



EIE-06-085 SOLPOOL

Intelligent Energy  Europe

# **Solar Energy Use in Outdoor Swimming Pools SOLPOOL**

**National Fact sheet Reports on the state of the Demand and Potential of Solar Heating of Outdoor Swimming Pools**

**Switzerland**

*D05 National fact sheets on boundary conditions*

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April 2009



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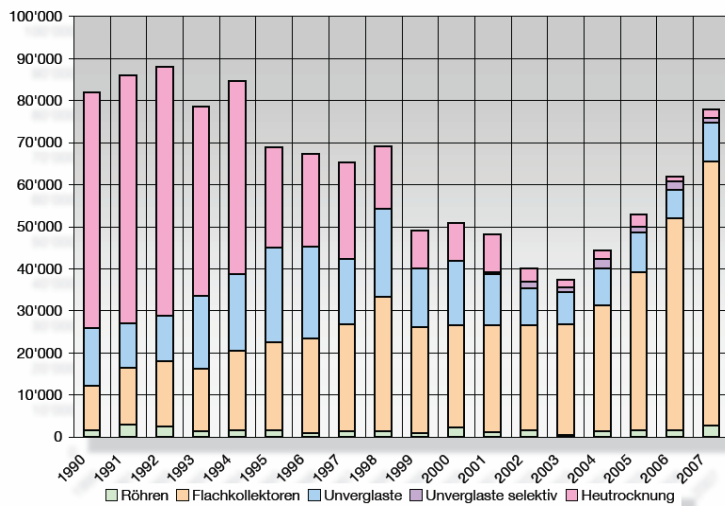
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## 1 Introduction

Following information is based on surveys performed by the Swiss solar organisation Swissolar. Swissolar has about 180 members, formerly producers, planners and installers of all solar energy applications.

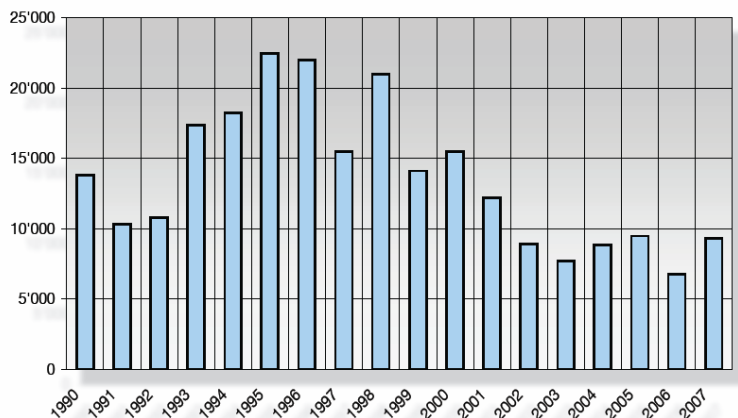
## 2 Environmental conditions for the use of Solar Thermal systems

The development of the Switzerland solar thermal market can be seen in the chart below. Since 2003 a continuous increase of the installed collector area is remarkable. Until the end of 2007 a total of 0,67 Mio. m<sup>2</sup> of collectors have been installed, corresponding to an installed power of 490 MW<sub>th</sub>.



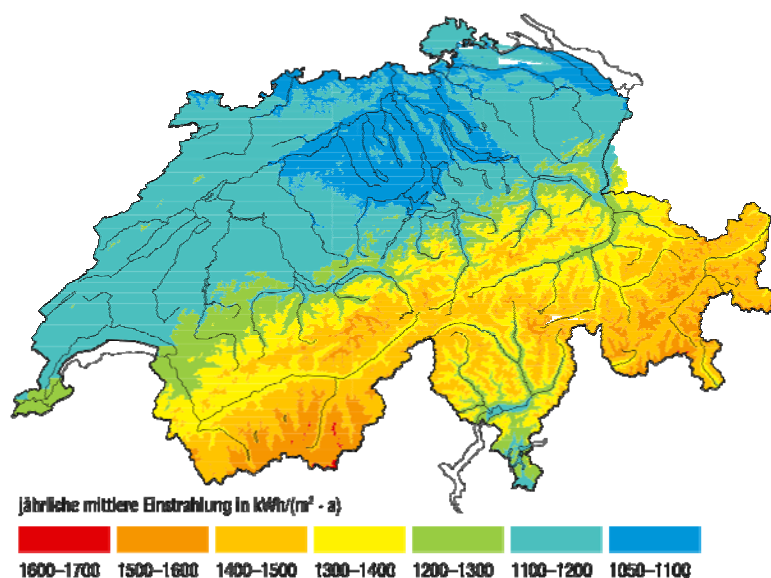
**Figure 1: The solar thermal market in Switzerland (swissolar) – installed square-meters per year**

The corresponding figures show the development of the unglazed absorber market. There is a downtrend from 1998 with a stagnation of installed absorbers from 2002 until today.



**Figure 2: The market of unglazed absorbers for swimming pool heating in Switzerland (Swissolar) – installed squaremeters per year**

The distribution of Solar Energy (Global radiation of yearly sums) is shown in the following chart. It can be seen that from 1050 kWh/m<sup>2</sup> in the northwestern regions up to 1600 kWh/m<sup>2</sup> in the highland of the southeastern mountains with peak values of up to 1700 kWh/m<sup>2</sup>.



**Figure 3: Solar radiation map of Switzerland (swissolar)**

### 3 Market analysis

Although no official report related to the number of existing open air swimming pools have been published it can be estimated that in Switzerland approximately 700 public open air pools are existing<sup>1</sup>. In addition to the public pools approximately 400 private pool were built each year<sup>2</sup>.

#### Suppliers in Switzerland

At the moment following producers of solar absorbers can be listed, distinguished between public and private pools:

Public	Private	
X		AS Absorber von Energie solaire SA, Z.I. Ile Falcon, 3960 Sierre / Wallis , Suisse
X		AQUA-SOL-System von Rüesch Solartechnik, Dottikon
X		FS-Energiedach-System, Mügler Dach&Wand, Thal & Reineck
X		Soltec, Solarroof
X	X	Minder Technik, 8424 Embrach
	X	Relax-Pool, GmbH, 8597 Landschlacht
	X	ESPA Schweiz, 4563 Gerlafingen

<sup>1</sup> Estimations of the Assoziation of in door and out door pools (VHF) machtes with the operator of the [www.swissbadeanstalt.ch](http://www.swissbadeanstalt.ch). For the cantons and the swiss federal office these figures have not been recorded.

<sup>2</sup> Dr. Andreas Altwegg, Geschäftsführer SVBP: [http://www.svbp.org/referat\\_altwegg.pdf](http://www.svbp.org/referat_altwegg.pdf)

## 4 Best practices

### 4.1 Pool 1 – Botza in Vetroz

#### Le Camping du Botza à Vetroz (CH)

Surface de panneaux solaires type AS : 174 m<sup>2</sup> (2 x 52 m<sup>2</sup> pour les 2 blocs sanitaires; 70 m<sup>2</sup> pour le chauffage de la piscine)

Chauffage de l'eau pour la piscine (28°C) et production d'eau chaude sanitaire (ECS) de juin à septembre.

Volume de la piscine: 600 m<sup>3</sup>

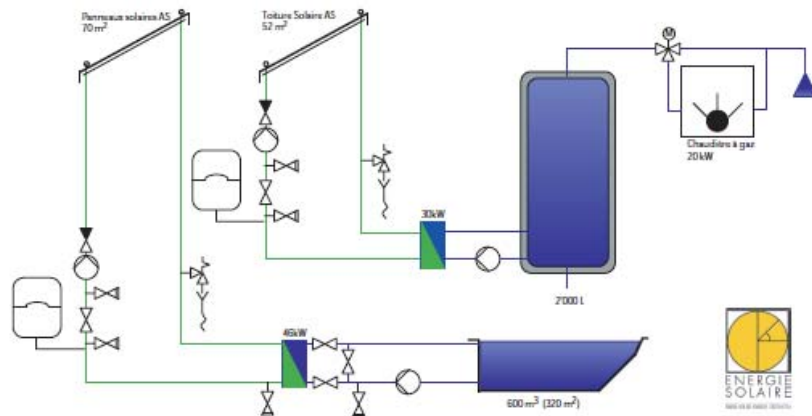
Consommation d'ECS: 2 x 2'200 litres/jour à 50°C

Taux de couverture solaire pour production d'ECS: 72 %

Date de construction: 2003

Conception & Réalisation : Energie Solaire S.A.

Projet soutenu par le programme P&D et le Service Cantonal de l'Energie, Etat du Valais.



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## 4.2 Pool 2 – Piscine de Versoix

### Piscine de Versoix (GE)

Piscine du centre sportif de Versoix "La Becassière"

Surface de 220 m<sup>2</sup> de toiture solaires AS fixée sur toiture Eternit existante

Production d'ECS et chauffage piscine

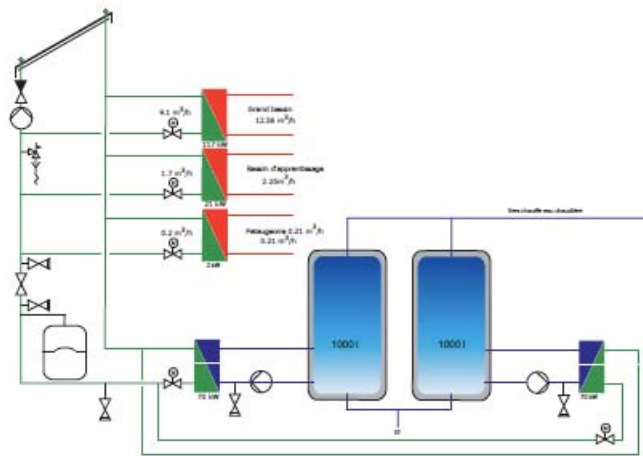
Consommation ECS variant suivant la saison: entre 2000 et 4000 litres/J à 50°C

Volume de stockage solaire: 2 x 1000 litres

Production solaire estimée: 450kWh/m<sup>2</sup>.an soit environ 99'000 kWh/an

Taux de couverture solaire: 80 %

Date de réalisation: mars 2006



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### 4.3 List of recommended open air pools in Switzerland (swissolar)



#### Liste der empfohlenen Bäder (kein Anspruch auf Vollständigkeit)

##### *Mit Sonnenwärme beheizte Bäder in der Deutschschweiz und Tessin*

- Solarbadi Konolfingen Bern
- Acquaparco Rivera, gemischtes Energiekonzept, Lugano
- Schwimmbad Fondli, Dietikon
- Krienser Badi, Kriens
- Freibad Bottmingen, Bottmingen
- Schwimmbad Nau, Laufen
- Klostermatte, Brig
- Schwimmbad Fontanivas, Ilanz
- Appenzeller Badi, Appenzell
- Parkschwimmbad Lyss, Lyss
- Freibad an der Aare, Solothurn
- Schwimmbad Altdorf, Altdorf
- Badi Waldenburg, Waldenburg
- Seebad Baldegg, Baldegg
- Badi Wallbach, Lenk
- Schwimmbad Konolfingen
- Schwimmbad Ebnat-Kappel
- Schwimmbad Muri, Muri AG
- Freiluft- und Hallenbad Bödeli, Interlaken
- Schwimmbad Stigeli, Affoltern am Albis
- Schwimmbad Im Moos, Schlieren

##### *Mit Sonnenwärme beheizte Bäder in der Westschweiz*

- Aquaparc, Bouveret
- Camping du Botza SA, Vétroz
- Camping La Colobière, Neydens
- Centre sportif la blancherie, Délemont
- Centre Sportif les Vernets, Les Acacias
- Genève Plage, Geneve
- Les Musquetaires, La Tour de Peilz
- Piscine de St.Imier, St. Imier
- Piscine de Versoix, Versoix
- Piscine de Vevey, Vevey
- Piscine du Communal au Locle, Le Locle
- Piscine du Val-de-Ruz, Engollon
- Piscine Guillamo, Sierre
- Piscine Vevey-Corseaux Plage, Corseaux
- Piscines du Val-de-Travers, Boveresse
- Piscine Bulle, Bulle

##### **Kollektoranlage für die Duschen** (mehr Info dazu auf [www.jugendsolarprojekt.ch](http://www.jugendsolarprojekt.ch))

- Badi Moosseedorf
- Badi Fraubrunnen
- La Neuveville
- Naters, Sportplatz/Schwimmbad
- Versoix, Centre Sportif
- Badewiese Cudrefin

Wichtige Anbieter von Solaranlagen für Warmwasser und Heizung finden sie auf [www.swissolar.ch](http://www.swissolar.ch)

## **5 Finances**

### **Legal foundations**

The MuKE n 08 (Cantons regulations in the energy field of the cantons) claim for outdoor heating the using renewable energies. This is valid too for open air pools larger than 8m<sup>2</sup> pool surface. Half of the cantons already make this regulation to rule, others are in the planning phase.

### **Subsidies and grants**

No specific programmes for funding the investment costs for open air swimming pools exist in Switzerland, either in the cantons nor for the association of in- and outdoor-pools (VHF).