

# Solar system in Lovča, district Žiar nad Hronom, Slovakia

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## SUMMARY



Thermo-solar systems have been applied in the three-stored private house in Lovca, district Ziar nad Hronom, Slovakia. The owners made a wise investment in terms of high-efficient use of solar energy for several purposes:

- Solar energy for preparation of domestic hot water, DHW
- Floor heating
- Heating of outside swimming-pool water

Maximum energy gain generated annually is 10 900 kWh

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## PROJECT OBJECTIVES

The main objectives that were set up by the house owners are:

- To reduce their energy bills
- To make household running energy efficient
- To prolong the time of using the outdoor swimming pool
- To contribute to energy conservation and improvement of the air quality

## THE PROJECT

Ten solar collectors have been put into one line and mounted on the southern side of the roof and is connected to a circuit containing water. The technical parameters of the collectors are following:

- Type of solar collector: Salk 200 1.V
- The solar collectors area of absorption: 20 m<sup>3</sup>
- Maximum energy gain: 10 900 kWh/year

The solar collectors cooperate with classical electric heating. The investment cost was covered by the owners of the house. The installation has been carried out by the company AQUA-SOLAR.

## **THE RESULTS: GENERAL**

The installed solar collectors enabled the house owners to secure preparation of domestic hot water, floor heating and heating of inside swimming pool:

- Solar energy for preparation of DHW 300 l/day bivalent
- Floor heating 150 m<sup>2</sup>
- Heating of outside 18 m<sup>3</sup> swimming-pool

Maximum energy gain generated annually is 10 900 kWh what cover significant part of energy consumption of the household.

## **THE RESULTS: ENVIRONMENTAL, SOCIAL & ECONOMIC**

In solar hot water systems, sunlight reduces the amount of electricity or gas required to heat your hot water supply, so it cuts fuel bills. Residential buildings benefit most where hot water demand is highest, as in this case when solar energy is used for several purposes in the big house.

The application of solar collectors is environmentally sound as they contribute to improvement of air quality. Besides the use of solar energy has an educational impact on the people in the neighbourhood as one of the reasons for low level of solar energy utilisation in Slovakia is low public awareness.

### **Information**

Title:	Solar system in Lovča, district Žiar nad Hronom, Slovakia
Installation organisation:	Miroslav Matuska - AQUA-SOLAR S.Partosovej 3/23 965 01 Ziar nad Hronom tel/fax + 421 045 6734513 mobile: + 421 903 220 710