

Committed to the region, the community and the environment.



10 years of Environment Management



Eco-label 542
"Returnable drink
packaging"

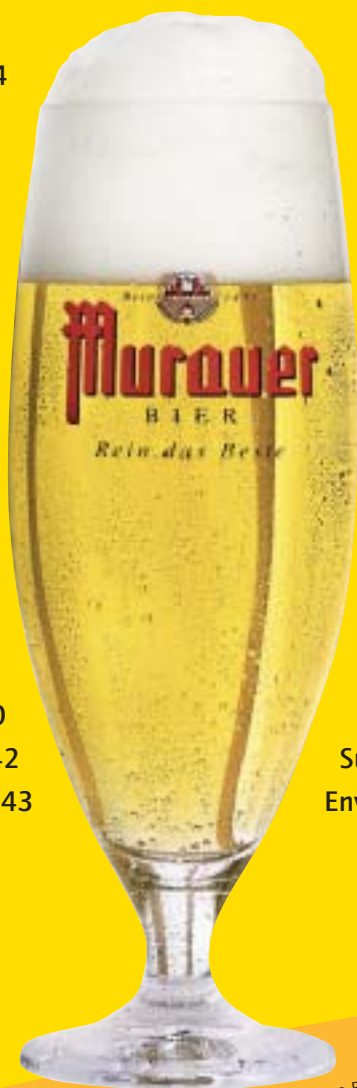


EMAS
CERTIFIED
INFORMATION
A-000001

Murover
BIER

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Cover photo: Auerlingsee, St.Lambrecht in the Grebenzen Nature Reserve



Eco-label 02
"Printing paper and
writing paper"



EMAS

CERTIFIED ENVIRONMENTAL
MANAGEMENT SYSTEM

A-000001

Murauer beer: a statement on the environment and sustainability

This environmental statement is issued in accordance with Regulation (EC) No 761/2001 of the European Parliament and of the Council of 19th March 2001 allowing voluntary participation by organisations in a community eco-management and audit scheme (EMAS).

As at December 2004

This environmental report also serves as Murau Brewery's sustainability report and demonstrates Murau Brewery's clear commitment to its social and regional responsibilities.

Murauer beer was rebranded in 2003

A success story



Josef Lankmayer
Chairman of the Board

Murau, a town steeped in history, which celebrated the 700th anniversary of its town charter last year, has a close bond to Murau Brewery. It is not just the town's coat of arms (incorporated in the Murau Brewery logo) which tie the two together, but also their joint quest to preserve this unspoilt location through sound environmental policy. Erste Obermurtaler Brauereigenossenschaft reg.Gen.m.b.H. can look back on over 500 years of tradition in the brewing trade. This gives us a sense of commitment towards our future generations and towards our neighbours and customers to ensure that we pay special attention to the preservation of our wonderful environment. For many years quality management and protection of the environment have been key elements of our corporate policy at Murau Brewery and illustrate our co-operative's belief in its wider responsibilities towards society.



Master Brewer Günter Kecht
Technical Manager

Our products have to satisfy our customers' high quality requirements and environmental awareness. For us actively dealing with our environment is a crucial factor in making long-term provisions for the future. Over the 10 years since the introduction of the environment management system, as laid down under ISO 14001 and the EMAS Regulation, we have been shown that we are on the right track. We have managed over that time to implement a large number of plans and we are therefore now proud to present a meaningful contribution to the environment. For instance we have achieved a significant reduction in a great deal of environmental pollution and our top environmental benchmarking system reveals constant improvements, which have a very positive impact on costs as well. Murau Brewery is proud to be the first company in Styria to achieve consolidation of licence notification ("Konsolidierter Genehmigungsbescheid") as laid down in Article 22



Helmuth Bliem
Commercial Manager

of the Austrian Environment Management Act (Umweltmanagementgesetz). We have now added a further milestone to our high environmental standard with the legal standardisation through the consolidation decision. The consolidation decision also offers site security of course and the major opportunity to be able to maintain legal certainty in the future as well. This environmental statement for 2005 is a presentation of our successes over the past 10 years, but it also looks at our environmental work for the future, as we aim at being one of Austria's pacesetters in precautionary operational environmental protection. Murau Brewery's Board of Directors and Management Team would like to extend their thanks to the whole workforce for their positive approach to our quality policy and their outstanding commitment to operational environmental protection.



That's how it works with Murauer beer

History

Murau has always been a welcoming town. It is therefore not surprising that the brewing trade came here a very long time ago. Brewing probably started in the Murau area as early as the 12th century, after which a few institutions started production of beer and malt.

The first records of our brewery in Murau date from 1495. We therefore celebrated our 500th anniversary in 1995.

The present Erste Obermurtaler Brauereigenossenschaft Murau was founded on 15th August 1910 by a group made up of 100 landlords, the municipality of Murau, the savings bank Sparkasse Murau and private individuals from the region. Since that time the members of the co-operative, who now number 525, have been responsible for the brewery's success.

Business development

Our solid economic results and the constant upward trend over recent years have been based on an up-to-date environmental policy, the high quality of our products and a cleverly devised market niche policy.

Since the beer cartel, which had acted as an association protecting the interests of the Austrian breweries and which had "regulated and brought order to the market", was abolished in 1982, the popular Murauer beer has been free to explore all sales paths.

Brief description of the company

Title of the company	Erste Obermurtaler Brauereigenossenschaft reg. Gen.m.b.Haftung GetränkevertriebsgesmbH. (100% subsidiary)
Location/ address	Raffaltplatz 19–23, A-8850 MURAU
Company registration number	FN 834803, GetränkevertriebsgesmbH FN 208194-X
Sector	Drinks industry
NACE code	D 15.96 D 15.99
Area of production	Manufacture and sale of drinks
Object of production	Beer and non-alcoholic drinks
Founded	1495
Number of employees	136 Brauereigenossenschaft, 14 GetränkevertriebsgesmbH
Waste holder number	38 12 16
ARA licence number	8658
Chairman of the Board of Directors	Josef Lankmayer
Chairman of the Supervisory Board	Ehrenfried Illitsch
Commercial Manager	Helmuth Bliem
Technical Manager	Master Brewer Günter Kecht
Head of the Logistics Centre	Christian Papst
Environmental representative	Johann Tanner
Tel./ fax:	Tel. (0043) 03532/3266-0, fax. (0043) 03532/3266-0
Website	http://www.murauerbier.at
E-mail address	umwelt@murauerbier.at

In addition to the main plant, depots have been opened in Tamsweg, Judenburg, Graz and St. Veit/Glan. In 2003 a logistics centre was opened in the eastern outskirts of Murau and in 2004 the company GetränkevertriebsGmbH was set up, a 100% subsidiary of the brewery.

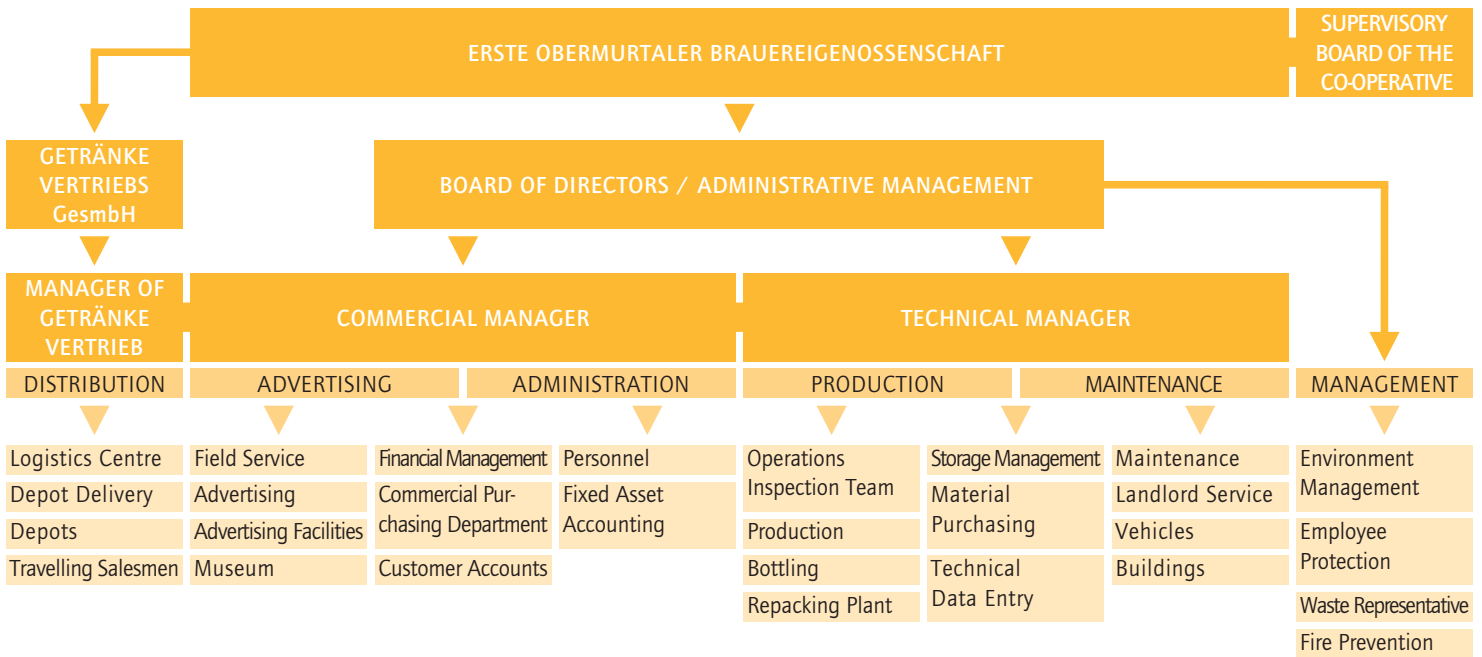
Although Murau Brewery is renowned for its high-quality beers, it also produces a wealth of non-alcoholic drinks, nevertheless accounting for 6.4% of overall output. The ranges of drinks which our plant does not produce itself are managed as commodities.



Beer production next to the green waters of the Mur

Murauer beer – there for everyone!

Murau Brewery is one of the region's few sponsors of clubs and associations, cultural events and social concerns in the region and that makes it all the more important. Under the terms of our corporate philosophy, we aim to provide a broad range of sponsorship, so that we can support many initiatives and promote cultural and sporting life and the community.



Help for Florian

Florian suffers from something known as neural tube defects and club feet. He needs a catheter installed every three hours, because the nerves below the "defect" on his back do not work or only work to a limited extent. This means that his bladder and kidneys are also affected and he has only partial feeling in his legs. Despite all this Florian is a lively, happy little chap.

Brewery with "eco-impetus"

Murau Brewery has succeeded in combining the "eco" of economic and ecological to become one of the major movers and shakers in the Murau (bio)region! And this is allied to our social commitment to come to the aid of those in need.

Murau – a small regional town lies in a romantic setting on the banks of the river Mur in Styria, Austria. The economy of the Murau region is based on agriculture, tourism and numerous small businesses.

The Murau region, however, has no significant industry. There are very few large companies providing work to the people of the region. One of the large companies here is Murau Brewery, a major employer and a strong partner in the local food and drink industry.

Thanks to the 150 jobs we provide, Murau Brewery guarantees the livelihoods of a significant number of families in the region. But there is much more to it than that. We also provide a considerable amount of work for other companies in the region. Over the past four years alone we have invested € 6.8 million in new buildings and repairs and maintenance. The construction of the new Logistics Centre in 2002 on its own meant an income of some € 2 million for local companies. So our annual investments also ensure a large number of jobs in the region indirectly as well.

A further indicator of Murau Brewery's regional significance can be seen in the form of what we pay in tax! Or our wage bill, which runs to € 7 million a year. The majority of this money is reinvested into the region.

Economic data

	2001	2002	2003	2004
Investments in the region in €	979.000	3.332.000	1.279.000	1.187.000
Cash flow as % of operating performance	22,30	19,83	18,77	19,85
Net turnover of the company in millions €	20,140.000	20,443.000	22,344.000	22,224.000
Readiness to invest	0,98	1,80	1,27	0,76
Net turnover per employee	156.124	147.072	157.352	148.160
Labour-intensity	23,10	23,80	23,40	24,90

Cash flow = profit plus depreciation and corporation tax.

Readiness to invest is measured in terms of investments with reference to depreciation

Labour-intensity means payroll costs in terms of net turnover.

Operating performance is net turnover plus beer duty.

In 2002 the construction of the Logistics Centre was reflected in the figures 'Investments' and 'Readiness to invest'.

In addition to these hard facts of day-to-day business, Murau Brewery is also a committed sponsor of a large number of regional initiatives. Our principle here is to provide the broadest possible range of sponsorship, focusing on schemes affecting young people!

We have been pursuing this policy for years, even decades, and as a result a large number of clubs and associations and cultural events are partners of Murauer beer.

In recent years the company has also been increasing its commitment to the community. For instance Murau Brewery is offering ongoing support to Lebenshilfe Murau, an Austrian association which represents the interests of people with mental and multiple disabilities, and continues to support people who have been dealt a cruel hand by fate. People like little Florian or landlords whose livelihoods were washed away in the great floods of 2002. We have also set up a social fund, providing support for employees or their dependants in dire straits.



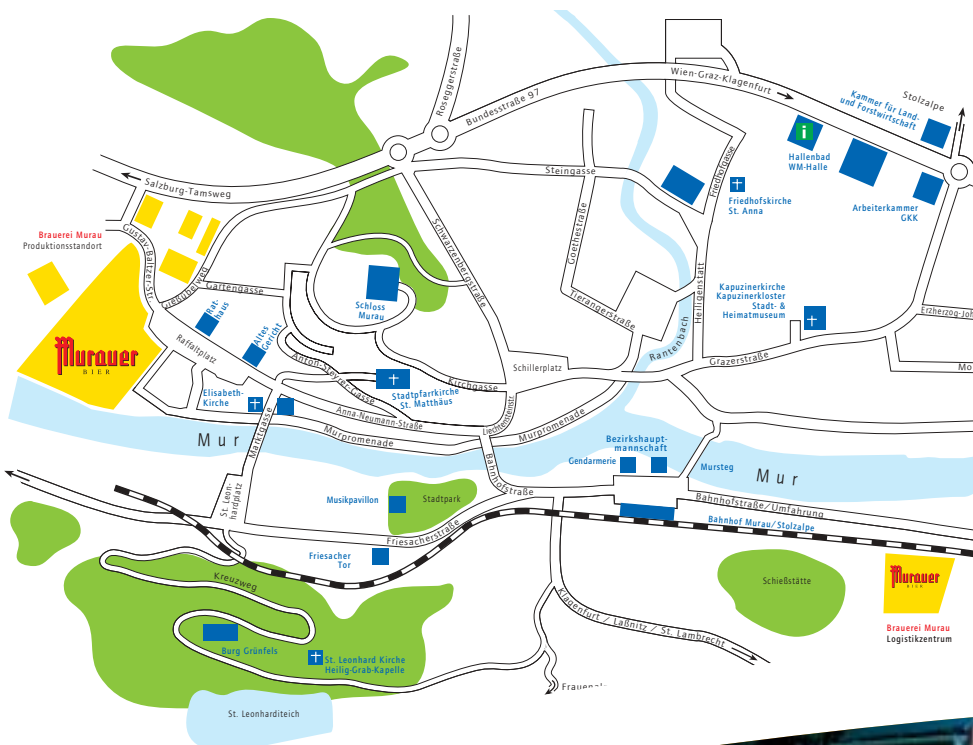
Florian's parents, Irmi Ulrich and Christian Galler, have had to reconcile themselves with fate, but one way in which we too can help is through providing them with financial support. Local artists and companies presented Irmi and Christian with a cheque, for instance, and Murau Brewery made a substantial contribution to bump up the total to a very tidy sum.

10 years of environment management

1994 PREPARE project – material flow analyses	STENUM Graz
1995 ISO 9001:1994 certification	TÜV Bavaria/Austria
1995 1st inspection of environmental operation	STENUM / INFORA
1995 1st EMAS assessment in accordance with EMAS Regulation no. 1836/93	ETA Umweltmanagement
1996 Entry in the list of registered sites and organisations under A-000001	Austrian Federal Environment Agency
1997 ISO 14001:1996 certification	ETA Umweltmanagement
1997 Introduction of AUDIT environmental information programme	AUDIT Graz
1998 Expert report for Eco-label 26	STENUM
1999 2nd EMAS assessment with certification 14001:1996	ETA Umweltmanagement
2000 KWI Legal Care 2000 – legal care programme	KWI St. Pölten
2002 3rd EMAS II assessment with 14001 certification	ETA Umweltmanagement
2002 Expert report for Eco-label 26 – Guideline dated 1st July 2001	STENUM
2003 Consolidation decision according to Article 22 of the Austrian Environmental Management Act (Umweltmanagementgesetz)	Murau District Authority
2005 4. EMAS II assessment with 14001: 2004 certification	ETA Umweltmanagement
2005 Expert report for Eco-label 26 – Guideline dated 1st July 2004	STENUM Graz – VKI

Sites

Production and Administration	8850 Murau, Raffaltplatz 19–23	Tel. 03532/3266-0
Logistics Centre – Distribution	8850 Murau, Bahnhofviertel 12	Tel. 03532/44741
Tamsweg Depot	5580 Sauerfelder Straße 355	Tel. 06474/2226
Judenburg Depot	8750 Judenburg, Burggasse 126b	Tel. 03572/85344
Graz Depot	8020 Graz, Puchstraße 41	Tel. 0316/273373
St. Veit/Glan Depot	9300 St. Veit a. d. Glan, Transportstraße 4	Tel. 04212/72778



First EMAS certified plant in Austria

In 1993 we decided to compile a systematic analysis of weaknesses for the company with a PREPARE project.

The findings we gathered from this were a good starting point for all the subsequent environmental work and showed even at that stage that the brewery had good environmental status. In 1995 a quality management system was built up and we successfully achieved our great aim, namely active participation in the EMAS Regulation (Eco-Management and Audit Scheme). Together with STENUM GmbH Graz the environment management system was set up at the plant, for registration after assessment in December 2005 by ETA Umweltmanagement GmbH, to then be entered in the list of registered sites and organisations at the Austrian Federal Environment Agency (Umweltbundesamt) under no. A-000001 in February 1996. After the management system was awarded ISO standard 14001:1996, in December 1996, we successfully managed first certification with respect to this. In the meantime the two systems were combined. In 2001 the manual was converted to process-oriented, which in so doing was aligned with the new requirements of ISO 9000:2000 and those of the new EMAS II – EC Regulation No. 761/2001 of 19th March 2001 and extended to include the elements of the occupational health and safety and of the Austrian Hygiene Regulation (Hygieneverordnung).

Site

Murau Brewery is a business in a region whose economy is based on tourism and agriculture, set in the middle of an historical town with no significant industry. The Murau production plant is bordered to the south and west by the river Mur, to the north by the square called the Raffaltplatz and to the east by gardens and the Hotel zum Brauhaus.

For space reasons, the Logistics and Distributions Centre, opened in 2002 and constructed according to ecological principles, lies in the eastern suburbs of the town.





It is through talking that people come together: we overcome challenges together

Management system

Murau Brewery uses a management system to implement its quality and environment policy and the environment programme, which also incorporates the concerns of the occupational health and safety and the Austrian Hygiene Regulation.

Both managers are responsible for external communication.

The responsibilities, powers and mutual relations of all the employees are stipulated in job specifications, the management handbook, procedural instructions, operating instructions and in test instructions.

Particular attention is paid in this stipulation to the independence of those who work for the Operations Inspection Team and the Environment Protection Team within the organisation to allow them to

- ▶ order preventative measures
- ▶ ascertain and record environmental problems
- ▶ order problem solutions and demand implementation thereof
- ▶ monitor the effectiveness of problem solutions
- ▶ prevent damage to the environment and harm to consumers

Administrative management

The Board of Directors, in conjunction with the General Managers, is responsible for the decisions and resources required for implementation of environmental policy and the environmental programme.

In the Management Review the administrative management carries out regular inspection of the operation of the management system and checks whether the environmental targets set have been met.

The quality control and environmental policy is prescribed by the administrative management of the brewery.

Management representative

The management representative is responsible for maintaining the quality control and environment management system and for co-ordination of all the environmental activities in conjunction with the quality assurance representative. The role of the environment and waste representative also belongs here. His responsibilities include integration of the requirements under the terms of the Austrian Hygiene Regulation and the Austrian Act on Occupational Health and Safety (Arbeitnehmerinnenschutzgesetz) into the existing system.

Environment Team

The Environment Team is a multi-functional committee in charge of operational environmental protection at Murau Brewery. The committee currently consists of 12 people from all areas of the company's operations who are responsible for the



Our museum displays items from centuries of successful brewing

environment. The environmental representative acts as chairman of the committee. The purpose of the monthly Environment Team meeting is to look into all the environment-related problems in the brewery. Findings and decisions are recorded and passed on in the form of minutes to the members of the Environment Team and to the co-operative's Board of Directors and Supervisory Board.

The Environment Team inspects and coordinates environmental work, ensures the exchange of information required and is responsible in particular for devising and implementing environmental projects and training. The team is also responsible for strategic environmental planning and inspection of environmental work using a ratings system and audits.

Every six months the Environment Team holds an enlarged meeting of the operational health and safety committee with workers' representatives and safety experts.

Internal audits

The purpose of our internal environmental audits is to determine whether the management system introduced is operating as planned and whether the environmental targets have been reached. At the same time, however, it also determines what must be done to eliminate any failings determined and to achieve further improvements.

Internal audits or spontaneous recognition of deficient procedures are used as a basis for immediate introduction of corrective measures and stipulation of preventative measures.

The brewery's partner: Lebenshilfe

The Lebenshilfe organisation, an Austrian association which represents the interests of people with mental and multiple disabilities, has a home in the small town of Murau. And the people whom Lebenshilfe helps are now ongoing business partners of Murau Brewery! For instance residents from the Lebenshilfe home have a long-term contract to care for all the shrubs and grass areas around the Brewery and the Logistics Centre, which they do immaculately.

Make use of every day!

There is one drawback to investing in quality: hardly a day goes by without bringing with it some kind of innovation. But there is a plus side! You are always one of the leaders in your field, business thrives and customers demonstrate increased product loyalty.



Quality control and environmental policy

Murau Brewery recognises that it has environmental responsibilities towards the community and future generations.

Quality management and environmental protection are key elements of corporate policy at Murau Brewery, with our corporate strategy consisting of focus on the customer, flexibility and customer satisfaction.

Our aim is ongoing improvement of all processes and in terms of operational environmental protection in particular. As long as it makes economic sense, we use the best technology available to ensure that we can constantly upgrade our quality and environmental standards.

Our responsible handling of the environment is based on the undertaking to take heed of and comply with the constantly increasing number of laws, regulations and decrees relating to the environment.

Our motto is to "improve every day in every way" and so we are constantly striving to save energy and improve our procedures over the long-term, so as to prevent any environmental pollution.

Our primary aim with all purchasing, production and marketing is to avoid waste and emissions and to recycle or dispose of in the most environmentally-friendly way possible.

This involves doing everything we can to ensure that we use commodities of all types, in particular natural resources such as water, sparingly and with consideration. We always attempt to ensure that our suppliers share our aims of quality and precautionary environmental protection and the traceability of raw materials to the producer is of great concern to us. Murauer beer products must satisfy our customers' high quality requirements and environmental awareness and we therefore only use brewing materials from monitored agricultural sources with exacting ecological purchase requirements.

One of our particular concerns is to raise the sense of responsibility amongst all our employees for the high quality of our products, therefore encouraging them to act in an environmentally conscious way.

We are driving forward our campaign for working conditions which benefit our workers in terms of hygiene, and occupational health and safety whilst at the same time protecting the environment, thanks to the support of ongoing advanced training and courses in all areas.

The benchmarks of our information policy are transparency and accuracy in our ongoing communication with customers, employees, authorities and the public.

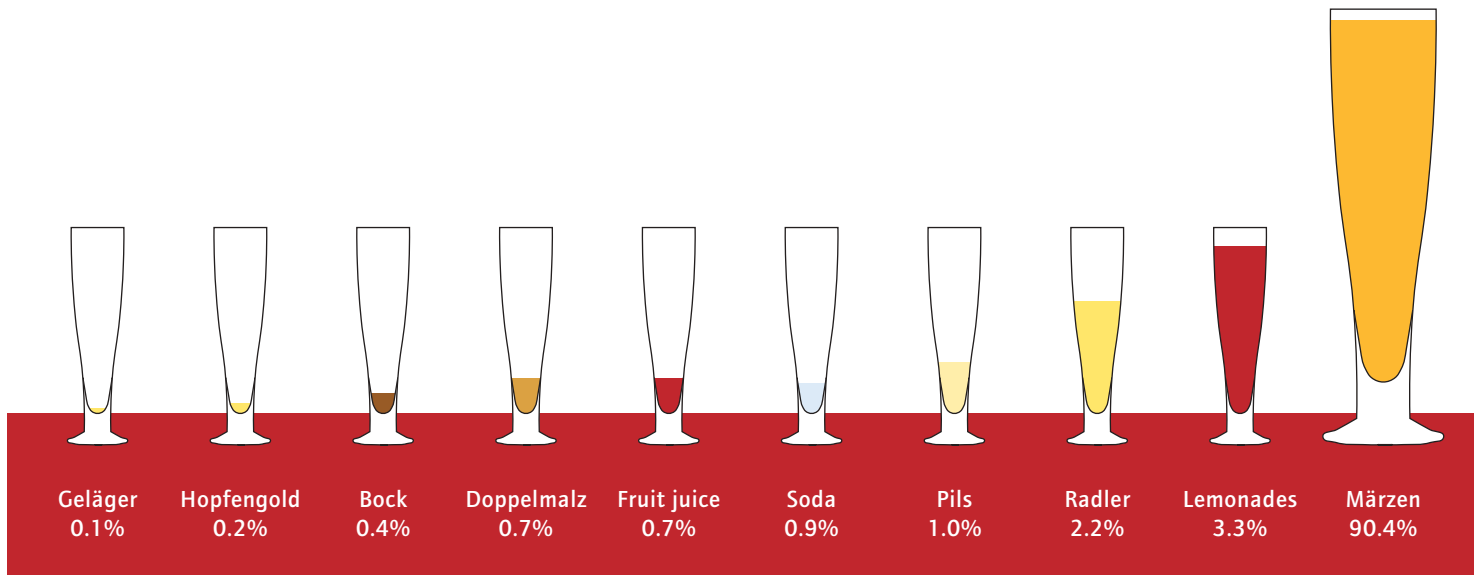
Under the terms of these principles of environmental policy, Erste Obermurtaler Brauereigenossenschaft reg.Gen.m.b.H. (the Board of Directors, the Management Team and the employees) undertakes to keep on improving operational environmental protection and developing implementation of the management systems introduced.

Flood assistance for landlords

No one could have guessed when the first few drops started to fall in early August 2002, that the rain would persist and increase in intensity and would still be falling seven days later. Streams and rivers became wild torrents and large tracts of Austria's two north-east provinces, Upper Austria and Lower Austria, were devastated. This was a natural catastrophe of diluvian proportions and people were killed and livelihoods destroyed. So it went without saying that Murau Brewery should set up a generous scheme to extend financial help to landlords and landladies who had been affected.

There's progress for you!

Erste Obermurtaler Brauereigenossenschaft is going from strength to strength.



Business development

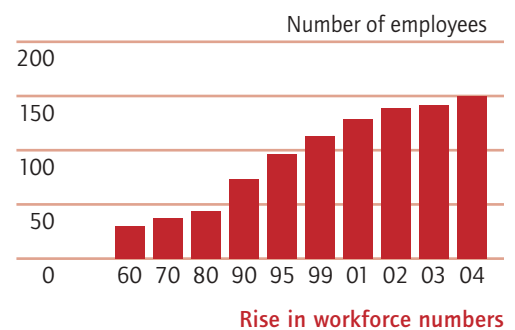
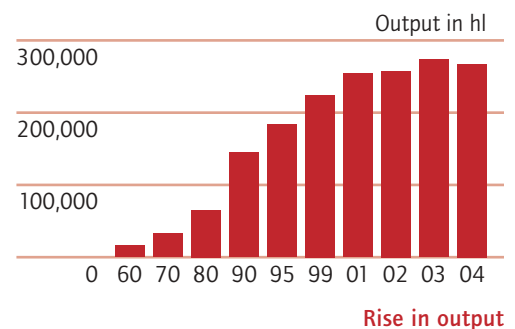
Although the total output in 1980 was still only 65,483 hl, there has been a constant rise in recent years. The figure in 1990 for example was 145,185 hl but by 2004 the total output had risen to 267,091.058 hl, with 67% sold by retail and 33% in pubs and restaurants.

Operating figures clearly show that Murau Brewery, despite the stagnating beer market in Austria, is enjoying a constant rise. Our range of beers are earning ever higher standing in Carinthia, Salzburg, Vienna, Lower Austria, Burgenland and even in northern Italy.

Our co-operative has successfully maintained a standard price band, contrary to the overall trend in Austria, in particular for bottled beer. This has therefore boosted the price-performance ratio.

Products

We have been guardians of good taste at Murau Brewery since 1495. The company's most popular beer is "Murauer Märzen", accounting for well over 90% of sales, followed by the exclusive, slightly bitter "Murauer Pils". Another favourite is the light, sweet-tasting "Murauer Doppelmalz". For special occasions there is "Murauer Hopfengold" and we brew "Murauer Bock" for Christmas time. Alcohol-free Murauer Radler (shandy) has developed into a particular favourite in recent years. The Brewery's popular range of lemonades is sold under the brand name "Murelli". We offer other top-class drinks to pubs and restaurants as commodities to round off our range.



Operational procedures

The environment first and foremost! All-natural raw materials, carefully selected auxiliary materials and fuels. An unrivalled environmental management system. "Simply the best" in the snappy jargon of the advertising trade.

Clean drinks

Thanks to our use of pure water, clean air, carefully selected raw materials, auxiliary materials and fuels and optimal procedural technology, we have made a simple drink into a benchmark for operational environmental protection. The ingredients in Murauer beer come from carefully monitored agricultural sources and, thanks to a comprehensive management system at the brewery, we are able to ensure that the actual brewing itself also proceeds with the lowest possible levels of environmental pollution.

Storage

Our storage facilities are arranged so as to allow practical access for the individual departments, whilst ensuring that the products are stored under protection, in accordance with regulations and in an environmentally friendly way.

The storage guidelines are also devised to prevent any negative impact on the environment. We perform daily inspections and spot checks to ensure compliance with storage guidelines and therefore guarantee storage safety.

Brewing malt and mills

The brewing malt and the hop products undergo special inspection on delivery and are stored in malt silos and coolers (hops) next to the brewing room. The malt is taken from the malt silos by elevator and screw-type conveyors, passing via the pre-cleaning machine on its way to the automatic scales and malt mill. From there the crushed malt is taken to the crushed malt box. Due to the increased levels of dust formation, there are special monitoring instructions for this area.

Brewing room – Wort production

Murau Brewery operates a 4-vat brewing room with connected heat recovery and an automatic CIP plant and wort cooling system.

A two-mash procedure is used.

After combining the two mashes and when the various saccharification temperatures have been reached, the whole mash is pumped into the straining vat and the lautering of the first wort begins.

The cake of draff is broken up and transported via the draff conveyor system to the draff silo. The first wort and the last runnings are pumped into the brew kettle and brought to the boil via an external heat source.

The whole wort is cooked using the vapour compression system. The finished hot wort remains in the copper and after removal of the hot sediment the wort cooling begins.

The wort is pumped over the varied cooler and is cooled to fermentation temperature using spring water and mixed with yeast and oxygen. The entire brewing room facilities and the wort cooling system and flotation tanks are cleaned using an automatic CIP system.

The measurement, control and monitoring device allows fully-automated mashing, lautering, wort boiling and wort cooling and cleaning of the entire system.

Fermentation and storage cellar

The brewery's fermentation and storage cellar has a capacity of 38,100 hectolitres. All the fermentation and storage tanks are equipped with cooling jackets, in which glycol circulates at -4 degrees Celsius helping to maintain the desired temperature.

All the cylindroconical fermenting tanks can be used as fermentation and storage tanks, whilst the storage tanks are only used for storage.

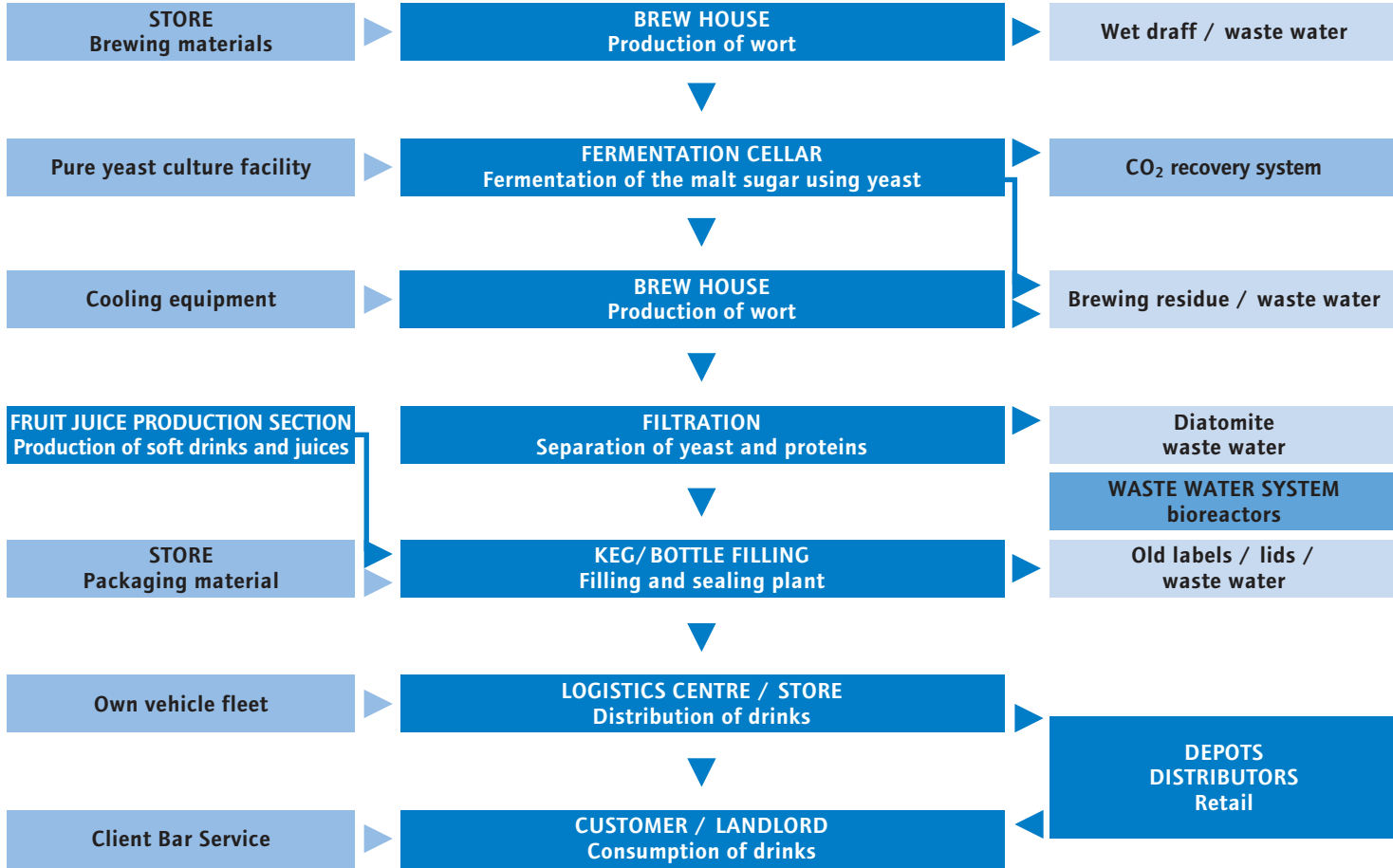




In the brewing room you develop the foundations for outstanding beer...



...and it is then stored and distributed



Production flow chart

Caring for clubs and associations

Murau Brewery is one of the main partners of clubs and associations and organisers of cultural events in the Murau region. At the same time, though, Murau Brewery does not splash out money on any old thing. One of the recipients of sponsorship, for instance, is the Murau regional Mountain Rescue and Nature Protection Team. After all, it is only right that an environmentally focused business should support these "environmental activists"!



Careful work going on in the filter cellar



The modern bottling plant...

Main and secondary fermentation

The yeast-enriched wort is transported from the preparation tanks to the cylindroconical fermenting tanks, where the main fermentation takes place. The yeast collects in the conical part of the containers at the end of the main fermentation and is re-collected.

After the main fermentation the green beer is pumped into cylindroconical fermenting tanks or storage tanks. The final fermentation and storage of the beer lasts at least 4 weeks. The beer becomes clear over this time. The carbon dioxide created by final fermentation combines with the beer. The excess fermentation carbon dioxide, depending on the level of purity, is channelled off to the separate CO₂ recovery systems for reuse. The beer stored here is now ready for filtration.

Yeast culturing and yeast cellar

The pure culture yeast is cultivated in the laboratory and is multiplied in the yeast culture device and added to the beer wort. If a strain exhibits outstanding properties, then it is kept to be used to create further pure cultures.

Filter cellar

The beer for filtration flows from the storage tank via the blending apparatus to the diatomite filter and on through the sheet filter, filtering the beer. The filtered beer is stored temporarily in pressure tanks or channelled straight to the bottling or barrel filling device.

Pressure tank cellar

The pressure tank cellar is used as a buffer (intermediate storage) between the filtration and bottling and barrel filling. Here the beer settles before bottling or barrel filling. This is the last stage of product clearance for bottling or barrel filling.

Soft drink production

The premix unit is used for production of soft drinks and fruit juices and all kinds of soft drinks with and without carbon dioxide (CO₂). It is also used for carbonating soda water.

The unit works according to the principle: water deaeration, dosage and carbonation of ready drink.

Because of the two components, water and syrup, are swirled together in the collector nozzle of the free-flowing jet, a homogeneously mixed product is created.

The finished drink is then filled directly into containers or via the bottling machine into bottles.

Dealcoholisation device

This device is used to remove alcohol from the finished beer.

The beer flows through the membrane capillaries from the bottom to the top in compact membrane areas, whilst the dialysate flows down past the membranes in the external chamber. Both media are channelled in counter flow, to achieve the greatest possible differences between the decreasing concentrations in the product and the increasing concentrations in the dialysate at all points. This allows the alcohol to migrate from the beer into the water flowing in the other direction.

The enriched dialysate enters the internal waste water unit and is processed into biogas via the bioreactors. The dealcoholised beer returns to the pressure tank cellar and from there is either processed with lemonade into alcohol-free shandies (Radler) or bottled directly in the bottling plant.





...the state-of-the-art, even...

Bottling and barrel-filling

Bottling

The Murau production plant boasts one of Europe's most modern bottling plants.

The bottled beer is taken from the pressure tanks to the fully automatic bottling machine. All the clean bottles coming from the modern double-ended bottle washing machine are inspected once again in the bottle inspector, filled in the bottling machine and then sealed with crown tops or screw-top caps.

The filled bottles are taken via the level measurer to the labelling machine, where they are fitted with labels.

After labelling the bottles are packed into freshly washed crates using the packing robot and stacked onto pallets. A total of 4 robots ensure optimal operation during loading up and moving the final pallet. Transportation to the outgoing goods store is performed using electric lift trucks.

Bottle cleaning machine

Bottle-cleaning water generally constitutes a significant proportion of the total pollution from breweries.

This pollution is caused by different gluing methods, glue types and paper types, packaging and the standing times of the lye. One of the problems is posed by the often luxurious printwork of the labels and the other accoutrements of the beer bottle (metal foil) which can lead to heavy metal pollution in the waste water.

Murau Brewery only uses printing colours on its labels which are free of all heavy metals and it no longer uses any metal foils. The frequent problem of scale or deposits of calcium salts and magnesium salts in bottle washing machines is prevented by adding chelating agents and softeners to the rinsing solutions.

Keg filling:

The beer for keg filling comes from the pressure tanks and is filled into the pre-cleaned kegs under CO₂ atmosphere. The entire cleaning and filling plant is fully automated. Maintenance-free conveyors and 2 robots are used for handling the sheathed, low-noise, stainless-steel kegs.

Upkeep and maintenance

An internal workshop has been set up for the electronic and mechanical maintenance and repairs to equipment, machinery and vehicles. The bar service and construction of bar equipment is also carried out here.

The maintenance of plants, machinery and vehicles is regulated by means of a legal safety programme, laying down inspection obligations. Maintenance work is performed for the most part by the company's own employees. Vehicle maintenance is contracted out.



...people are assisted by robots

Client Bar Service

One of the services Murau Brewery provides is a care service for landlords. The aim of a properly functioning bar service is not only to support landlords in meeting the requirements laid down under the Austrian Beverage Dispensing Equipment Regulation (Schankanlagenverordnung), but in particular to maintain the quality of a high-class product right the way to the customer or into the glass. In addition to the daily and weekly cleaning required by the landlord, the brewery offers regular cleaning by qualified personnel as a service for our landlords (a maximum of every 3 months).

In addition to providing support for bar equipment, the Client Bar Service is also responsible for the assembly of bar equipment and advertising facilities.

Operations Inspection Team

The Operations Inspection Team is the company's police force. It checks that all the parameters, recipes and targets set are being observed, from manufacture right the way to the finished product, constantly ensuring maintenance of the high standards of quality of our products.

Inspections extend to the entire production process, including raw materials and water analyses, monitoring test devices and analysing beer returned.

Social fund for employees

On Christmas Eve 2003, Simon Güttersberger was driving home from work at Murau Brewery when he was killed in a car accident. This sad event prompted Murau Brewery, the Work's Councils and the Board of Directors to act together to set up a social fund, which now supports surviving dependants. The social fund also provided support to employees who suffered losses in 2004 following the heavy storms.



Distribution by modern truck



Delivered by committed employees

The Operations Inspection Team is also responsible for inspection of incoming goods for certain materials and raw materials. The Operations Inspection Team also approves production stages in conjunction with the Technical Manager.

The Operations Inspection Team is equipped with the necessary testing facilities and testing devices.

Product safety

The Operations Inspection Team monitors the individual production stages using step-by-step inspection. One of the Operations Inspection Team's other responsibilities is guaranteed quality of the products.

Inspection of quality and subsequent approval of the beer is performed, at the latest, in the pressure tank cellar. Other means of ensuring product safety are the bottle inspection machine, fill-level inspection and the short-time heater. In the unlikely event of justified claims arising on the market or from customers, the return specifications and claim handling are precisely regulated.

DISTRIBUTION OF DRINKS

GetränkervertriebsgesmbH, the 100 % subsidiary of Erste Obermurtaler Brauereigenossenschaft reg.Gen.m.b.H., is in charge of distributing drinks for Murau Brewery.

To meet customer requirements, GetränkervertriebsgesmbH not only distributes

Murau Brewery's own products, but also a large number of top-class drinks (mineral water, wheat beer, fruit juices, Coca-Cola, etc.) made by other manufacturers. The aim is to meet all customer requirements as a single supplier, thereby also offering logistical advantages.

Logistics Centre

In 2002 Murau Brewery proudly brought into operation the new Logistics Centre. It was built in accordance with ecological principles with a wooden frame and cross laminated timber panels from the region. The building is heated using long-distance heating from biomass. The building was constructed by local companies. The relocation of the vehicle fleet has freed up the traffic in the town centre and solved the space problems at the production site.

In principle all finished products produced by Murau Brewery and externally produced drinks are stored in the GetränkervertriebsgesmbH Logistics Centre in Murau or in the depots. The goods are stacked onto different pallets according to type, to ensure smooth handling by fork-lift or pallet truck. In order to ensure the quality of the products up until delivery to the customer or to the depot, the company's internal storage guidelines are to be applied. Major emphasis is placed on protecting the goods from direct sunlight, dust, extreme cold and heat.

The company's vehicle fleet

One of the brewery's major concerns is to provide the best possible levels of customer care and on-site delivery. Deliveries to depots and customers are carried out using the company's vehicle fleet, from the Murau production site to the Murau Logistics Centre or to the depots and distributors.

The company fleet consists of a total of 44 trucks and articulated vehicles.

Deliveries to the customer from the individual warehouses are performed by the company's own drivers, with the help of an electronic clearing system. In order to minimise noise pollution we only buy low-noise trucks.

SECONDARY STRUCTURES

Refrigeration plants

The fully-automated refrigeration plants work using direct vapour. Glycol, which is used for cooling the cylindroconical fermenting tanks and storage tanks, is cooled using ammonia or dichlorodifluoromethane to minus 4 degrees and is pumped through the cooling jackets of the cylindroconical fermentation and storage tanks. The requirements of both cooling systems are co-ordinated using a heat exchanger. The quantities of ammonia used are below 500 kg and therefore fall within the limits permitted under the Austrian Statutory Order on Hazardous Incidents (Störfallverordnung).

Sport needs support

Murau Brewery is constantly involved in sporting events as a major regional sponsor. An example of this was the Ski Cross World Cup in 2005 on the Kreischberg. Murauer beer also sponsors outstanding individual athletes and we are committed to regional football clubs and are even willing to lend support to fun tournaments every now and then, for example when the company is pitted against the Schwarzenberg Estate in our traditional curling match.



Central points in the company: testing laboratory and heat generating plant

Safety: chemicals store

The "ammonia leak" emergency plan stipulates the contingency measures to be taken here in the event of abnormal operations. We have converted to more environmentally friendly alternatives for all the coolants we use. The refrigeration plants are constantly monitored by our employees.

Chemicals store

We store two weeks' worth of stock of the cleaning agents, disinfectants and neutralisers required in drain pans in the central chemicals store. The liquid caustic soda lye (50%) is stored temporarily in a storage tank with a capacity of 16 m³ and is pumped from there straight to the bottle washing machine, the cleaning unit in the keg-filling plant, the neutralisation station at the waste water pre-treatment plant and all the CIP cleaning units. The chemicals store is sealed and protected with a fire door to prevent unauthorised access.

From here all the agents are automatically distributed to the intake points by meters and pumps.

The intake points are marked with product sheets. Generally-speaking only reusable packaging is used. Great strides have been made in terms of occupational health and safety in the chemicals store through direct integration of the individual fully automatic CIP systems and their chemical intake points.

CIP systems

All the CIP systems (CIP= Cleaning In Place) are fully automated.

The systems allow settings down to the nearest second and therefore enable precise dosage, efficiency co-ordination, reduced fresh water consumption and minimal use of cleaning agents. The lyes and acids used are stored and reused. Removal from storage is performed via direct pipes from the where the agents are kept in the chemicals store.

Air-compressors

The brewery has oil-free compressors for producing sterile air and compressed air. The main consumers of compressed air are the large number of pneumatic valves in the brewing room and bottling plants. The sterile air is used for wort aeration and to aid in bottling. Compressed air leakage inspections and a new buffer tank have allowed reduction of the working pressure and consumption has been brought down by 40% in comparison with the figures for 1999.

Heating boiler

This boiler with its combined fuel burner (extra-light heating oil and biogas) is used for supplying heat for room heating and the heating requirements of the bioreactors of the operational waste water pre-treatment system (BARA).

Since 1999 the plant has been operating on extra-light heating oil and the biogas accumulating from the bioreactors.

Steam boiler unit

The plant's steam boiler unit is used for the production of process steam (8 bar) and is operated by light low-sulphur heating oil "Schwechat 20002". Process steam is used above all for steaming product pipes and bottling plants, for the bottle washing machine, for the container washer, for the hot water tank, for the CIP systems, in the brewing room and for the short-time heater.

The unit is monitored using a system operated without constant supervision and is inspected every day. Emissions testing is performed constantly in accordance with the inspection findings.



Murauer beers and soft drinks



Murauer Märzen

The real "star" in Murau Brewery's range of beers is Märzen, the beer which is drunk most over the course of the year. Märzen is a balanced malty beer with an original wort gravity of 12.2°, an alcohol content of 5.2 % vol. and provides 450 kcal/l.



Murauer Pils

Murauer Pils is a lovely, refreshing herbal beer with an alcohol content of 5.1 % vol., an original wort gravity of 12.2°, and provides 450 kcal/l. Because of its refined, slightly bitter flavour, Murauer Pils is ideal as an aperitif and as an accompaniment to light meals.



Murauer Hopfengold

Hopfengold is a wholehearted, fruity Vollbier with an alcohol content of 5.7 % vol., an original wort gravity of 13.4°, and provides 520 kcal/l. Hopfengold is ideal for more substantial meals and offers an alternative somewhere between Bock and Pils.



Murauer Doppelmalz

This is a 13-degree dark beer, brewed in the Munich style. Because of its low final fermentation level, Doppelmalz contains proportionately less alcohol and is best suited for mixing with pale types of beer. This dark, sweet, full-bodied beer has an alcohol content of 5.4 % vol. and provides 500 kcal/l.



Murauer Bock

This is a delicious, heavy, full-bodied beer with an alcohol content of 7.3 % vol. and an original wort gravity of 16.4° and provides 600 kcal/l.



Murauer Radler Zitrone

This highly popular shandy with a hint of lemon only provides 280 kcal/l with an alcohol content of just 2.9 % vol., so it can also be classified as a refreshing fitness drink. We should also mention here that the lemonade in this shandy is manufactured using artificial sweeteners (sugar replacement).



Murauer Radler alkoholfrei

An alcohol-free shandy made of 60% alcohol-free beer and 40% herbal lemonade. The special combination of (alcohol-free) beer and lemonade means that this drink provides special refreshment at no more than 320 kcal/l.

Murelli soft drinks

Murau is not just a by-word for top-quality beer: we also make outstanding soft drinks! We produce an extensive range of soft drinks and juices with a large, mostly young fanbase! And something else which goes to make our range special is that apple juice from Murau, for instance, is made only using apples from our home region of Styria.





Werner Meissnitzer
Member of the Environment Team

What working at Murau Brewery means to me!

It is difficult to find work in the Murau region: over 60% of people here have to commute to work out of the area. So working in a local business means even more to every single one of us. Everyone would like to have such a good place to work as we have here at Murau Brewery. So we live for the company and we get a pretty decent living from working in the brewery as well.



Karl Galler
Chairman of the Workers' Council

A caring working environment!

The company has always made time to listen to workers' concerns, so the Workers' Council has a good relationship with the management. It works both ways: if the workers are happy then the company will be successful. So we are confident that Murau Brewery's will continue to provide a caring working environment for the workers in the future as well.



Councillor Dr. Wolfgang Thierrichter
District Commissioner

Murau Brewery is leading the way in caring for the environment!

The brewery is one of the biggest employers in the region but acts as an example of eco-sensitive business management. The brewery is also the first company in Styria to successfully gain certification for its procedures under the Austrian Environment Management Act!
In other words all the company's equipment has been approved.



Karl Hager
Chairman of Bioregion Murau

Our Bioregion and the brewery

Bioregion Murau forms part of our day-to-day identity. Thanks to its excellent policy tackling environmental problems, Murau Brewery is one of the stalwarts of our energy plan! Under the terms of this energy plan, we intend to stop heating using heating oil from 2015, even in industrial and commercial enterprises! For more details log onto www.bioregionmurau.at!



Herbert Bacher
Mayor of Murau

The significance of this business for our town and for the region

Murau Brewery has developed into part of our town, and therefore also part of the region! It provides more than 150 jobs, and has been a successful business for many decades. It is a shining example of how a business should be run. And then to add to that you have got the delicious products they make, which play such a major part in making Murau a wonderful place to live!



Barbara Huber
Lives next door to Murau Brewery

The aroma of the beer does you good

Even back when I was young and above all in the school holidays, I used to spend a lot of time near the brewery. I could not help it – I love Murauer beer and I also love the wonderful aromas of wort and hops, which are such a typical feature of this brewery and every now and then envelop Murau's old town centre. The brewery also represents a very important business for the town and the region.

Sponsoring disabled sport

In 2002, the Special Olympics made a guest appearance in Lungau in the Skidorado ski-area near Salzburg. In 2005 Lungau is holding International Cross-Country Skiing for the disabled. These two major sporting events bring the disabled and able-bodied people closer together and each event demands exceptional motivation and represents a challenge for the participants. Murauer beer sponsored both these events for the disabled.

Focus on the environment

For a decade now, Murau Brewery has been investing a great deal of positive energy and material resources into the environment. We are keeping our noses clean!



Waste water is carefully treated



The brewery and water: only a bit of water for consumption is taken from the town's springs

Waste water treatment plant

The brewery channels its waste water indirectly into the waste water network administered by Murau's Water Pollution Control Association and consequently it uses its own waste water pre-treatment plant to reduce pollution and neutralise the waste water. The anaerobic waste water pre-treatment plant with its four bioreactors cleans the brewery's production waste water by organic means using an anaerobic procedure, whereby the methane bacteria create usable biogas from the contents of the waste water. The aim of treatment and the task of this plant is to maintain the limits set in terms of pH-value, COD, temperature and quantity and the drastic reduction of the waste water pollution into the public drainage system from currently over 66% of the total output of the brewery's waste water.

Solids (e.g. draff residue) are removed from the waste water by means of a filter station before the bioreactors. In order to meet the pH-values (alkaline waste water), a neutralisation plant is used, with preliminary acidification performed in the two large collection tanks. The pre-treated waste water flowing into the public drainage system is constantly inspected and logged by means of an automatic measurement section, to ensure that it complies with the limits set.

DIRECT ENVIRONMENTAL ASPECTS

Energy savings in kWh

All the measures implemented to reduce the consumption of energy for the production of beer and alcohol-free drinks have led to significant successes. For instance the consumption of energy for the production of one hectolitre of the company's own drink fell from 48.40 kWh in 1998 to 40.15 kWh in 2004. In the area of superheated steam in particular, output fell by 15% per hl and the power consumption was reduced by 12% over the period from 1998 to 2004. The European average is 60 kWh per hl of the company's own drink produced.

In mid 2003 a biogas meter (m³) was installed in the heat burner. Regular readings could now produce more exact values and this allowed correction of the values calculated over recent years.

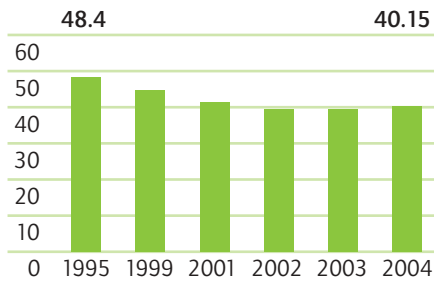
Electrical energy

The brewery's power is supplied by Murau public utilities. Power is supplied on the basis of an up-to-date power supply contract, which also covers the Logistics Centre and Murau Brewery's depots.

There is a large amount of equipment consuming electricity within the brewery. The largest and most important are the refrigeration plant compressors, the compressed air compressors, the various machines in the filling room and the equipment in the brewing room with the vapour compressor.

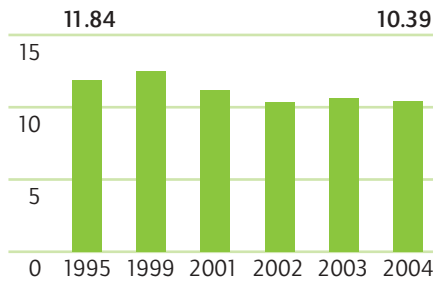


Consumption in kWh per hl of drink produced



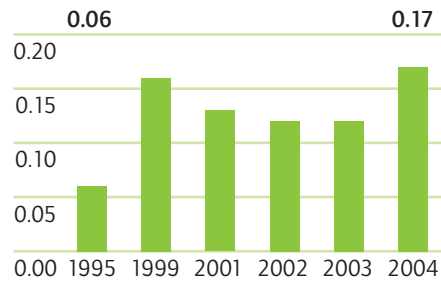
Total energy consumption

Demand in kWh/hl of own drink produced



Total power consumption

Accrual in m³/hl of waste water



Biogas accrual from bioreactors

Murau Brewery has facilities for pollution management. Ongoing background processes, such as the refrigeration plant condensers for example, can if required be withdrawn from the network in the short term. There are also facilities for idle current compensation.

We have managed here to reduce the consumption from 12.73 kWh/hl of own drink in 1998 to 10.39 kWh/hl of own drink today. The greatest savings in comparison with 1999 have been achieved through the new state-of-the-art refrigeration plant (-33.4%), the largest electricity consumer in the brewery with a current figure of 2.61 kWh/hl of own drink, in the fermentation and storage cellar area (-48.8%), the air compressors (-37.7%) and in the brewing room (-14%).

The new state-of-the-art ventilation system supplies the bottling and barrel-filling section. Because of the average of 0.5 kWh of power consumption per hl of own drink, this was responsible for the rise in total power consumption for 2003.

Energy from waste water

The biogas accumulating in the anaerobic bioreactors is converted in the boiler to generate room heat. In the combined fuel burner, extra-light heating oil is only burned as an alternative when there is no biogas. This has enabled savings of some 236,000 kg of extra-light heating oil since 1999. Because there is always a surplus of biogas in the summer months, alternatives are currently being sought, since the "biogas cooling" project could not be implemented to this extent.

A heat exchanger has also been installed in the waste water, to be able to reuse the waste heat at times for the reactor heat requirements.

Process steam and room heat

The steam boiler unit is operated using Schwechat 2000 heating oil and is fully-automated. The main savings in heating oil have been recorded through the insulation of the steam pipes. This has allowed a reduction in steam consumption or in the Schwechat 2000 heating oil used of almost 15% in comparison with 1995.

The conversion of the combined fuel burner to extra-light heating oil has brought about a reduction in the already low emissions. Since the biogas accumulating from the biogenic waste water treatment plant can be burned in the combined fuel burner, 76% less extra-light heating oil was consumed in comparison with 1995 and virtually no biogas had to be burned off.



Tanks for cold and hot water

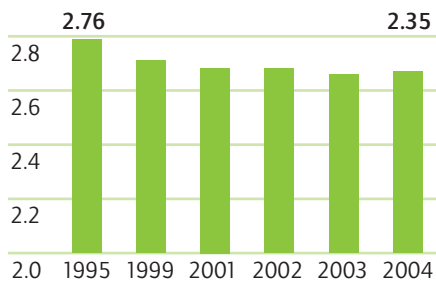


3 brewery wells from which all the water for production is taken.

Promoting young sporting talent

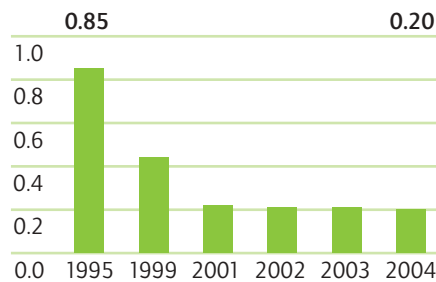
Murau Brewery pinpoints young sporting talent from the Murau region to sponsor. The latest example is 17 year-old Matthias Feuchtnner from Ranten, a graduate of Murau's Sports Secondary School and Schladming's Sports College of Skiing and Commerce and a member of the Austrian Skiing Federation's junior squad. Matthias currently holds the gold medal from the unofficial Junior World Championships in Italy and he is also Austrian school champion at slalom!

Heating oil required for steam boilers in kg/hl of own drink produced



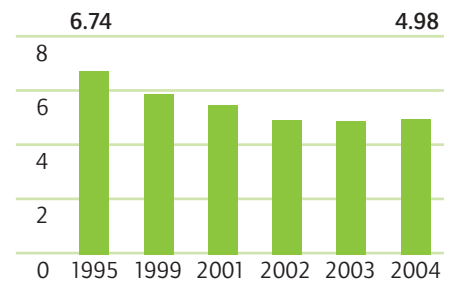
Falling heating oil demand for steam...

Heating boiler demand kg/hl of own drink produced



... and heat

Fresh water demand in hl/hl of own drink produced



Careful handling of fresh water



Cold water distributor

Fresh water supply

The fresh water supply for brewing water is taken exclusively from the brewery's own brewery wells and is ideal for beer production at a hardness of 6–7°. The water for consumption is drawn from Murau's public water supply.

The central water supply is guaranteed through a cold water tank and a hot water tank. Removal and distribution are controlled via frequency-controlled pressure increase pumps. Water meters are installed for each compartment and these are read and evaluated every month.

The main consumer of fresh water is the brewing room with 2.24 hl/hl of own drink, with a large proportion going into the product, but a large amount of water is also required for the cleaning processes after each brewing (0.65 hl/hl of own drink). The next biggest fresh water consumers are the fermentation and storage cellar (0.63 hl/hl of own drink) and the other CIP systems (0.48 hl/hl of own drink) and the bottle washing machine with 0.075 hl/hl of own drink produced. For hot water only 0.32 hl/hl of own drink have to be used because of heat recovery (e.g. wort cooling).

A large number of small steps have been implemented with regard to fresh water to bring about a considerable reduction in fresh water consumption from 6.74 hl/hl of own drink produced to 4.98 hl/hl of own drink produced.

The main potential for savings in comparison with 1999 was in the storage cellar through automation of the CIP system with – 27.2%. We also achieved a 15.2% reduction from the brewing room systems and a 50% reduction in the barrel washer consumption. The fresh water injection for the bottle washing machine had to be increased by 53% in comparison with 1999.

Waste water accrual

The many accompanying materials of beer manufacture form as solid-liquid mixtures, which can only be fractioned through the corresponding separation measures. Despite the constant rise in output over recent years, it has been possible through targeted measures (e.g. fresh water savings) to reduce the quantity of waste water by 31.7 % in comparison with 1995 (see environment figures).

It has also proved possible to achieve a considerable reduction in the extent of pollution thanks to in-house measures, such as almost complete removal of brewing residue and low COD (Chemical Oxygen Demand) chain lubricants. Above all we have also managed to make complete use of the semi-solid Kieselgur mineral silt, which accumulates upon filtration, as a form of agricultural composting.

Increased pollution in waste water often results from a non-optimal solid/liquid phase separation. The fluctuations of the BOD5-values and of the pH-values result from the various cleaning processes and various CIP systems. The COD-depletion in 2004 was almost 66%. The extent of pollution introduced into the communal waste water system corresponds to an average value of some 3770 REU a day. With two large collecting tanks these fluctuations are balanced out, whereby through the pre-acidification savings of over 17% in neutralisers can be made as well.

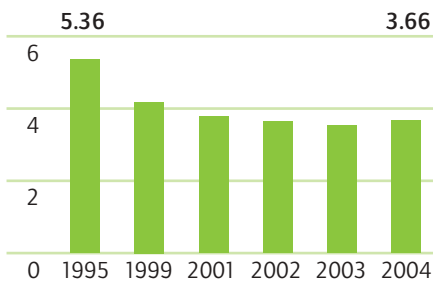
Ordinance on discharge of waste water

In September 1999 Murau Brewery concluded a written agreement with the Municipality of Murau in accordance with the Ordinance on discharge of waste water into public wastewater-treatment installations (Indirekteinleiterverordnung BGBl. II no. 222/1998). According to this, the discharge into the public wastewater-treatment installations of the operating pre-treated waste water to a maximum extent which will be 8000 REU COD 120 is guaranteed in the future as well.

Sporty employees

Murau Brewery's employees are showing that they are keen on sports! We have a company football tournament, a 24-hour charity bike ride, running events such as the Vienna City Marathon and the Murau Town Run. And nothing can be held without Murauer beer! The positive to come out of it is that employees who regularly take part in sport are also more active and more vital in the company. And thanks to their successes and activities they act as an example and motivate those who are less agile to get involved in something for their personal fitness!

Accrual waste water in hl/hl of own drink produced



Less waste water in terms of production

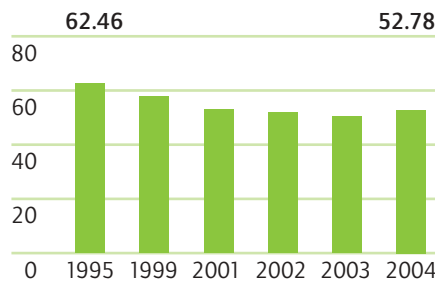
Emissions into the air

Murau Brewery with its boiler plants, (2.6 MW and 510 kW) is not subject to the Emission Trading Directive (Emissionszertifikatgesetz BGBL. I. no. 46/2004). Despite a rise in production of over 27% in the last 7 years, the total emissions from boilers and steam boilers have only risen by 7.3% to 13,864,701 kg.

We have managed to achieve significant reductions in emissions into the air (CO, CO₂, dust and SO₂) in recent years through the major savings in heating oil in terms of superheated steam. The steam boiler unit is checked every year by accredited testing and maintenance authorities and emission tests are performed every three years as stipulated in the decree, whereby the readings are far below the prescribed limits.

Through the implementation of the biogas project and through the conversion from light heating oil to methane gas (biogas) or extra-light heating oil with a combined fuel burner for room and reactor heat, it has been possible to achieve reductions in emissions here as well. As an additional safety factor the accumulating biogas can be flared on demand. Also with the heat boiler the pollutants are determined every year through emissions testing and there come under the prescribed limits. Through the loss of the heat exchanger in the waste water there was a rise in heat requirements for the bioreactors in 2004, which it was possible to balance out however through the increased biogas accrual. Unfortunately though, this led to an increase in emissions from the heating boilers, exactly as through the increase in heat-

Emissions from heating plants kg/hl of own drink produced



Constant optimisation of emissions

ing oil consumption with the steam boiler also unfortunately led to a rise in emissions from the heating systems.

Brüden brewing room:

The vapours resulting from the cooking of wort are condensed in the vapour compressor (heat recovery) and the condensates are channelled off to the waste water system. The exhaust over the roof is harmless steam.

Fermentation carbon dioxide (CO₂)

The carbon dioxide released during the main fermentation is largely purified and liquefied. The liquefied carbon dioxide is stored in the meantime in CO₂-storage tanks and is converted on demand into gaseous carbon dioxide via a vaporiser and channelled off to the consumption points. In this way it was possible in 2004 to recover from approx. 621,225 kg of fermentation carbon dioxide 465,485 kg of CO₂ or 75% and reintroduce it into production.

Smell

In principle the brewery is a low-smell plant. The anaerobic waste water system is a closed system. If smells emerge from the public drainage system, these are reduced using the heavy post-ventilation available and an in-built bio filter. In order to prevent post-fermentation of brewery waste waters in the public drainage system, the still-warm waste water is mixed with the cold waters of the river.

Any smells which might emerge when cooking mash and when removing draff are pleasant and hardly noticeable.

Waste water treatment

Parameters	Readings	Limits
Temperature	°C 33.4	35
pH-value	8.35	6.5–9.5
Copper	mg/l 0.014	0.5
Zinc	mg/l 0.05	2.0
BOD ₅	mg/l 560	n.d.
COD	mg/l 1054	n.d.
Kjeldahl-N	mg/l 83.1	n.d.
NO ₃ -N	mg/l 0.4	n.d.
Total Nitrogen-N	mg/l 83.5	n.d.
Total PO ₄ -P	mg/l 22.4	n.d.
AO _x	mg/l 0.01	0.5
Hydrocarbons (HC)	mg/l 0.35	20

Analytical findings and expert report dated 20/12/2004. Österreichisches Getränkeinstitut, Vienna

Steam boiler

Material	Readings mg/Nm ³	Limits mg/Nm ³
CO emissions	8	175
Dust emissions	6	50
SO ₂ emissions	220	n.d.
NO _x	425	450

Emissions testing of steam boiler dated 8/3/2005 by Dr. DI techn. Gerhard Fleischhacker. Measurements relative to 273K, 1013mbar and 3% O₂ oxygen

Combined fuel burner

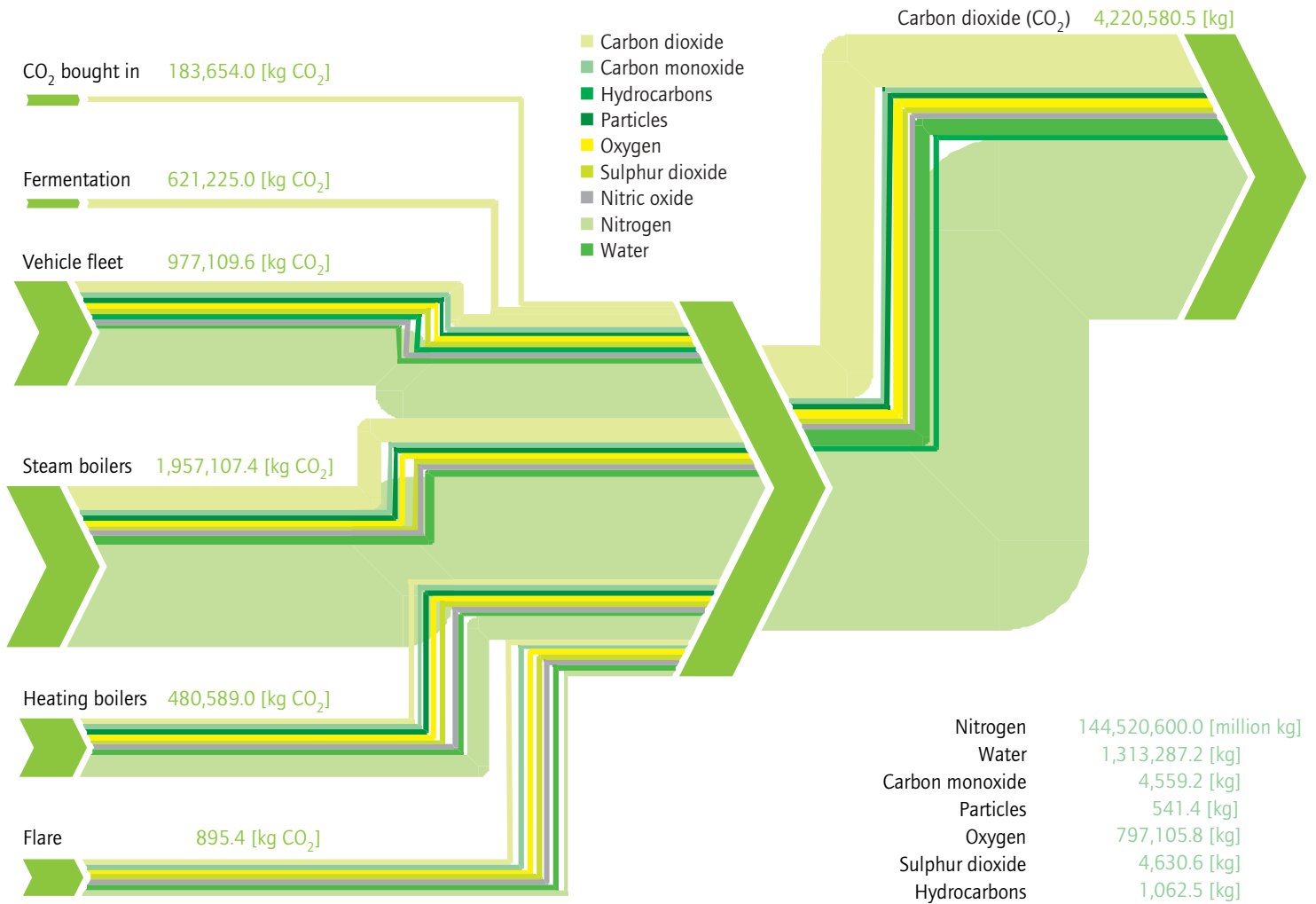
Material	Reading Biogas mg/m ³	Reading Heating oil EL mg/m ³	Limit lt. FAV mg/m ³
Carbon monoxide (CO)	30	16	100
Nitrogen monoxide (NO)	44	76	n.d.
Nitrogen oxide (NO _x)	71	123	150

Emissions testing of combined fuel boiler dated 9th March 2004. Measurement relative to 3% O₂ oxygen, performed by Weißhaupt, 9300 St. Veit/Glan

n.d. – not determined



ENVIRONMENTAL ASPECTS



2004: Emissions breakdown for Murau Brewery

EMISSIONS INTO THE AIR

The brewery also evaluates the material flows using Sankey diagrams. Because of the major relevance of the CO₂ debate this shows gaseous emissions.

Soil

In order to prevent any soil pollution, all the lay-down areas, storage areas, loading areas and garaging are sealed and reinforced as standard. The drainage system has been certified as leak-proof by an authorised company. The loading path at the Logistics Centre is equipped with an oil trap. All items stored in the brewery which are environmentally relevant are inspected every day with a checklist.

An over-ground stainless steel drainage system has been installed in the brewing room to protect the soil. This allows visual inspection of the waste water system for leaks.

Cleaning agents

For hygiene and product quality reasons, any residues and micro-organisms left on the production equipment must be cleaned using detergents and disinfectants.

Consequently when choosing the quantity used and the products used, a compromise must always be sought between cleaning efficiency and the interests of the environment.

- ▶ Alkalis: for example caustic soda lye, polyphosphates and silicates to remove organic dirt. They also emulsify, dissolve proteins and kill some bacteria.
- ▶ Acids: mainly to remove mineral deposits (e.g. beer stone), because these sorts of deposits do not dissolve in alkaline cleaning agents. 1.0% saltpeter acid is the most frequently used.

Wood and beer – that's what I like to see

"Wood is our cup of tea" was the slogan created by Murau's Regional Exhibition Office in 1994, when Murau Brewery was the main sponsor of the "Holzzeit" regional exhibition. As we attempt to maintain continuity (and sustainability) to this day Murau Brewery remains sponsor of wood-related events in the Murau region. These include supporting the Holzstraßenlauf, a run through the Styrian countryside along the Holzstraße, and sponsoring Murau's annual wooden window conferences.

- ▶ **Tensides:** in order to reduce the interfacial tension of aqueous solutions so that the dirt particles are wetter and can therefore be removed.
- ▶ **Disinfectants:** the microbiocidal effect of disinfectants has special importance in breweries, because on the one hand targeted yeast multiplication is required, whilst on the other hand an increase of micro-organisms (yeasts) outside the fermentation vat or yeast culture facility must be avoided.

Acid disinfectants are used on the basis of hydrogen peroxide and peracetic acid.

The increases in the quantities were caused by conversion from caustic soda (100% lye in solid flakes) to 50% liquid lye from 2000.

Although no further improvements were possible in the use of detergents and disinfectants in 2004 (0.791 kg/hl of own drink produced) in comparison with 2001 (0.781 kg/hl of own drink produced), better agents were found from an ecological point of view, such as mercury-free caustic soda lye, and we are well on the way to achieving improvements in terms of quantity again in 2005.

Since all the dosing equipment has been moved to the chemicals store, the handling of cleaning agents has been considerably simplified.

Noise control

We have managed constant reductions in noise levels in the bottling hall (where hearing protection must be worn) in recent years. A noise reduction of 13 dB(A) was possible in the high blow-off noise at the bottle inspector thanks to the new bottle inspection machine. There is also a sound-proofed ceiling. All our employees here have been equipped with appropriate hearing protection. The glideliners also reduce the impact noise in the bottling facility because the bottles are brought together without any pressure.

We have therefore managed to reduce the peak noise level on the bottle conveyor in front of the filler by 9 dB(A). The noise level on the outside (east) of the bottling hall is 60.0 dB(A). The prevailing noise here is the noise of the river Mur flowing past, which was 70.0 dB(A) when last measured.

Waste management

A corresponding waste logistics system has been set up in the brewery for the due disposal of hazardous and non-hazardous waste.

Separate collection of waste is provided through collecting tanks which are positioned in all areas of the site in a way facilitating the logistics of collection.

Contracts have been concluded with waste disposal companies for all the different types of waste and these companies collect the waste from the site and dispose of it professionally. Training courses are used to ensure that all our employees are familiar with disposing of waste in the correct container on site.

99.5% of all solid waste accumulated is recycled. Mixed domestic waste (rubbish) has been reduced by 43% since 1997 through proper separation and this type of waste now only constitutes 0.3% of the total waste. There have been slight increases in recycled materials in all areas in comparison with 2001.

There have only been major fluctuations in recent years in the case of broken glass because of bottle changes.

95.6% of the waste accumulating is biogenic waste. Wet draff is distributed to agriculture.

Spent kieselguhr and brewing residue are composted for agriculture as are the screenings, which primarily consist of draff residue. Hazardous waste comprises only 0.1% of the entire waste accrued and this is duly disposed of using the appropriate collecting tanks under the terms of a waste disposal contract. Thanks to weighing all the skips upon collection, there has been a considerable improvement in the values recorded. There are fluctuations every now and then because of the irregular build-up of fork-lift batteries and cooling appliances.

Usage in kg/hl of own drink produced



Use of cleaning agents

Noise

Production noise inside	dB(A)
Bottling hall in operation inside	85.0
Keg filling facility in operation	84.0
Filtration room	75.0
Noise level measurements outside dB(A)	
Waste water system outside	62.0
Bottling hall east	60.0
Flow of Mur river waters south	70.0

Measurements 27/ 5/ 2004
Safety expert DI N. Moschini

Waste HAZARDOUS

52725	Aqueous concentrates	855 kg
57124	Ion exchange resins	160 kg
55205	Refrigerators	1,900 kg
55502	Residual paint	16 kg
54930	Heavy fuel oil	88 kg
59305	Residual chemicals	21 kg
35322	Fork-lift batteries	1,691 kg
35326	Neon tubes	60 units
54102	Waste oil	620 kg
35202	Electronic scrap	650 kg
55370	Solvent mixtures	17 kg
52403	Ammonia solution	610 kg

Serial number – according to Önorm S 2100 Waste Catalogue

Volume of waste 2004

Wet draff	91.79%
Mixed domestic waste	0.30%
Cartons/paper	0.30%
Plastics	0.10%
Used labels	1.10%
Metals	0.20%
Broken glass	2.20%
Special waste	0.10%
Brewing residue	2.40%
Spent Kieselguhr	1.50%





On-site checking in the "Hopfenlandl", the local hop-growing country



Best grain for the malt

INDIRECT ENVIRONMENTAL ASPECTS

Indirect environmental impacts are also an important concern for Murau Brewery. We try to use our own internal capacity to analyse purchasing, suppliers, packaging, bottles, transportation routes, products and other companies. As far as it possible for us from within the company, we try to minimise indirect environmental impacts. Since evaluation is not easy and access to external data is not always possible, the pros and cons are recorded in the environmental register.

Ecological purchasing guidelines

An important aspect with regard to the precautionary operational environmental protection at Murau Brewery is compliance with and implementation of Murau Brewery's ecological purchasing guidelines. The measures stipulated in these guidelines include:

- ▶ brewing materials only from accredited monitored outgrowers
- ▶ chlorine-free detergents and disinfectants
- ▶ heavy metal-free print colours on bottle labels
- ▶ PVC-free sealing materials for caps
- ▶ packaging returnable (reusable) if possible
- ▶ high-quality brewing water from our own fresh water springs
- ▶ CFC-free coolants in the cooling equipment etc.

We always try to establish relations with our suppliers which are based on partnership.

Traceability of raw materials

We place special emphasis on being able to trace brewing materials. This means evidence regarding the area under cultivation, farming measures, fertilisation, crop rotation and yield has to be submitted along with the field-plot card-indexes. This is checked by Murau Brewery in conjunction with the Austrian Drinks Institute (Österreichisches Getränkeinstitut) using random testing in spot checks on site at suppliers. To complete our compliance with ecological purchasing guidelines we check the incoming goods when brewing materials are delivered.

We have found partners we can depend on in the form of the farmers belonging to the producers' cooperative in Zistersdorf in Lower Austria. These farmers are able to comply with the guidelines and all the members of the cooperative have undertaken to abide by strict basic rules on environmentally friendly and sustainable cultivation of their land, in close contact with nature.

Selection of suppliers

The selection and evaluation of suppliers is performed according to objective principles in conjunction with the management, the management representative and the supervisor concerned.

Evaluation of suppliers is performed in a team comprising supervisors from the Purchasing Section, Storage Administration, the Incoming Goods Section, the Operations Inspection Team and the Environment Team. The existence of quality control and environmental management systems is also taken into consideration in the evaluation.

Logistics – Transport

Murau Brewery's vehicle fleet covered a total of 1,753,483 km in 2004, of which 271,120 km came under depot delivery (without hauliers), 839,369 km were covered by the outbound distribution fleet, 297,795 km came under bar service for landlords and 323,992 km were covered by customer care vehicles. In the outbound distribution fleet the total distance covered to sell 1.0 hl of beer was 3.14 km. Thanks to ongoing fleet improvements, we look set to improve this figure even further in the years to come. New, state-of-the-art lorries also ensure a reduction in emissions thanks to the new EU emission standards. This also has an effect because of reduced fuel consumption.

In 1995 a lorry needed on average 26.7 l to cover 100 km, in 2001 this figure was 25.98 l/100 km but by 2004 it had fallen to 24.95 l/100 km, although the total load capacity of the vehicle fleet had risen. To cover peak demand for depot delivery a haulier is used if so required.

In contact with the customer

Personal contact with our landlords and store-owners is something that is close to our hearts here at the brewery. That does not just mean attending food and drink trade fairs, but we also find that taking our customers on skiing day-trips and organising trips out with our landlords (and landladies) is a useful way of creating vital contacts with retailers. It allows us to discuss any problems and it also helps to foster the positive image of the company.



Quiet and dust-free: our warehouse



Environmentally friendly: the Logistics Centre was constructed according to ecological principles

Employee mobility

As a result of a lack of public transport facilities, most of our employees can only get to work by car. There are employee parking spaces for our employees in all sections close at hand. There is always a company bicycle available for any business to be sorted out in Murau and so deliveries to the post office or banking transactions can be attended to easily and without clogging up the traffic in the town. There are bike racks installed in the courtyard at Murau Brewery and in the Logistics Centre.

The glass and the tin can easily be recycled using one of the recycling systems provided by ARA. The suggestion made by the person responsible at Murau Brewery has been borne out by the resulting success. Not only have we been able to recapture a share of the market amongst the customers targeted, but also the cherished 0.33 l. ALE reusable bottle with deposit has witnessed a healthy increase in sales since the introduction of the non-returnable bottles. And because recyclable bottles have been brought in, the idea of the PET beer bottle has been forced onto the backburner for the next few years.

Recyclable bottles instead of PET plastic bottles

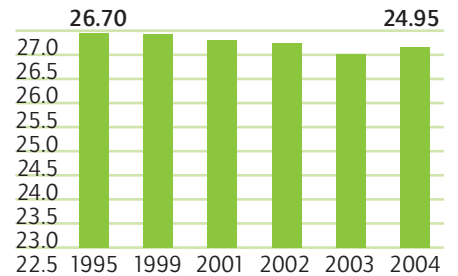
For many years Murau Brewery's Environment Team has resisted non-returnable bottles, because this product does not necessarily fit in with our environmental philosophy. However, over time we have come to acknowledge that we are losing an ever-increasing amount of sales to customers at service stations, from bus companies and at stalls and kiosks. We even contemplated an external can filling service, but in the end we opted for the perfect compromise, which has the added bonus of being aesthetically pleasing: a non-returnable glass bottle with a practical twist cap.

Returnable share of 95.9%

Nevertheless 95.6% of the brewery's output still goes into returnable bottles or barrels, something also promoted by the sales department. This is also shown by Murau Brewery's membership in the voluntary undertaking by trade and industry for the promotion of returnable products.

20.65% of the 0.5 l NRW beer bottles are now repacked every year into cardboard-covered six-packs, which can also be reused. The standing time of bottles and barrels has slightly worsened because of increases in distribution areas covered and the additional purchase of bottles and barrels this has necessitated. A 0.5 l beer bottle is filled on average every 121 days, whilst it takes about 46 days for a 50 l barrel to find its way back to the brewery.

Consumption of the vehicle fleet in l/100km



Doing the environment a favour and cutting down on fuel

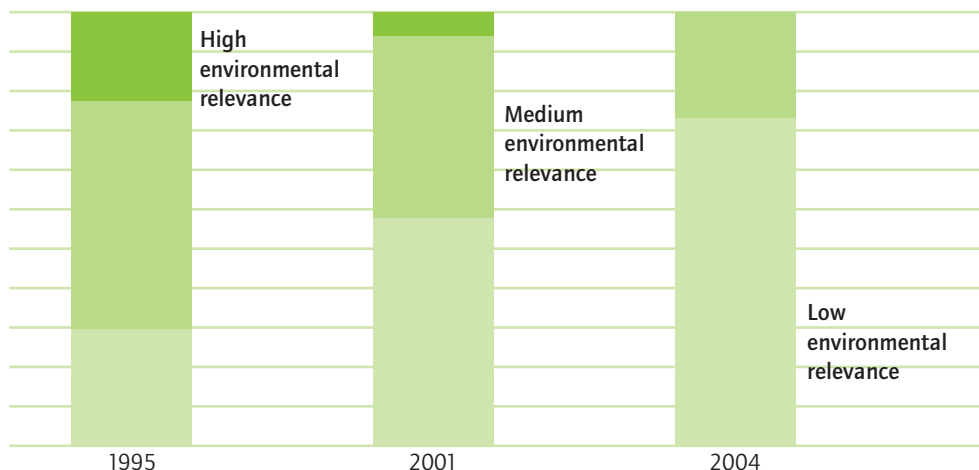
Planning decisions

We always apply ecological principles when planning new buildings or new facilities, provided economic considerations allow.

For instance the new Logistics Centre in Murau was built out of wood and the heating system there uses biomass long-distance heating.

The new Logistics Centre not only spells relief for Murau, with fewer lorries clogging up the traffic, but it has also provided a vital solution to the cramped conditions we were facing where the incoming empties are stored and where the bottles and barrels are stacked ready for dispatching and in the loading area here at the brewery.





Classification of all the equipment in the brewery according to environmental relevance

EVALUATION OF ENVIRONMENTAL ASPECTS AND SAFETY ASPECTS

We evaluate the direct and indirect environmental aspects of all the procedures and equipment in the brewery according to their environmental relevance. We determine the intensity of these aspects and work out the extent to which we can influence these aspects and what measures have to be taken to reduce the impact.

After establishing the environmental aspects arising from the procedure, we assess the various aspects in terms of the intensity of the impact and in terms of the quantity with regard to waste water, waste, soil, noise, emissions into the air, use of energy and raw materials and the impact on the workplace. The assessment is performed for normal and abnormal operations using a points system from 0 (no impact) to 3 (high impact). The risk assessment can be bolstered or reduced through additional assessment as to frequency of the impact, cost of the impact and local interest or general public interest. The measures already implemented for the evaluated facility or procedure are accorded minus points from -1 to -3 depending on the positive effect these measures have had. This means it can be made clear that there is still scope for improvement (below -3).

The total number of points is divided by 5 and the results are categorised according to three different levels:

- ▶ 1 – 5 low environmental relevance – no immediate need to act
- ▶ 6 – 10 medium environmental relevance – regular inspection required
- ▶ over 11 high environmental relevance – measures must be taken or incorporated into the environment scheme

Since the 2004 assessment, no more operations and procedures have been categorised as having high environmental relevance. This success is down to all the measures implemented as well as specific internal instructions and regular inspections.

Major environmental impact stems from the steam boiler facility and the waste water system bioreactors, followed by the bottling plant, the combined fuel burner for heating, the bottle washing machine and the lorries in the vehicle fleet.

Under normal operations the main environmental impacts consist of consumption of energy and raw materials followed by noise and waste water generated. The environmental risk under abnormal operations is highest for use of raw materials and energy, followed by possible waste water pollution and the impact on the workplace.

43% improvement in environmental status

Although the brewery already had a relatively good environmental status in 1995, we have managed to achieve a 43% improvement on 1995 at Murau Brewery through the implementation of a raft of different measures based on the assessment for 2004. A 27.6% improvement has been recorded in comparison with the last assessment of environmental aspects in 2001. Despite a 48% rise in production since 1995, the overall environmental impacts per hl of own drink produced have fallen significantly, but even in absolute terms the overall impact since then has sometimes been reduced for waste water or industrial waste accrual.

Environmental register

Murau Brewery's environmental register clearly shows the environmental aspects arising, the global impact possible and the findings of the environmental assessment for each department or for each procedure or operation.

A record is also kept of whether limits are to be observed and which inspection records (DOC) apply for the respective procedure. Great value is attached in the environmental register to documents about the environmental status of the section concerned. All the measures implemented and environmental records are documented here.

Equipment assessment

Potential hazards and pollution are systematically ascertained for new or existing facilities, machines and devices, so as to record and subsequently minimise negative impacts on the environment and harm towards employees. The ongoing assessment is performed by the safety engineer in conjunction with the foreman. For certain issues the relevant representative (environment, fire protection, etc. ...) or other experts can be called in for assessment and to introduce preventative



HEALTH AND SAFETY – EMERGENCIES

Occupational health and safety

The workplace evaluation involved the inspection of all workplaces, checking them for possible hazards and burdens placed on employees, with assistance provided by the safety engineer, works medic and safety representatives. Lists of measures are compiled every year in the Operational Health and Safety Committee meetings and implementation of these measures is inspected and the effectiveness of the safety installations is monitored. There are also ongoing courses and tuition on safety instructions, first aid and how to handle hazardous materials. In recent years, increased workloads have led to an increased number of minor accidents at work, in particular accidents involving the vehicle fleet and foot injuries. We have been trying to tackle this problem through instructions and the introduction and systematic wearing of safety footwear.

Plant hygiene plan

A plant hygiene plan specifies all the measures required to ensure faultless hygiene with regard to production conditions.

The plant hygiene plan lays down regulations relating to personal hygiene, compulsory cleaning in all production sectors with inspection and documentation, bar equipment cleaning requirements, general cleaning requirements and pest control at the brewery and in the Logistics Centre. The frequency intervals, procedures and means used are stipulated in the cleaning plans and directions.

HACCP system

At the same time as implementing the Austrian Food Hygiene Regulation, we have also introduced an in-house self-monitoring plan in accordance with the principles of the HACCP concept, in order to increase levels of consumer protection. Through determining and specifying the critical control points (CCPs), a risk assessment was performed (high-medium-low) with a probability test and corrections, control conditions and measures were stipulated, in order to minimise high risk points.

Emergencies – emergency alert folder

There are various systems regulating how to prevent major accidents and how to proceed in the event of such an accident occurring. These specifications are all recorded in the Murau Brewery's emergency alert folder. The aim is to prevent or at least minimise danger and harm to employees, local residents and the environment (soil, water, air).

Fire protection and the prevention of major accidents are backed up by the Fire-Safety Regulation (Brandschutzordnung) and preventative measures stipulated. Emergency plans, rules of procedure in the event of fire or major accidents and a set crisis management plan should specify measures to be taken in the event of abnormal operations and minimise risks. There are special emergency plans for ammonia leakage, incidents in the chemicals store, carbon dioxide discharge and biogas accidents. There are always trained first aiders on hand, depending on the size of the section.

Hazard areas with warning signs

The materials used in the brewery come well within the quantity limits specified under the Austrian Statutory Order on Hazardous Incidents (Störfälleverordnung). All the equipment and stores are nevertheless constantly examined for possible abnormal operations and their environmental impact. Hazard areas posing possible risks are marked with warning signs, indicating the main hazard, the additional hazards and the maximum storage quantity. The weekend staff continue to monitor at weekends and on public holidays. There are also precise rules of procedure for dealing with accidents and employees on hand with first aid training.

Fire alarm system

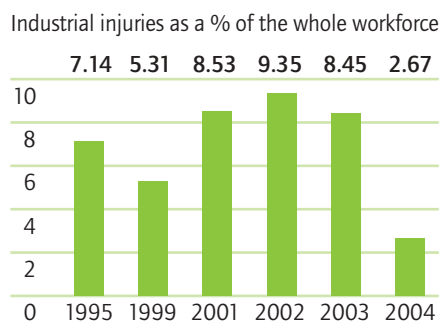
There is an up-to-date fire protection plan and a fire alarm system for the plant, which is directly linked to the local fire brigade. The fire protection plan is updated when required and constantly co-ordinated with the outside authorities (fire brigade).



The Murau fire brigade: practising just in case of the real thing



Labelling hazardous areas



Health and safety: a vital issue in the company

The Murau Brewery production plant was involved in a large-scale drill conducted by the Murau Regional Fire Brigade. During the drill the firemen also tested access to the waters of the river Mur for extinguishing purposes. The drill successfully fulfilled its objectives and our organisational procedures were given the thumbs-up.

The growth of Murau Brewery, the various sites, shift-work and rising workforce numbers all make it all the more important that we have company get-togethers. By attending them, we at Murau Brewery can strengthen the atmosphere at work, create friendships and foster the sense that we are "united behind the company and its products and share the same philosophy". Together we are strong! And that is why the Christmas staff party, curling, rambling trips or works outings are more indispensable than ever!

Together we are strong

Input

	1995	1999	2001	2002	2003	2004	
Brewing ingredients	2,956,548	3,702,405	4,150,841	4,143,900	4,383,503	4,669,197	kg
Raw materials soft drinks	48,509	42,109	11,198	25,054	38,389	36,668	kg
Additives soft drinks (sugar etc)	121,916	143,442	126,487	127,117	133,582	113,514	kg
Adjuncts	87,158	99,607	115,930	116,072	116,873	108,370	kg
Fresh water consumption hl	1,195,230	1,265,620	1,319,640	1,203,430	1,259,610	1,307,764	hl
Electricity consumption – Murau	2,100,202	2,689,369	2,692,542	2,522,794	2,741,349	2,728,625	kWh
Light/extralight heating oil	565,594	630,013	626,638	636,887	649,032	668,889	kg
Diesel oil – fleet including cars	222,003	291,358	339,180	345,280	346,555	371,439	l
Fuels	169,374	264,614	313,942	304,994	318,969	339,652	kg
CO ₂ recycling	297,380	346,600	354,500	304,370	364,640	465,455	kg
Biogas from bioreactors		144,661	120,498	107,059	112,982	160,129	m ³

Output

	1995	1999	2001	2002	2003	2004	
EG production hl (average)	177,451	214,769	240,954	244,677	257,506	262,690	hl
Used substances	210,240	169,417	264,869	233,743	320,095	236,881	kg
Biogenic waste	56,820	305,405	314,950	325,334	312,066	282,366	kg
Wet draff	3,487,300	4,347,300	4,841,800	4,854,700	5,082,600	5,499,700	kg
Unsorted municipal waste	27,760	23,380	13,880	13,720	18,000	20,210	kg
Hazardous waste	5,670	3,226	9,150	9,708	10,741	6,688	kg
Waste water into sewer	101,800	89,704	91,263	89,222	90,591	96,179	m ³
Disposal of single-use packaging	80,180	96,222	178,681	192,755	349,254	432,143	kg
COD in public sewer discharge		80,969	112,979	168,295	192,324	152,921	kg
Heating plant CO ₂ emissions	1,787,269	2,087,886	2,235,196	2,225,435	2,282,686	2,438,592	kg
Vehicle fleet CO ₂ emissions					935,335	977,110	kg

HL of own drink produced (average) = fill quantity + cold wort (brewing room production)/2
= average and is basis of all environmental and other key numbers.

Input/output analysis

This is designed to give a clear and consistent overview of environment-related material flows from procurement through storage and production to leaving the brewery. It provides a quantitative summary of the materials and energy flowing through the business. The increases in the total quantities reflect the highly satisfactory production growth of recent years, though (with the exception of brewing house production) this flattened out for the first time in 2004. The specific reasons for the fluctuations are detailed in the notes to the key environmental numbers in relation to production, and in the notes on environmental aspects.

The above is a summary of the years since 1995.

ENVIRONMENTAL AUDIT

Collecting operational data

The Murau Brewery's stock control and operational data collection systems form an important part of the environmental management process. This part of the business also includes the waste and environment management functions, which means that the data flows used to produce key numbers, input/output analyses, waste management plans and environmental returns can be obtained and evaluated at any time.

AUDIT – Environmental information system

The brewery uses an environmental information system to monitor and calculate material flows based on operating data. Sankys is used as an effective means of displaying processes and calculating process changes. This system is mainly used to show emissions and water and energy flows, and also facilitates the production of key numbers.

Eco-partners

In order to achieve its environmental targets, the brewery sets clearly defined targets for its partner companies. These include the highly respected environmental and health equipment installer Zeiringer and the EGZ Zistersdorf cereal farming cooperative, both of which comply with strict rules on natural, environment-friendly and sustainable cultivation.

Key environmental numbers

These essentially reflect production trends, and provide information about the brewery's annual environmental impact and overall environmental situation.

The key numbers system, which is based on data from the environmental review, is subject to regular vulnerability analysis.

This wide-ranging information is used for the following purposes:

- ▶ Evaluating environmental impact, emissions, waste, downtime etc
- ▶ Monitoring equipment and energy consumption over specific periods
- ▶ Benchmarking
- ▶ Documenting improvements in achieving environmental targets
- ▶ As a control tool for senior management, the environmental team etc

It is possible to increase key numbers per hectolitre of own drink production by switching to different products, acquiring additional plants and so on, but there have still been continuous improvements over the years in all areas of the business.

The data used to produce the numbers has also constantly improved as a result of new metering equipment, additional metering points, better records and newly acquired know-how, so the numbers themselves provide more information.

In 2004, there was a short-term increase in consumption as a result of the new CIP cleaning control system in the brewing room.

The changes and improvements are documented under production or environmental aspects.

Protecting the environment pays for itself!

Benchmarking

We have good access to comparative figures from other breweries because we maintain good relations with them and also because such information is widely available in the trade press. It is usual in the brewing industry for all key numbers to be based on production in hectolitres. The Murau Brewery's numbers are well above the average for businesses of similar size in Austria and abroad.

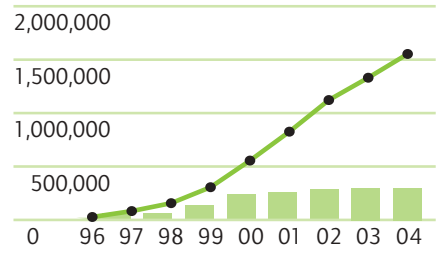
Environmental cost accounts

All capital investments are assessed for cost effectiveness, which sometimes means taking a longer-term view. Many are made on purely environmental grounds – for example the use of ingredients from controlled and integrated agriculture, and of PVC-free sealants – and are taken into account only when disposed of or otherwise enter the outside world.

The environmental and material flow cost accounts are produced in conjunction with the brewery's audit department. They are based on a method developed by Austria's institute for environmental and industrial research (IÖW), and can be easily and inexpensively updated each year.

The depreciation, maintenance and personnel costs of environment-related plant amounted to 15.2%, and taxes and charges to 6.8%. The internal and external personnel cost of the environmental management system is 1.5%. In addition to environmental protection costs, we also record the material values of exhaust air, waste water, and other waste. These are the most important cost factor at 79.2%.

■ €/total ■ €/year



Potential savings

Income from the sale of used materials amounted to 2.6% of total environmental and materials costs. The breakdown by environmental medium was as follows:

- 28% climate-related
- 34% waste water
- 40% waste

The remainder consisted of general environmental management costs.

The environmental cost calculated using the IÖW method increased by 12.6% to € 2,419,400 between 2001 and 2004.

Cost savings achieved by improving key numbers

Staff must also be persuaded of the importance of protecting the environment, and the resulting improvements must be identified in terms of quality as well as quantity.

As it is often difficult to prove that key numbers have got better, the brewery also carries out an annual financial evaluation of the improvements. This is based on the annual quantitative differences between key numbers compared to 1995 or 1996, which are projected against output volumes and prices for each year of production. The resulting annual saving is approximately 12% of the brewery's total turnover. Of course, there are also improvements in efficiency, yields, wastage, output in hectolitres per employee and other items which are not yet subject to detailed financial evaluation.



Key environmental numbers: input

	Value	Value	Value	Value	Value		Unit	Percentage change compared to		
	1995/96	1999	2001	2003	2004			2001	1995/96	%
Brewing ingredients: beer	18.41	19.23	18.58	18.04	19.63	kg	hl beer prodn.	5.65	6.63	1
Raw materials soft drinks	2.37	1.84	0.60	1.93	2.16	kg	hl soft drink prodn.	261.03	-8.93	2
Additives soft drinks (sugar etc)			6.75	6.71	6.68	kg	hl soft drink prodn.	-1.05		3
Product labels			0.48	0.45	0.41	kg	hl drink prodn.	-14.26		4
Fresh water consumption	6.74	5.89	5.48	4.89	4.98	hl	hl drink prodn.	-9.10	-26.14	5
Electricity consumption	11.84	12.52	11.17	10.65	10.39	kWh	hl drink prodn.	-7.04	-12.27	6
Heating oil consumption: steam	2.76	2.49	2.39	2.31	2.35	kg	hl drink prodn.	-1.99	-14.95	7
Heating oil consumption: heat	0.85	0.44	0.22	0.21	0.20	kg	hl drink prodn.	-8.78	-76.58	8
Biogas output	0.06	0.16	0.13	0.12	0.17	m ³	hl waste water output	26.10	177.48	9
Diesel oil consumption: trucks	26.70	26.57	25.98	24.09	24.95	l	Per 100 km	-3.95	-6.54	10
Filter material consumption	0.15	0.16	0.14	0.12	0.12	kg	hl beer prodn.	-9.67	-18.42	11
Label glue consumption	0.044	0.062	0.040	0.031	0.036	kg	hl drink prodn.	-10.10	-19.28	12
Oil/lubricants	0.006	0.007	0.007	0.005	0.005	kg	hl EG output	-22.67	-11.91	13
Neutralisers	1.15	0.81	0.91	0.087	0.95	kg	m ³ waste water	4.09	-17.22	14
Disinfectants and cleaning materials		0.67	0.78	0.78	0.79	kg	hl drink prodn.	1.05	*	15

NOTES ON CHANGES IN THE LAST FEW YEARS

- Brewing ingredients: beer** Fluctuations depend on malt quality (controlled agriculture) and have increased since 2004 onwards when raw fruit (broken rice) was replaced by increased use of brewing malt.
- Raw materials soft drinks** We resumed year-round use of in-house soft drinks production in 2003.
- Additives soft drinks** As a result of increased soft drinks production (which meant that no sugar was needed in some cases) and shandy production with sugar substitute, less sugar was required per hectolitre.
- Packaging** The weight of the label component reduced when the new label shapes were introduced in March 2003.
- Fresh water consumption** We achieved our target of less than 5 hectolitres per hectolitre of own drink production in 2003. There was a slight increase in fresh water consumption in the brewing room in 2004, and the brewing room CIP rose by 2%.
- Electricity consumption** This increased in 2003 as a result of the large new air conditioning and ventilation plant in the bottling hall. Further substantial savings were made by using heat exchangers in the cooling plant, not using this plant to cool wort, and installing new lighting in the fermentation and storage cellar area.
- Heating oil saving: process steam** Unfortunately, we exceeded our 2003 record by 1.61% in 2003, but we aim to achieve this figure again in the coming years. It has worsened slightly due to increased brewing room production, which requires large quantities of heating steam compared to the reduced filling volumes.
- Heating oil consumption: heat** Despite the occasional failure of the heat exchanger in the waste water, increased biogas output in the waste water plant meant that less extralight heating oil had to be purchased.
- Biogas output** A 65.9% reduction in contamination and reduced downtime led to a 33% increase in biogas output compared to the previous year.
- Diesel oil consumption** This reduced as a result of acquiring more modern trucks, but there was another slight increase in consumption in 2004 due to the purchase of larger trucks.
- Filter material consumption** Proper storage of beer has led to constant improvements in filter performance over recent years, resulting in reduced consumption of filter materials and filter beds.
- Label glue consumption** This was on a downward trend until 2003 thanks to the use of smaller labels and the new labelling plant. However, it increased slightly in 2004 as a result of changes to the glue.
- Oils/lubricants** The differences in quantities are very small and depend on how often the plant is maintained.
- Neutralisers** Longer periods in the storage tank and better preacidification resulted in increased use of neutraliser per hectolitre of waste water output.
- Cleaning materials consumption** Caustic soda was used in the warehouse until 1999. Quantity has increased as a result of using 50% sodium lye.

hl drink prodn. = hectolitres of own drink production (cold wort brewing room + fill quantity /2)

hl EG output = drinks delivered from Murau production site

hl beer prodn. = quantity of cold wort produced in brewing room

One beer is better than no beer,
two beers are better than one beer,
but four beers aren't twice as good as two beers.

Key environmental numbers: output

	Value	Value	Value	Value	Value	Unit	Percentage change compared to			
	1995/96	1999	2001	2003	2004		2001	1995/96	%	
Nasstreberanfall	21.69	22.58	21.67	20.92	23.12	kg	hl beer prodn.	6.69	6.60	16
Presshefe/Gelägeranfall	0.11	1.16	0.95	0.75	0.61	kg	hl beer prodn.	-35.56	454.64	17
Siebgut			0.10	0.11	0.17	kg	hl beer prodn.	65.63		18
Hmä. Gewerbeabfall	0.12	0.11	0.06	0.07	0.08	kg	hl drink prodn.	33.56	-35.89	19
Kieselguranfall	0.24	0.43	0.32	0.40	0.38	kg	hl beer prodn.	17.41	58.10	20
Glasbruchanfall	0.38	0.26	0.54	0.79	0.53	kg	hl EC output	-1.64	39.30	21
Altetikettenanfall	0.41	0.35	0.32	0.27	0.24	kg	hl drink prodn.	-26.08	-41.41	22
Papier/Kartons	0.20	0.10	0.12	0.08	0.07	kg	hl drink prodn.	-41.03	-63.36	23
Plastik/Verbundstoffe	0.11	0.02	0.03	0.02	0.02	kg	hl drink prodn.	-34.52	-83.28	24
Metalle/Alteisen	0.06	0.05	0.08	0.06	0.06	kg	hl drink prodn.	-28.07	-3.21	25
Altöle/Ölk.Betr.-Stoffe	0.003	0.002	0.000	0.002	0.003	kg	hl drink prodn.		-10.16	26
Sandf./Ölabscheiderabf.	0.016	0.000	0.031	0.014	0.000	kg	hl drink prodn.			27
Staplerbatterien	0.007	0.003	0.000	0.016	0.007	kg	hl drink prodn.		-5.21	28
Kühlgeräte/Kühlschränke		0.008	0.004	0.006	0.007	kg	hl drink prodn.	74.28		29
Sonstige gefährliche Abfälle		0.001	0.002	0.004	0.009	kg	hl drink prodn.	318.80		30
Abwasseranfall	5.36	4.18	3.79	3.52	3.66	hl	hl drink prodn.	-3.33	-31.69	31
Emissionen in die Luft	62.46	57.66	52.85	50.52	52.78	kg	hl drink prodn.	-0.13	-15.49	32

NOTES ON CHANGES IN THE LAST FEW YEARS

- Wet draff output** This rose as a result of increased use of brewing malt; see Input. It was all sold to the agricultural sector as cattle feed.
- Beer residue/press yeast** The output of residue (a mixture of beer and yeast) has significantly increased since 1995 thanks to better separation and proper disposal. It fell again in 2004 due to improved use of the collection containers and more beer residue into the waste water. This will be resolved from 2005 onwards using collection tanks.
- Sieved product** The sieved product in the waste water plant consists almost exclusively of draff residue. The short-term increase resulted from plant conversion and start-up problems in the brewing room at the beginning of 2004.
- Unsorted municipal waste (residual waste)** The normally low level of unsorted municipal waste increased when 5,900 kg of old wooden fittings were disposed of. Excluding these, the figure represented a 16% reduction on the previous year.
- Kieselgur output** The reduced use of filtering agents (see point 11) has decreased the output of used kieselgur, which is used as farming compost.
- Broken glass output** The switch from Vischey 0.33 to ALE 0.33 bottles caused a sharp rise in glass breakages in 2003. This reduced to below 2001 levels from 2004 onwards.
- Used label output** The new smaller round body labels introduced in March 2003 have had a positive effect. The total quantity has significantly reduced since 2001 as a result of the used label press, and single-use bottles mean that many labels are not returned.
- Paper/cardboard boxes** Many boxes are reused by sporting goods wholesalers. Further improvements have also been achieved by keeping more detailed records.
- Plastic/composites** Figure remains largely unchanged. Increased sheet output as a result of new glass (ALE bottles) in 2003.
- Metals/scrap iron** Figure fluctuates slightly each year depending on rebuilding work carried out. Scrap iron parts, pipes etc.
- Used oil/oil-contaminated fuel** Used oil is stored and then properly disposed of when it reaches a certain level. This means the figure may fluctuate from year to year.
- Sand filter/oil separator** No oil separator output in 2004, as no disposal requirement identified when inspection carried out. Washing area no longer used.
- Forklift batteries** These occur irregularly. Only one disposed of in 2004.
- Coolers/refrigerators** Varies depending on backflow from landlords (condition and disposal of units).
- Other hazardous waste** Unplanned output of 610 kg ammonia solution from the cooling plant and 650 kg aqueous concentrates from the new CO₂ recycling plant.
- Waste water output** This has increased due to a rise in fresh water consumption. More beer/residue mixture into sewer, but this has also caused bioreactors to produce more biogas.
- Atmospheric emissions from steam and heating boilers** Increased heat requirement in bioreactors (heat exchangers also switched off) and increased consumption of light heating oil by the steam boiler has led to an increase in atmospheric emissions per hectolitre of own drinks produced.

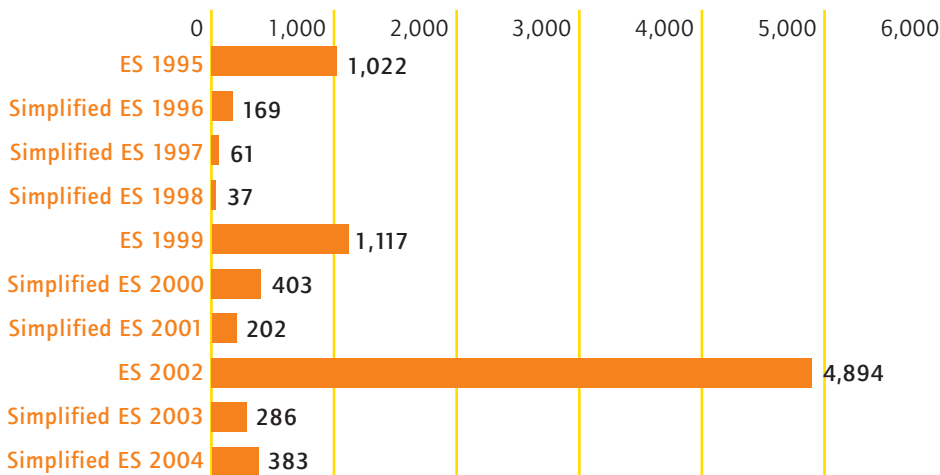


Beer keeps you young, fit and good-looking. It also helps to prevent heart attacks. The more doctors look at beer, the more they realise how healthy it is!

That's probably why it's increasingly regarded as a fitness drink to be consumed (in moderation) by young, health-conscious people.

Keeping in contact

Here at Murau Brewery we always communicate our (environmental) successes, but we do so discreetly and without making too much of a song and dance about it. We use the serious media and forums like this.



Since 1995 Murau Brewery has issued 8574 environmental statements (ES)

External communication

Because of our experience and successes in operational environmental protection, Murau Brewery continues to be highly sought-after for lectures, presentations and workshops. Murau Brewery's presence is also sought at major environmental events, where our presentations also allow us the opportunity to communicate to others and present our successful environmental management system and a positive corporate image:

Over 8574 environmental statements published

The environmental statement required under the EMAS Regulation is available to the public and is validated every year by an environmental expert.

Once approved, the environmental statement is passed on to the parties relevant for the brewery (public authorities, local residents, customers, suppliers) and to any interested parties. You can also find extracts from the annual environmental statement published on the Internet by logging on to <http://www.murauerbier.at>.

The environmental statement also represents fulfilment of our obligation to publish environmental data, as specified under the Austrian Environmental Information Act.

Over the period between 1995, when Murau Brewery published its first environmental statement, and the end of 2004, we have been very active in distributing over 8574 environmental statements to interested parties, public authorities, suppliers and employees, including the comprehensive environmental statements for 1999 and 2001 and the annual simplified environmental statements.

Of this number, 4894 environmental statements were issued for 2002 and these were also distributed to all our customers. 4.08 % of the environmental statements published were sent abroad and 1.61 % of the statements were downloaded over the Internet.

Internal communication

With our internal communication, we place particular emphasis on bringing together the otherwise disconnected technical and commercial management sectors and the new GetränkevertriebsgesmbH.

In order to ensure communication within the company and cooperation between the various departments, regular meetings are held, such as production meetings, meetings of the Environment Team, Operational Health and Safety Committee meetings, discussions on the post-bag and training courses and tuition.

Our employees are also kept up-to-date through shop-floor talks, information posted on notice boards and through mail shots and announcements about important matters. Employees in positions of responsibility are kept abreast of developments in our monthly publication, Technik-NEWS.

The Environment Team is an important conduit for internal communication, on the one hand, communicating Murau Brewery's environmental philosophy to employees and, on the other hand, acting as a sounding board for suggestions, proposals and ideas. These are then analysed and discussed by the members of the Environment Team and where possible incorporated into the environment scheme.

Johann Tanner: devoting his life to the environment

Murau Brewery's environmental representative enjoys his job to the hilt. Johann is a sportsman and a former municipal councillor for environment, sport and the community, head of operations at the local Mountain Rescue and Nature Protection Team and is also passionate about nature. He enjoys legendary status, not just because of his environmental initiatives for the brewery, but also for the town of Murau itself. He is the mover and shaker behind biomass long-distance heating, promoting solar-power systems and the waste ordinance!



Talking medicine at the beer stand



The prize draw for the Eco-label competition



Leoben Mining School lecture being held in the brewery

CleanMed Europe

Murau Brewery, the first EMAS certified company in Austria, was invited to the International Healthcare Congress on Sustainable Products and Practices, CleanMed Europe, to give a presentation on our environmental efforts and successes and our products. The Murau Brewery beer stand had an important role to play in the communication between those attending and those exhibiting at the congress.

Presentations in 2004

"Marketing in a company – Murau Brewery"	ÖKOPROFIT Workshop Vienna
Podium discussion "Environmental management and business appraisal"	EMAS Conference in Graz
"Environmental marketing using the example of Murau Brewery"	ECOPROFIT South Tyrol series of workshops
CSR discussion "Corporate Social Responsibility"	Judenburg Chamber of Commerce
"EMAS – What does it mean for employees?"	Austrian Federal Environment Agency and the Vienna Chamber of Labour
Statements on the continuance of the consolidated decision	Vienna University of Economics and Business Administration
"EMAS and the consolidated decision"	Technical University Leoben

Eco-label 542

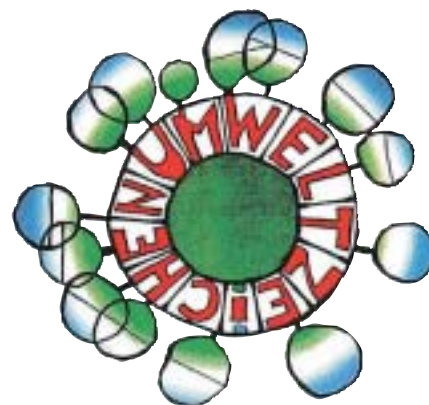
"Returnable drink packaging"

Murau Brewery is the only brewery to have been able to proudly boast Eco-label 542: "returnable drink packaging" since 1998. To gain this certification, you not only need to comply with the strict list of criteria but you also need to exhibit repeated use of returnable packaging with deposit (at least 12 returns). The Eco-label offers Murau Brewery an additional means of advertising our forward-thinking operational environmental protection on the beer bottle.

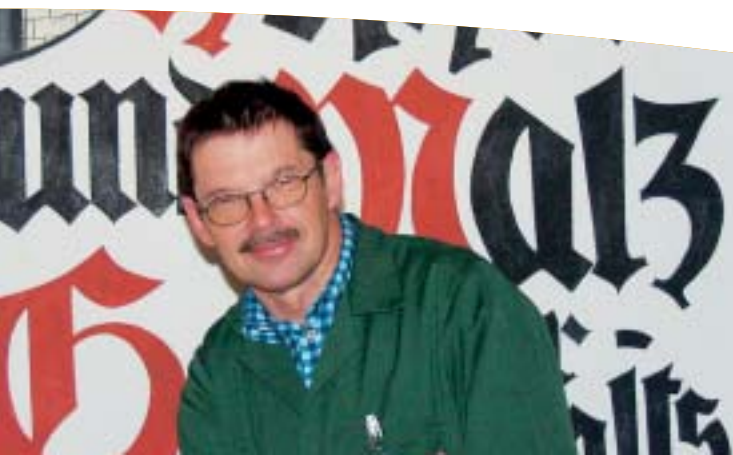
In March 2005 we once again demonstrated the required evidence in an extensive expert report and complied with the extensive criteria to achieve this certification, as laid down in the new guidelines on Eco-label 26 of 1st July 2004. At the moment we are still achieving a figure of 18.6 returns for our 0.5 l NRW beer bottle, as we have been doing since 1997.

Millions of Eco-labels

To promote awareness of the Eco-label, with its unique symbol guaranteeing environmental protection designed by the Austrian artist Friedensreich Hundertwasser, 4.7 million beer bottles were brought into circulation with an eye-catching invitation to take part in our summer competition. We also issued thousands of cards with Eco-label quiz questions and information. Some 4500 of these quiz cards were sent in and there were around 1500 Internet hits. Over the course of the "Nachhaltige Wochen", a month-long campaign held across Austria to encourage environmentally conscious shopping, Murau Brewery's winners were drawn in the City of Graz where the Austrian Minister of the Environment, Josef Pröll awarded the winners their Eco-label prizes.



Eco-label 542
"Returnable drink packaging"



We should also mention the years Johann spent as Chairman of the Workers' Council, where he encouraged our employees to share his passion for implementing environmental concerns. Johann's approach has always been that without the support of his colleagues, it would never be possible to implement Murau Brewery's environmental policy!

A farewell to red tape!

Where there's a will, there's a way! Murau Brewery has been involved in ground-breaking work with external (legal) experts and the District Authority with regard to authorisation procedures. After months of painstaking work, the company has achieved some fantastic results and the civil servants have earned themselves a national award!



Authorisations: what used to have to be stored in hundreds of files can now be found in two compendiums!

Alongside our undertaking to comply with the environmentally relevant acts, decrees and regulations, another thing which is very important to us is to work hand-in-hand with the relevant authorities. Our own procedural instructions provide for the induction of new stipulations from decrees, acts, rulings, standards and internal specifications.

All internal environmental requirements, specifications, conditions and inspection obligations are checked to ensure compliance using audits and the required test certificates and expert reports are inspected.

To improve our compliance with official requirements and test intervals, Murau Brewery applies the Legal Care legal compliance scheme.



"Consolidated authorisation"

Murau Brewery, as a company with over 500 years of history behind it and made up of departments both old and new, had innumerable authorisations under a wide range of legal provisions, which were mostly already obsolete.

The authorisations though had never been formally repealed. There were therefore any number of mutually contradictory authorisations. There were also in particular a large number of contradictory, obsolete conditions. Despite a functioning management system, it was extremely difficult for us and even for the public authority to weave our way through the maze of authorisations.

We were trying to obtain a consolidated accreditation under the terms of the Austrian Environment Management Act, in conjunction with our advisers and the public authority. We were trying to use a transparent system (with a loose-leaf-collection) to provide a new description of all the components, complete with photographic documentation of the equipment, technical data and the conditions imposed of which we were aware. Each subsequent alteration procedure involves swapping over the pages from the file relating to the part of the equipment being changed. This system proved its worth in the first alteration procedure in September 2003.

On 7th February 2003, we lodged the application in accordance with Article 22 of the Austrian Environment Management Act for consolidation of the authorisations relating to industrial law, law on occupational health and safety, law on water pollution control and air pollution control (steam boilers) for the production plant located at Raffaltplatz 19–23, Murau. At the same time an application was submitted to Murau Local Authority for the public authority to establish that the plant is constructed and operated in accordance with the stipulations under building law. Over the course of three months and several days of discussions, the consolidation procedure was successfully implemented and official approval of the construction and operation of the plant was awarded.



Proud Office Managers of the year: Dr. Hagen Lindner (left) and colleagues

During the procedure we were able to remedy the various minor shortcomings determined on inspection of the various components.

We were able to ensure that any discrepancies were evaluated as minor alterations, as specified in Article 22 Paragraph 3 of the Environment Management Act.

No local residents or public authorities challenged the draft authorisation published and, therefore, the consolidated authorisation assumed legal effect on 31/5/2003.

Now instead of being scattered amongst hundreds of files, the company's consolidated accreditation is summarised in two clear files. Thanks to this transparent system, it is possible to anticipate that future alteration procedures will be considerably easier, because the relevant pages of the consolidated accreditation affected by the alteration authorisation just need to be swapped.

Meaningless conditions that are long out of date have been omitted and contradictions have been rectified. Thanks to the restructuring of the monitoring regulations, standardisation of inspection regulations and inspection parameters, significant future cost savings will be possible in the company

Office Manager 2003

Something remarkable and worth mentioning was the constructive relationship between the expert appraisers, the authority's representatives and the representatives of Murau Brewery and Dr. Wolfgang List (Saxinger Chaloupsky & Partners) and the consultancy firm KEC Kanzian Engineering & Consulting. Without this it would not have been possible to implement such an extensive procedure. Senior Administrative Officer Dr. Hagen LINDNER and his team, consisting of Master Builder Ing. Gerhard STEIGER, Ing. Mario WEISS and Dipl.-Ing. Dr. techn. Walter RIBITSCH received the award of Office Manager 2003 for their outstanding and constructive implementation of the consolidated accreditation in accordance with the Austrian Environment Management Act at Murau Brewery.



Together at last: all Murau Brewery's authorisation documents – in two files

The efforts gone to for operational environmental protection have been recognised through national and international awards. Here is a brief list of just some: 1999 ÖKO Audit Prize in the category "Best Eco-Efficiency", 2000 Austrian Industry Environment Prize in the category "Sustainable Business", 2000 European Environmental Reporting Award (EERA) for the best simplified environmental statement, 2002 Environment Prize of the Town of Murau.

Awards

In Mother Nature's slipstream

If you work hard on the ecology of a company, then there will be increased economic rewards.

Energy – light heating oils

- ▶ Vapour compressor in the brewing room
- ▶ Insulation of all the steam pipes and the steam distributor
- ▶ System operated without constant supervision for equipment inspection
- ▶ Compilation of a process steam load profile
- ▶ Compilation of an energy plan focused on "steam requirements"
- SINCE 2002:
 - ▶ Extension of plate heat exchangers in brewing room
 - ▶ Biogas project for use in the steam boiler
 - ▶ Heat recovery from condensate in the brewing room

Energy – extra-light heating oils

- ▶ Conversion of the biogas in the boiler for room and reactor heat
- ▶ Heat recovery from the pre-treated waste water using the heat exchanger
- ▶ Installation of thermostats to control the room heat
- ▶ Conversion of the alcohol-water mixture (dialysate) to biogas
- SINCE 2002:
 - ▶ Using the waste heat via a ventilation facility
 - ▶ Using the waste heat from air-compressors and the ventilation system
 - ▶ Revising the room heat distribution system

Power savings

- ▶ Sealing the electricity meter network
- ▶ Commencing a solar energy project
- ▶ Compiling a current load profile
- ▶ Optimisation of the current load management
- ▶ Idle current compensation unit
- ▶ New state-of-the-art electricity contract
- ▶ Expansion of the low voltage facilities
- ▶ Installation of frequency transformers in compressors and pumps
- ▶ Compressed air leakage inspection
- SINCE 2002:
 - ▶ Savings in ice water cooling through cooling well water
 - ▶ Installation of frequency transformers in air-compressors and feed pumps
 - ▶ Reduction of the pressure requirement through buffer tank solution

Use of cleaning agents

- ▶ Optimisation of the CIP system
- ▶ Revising the brewing room cleaning plan
- Optimisation of the CIP system
- SINCE 2002:
 - ▶ Project on lye filtration

Protection of the soil and surrounding area

- ▶ Installation of above-ground Nirosta drainage system also allowing leakage inspection
- ▶ Replacing asbestos-containing roof material

Logistics

- ▶ Test operation with bio diesel in the vehicle fleet
- SINCE 2002:
 - ▶ Vehicle fleet analysis and route optimisation
 - ▶ Better use of stacking through double stackers

Water management

- ▶ Connection of bottle spray at filler to belt control
- ▶ Expansion of the well facility and UV facility
- ▶ Expansion of the fresh water network for guaranteed future supply
- ▶ Compilation of a fresh water consumption profile
- ▶ Insulation of the cold water pipe
- ▶ Condensate recovery
- ▶ Installation of a new insulated hot water tank in the brewing room
- ▶ Revision of the water supply distribution system
- SINCE 2002:
 - ▶ New tank system and new distribution system

Employee mobility

- ▶ Increase of employee parking spaces
- ▶ Bicycle stands in the court
- ▶ Company bicycles

Waste water management

- ▶ Examination of the waste water flows in the brewery
- ▶ Stocking up the waste water pre-treatment plant according to the state-of-the-art with 4 anaerobic bioreactors
- ▶ Buying additional pollution quotas to safeguard the future with the Waste Water Treatment Association
- ▶ Counter current coolers for wort cooling
- ▶ Conversion to low-COD chain lubricants
- ▶ Condensate feedback with different equipment
- SINCE 2002:
- ▶ Introduction of reusable cleaning cloths

Ecological purchasing

- ▶ State-of-the-art packaging with bottle crates
- ▶ Plastic sheathed stainless steel barrels
- ▶ Introducing Pinolen crates for improved handling of six-packs and increased return quotas for beer bottles
- ▶ Fulfilment of the criteria for Eco-label 26 for the 0.5 lt NRW bottle
- ▶ Introduction of textile carrier bags for the retail trade
- ▶ Introduction of ecological purchasing guidelines
- ▶ Brewing materials only from monitored, accredited farming sources
- ▶ Replacement of metal foil with paper throat labels
- ▶ Purchase of cadmium-free bottle crates
- ▶ PVC-free sealing materials for caps
- ▶ Heavy metal-free print colours for labels
- SINCE 2002:
- ▶ Random inspection of the field-plot card-indexes on site
- ▶ Construction of the Logistics Centre according to ecological principles
- ▶ Mercury-free caustic soda lye
- ▶ Low-phosphate cleaning agents

Cooling equipment

- ▶ Conversion to more environmentally friendly coolants
- ▶ Compilation and implementation of the cooling plan
- ▶ "Biogas cooling" pilot project
- ▶ New state-of-the-art cooling equipment
- SINCE 2002:
- ▶ Combination of NH₃ cooling equipment with the brine system
- ▶ Reduction of the ammonia storage quantity

Waste management

- ▶ Training of employees in waste separation
- ▶ Inspection of a waste recycling plant
- ▶ Logistical improvement of the used label disposal
- ▶ Well-engineered skip system
- ▶ Contemporary waste disposal contracts
- ▶ Installation of a used label press
- ▶ Supply of yeast and brewing residue to the farming industry

Noise – Odour – Ventilation

- ▶ Sound-proofed ceiling
- ▶ Sound-proofed walls towards residents
- ▶ Installation of low-noise conveyor belts (glideliners)
- ▶ Annual noise measurements in the bottling section
- ▶ Appropriate hearing protection for employees in high-noise areas
- ▶ Ventilation facility with heat recovery in the bottling section

Plant operations

- ▶ Introduction of barrel side covers for product safety
- ▶ Increase in the CO₂ recovery system for improved recovery of fermentation carbon dioxide
- SINCE 2002:
- ▶ New air circulation and ventilation system

Precautions in the event of major accidents

- ▶ Revision of the fire protection plan
- ▶ Affixing emergency and alarm warning signs
- ▶ Installation of a fire alarm system
- ▶ Labelling the hazard points with Kemler numbers (hazard identification numbers)
- ▶ Expansion of the chemicals store and alignment to the state-of-the-art
- ▶ Direct dosing of cleaning agents from the central chemicals store
- ▶ Installation of a lye tank instead of caustic soda in solid flakes
- ▶ Labelling of intake points with product sheets and safety instructions
- ▶ Installation of CO₂ extraction devices
- ▶ Installation of a CO₂ warning system
- ▶ Thermal insulation room for employees
- ▶ Gas warning facility for the bioreactors
- SINCE 2002:
- ▶ Connection of all the CIP systems with automatic dosage from the chemicals store
- ▶ Compilation of a state-of-the-art emergency alert folder
- ▶ Provision of fire-fighting water also via brewery water supply
- ▶ Reduction of the dust pollution in the mill area
- ▶ Central dust extraction facility in the mill section
- ▶ Introduction of dead-man's handle device

Emissions into the air

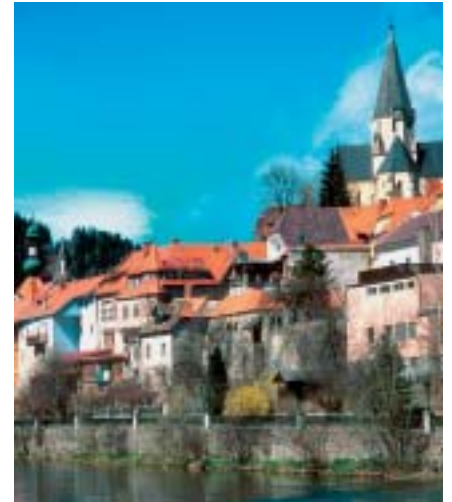
- ▶ Conversion from light heating oil to extra-light heating oil
- ▶ Annual equipment inspection and emission testing
- ▶ Fewer emissions into the air thanks to heating oil savings
- SINCE 2002:
- ▶ Improved recovery of carbon dioxide from fermentation

Legal compliance

- SINCE 2002:
- ▶ Combination of all existing accreditations into a consolidated accreditation

Protecting Mother Nature!

As diligent as squirrels: Murau brewers "collect" measures to protect the environment.



Over 160 steps taken to protect the environment

The environmental programme with its agreed aims is drawn up and the appropriate measures, dates and persons responsible for achieving the goals are determined on an annual basis. The implementation of the programme is monitored by the Environmental Team and is documented in-house in environmental logbooks. The measures implemented are published in the Environmental Statement which is drawn up annually and is accessible by the public.

In addition, smaller measures are implemented at short notice and non-bureaucratically during the meetings of the Environmental, Production and Quality Teams in order to react to any undesirable developments.

Achieving our goals

73% of all measures taken to protect the environment were implemented over the past nine years.

The environmental figures show that we have clearly achieved our objectives. Following external or internal reviews, some measures were classified as uneconomical and were not implemented, such as the insulation of the pressurised tank in the pressurised tank cellar, the integration of surplus heat into the heating network of the Murau district heating system or the implementation of the low temperature concept using absorption techniques.

Some things were solved in other ways, such as the installation of an air curtain in the keg plant, which was controlled using waste heat from the new ventilation system in the filling department.

It has also been mostly possible to achieve the number of objectives which have been set out each year. Only the impact of COD in the sewage inlet could not be reduced as we had wished, but with the new tank collection system it was possible to deal with this item too.

We have got much closer to achieving our environmental goals and are aiming to achieve even higher objectives and maintaining the standard which we have already achieved by targeting the measures we take. Nevertheless, another 19 implementable measures were found for the new environmental programme in 2005.

Environmental goals for the next few years

The objectives for the next few years stem from the quality and environmental policies and thus define the overall goal that the brewery has set itself.

Each year the objectives are re-defined on the basis of the audit and/or review by the senior management. The individual goals and the time limits for implementing them are determined more exactly in the meetings of the Environmental Team, which also checks afterwards whether the objective has been achieved.

Energy vision in the Murau district

The fundamental objective in this is that by 2015 Murau will be self-sufficient in energy – by that date heat and electricity are to be produced from 100% renewable energy sources. In parallel with this, the creation of awareness of the closed loop recycling management of energy and the building up of an energy platform in the Murau district are to be accelerated. The "Energievision Murau" project was awarded the "Energy Globe Styria 2004", and we took 2nd place in the "Energy Globe Austria 2004". Further details on <http://energieagentur.ainet.at>

In the course of debating this subject in the Bioregion Murau, the "Murau Energy Objectives" were formulated in collaboration with the Judenburg Energy Agency.

Environmental Objectives

The aims of the preventative environmental protection measures at Murau Brewery for the next few years are:

- ▶ to maintain the environmental status which has already been achieved
- ▶ to bring the figures for the energy and fresh water sectors back to the 2003 levels
- ▶ to position the brewery definitively as an ecologically responsible operation
- ▶ to further extend our regional and social responsibility
- ▶ to actively share in the work of implementing the Murau Energy Vision project
- ▶ to actively share in the work of implementing the "Murau 2015 Energy Goals"
- ▶ to bring the figures for the energy and fresh water sectors back to the 2003 levels
- ▶ to create clear responsibilities and structures with Getränkevertriebs-gesmbH
- ▶ to encourage and educate our employees to be aware of quality and environmental issues
- ▶ to ensure that legal regulations and operational environmental instructions are complied with
- ▶ to continue to reduce environmental impacts, e.g. emissions into the atmosphere
- ▶ to look constantly for alternative sources of energy.

2005 Environmental Programme

Since the focus of the environmental programme over the past few years were, first, the areas of fresh water and sewage, followed by the demand for steam, then with the main focus on electricity and, over the past few years, the wider area of refrigeration, this means that in future it will be very difficult to find further improvements. In the mid-term the aim simply has to be to maintain the good environmental status that we have already worked hard to achieve.

2005 Environmental Programme

AREAS / GOALS	RESPONSIBLE	DEADLINE
Energy savings - heating oils	Goal: 2.52 kg light heating oil per hl EG	
Try to use biogas in the existing boilers so that optimum utilisation of biogas is possible	TM	3/2005
Increase the recirculation of condensate to improve recycling of heat in the brewing room	TM	1/2005
Energy savings – electricity required	Goal: 10.45 kWh per hl EG	
Reduction of loss of heat from rooms by insulating the walls in pressurised tank room I	TM	2/2005
Using resources sparingly – fresh water	Goal: 4.9 hl per hl EG	
Conversion of the flotation tank cleaning to batched cleaning by integration into CIP IV	TM	3/2005
Emissions into the atmosphere	Goal for 2004: purchase less	
Recirculation of used CO ₂ from the fermentation from the storage tanks and pressurised tanks	TM	4/2005
Breakdown precautions		
Reduce impact of dust in the silo infeed and integrate into control system	TM	1/2005
Savings on cleaning materials	Goal: 078 kg per hl EG	
Optimise CIP cleaning facility in brewing room by integrating into CIP 4	F	3/2005
Re-use cleaning water from cleaning containers in the bottle washing machine	F	3/2005
Waste management		
Put up-to-date separation of residual waste and potential recyclables into effect in the Graz depot	MR	1/2005
Acquire a glass crusher in order to minimise volume and therefore reduce the number of journeys	TM	2/2005
Impact of sewage	Goal: 1.35 kg COD in inflow per hl EG	
Reduction of impact of COD in sewage inflow by using cleaning materials which have minimal chemical oxygen demand and are low in phosphates	TM	4/2005
Construction of a tank system to separate the beer residue and kieselgur waste more efficiently from the factory sewage	TM	2/2005
Ecological sourcing		
Random monitoring of acreage indexes and tracking of hop cultivation, storage and processing procedures	TM	3/2005
Check ecological alternatives in the use of drinking cups such as offering reusable cups etc.	SM	2/2005
Noise		
Checking whether the installation of new and more innovative noise insulation measures in the filling department makes sense	TM	4/2004
Logistics		
Continuation of the optimisation of journeys to increase the output per hectolitre per delivery vehicle	SM	4/2005
Management		
Integration of the new company structures into the factory management system	MR	2/2005
Integration as per schedule of the job valuation into the factory's legal security programme	MR	3/2005
Communications		
Increased marketing of the environmental activities of Murau Brewery, such as active marketing of the Environmental Statement, continued use of environmental symbols etc.	SM	2/2005

TM – Technical Manager
 F – Foreman
 SM – Sales Manager
 MR – Management Representative



Looking to the future

500 years of brewing tradition, 10 years of active environmental management, continually improving net operating profits. These are the characteristics of the 1. Obermurtaler Brauereigenossenschaft of which we are all very proud – rightly so, we believe! As far as “Simply the best!” goes, we will continue steadfastly down the road of preventative operational protection of the environment!



Ehrenfried Illitsch
Chairman of the Supervisory Board of Murau Brewery, formerly Mayor of Murau

Murau Brewery – Murauer beer – can be traced back to 1495 and has thus been part of the history of the district capital of Murau for over 500 years.

With the brewery run as a cooperative since 1910, the officials have always taken their regional mandate seriously. The brewery is therefore one of the few major businesses in the region to become involved in social issues.

10 years ago we also allotted the appropriate level of importance to ecological issues and set up a system of environmental management under our very committed Environmental Representative Johann Tanner.

Involved on a social, region and ecological level – that is our interpretation of this theme which we have been able to apply absolutely consistently and sustainably over these 10 years with the way we think and act in our business.

For Murau Brewery, sustainability over and beyond these 10 years is both a task and the motivation for the further strengthening of our business in the future as well as the strengthening of our region (itself not completely free of problems) from which our children too should benefit!

The road taken by our company in future needs to stay consistently in line with the market in the sense of clear positioning with ecologically perfect products and also be recognisable as such.

“Rein das Beste” – “Simply the best” – will continue to be Murau Brewery's advertising slogan in the future too! “Simply the best” is synonymous for protection of the environment, for wellbeing, for Murauer beer. Last but not least, “Simply the best” also refers to the responsible actions of all the officials and employees of Murau Brewery!

Imprint

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The supplementary and simplified Environmental Statements will appear in March 2006 and 2007. They can be found on www.murauerbier.at. The next comprehensive, consolidated Environmental Statement including a report on sustainability will be published in April 2008.

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We should be happy to make further information on the 2005 Environmental Statement of the 1. Obermurtaler Brauereigenossenschaft available to you. Please e-mail your enquiry to: umwelt@murauerbier.at

Abbreviations and Acronyms

www.murauerbier.at

Murauer
BIER