



# Kötschach-Mauthen

## model community for energy-self-sufficiency



**The community Kötschach-Mauthen (situated in the federal state Carinthia, Austria) became known in Europe as pioneer for energy-self-sufficiency latest since the Mayor of Kötschach-Mauthen Walter Hartlieb presented the ecological energy concept during the „Open Days“ at Brussels in 2007.**

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### Historical review

In Kötschach-Mauthen renewable energy has been used since a long time. Already in 1886 the first water power plant was built by Anton Klaus. It was the second in Carinthia and the fifth in the K&K-Monarchy. A power grid existed in Kötschach-Mauthen already in 1899, almost 14 years before a grid was built in Klagenfurt, the Carinthian capital. The grid was extended during the following years by the family Klaus, today's owner of the grid and the utility ALPEN ADRIA ENERGIE (AAE).

The pioneering feat of this family has been the key to today's numerous plants using renewable energy for power production in Kötschach-Mauthen: 21 small hydro power plants (20 in private property, 1 owned by KELAG the Carinthian federal utility), 3 reservoirs, Carinthian's only wind power plant (located at 1,400m – one of the highest wind power plants in Europe), one biogas plant and several PV and thermal solar plants. Three biomass district heating systems were installed due to an initiative of the Mayor of Kötschach-Mauthen Walter Hartlieb in 1997 to connect all public buildings. Today the town hall (used for public services and cultural events), the school buildings (elementary and secondary school), residential buildings, public swimming pool, bank buildings and industrial plants are connected to the biomass district heating. Generated electricity that exceeds the regional demand is sold by the utility "Alpen Adria Energie Naturstrom GmbH" (Manager Ing. Wilfried Klaus) as "AAE-Naturstrom – 100% clean electricity" to about 6,000 consumers in Austria. A renewable power selling cooperation has been established between the "Alpen Adria Energie Naturstrom GmbH" and communities in the Waldviertel region (in the federal state Lower Austria) running wind power plants, in order to build a network of regional renewable energy producers.



**First water power plant built in 1886**



**Wind power plant at 1,400 m**



**"Green Lake" one of three eco reservoirs in the mountains**



**One of three biomass district heating plants**



**Biogas plant**

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### Environmental awareness

Two tourism companies have put their main focus of attention on the use of renewable energies and ecological awareness. The slender-gourmet hotel Kürschner ([www.hotel-kuerschner.at](http://www.hotel-kuerschner.at)) with several national and international eco honours like EU-Eco Label, Austrian ecolabel, Climate Alliance company, Nature Kitchen – “Grüne Haube”, bio certificate) and the campsite Alpengcamp ([www.alpengcamp.at](http://www.alpengcamp.at); [www.schauheizung.com](http://www.schauheizung.com)) with Austrians first internet controlled bio demonstration heating system and also some eco honours (EU-Eco Label, Energy Genie 2007, Climate Alliance company) are the pioneers to start an eco-energy-tourism in Kötschach-Mauthen. Because of the energy structure in Kötschach-Mauthen and the good example “Hotel Kürschner” and “Alpengcamp” set several other tourism companies in Kötschach-Mauthen have already changed their heating systems and their mental attitude towards environmental awareness.

But environmental awareness is not only a focus of the touristic companies. Also our regional hospital in Laas (part of the community of Kötschach-Mauthen) has put its focus on the use of renewable energies. The location of the hospital is special – it was built there in 1927 as medical lung institution because this place has a multiplicity of hours of sunshine (like Davos/Switzerland). Now the regional hospital Laas has a 360m<sup>2</sup> big solar energy plant on the roof with a production of about 167.000 kWh/y. This energy is not only used for warm water and heating but also for cooling. In 2009 a biomass district heating plant will be build. Then the hospital will be energy-self-sufficient and will produce thermal energy for its whole demand of heating and warm water.



**The slender-gourmet hotel Kürschner**



**Campsite Alpengcamp with bio demonstration heating system**



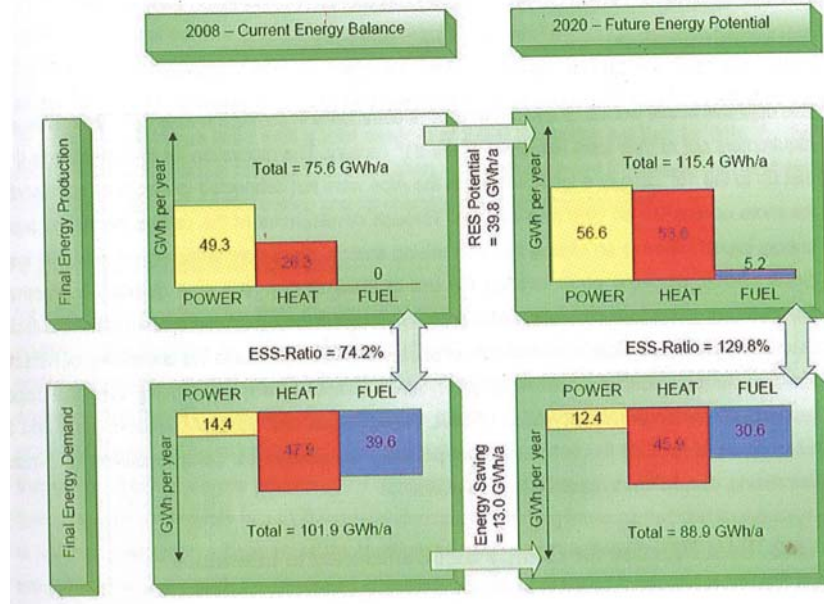
**Regional hospital in Laas with solar energy plant**

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### The energy concept

Currently the energy-self-sufficiency coefficient as the ratio between regional energy demand and regional renewable energy generated is about 75%. Energy demand encloses electricity, heat and fuels. Especially the production of electricity (49.3 GWh/y) exceeds by far the demand (14.4 GWh/y; surplus of 34.9 GWh/y). Thus the energy-self-sufficiency index for electricity is 343%. Heat demand accounts for 47.9 GWh/y, with 26.3 GWh/y locally produced using regional renewable resources: thus the energy-self-sufficiency index for heat is currently 55%. So far



**Final energy demand and renewable energy production 2008 and potentials for the future energy production based on local resources and for energy efficiency actions until 2020**

renewable fuel has not been produced in Kötschach-Mauthen (39.6 GWh/y fuel demand). The potentials of regional resources for additional energy production are presented in the energy balance for 2020 developed by Aste<sup>energy</sup> (Krumpendorf, Carinthia). The potentials of regional energy production are: 7.3 GWh/y electricity, 27.3 GWh/y heat (mainly from biomass) and 5.2 GWh/y fuel (biogas with natural gas quality); in total a potential of 39.8 GWh/y. With additionally energy saving potentials realised an energy-self-sufficiency coefficient of 130% in total could be reached. Energy saving potentials account for 2 GWh/y electricity and heat and 9 GWh/y fuel. These are very ambitious goals, but by participation of all relevant stakeholders and the population they could be achieved.

### Association

#### „energie:autark Kötschach-Mauthen“

To meet the challenges of climate change Kötschach-Mauthen has set the goal that until 2020 the energy-self-sufficiency coefficient should become 100%. Thus in 1996 the platform “energie:autark Kötschach-Mauthen” was installed to deal with renewable energy subjects. The work within this platform resulted in the foundation of an association in May 2008, with politicians, managers, touristic experts and energy producers working together towards the goal. The association office is the drop-in centre for all energy topics in Kötschach-Mauthen.



**The office of “energie:autark Kötschach-Mauthen” gives support and information**

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## Projects

Many varying projects that will be realised during the next years shall build the basis to link the numerous plants producing and using renewable energy and thus enable an “energy experience” in Kötschach-Mauthen. Examples of projects are: “learning garden of renewable energy” for schools, revitalisation of “Hydro Solar power plant exhibition”, the lighthouse project “PV-plant with shared certificates for the population” and a “recharge station for electric vehicles” using solar energy. Some of these projects are financed by the LEADER programme.

The “learning garden of renewable energy” for schools is part of the LEADER programme. In cooperation with the teacher training college Carinthia, the Climate Alliance Carinthia and the schools in Kötschach-Mauthen a pedagogic consolidated concept was elaborated. As from October 2009 it will be possible for schools to come to the “learning garden of renewable energy” and experience the renewable energies with experiments, games and models. In combination with guided tours at the producing plants you will be able to feel, look at and experience energy.

The research project “Multifunctional Energy Centre Kötschach-Mauthen” performed in cooperation with JOANNEUM RESEARCH Graz/Austria (financed by the Austrian Ministry of Transport, Innovation and Technology) was awarded the “Energy Globe Carinthia 2008” (category fire). The tourism association “Kötschach-Mauthen/Plöckenpass” and stakeholders together with JOANNEUM RESEARCH are developing a new tourism concept to foster the “energy experience” in Kötschach-Mauthen – “eco-energy-tourism”. The “Energy-info-point” in the town hall will be accessible 24 hours. Excursions, fairs and workshops will be held in the new event hall. Renewable energy production and use on the one hand and the implementation in the community on the other hand will be presented to the population, energy experts and interested tourists. The objective of all the projects is not only to reach the goal of energy-self-sufficiency, but also to raise the awareness for renewable energy use. Kötschach-Mauthen is participant in an Austrian mobility programme organised by “klima:aktiv”, and has been a Climate Alliance community since 2008 and partner in the Austrian energy programme for communities (“e5-Programm”). These memberships and further projects shall foster improvements in energy efficiency and climate protection by the use of regional renewable resources.



**Collaboration with the schools in Kötschach-Mauthen for the “learning garden”**



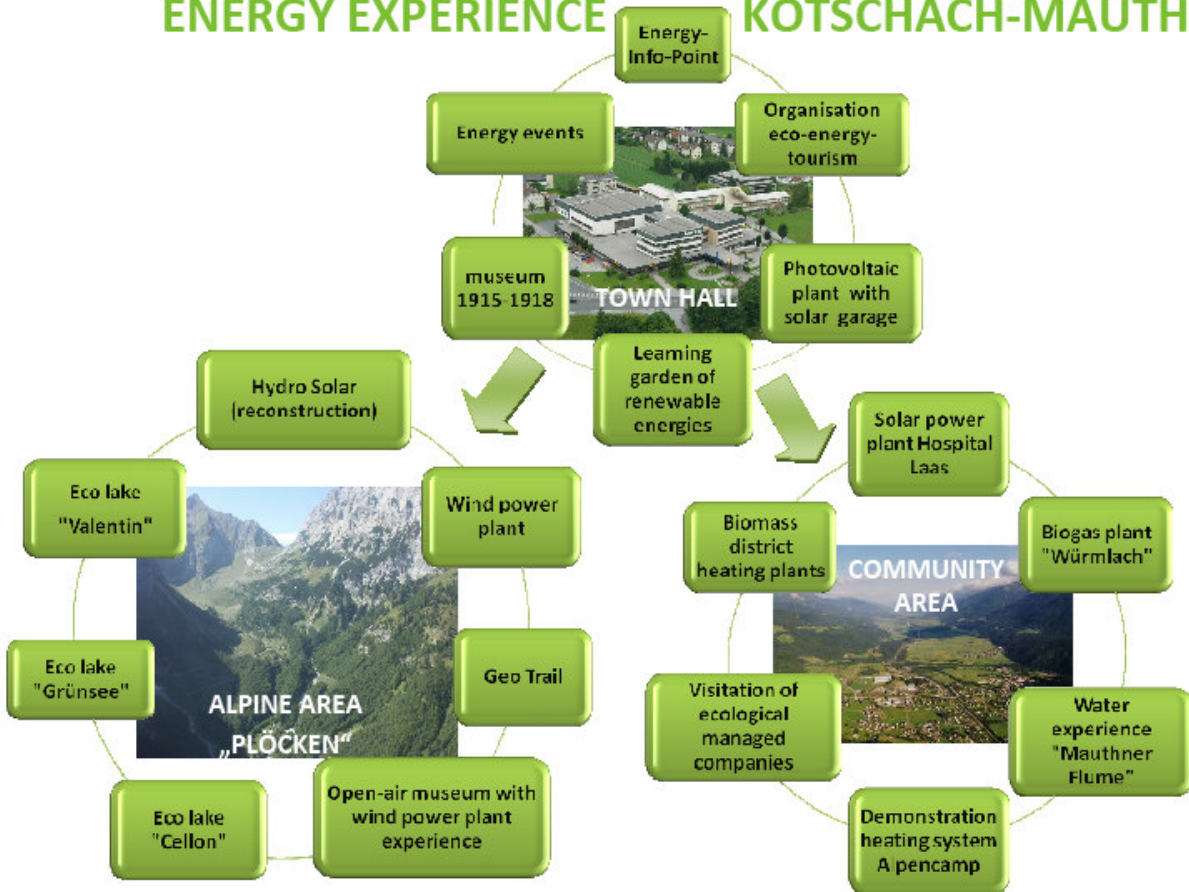
**Guided tours at production plants**



**Mayor Walter Hartlieb with members of the association at the gala “Energy Globe Carinthia 2008”**



## ENERGY EXPERIENCE KÖTSCHACH-MAUTHEN



**Kötschach-Mauthen – a place to feel, look at and experience energy**

MIT UNTERSTÜTZUNG VON BUND, LAND UND EUROPÄISCHER UNION



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