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## Consultancy/services

Examples of consultancy activities held by the Unit:

- Energy audits in commercial and office buildings and industrial facilities
- Study of solutions for the installation of solar thermal heating, cooling and photovoltaic systems
- Test and development of commercial refrigerators
- Thermal design of industrial heat exchangers
- Ventilation efficiency measurements in buildings
- Study of cogeneration systems

The Unit has laboratory and computational facilities for:

- Testing of solar collectors
- Testing of refrigeration equipment and heat pumps
- Testing of heat exchangers
- Testing of ventilation and air movement
- Testing of fluidised bed combustion
- Numerical simulation of energy systems (Fluent and TRNSYS software)

The Unit has also been involved in teaching specialised courses for industry and building services professionals.

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## Hosted by

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## Funded by

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**Fundação para a Ciência e Tecnologia (FCT)**

**European Commission (research contracts)**

**Companies (research & consultancy)**

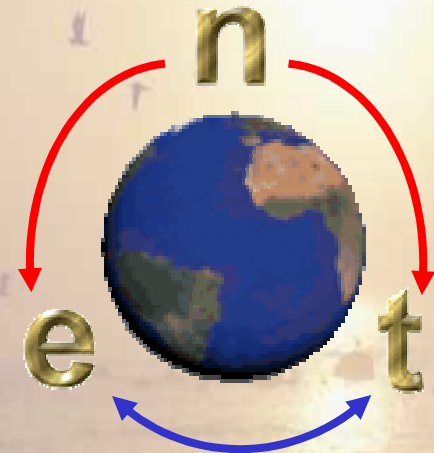
**Specialised formation activities**

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# New Energy Technologies

**Research Unit**

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# Objectives

The Unit was founded in 2002. Its main goals are to perform both fundamental and applied research in the fields of sustainable energy and low carbon technologies, contributing to advances in knowledge concerning rationalisation of energy consumption and reduction of harmful emissions to the environment.

Major topics of work are:

- Solar thermal collectors
- Solar active heating and cooling systems
- Solar electricity (thermal / PV)
- Ozone-friendly and new refrigeration equipment (absorption, adsorption, ejection, desiccant systems)
- Distributed electricity generation (micro-cogeneration)
- Efficient ventilation systems
- Efficient combustion processes and equipment

The Unit also contributes to the formation of new researchers, in its areas of work, at post-graduate level (M.Sc. and Ph.D.).

The Unit has been active in technology transfer activities, establishing cooperation agreements with European and Portuguese companies for the development of new energy solutions and products. Specialised consultancy work has been done for many companies.

The Unit co-organises international conferences concerning its major research topics (SET, CYTEF, ...) and collaborates with several international scientific journals of the field (journal edition and paper revision).

# Staff

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# Research projects

Examples of research, development and demonstration projects held during the last years:

- POWERSOL – Mechanical Power Generation Based on Solar Thermodynamic Engines, DG Research, FP6, contract INCO-CT2006-032344, 2007-10
- MEDITERRANEAN-AIRCOND – An Advanced Solar-Driven Air Conditioning System for Mediterranean Climate, DG Research, FP6; contract INCO-CT2006-032227, 2007-10
- RENET – Network for Renewable Energy Research for the Built Environment and Technology Transfer Between EU and India, EU-India, contract ASIE/2004/093-330, 2005-07
- TRI-GEN EGD - A Novel Tri-Generation Electrogas-dynamic Converter System, DG Research, contract ENK6-CT2002-00686, 2003-05 (proj. coordinator)
- SOLAR LOUVRE – Solar Louvre Building Integrated Collector, DG Research, contract ENK6-CT2000-0330, 2001-03
- HYBRID-CHP - A Hybrid Combined Heat and Power System, DG Research, contract ENK5-CT2000-0080, 2000-03
- ECOCOOOL - Ecological Cooling for Buildings by Combining a Closed Wet Cooling Tower With Chilled Ceilings, DGXII, contract JOR3-CT97-0195, 1997-00 (proj. coordinator)
- COOLGEN - An Integrated Hybrid Solar/Gas System For Buildings, DGXII, contract JOR3-CT97-0183, 1998-00 (proj. coordinator)

