

Sheet No: 1

Country: Greece

End User: Mevgal Dairy



View of collectors filed in MEVGAL plant



One collectors row in MEVGAL solar plant

General Presentation

The project regards a TPF action in “Mevgal S.A.” industry for a solar thermal application combined with a heat recovery measure.

Mevgal S.A. is a dairy industry situated in Northern Greece (between Thessaloniki and Giannitsa).

The heating requirements (mainly for pasteurisation and cleaning) are covered by a steam network. The steam boilers are running on heavy oil and are fed by cold water; daily water requirements are about 75 m³.

Technical Aspects

The total collectors area is 727m². A combination of three collectors types has been used: selective flat plate (403m²), black painted flat plate (216m²) and 108m² of CPC (Compound Parabolic Concentrators).

The heat produced by the collectors’ filed is used to preheat the water feeding the steam boiler. Two accumulators are used with a total volume of 10 m³.

The mean annual value for the total solar gain is about 270 MWh.

The solar plant is only a part of an installation which includes a heat recovery system from the steam boilers blow-down.

Thermal energy savings are split as follows: 30% from solar and 70% from the blow-down heat recovery system.

Contractual aspects

The project was financed (with a TPF scheme) in the frame of a national programme (Operational Programme of Energy 1994 – 1999) and CRES was the contractor of the project. The bodies of project implementation were CRES and MEVGAL S.A. The system is in operation from 1999. Subcontractor for the installation of the whole system was the company Intersolar S.A.

The operation and maintenance of the system has been arranged by a private agreement between CRES and MEVGAL S.A. Based on this agreement, CRES has the responsibility of system’s monitoring, operation, service and energy measurements. Once the payback period has been completed, the system will become exclusive property of the End-User. The contract agreement sets the kWh_{th} price to be equal to the cost of the kWh_{th} produced by the cheapest conventional fuel available (a continuously updated value). The total TPF investment for the whole application (solar plant and heat recovery measure), was about 130000 €. The mean annual energy savings are about 900 MWh and the price for each MWh equal to 25 € (in year 2005).

Source: CRES internal reports, G. Kanavakis (MEVGAL project’s responsible).