



**ΚΑΠΕ  
CRES**

CENTRE FOR RENEWABLE  
ENERGY SOURCES AND SAVING



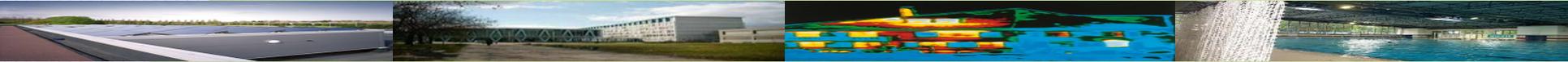
MINISTRY OF  
ENVIRONMENT  
ENERGY &  
CLIMATE  
CHANGE

# CRES – Centre for Renewable Energy Sources and Saving



**Dimitrios Mendrinos, senior geothermal expert;  
Dr. Constantine Karytsas, director of RES division.**

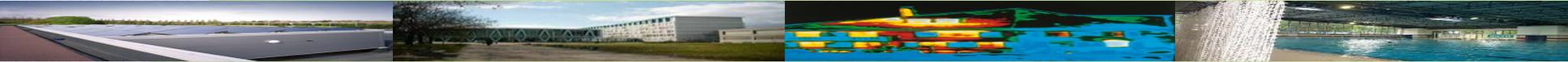
# Background



- The Centre for Renewable Energy Sources and Saving (CREC) is the Greek national centre for Renewable Energy Sources (RES), Rational Use of Energy (RUE) and Energy Saving (ES)
- CREC was founded in September 1987, it is supervised by the Greek Ministry for the Environment, Energy and Climate Change, and has financial and administrative independence.
- Its main goal is the research and promotion of RES/RUE/ES technology at national, European and international level, as well as the support of related activities taking into consideration the environmental impacts in the energy supply and use.



# Mission



Identity of CRES: Two directions

## National Energy Centre

In support of :

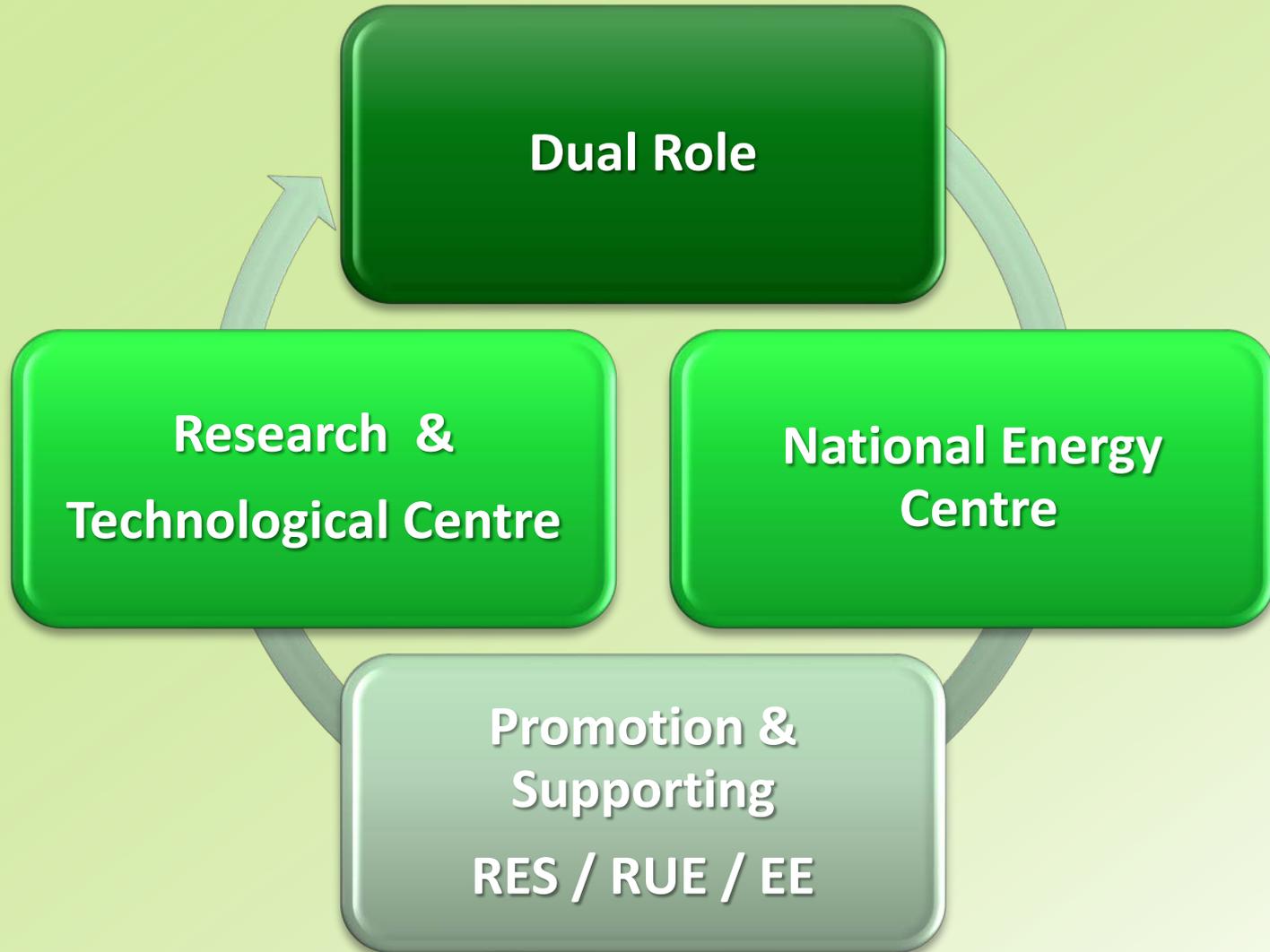
- Policies Formulation
- Investment programmes management
- Energy planning
- Dissemination

## Energy Research Centre

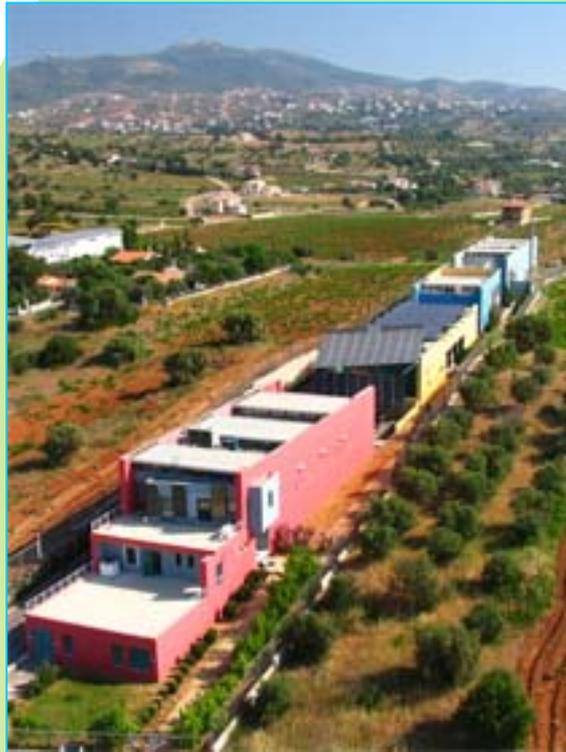
Research and Applications regarding :

- New and Renewable Energy Technologies
- Energy Efficiency Technologies

# Mission



# Sectors



**WIND ENERGY**

**BIOMASS**

**GEO THERMAL ENERGY**

**SOLAR ENERGY**

**PV SYSTEMS**

**SMALL HYDRO & OCEAN ENERGY**

**RES & HYDROGEN TECHNOLOGIES**

**RATIONAL USE OF ENERGY & ENERGY EFFICIENCY**

**ANALYSIS OF ENERGY POLICY & SYSTEMS**

**BUILDING CELL & INDOOR CLIMATE**

**ENVIRONMENT**

**TRANSPORT**

# Premises



The laboratories



Nearly Zero Energy Office Building



**The Park of Energy Awareness, situated near Lavrio Attiki, where RES systems are demonstrated:**

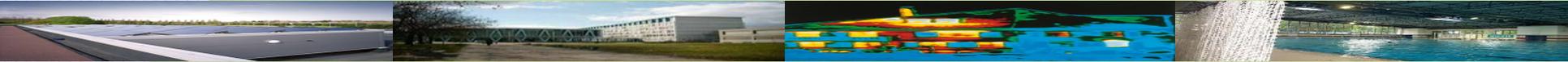
- 3.01 MW wind park
- biomass boiler
- hydrogen production
- DEC solar cooling
- hybrid desalination
- geothermal heat pump
- PV

# Labs

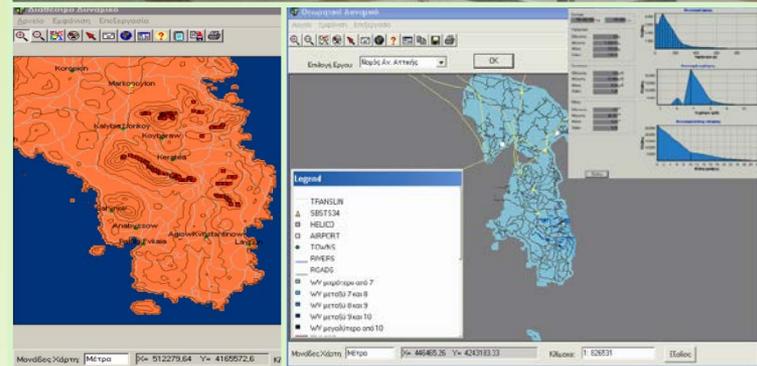


Technology	Facilities
Wind	<ul style="list-style-type: none"> <li>W/T Testing</li> <li>Test Station, Demo Wind Farm</li> <li>Wind-diesel</li> </ul>
Biomass	<ul style="list-style-type: none"> <li>Biomass Fuel Analysis Lab</li> <li>Biomass Boilers Test rig</li> </ul>
Geothermal	<ul style="list-style-type: none"> <li>Portable equipment &amp; software</li> </ul>
Solar Thermal	<ul style="list-style-type: none"> <li>Portable equipment</li> </ul>
Water Tech	<ul style="list-style-type: none"> <li>Portable equipment</li> </ul>
Hydrogen & RES	<ul style="list-style-type: none"> <li>Wind-Hydrogen installation,</li> <li>Hydrogen Tech. Lab, link to DER Lab</li> </ul>
PV Systems & DER	<ul style="list-style-type: none"> <li>PV Modules Lab. &amp; Battery Lab.</li> <li>Power Electronics Lab.</li> <li>Hybrid System - DER</li> </ul>
Building Cell & Indoor Climate	<ul style="list-style-type: none"> <li>Air flow Lab. (wind tunnel)</li> <li>Day-lighting Lab. (artificial sky)</li> <li>Thermal comfort Lab.</li> <li>Test cells</li> <li>Building Env. &amp; Indoor Climate Lab.</li> <li>Building components &amp; materials thermal testing lab.</li> </ul>

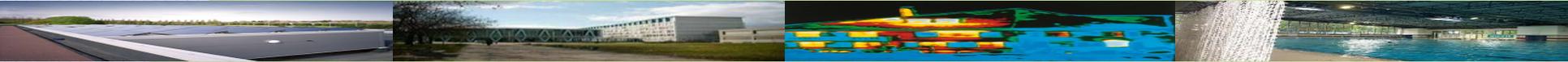
# Activities



- Is the official Greek government consultant on matters of RES/RUE/ES national policy, strategy and planning
- Carries out applied research and develops innovative technologies which are both technically and economically viable and environmental friendly
- Organises, supervises and carries out demonstration and pilot projects, to promote the above technologies
- Develops and distributes specialised software programmes (GIS tools) on the RES/RUE/ES area



# Projects



**CRES has participated in more than 800 European, national and international projects.**

These include research & technology development demonstration & pilot projects, development of energy information systems and energy modelling, energy policy studies, investment feasibility studies, techno-economic studies, market research, environmental impact assessments, as well as training and promotional activities on the RES/RUE/ES related issues.

CRES also provides important services to **third parties** (private investors, companies) and to local authorities, concerning the exploitation of the technical and techno-economic possibilities for the application of RES/RUE/ES.

# Personnel & Networks



CRES employs **110** highly qualified engineers and other scientists (the total personnel amounts at 173 people).

CRES has an annual **turnover** of **8 million** Euro.

CRES co-operates with other institutes, organisations, universities, consultants, international organisations (such as the IEA, UNESCO, ISES, PLEA, IEC, CEN, etc)

CRES is an active member of various European and international networks, such as the E<sup>n</sup>R, MEDENER, EUFORES, EWEA, DYNASTEE, MEASNET, EUREC Agency, etc.

# Services



**New Energy Technologies responding to the needs of business**



*Supporting entrepreneurship*



*Enhancing competitiveness*



*Protecting the environment*





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