



## BEST PRACTICE FACTSHEET



### MEVGAL S.A.

MEVGAL S.A. was founded in 1950 and is one of the largest dairy enterprises of Greece. Today, the company distributes products in the Greek and European market. Since 1985 MEVGAL S.A. developed an intense exporting activity.

High technology methods and the strictest controls are implemented at the company's facilities, thus ensuring the high quality, nutritional value and freshness of all of the products. The HACCP system has been implemented since 1996 and the company is the first Greek dairy industry to have been certified under ISO in 1999, with respect to three dairy product categories (milk, cheese and yogurt). MEVGAL demonstrates their commitment by virtue of the quality system compliance certificate with respect to the following standards: ISO 9001:2008, ISO 22000:2005 (HACCP), BRC GLOBAL STANDARD-FOOD, IFS INTERNATIONAL FOOD STANDARD.

#### Initial Situation

Hot water and steam is required in many processes in the dairy industry. These processes concern washing of the equipment, cheese maturing, milk pasteurization and sterilization, milk spray drying and bottle washing. The thermal needs from the hot water and steam production is generated in the central conventional boiler room of the factory and distributed throughout the factory via a piping system. The central boiler room consists of three steam boilers.

#### Measures

In the framework of the Community Support Framework for 1994-1999, the project "Pilot installation of a central solar system for pre-heating boiler feed water

in MEVGAL S.A. industry" was financed (with a TPF scheme). CRES was the contractor of the project and the involved parties in the project implementation were CRES and MEVGAL S.A.

This project aimed to reduce the energy consumption of conventional fuels. In the facilities of MEVGAL S.A in Koufalia, a village near Thessaloniki, an energy saving system was implemented that was divided into the following three (3) subsystems:

- A field of central solar collectors with a 403,2m<sup>2</sup> collector area for hot water production.
- A field of central solar collectors with a 324m<sup>2</sup> collector area for hot water production.
- A heat recovery system from the three steam boilers blow-down using automatic

## *Integrated quality management system in all production stages*

Mr. Konstantinos Alatas

<http://www.mevgal.gr/frontend/index.php>

#### Time Investment

8 years

#### Savings

Thermal energy: 6x10<sup>6</sup> kWh  
in a period of 8 years

#### Year of Realisation

2000

#### Other benefits

Use of renewable energy source

Reduction of CO<sub>2</sub> emissions

devices. The boiler blow-down process was implemented to ensure proper functioning of the boiler (maintaining desired levels of total salt concentration and pH value).

The hot water from the closed-loop hydraulic circuit of the solar collectors heats (via an internal heat exchanger) the water in two, 2.500 liters solar storage tanks. The hot water leaving the solar storage tanks is used for preheating the water entering the steam boiler. The energy saving from the boilers blow-down was achieved from recovering the heat loss via a heat exchanger.

The energy saving system started to operate in 2000. The operation and maintenance of the system had been arranged by a private agreement between CRES and MEVGAL S.A. that

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was signed in 1998. Based on the agreement, CRES had the responsibility of the system's monitoring, operation, service and energy measurements. Once the payback period has been completed, the system would become exclusive property of the end-user. The payback period was eight years, between 2000 and 2007. In this period the total thermal energy production was approximately  $6 \times 10^6$  kWh, 80% from steam boiler blow-down and 20% from solar collectors.

