

ORGANISATION FOR THE  
**PROMOTION OF ENERGY TECHNOLOGIES**



Mednet:  
Results of activities 2003-2005



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Mrs. Vassiliki Papadopoulou  
 CRES - Centre for Renewable Energy Sources  
 19 km Marathonos Ave., 19009 Pikermi, Greece  
 tel 30-210-6603310, fax 30 - 210 - 6603302  
 Email: opet@cres.gr

**Further information:** <http://www.cres.gr/mednet/>

**Ever-increasing energy consumption is one of the greatest challenges facing Europe and the world today. Most consumption is derived from fossil fuels - much of it imported from outside Europe, depleting natural resources and contributing to global climate change, through increased greenhouse gas emissions. When the EU signed the Kyoto Protocol, it promised to reduce these emissions by 2012, by 8% in comparison to 1990 levels. To meet this commitment, significant changes of behaviour are required now, both in terms of energy supply and demand management.**

The Organisation for the Promotion of Energy Technologies (OPET) Network, established by the European Commission, seeks to enhance sustainable energy production, distribution and consumption (excluding nuclear energy) by promoting the use and exchange of information on new technology in the marketplace. The resulting efficient knowledge transfer benefits all European citizens, supporting and implementing European policy priorities at EU, Member State and regional levels, accelerating innovation of renewable energy sources (RES) and the rational use of energy (RUE).

The OPET Network was restructured in 2002 around a series of Thematic Consortia to provide an integrated and comprehensive view of on-going research and to further innovative technologies deployment. The CO-OPET partners in cooperation with each Thematic Consortium have issued a Consortium brochure, which provides a summary of the promotion and dissemination actions undertaken between 2003 and 2005 in emerging sustainable energy technologies, aimed at the valorisation and integration of R&D results, pointing the way towards more intelligent energy use in Europe.

***The OPET Thematic Consortia:***

- Buildings
  - Electricity generation from renewable energy sources (RES-e)
  - Combined heat and power / District Heating (CHP/DH)
  - Clean fossil fuels (CFF)
  - Energy issues in transport
  - New energy technologies in the Mediterranean region (MEDNET)
  - Modern and clean energy and transport technologies in Latin America and the Caribbean (OLA)
  - Early market introduction of new energy technologies (EMINENT)
- and
- CO-OPET, support to the OPET Network

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The energy sector is very crucial for the Mediterranean and it is a key factor in economic growth. The Mediterranean basin is faced with special future challenges (increasing population growth, high industrialisation and consumption rates, etc.). Increased energy and water consumption places stress on the environmental balance.

The application of renewable energy sources (RES), energy efficiency (EE) and new energy technologies are highly favoured by the regional climatic conditions, the substantial development rates and the resulting growth in energy consumption and fundamental to a high level of cooperation between the EU and Mediterranean partners. A coherent approach and specific joint strategic plans are imperative.

The EU has introduced a set of policies to meet these challenges through on-going initiatives and programmes.

**OPET MEDNET supports Mediterranean cooperation in the fields of renewable energy sources and energy efficiency technologies.**

MEDNET aims to promote new energy technologies in the Mediterranean by:

- Disseminating Mediterranean energy market information specifically for the Southern Mediterranean region
- Promoting EU energy policies.

MEDNET aims to implement networking activities such as:

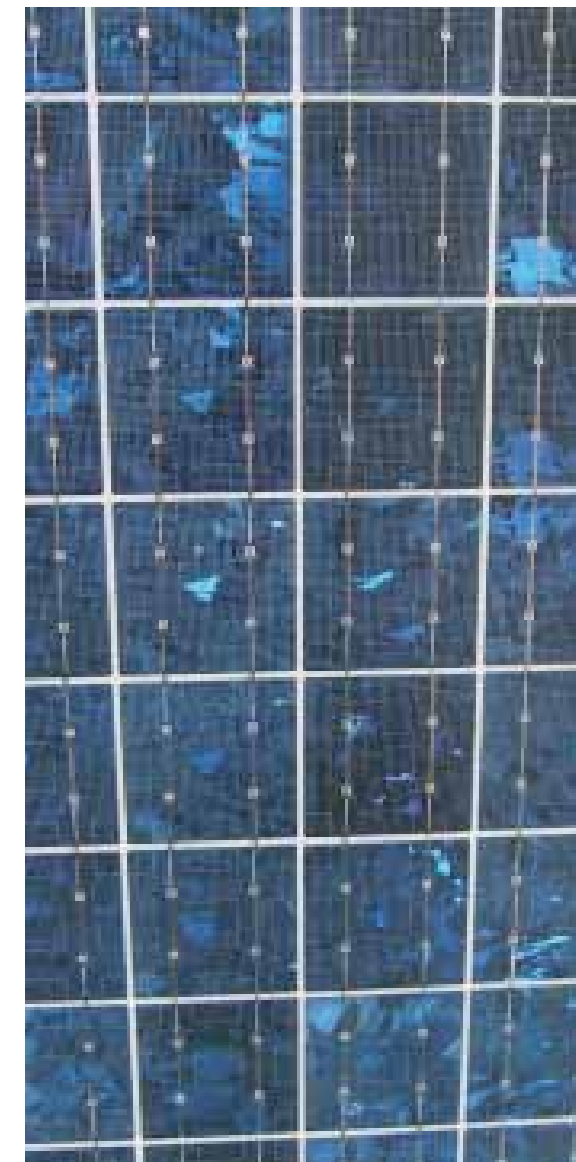
- A Mediterranean Web-based Discussion Area
- Discussion forums
- News and announcements
- Policy and financial issues documentation
- Case studies for regionally applicable technologies
- Electronic newsletters and publications
- Constantly updated database with major facts and figures on the MEDENER energy markets.



The initiative comprises five Mediterranean partner organisations:

- CRES from Greece (co-ordinator)
- IDAE from Spain
- ENEA from Italy
- ADENE from Portugal and
- ICTAF from Israel.

The first four are also MEDENER network members. The MEDENER network, brought together in 1997 twelve Mediterranean energy agencies, and is actively working towards a common approach to energy issues and the exchange of successful experience. Its partners are located in Algeria, Egypt, France, Greece, Italy, Jordan, Lebanon, Morocco, Portugal, Palestine, Spain and Tunisia.



### High level initiative in a key area



All members from the Southern Mediterranean enjoy support from the highest political levels, as well as from industrialists, electric power companies, regulatory bodies and international organisations. They are experienced in the RES and RUE programme design and implementation. The proximity of Southern Mediterranean countries to the European Union and their special conditions for development of policies associating energy conservation and environment, make this region a key to the future development of European energy strategies and specifically of OPET activities.



This database can be easily accessed from the website <http://www.cres.gr/countries/db.html> and has five separate sections:

- Energy Projects
- National Energy Programmes
- National Measures for Energy
- Energy Statistics up to year 1998
- Energy Statistics 1998 onwards.



Further information that can be found on the website:

- Energy Investment Projects
- Key Organisations
- Programmes
- National Measures
- Operational Installations
- Energy maps including electricity, oil and gas networks.

The country Profiles have been developed to present an overview of the national energy policy issues of the seven Mediterranean Countries region (Algeria, Egypt, Jordan, Lebanon, Palestine, Morocco and Tunisia). These documents are structured along 5 parts, as follows:

- Introduction
  - Review of the regional energy analysis
  - Review of the national energy analysis
  - Conclusion
  - Energy projections
- and are available at

<http://www.cres.gr/mednet/cprofiles/introduction.htm>



A series of case studies has been published on [http://www.cres.gr/mednet/case\\_studies.htm](http://www.cres.gr/mednet/case_studies.htm), for example :

**Case Study:**  
*Sidi Daoud Wind Farm, Tunisia,*  
*Société Tunisienne*  
*de l'Électricité et du Gaz*



This Project was carried out in the framework of the EU actions for Mediterranean countries (INTERSUMED & SINERGY Programmes). The main aim is energy source diversification using renewable energy for electricity production, avoiding the annual emission to the atmosphere of around 50,000 million tonnes of CO<sub>2</sub>, allowing Tunisia to get closer to its Kyoto commitments. 150 jobs have been created and the electrical infrastructure has been improved.

**Case Study:**  
*Hybrid system (biomass and solar) for*  
*hot water production and heat space*  
*in a swimming pool, Portugal*



With high RES potential, the Municipality of Alcaur do Sol decided to use RES to supply energy for its facilities in order to contribute to the energetic valorisation of those resources and to become a more environmentally friendly region. The project aimed to produce hot water for a municipal swimming pool (25x12,5 m) through renewable energy sources (biomass and solar). The biomass resource is pinecone scale that is burned in a 300 kW boiler. Furthermore, the installation includes a solar system of 120 m<sup>2</sup> that serves to heat space and to produce SHW.

Other technical features

- the energy produced from biomass and solar acts as energy back up source
- the solar system includes a box of integration
- annual consumption of pine cone scale - 150 tonnes
- automatic feed in system of the boilers.

There exists a high potential for the replication of similar projects.



**Case Study:**  
*Negev Desert Solar*  
*Power Station, Israel*

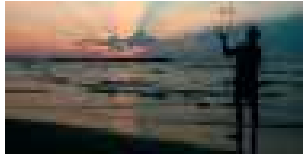


The Israeli Government decided in 2002 to establish the first Israeli Solar (thermal) Power Station (100- 500 MGW) in the Negev Desert (in the south of Israel). The main aim of this project was to choose the appropriate location for the station. OPET member ICTAF took part in the evaluation which took 8-10 months, culminating in the choice of the region of Ashalim (some 50 Km south of Be'er Sheva) as the most appropriate place for the Solar (thermal) power station.

The project included the following stages:

- Choice of the relevant indicators for evaluation. These include the minimum dimensions (a Solar Power Station needs a large area), availability, the slope (areas with a land slope of over 10% are excluded), technical needs, radiation, distance from labor, distance from needed infrastructures and the environmental and geological aspects.
- Mapping of the relevant areas in the Negev desert which are unoccupied and are not planned for use in the near future by other elements such as tourism, airports, nature reserves, settlement and industry.
- Collecting data for all the relevant areas and to evaluate each with regard to the chosen indicators.
- Decision on preferred location.





These have been prepared to raise awareness in the target group about EU energy policy and financial aspects of energy technologies and to promote regional co-operation in RES technologies such as solar energy and biomass utilisation, RUE and energy efficiency in domestic and industrial buildings as well as industry generally.

- **Six information documents** were developed on national energy policy issues for Greece, Spain, Portugal, Italy, Israel, Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine and Tunisia covering security of energy supply, competitiveness of the energy sector, environmental protection, energy investment projects.
- **One information document** focuses on the financial aspects of energy technology implementation which presents modern financing mechanisms such as third-party financing, build - operate - transfer schemes, venture capital and international financing bodies and programmes for the Mediterranean.
- **Fourteen technological case studies** were made covering the following technological areas: solar thermal energy, photovoltaics, wind energy, biomass, hybrid systems.
- **A quarterly e-bulletin** providing general EU energy policy information and social-economic context, political and energy news from non-EU Mediterranean countries is available.

<http://www.cres.gr/mednet/>

**The Mediterranean region will continue to be a net energy exporter in 2010, while by 2020 the region is expected to be more or less in balance. It may even become a net importer if exploration in the Mediterranean countries leads to few if any finds. This transition may occur as a result of continuing economic development and transition, especially through the process of industrialisation and rapid population growth.**

**Euro-Mediterranean Energy Cooperation also has the potential to make an important contribution in the environmental area . Through joint R&D and technology programmes, financial assistance or private investments, the EU can enhance the region's energy efficiency, promote clean coal technologies and/or contribute to RES development, including solar and wind power.**

**The seven non-EU Mediterranean countries have great unexploited solar and wind power potential as well as hydropower and geothermal in specific cases. Technology transfer will also assist security of supply by improving access to resources through the use of enhanced oil recovery techniques, and by contributing to the diversity of fuel availability, among other examples.**

**Within the security of supply framework, the promotion and development of networks and interconnections (Trans-Euro-Mediterranean Energy Network) are of paramount importance. This will require ongoing improvement in dialogue between producers and consumers and the development of energy policies, structures and procedures in the seven non-EU Mediterranean countries, to support international co-operation and investment.**



## The OPET Thematic Brochures: Results of activities 2003-2005

The collection comprises 8 brochures and covers the following technological topics:

- Energy Technologies in the Building Sector
- Energy Technologies for the Generation of Electricity from Renewable Energy Sources
- Combined Heat and Power Generation (CHP) and DHC (District Heating and Cooling) Technologies
- Clean Fossil Technologies Within the Energy Market
- New energy technologies and efficiency measures in transport
- Mediterranean Cooperation for New Energy Technologies
- Modern and Clean Energy and Transport technologies in Latin America and the Caribbean
- Accelerating Market Introduction of Promising Early Stage Technologies for Transport and Energy

*For more information, please contact [sonja.ewerstein@stem.se](mailto:sonja.ewerstein@stem.se)*

