



POSSIBILITIES OF USING SOLAR ENERGY TECHNOLOGIES IN WESTERN CRETE

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- Solar Energy is currently used for heating, cooling and power generation in Western Crete.
- Although 15 years ago solar energy was used mainly for heating, nowadays it finds more applications in energy generation, apart from heating.

Traditionally solar energy was used in Crete for :

- A) Supporting Greenhouse cultivations.
- B) Production of hot water with simple thermosiphonic systems and flat plate collectors.

However the liberation of energy market in Greece has increased the use of solar energy for power generation the last 15 years.

The rapid growth of the hotel sector in Crete has increased also the use of large solar thermal systems for hot water production in various hotels.

Apart from solar thermal applications, solar power generation in western Crete is achieved with

- A) PV systems installed in the fields with peak power 80 KW_p, (with or without a tracking system).
- B) PV systems installed on the roofs of buildings with peak power 3-10 KW_p.

The generated power from these systems is sold to the grid in attractive prices.

Solar cooling is quite promising in Crete, since the season that cooling is required coincides with the period of high solar irradiance. Two hotels in Crete have installed currently solar cooling systems (with flat plate collectors) for space cooling. However this technology is economically viable only for large systems and with financial subsidies.

An increasing interest for solar thermal power generation exists at the moment in Crete. Such projects with parabolic trough solar collectors today are trying to obtain the necessary licences and hopefully 1-3 such plants will be installed in the near future in Crete.

However there are public opposition for the creation of these plants mainly due to the large area which is required for the installation of the solar field.

Solar energy finds various applications in buildings in Crete including

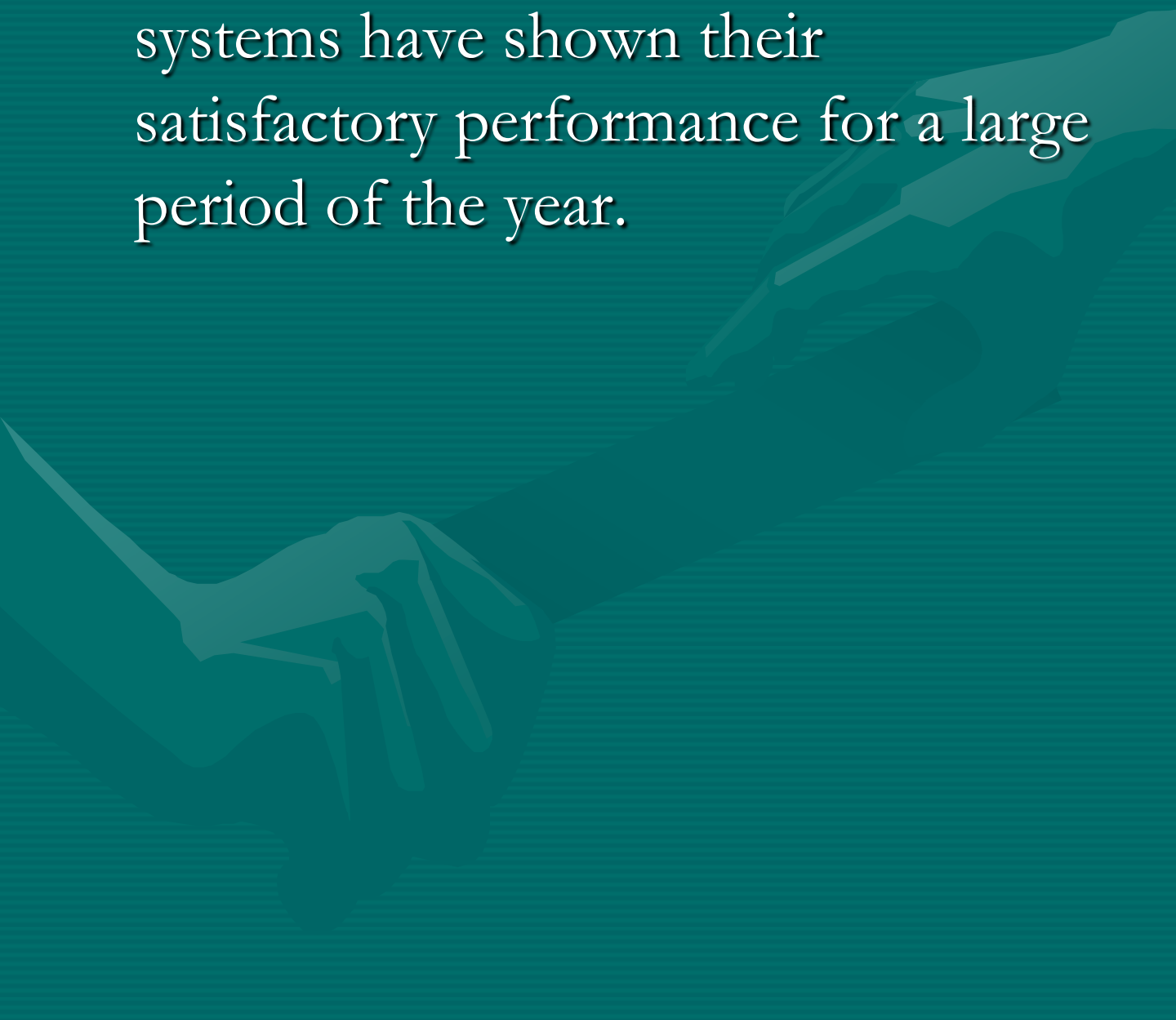
A) Applications of Bioclimatic architecture.

B) Construction of energy autonomous houses where all their power needs are covered with PV and wind energy systems. These houses are not interconnected with the power grid.

Solar drying of various agricultural products can be achieved in Crete since the solar irradiance in the island is high.

However there are not commercial systems operating at the moment in Crete.

Solar cookers are not spread currently in Crete although experimental systems have shown their satisfactory performance for a large period of the year.



Solar desalination systems have experimentally demonstrated the possibility of using solar thermal energy for sea water desalination in Crete.

However such systems have not found commercial applications.

EU FUNDED ENERGY PROJECTS IN WESTERN CRETE

- Various EU funded projects have been implemented the last years from TEI of CRETE in the field of innovative energy technologies through various EU initiatives like INTERREG , 6th framework programme and IEE , which are

EU FUNDED ENERGY PROJECTS IN WESTERN CRETE

- REGENERGY , Network of pioneering communities and regions working on innovative energy solutions.
- EU Initiative -INTERREG3C , 2005- 2007

EU FUNDED ENERGY PROJECTS IN WESTERN CRETE

- SOLATERM , A New Generation of Solar Thermal Systems in the Southern Mediterranean.
- EU initiative , 6th framework programme , 2006-2008

EU FUNDED ENERGY PROJECTS IN WESTERN CRETE

- CLEARING HOUSE SUPPORT
, paving the way for a better
energy performance of buildings in
the EU.
- EU initiative , INTELLIGENT
ENERGY EUROPE , 2007-2009

EU FUNDED ENERGY PROJECTS IN WESTERN CRETE

- SETCOM , Sustainable Energies
in Tourism Dominated
Communities
- EU initiative , INTELLIGENT
ENERGY EUROPE 2008-2011

INNOVATION COUPONS

- TEI of CRETE has received from the Greek secretary of research and development an innovation coupon for assisting a small enterprise to develop a new innovative solar dryer.

PATENTS IN TEI OF CRETE

- TEI of CRETE has received various patents in the field of renewables including
 - 1. A hybrid solar dryer
 - 2. Drying of sewage sludge with solar energy.
 - 3. Production of pellets from various agricultural wastes and byproducts.
 - 4. An automatic ignition system for burners using olive kernel wood as a fuel.

- Thank you very much for your kind attention
- Platanias –Crete , 16/9/2011

TECHNOLOGICAL EDUCATIONAL INSTITUTE OF CRETE <http://www.teicrete.gr>

