



# Switzerland invites you.

## Green Building Policy and Design: Best Practices from Switzerland

[www.thinkswiss.org](http://www.thinkswiss.org)



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Embassy of Switzerland, Washington, D.C.

### Renewable Energy and Energy-efficient Buildings in Switzerland

Switzerland is a leader in environmental sustainability, design, green technology, renewable energy and environmental awareness by all citizens.

- Switzerland is the most greenhouse gas efficient economy in the developed world, according to the Yale Center for Environmental Law and Policy
- Hydropower meets 60 percent of Switzerland's electricity requirements.
- Over eight percent of all households and business in Switzerland buy "green power."
- Switzerland plans to produce up to 100 gigawatt hours of electricity from domestic wind energy by 2010.
- Switzerland is committed to increasing its share of MINERGIE buildings to 20 percent for new buildings and five to ten percent for renovated houses by 2010.
- Thirteen percent of new and two percent of renovated buildings comply with the MINERGIE standard in Switzerland.

### MINERGIE: The Successful Swiss Building Standard

The example of the Swiss MINERGIE standard offers insights into how green buildings can become both popular and profitable. This voluntary building standard is a driving force in Switzerland's energy policy and is supported by a strong public-private partnership between the economic sector, the building industry and public agencies. It is economically competitive and combines energy efficiency with great living comfort and outstanding design. More than 14,000 buildings are already MINERGIE-certified. They consume around 60 percent less energy than conventional buildings.

This energy efficiency is attained through an approach which considers a building to be an integral system. Only the amount of energy delivered to the site is relevant. Various measures can be taken to meet the standard:

- Compact building form
- Airtight construction of the building shell
- Windows with coated double-glazing
- Improved thermal insulation for walls and roof
- Heated and unheated parts of the building are always separated
- Controlled airing by means of fan-assisted, balanced ventilation
- Use of renewable forms of energy such as solar energy, wood heating, geothermal heat and waste heat
- Efficient household appliances and lighting

To the original MINERGIE standard developed in 1998, three supplementary and more sustainable standards have been added in 2007. The most energy efficient standard MINERGIE-P, for example, reduces energy consumption by a further 20 to 30 percent compared with a normal MINERGIE building.

MINERGIE is designed to be economically competitive. Construction costs for new MINERGIE buildings are not allowed to exceed those for conventional buildings by more than 10%. The high number of MINERGIE-certified buildings shows that this figure is feasible and that constructing energy-efficient - and at the same time more comfortable - homes is affordable.

To ensure that these strict requirements are met, the MINERGIE standard has to be included in the planning from the very start. Compact structures, such as apartment buildings, attain energy efficiency more economically and are therefore more likely to pay off their additional costs in the long run. However, with current energy prices, most MINERGIE buildings and particularly MINERGIE single-family homes are still not able to compensate for the additional investment costs through the



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Higher quality of life, lower energy consumption  
Mehr Lebensqualität, tiefer Energieverbrauch



gains from saving energy alone, meaning that the current popularity of MINERGIE buildings cannot be explained by the mere cost-benefit calculations of their energy savings. To understand its success, a wider array of factors has to be taken into account, one of which is MINERGIE's strong public-private partnership with the Swiss economic sector, building industry and public agencies.

### **MINERGIE as a Driving Force in Swiss Energy Policy: Reasons for Its Success**

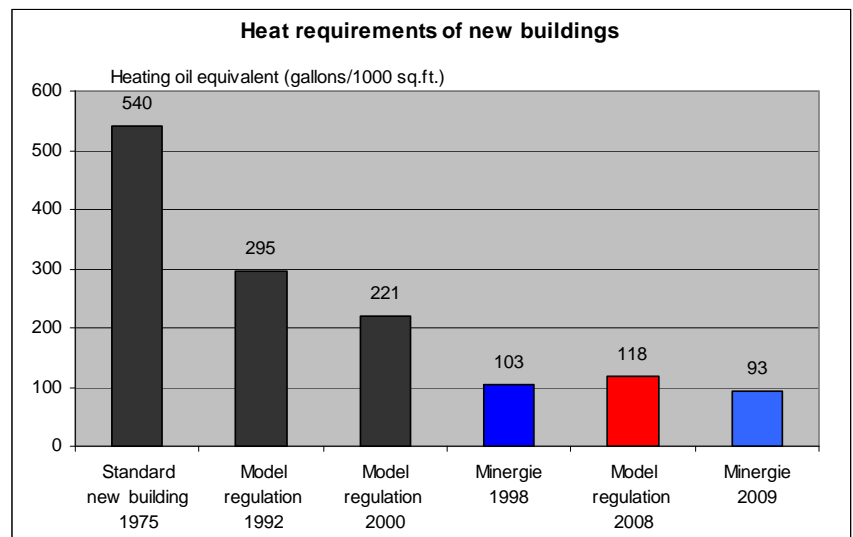
MINERGIE is a registered trademark owned by the nonprofit MINERGIE Association (AMI) and enjoys strong legal protection. AMI counts 380 members, including many architectural firms, construction and manufacturing companies, and banks. MINERGIE is in close contact with 900 local businesses experienced in building according to the standard. One reason for the strong support by private companies is the positive, green image it provides their customers. World-renowned companies such as IKEA and Swiss Re are MINERGIE members and have decided to construct all their new buildings in Switzerland according to the standard. Credit Suisse and local Swiss banks offer MINERGIE credits under favorable conditions.

In addition, all 26 Swiss cantons (states) are members of the MINERGIE Association and 9 of them directly promote MINERGIE by offering subsidies to homeowners. The amounts of subsidies for a MINERGIE single-family home range from USD 1,360 to USD 9,090. Moreover, 19 out of 26 cantons provide subsidies for the even stricter MINERGIE-P standard. Here the sums paid are considerably higher, averaging around USD 12,100 per new single-family home.

Since its launch in 1998, MINERGIE has become a very important factor in Swiss energy policy. The MINERGIE certificate has been given to a wide variety of buildings, ranging from single-family homes, to shopping centers and even historically valuable buildings with landmark status. MINERGIE's impact is also reflected in the fact that the minimum requirements in Swiss cantonal building regulations (Model regulation 2008) have almost reached the level of the 1998 MINERGIE standard.

Apart from the voluntary nature of the standard and the strong private and public sector support, there are several other important success factors. Firstly MINERGIE not only focuses on energy efficiency, but it also strongly markets itself as a way of improving the indoor living environment.

Thanks to good and consistent thermal insulation and a fan-assisted, balanced ventilation system, MINERGIE guarantees a higher quality of life and considerably increases the value of the building. Secondly, building clients, architects and planners are completely free in the design and their choice of materials and in the internal and external structure of their building--probably one of the most important reasons for the wide acceptance of the standard.



Source: Konferenz Kantonaler Energiedirektoren, 2009: <http://www.endk.ch/kantone.htm>

### **Further Information**

Handouts and presentations: <http://www.thinkswiss.org/>, [http://www.eesi.org/100709\\_minergie](http://www.eesi.org/100709_minergie)

MINERGIE: [www.minergie.ch](http://www.minergie.ch)

Yale/Columbia 2008 Environmental Performance Index: <http://epi.yale.edu/Contents>

### **The ThinkSwiss Program**

As a leading country in science, research and technology, Switzerland is working with its American counterparts to address key global topics like climate change, to better understand trends and arrive at solutions. To this end, the Swiss Confederation is operating the ThinkSwiss program, which also presents today's event.

<http://www.thinkswiss.org/>

