterreich(Climate Alliance Upper Austria): www.klimabuendnis.at/oberoesterreich
- Öko-Beratung der Wirtschaftskammer (Eco-consultancy Service of the Economic Chamber): www.oeko-beratung.at
- Naturschutzbund OÖ(Nature Conservation League): www.naturschutzbund-ooe.at
- Nationalpark Kalkalpen: www.kalkalpen.at
- Landesschulrat für OÖ (Upper Austrian School Inspectorate): www.lsr-ooe.gv.at
- Education Highway: www.eduhi.at

2. TELEPHONE SERVICES

„Grünes Telefon (green phone)“
Installed at the Upper Austrian Academy for Environment and Nature
Telephone: 0732 / 7720 – 13300

„Ozontelefon“ – ambient air quality information
Provides information about the current ambient air quality situation, in summer supplemented by the ozone report
Telephone: 0732/1510

„Energiespar-Hotline (energy saving hotline)“
The hotline of the Upper Austrian Association for Conservation of Energy
Telephone: 0800 / 205 206

3. INFORMATION ON AMBIENT AIR QUALITY

At the Internet address: www.land-oberoesterreich.gv.at (Subjects/Environment/Air, climate and ambient air quality data) the most recent ambient air quality situation is presented separately for Linz and for Upper Austria in the form of graphs and tables.
Ambient air quality data is also available via mobile phone: wap.ooe.gv.at.

4. DORIS – GEOLOGICAL INFORMATION FOR THE BENEFIT OF THE ENVIRONMENT

Directory inquiring services on the Internet (http://doris.ooe.gv.at)
The map services on the Intranet and the Internet have become very popular as an important tool in one's daily work or in procuring information, for example if you search for an address or plan a bicycle tour.
In addition to a variety of basic maps (e.g. topographical map or ortho photo), data from the sectoral divisions of the provincial government constitute a valuable knowledge base.

5. WATER INFORMATION SYSTEM (WIS) – WATER REGISTER

Since 1997 data have been collected in the WIS (water information system) database, and information on surface waters, groundwater, wastewater disposal and drinking water supply is provided.
By 2007 the database surface will be transferred to a WISweb application. Then it will be possible to retrieve data from the WIS database over the Internet.

6. OFFICIAL STATISTICS

A large part of the Statistics Department data is retrievable at http://www.land-oberoesterreich.gv.at/statistik/.
Specific environmental topics including energy, material, eco-balance, materials flow calculations, eco-tax, environmental protection expenditure, environmental conditions and behaviour are offered by Statistik Austria (Internet: http://www.statistik.at/)

A3 | AN OVERVIEW OF ENVIRONMENTAL DEVELOPMENT PROGRAMMES

This schedule provides an overview of selected priorities in environmental, energy and water development. For more information about incentives provided by the state of Upper Austria visit us on the Internet at www.land-oberoesterreich.gv.at, „Subjects" – „Benefits" – „Subsidies".

1. ENVIRONMENTAL DEVELOPMENT

The goals of measures promoting environmental development in Upper Austria are:

- Human, animal and plant health
- Preventive environmental protection before downstream environmental measures
- Reinforcing sustainable development
- Strengthening environmental awareness
- Reduction of material and energy turnover in materials circulation
- Protection of the atmosphere

In the period 2000 to 2005 a total of 49.38 million Euros were paid out for promotion of environmental development.

Focuses of environmental development 2000–005

- Environmental protection, energy, district heating
- Waste management
- Soil protection
- Measures to strengthen sustainable development and to raise people's awareness
- Special development programme climate protection partnership

2. WATER MANAGEMENT DEVELOPMENT

- Subsidies for the construction of canals, purification plants, plants for water recovery and water supply in compliance with the Environmental Development Act 1993; clean-up of flood damage
- Investment aid for individual water supply plants and sewage installations in remote locations
- Well redevelopment programme for farmers who produce milk and for farmers who sell their products directly
- Subsidies for various measures for securing the water supply and disposal of wastewater with private entities and water associations.
  This includes works for quality assurance and measures of water reclamation.
- Subsidies for wastewater disposal management community networks.
- Subsidies for measures of flood control

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