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"What is ENEA"

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# WHAT IS ENEA ?

ENEA, the Italian National Agency for New Technology, Energy and the Environment, is a scientific research and technology development organisation.

In principal, ENEA's activities, can be grouped into the following main categories:

- **NEW TECHNOLOGY**
- **ENERGY**
- **ENVIRONMENT**

# **NATIONAL AGENCY FOR NEW TECHNOLOGIES ENERGY AND ENVIRONMENT (ENEA)**

**In order to achieve the above mentioned main programmatic objectives, presently, the agency has nearly 3200 employee working in 13 different research centres located over the national territory. With its Head office, in Rome, The agency bases its operations on the development and application of innovative, leading-edge technologies, in which it has achieved excellence.**

**For the most part this work is carried out in the framework of programmes aimed at strategic goals. ENEA works with the Ministries of Industry, Ministry of Environment, University and Research, Agriculture and Cultural Resources on designing and conducting research projects involving the European union and other international organizations such as United nations and the OECD as well as non governmental organization on technology and applications of mutual interest.**

**ENEA also acts as a Technology Agency, providing scientific and technological consulting and support to national and local governmental bodies in the solution of complex, urgent and serious problems, the preparation of regulations, and participation in international initiatives and projects.**

New Technology Department focuses its activities predominantly on:

Research and development of advanced technologies including lasers, robotics, new materials, chemical processes and treatment, informatics, etc..

Research and development in the fields of agro-industry and biotechnology.

Development of methods and technologies for diagnosing the physical state of conservation of art and antiquities.

Creation of an integrated system of technical-scientific services to assist engineers in the understanding and solving technological problems; design, construction and operation of important plants and equipment; partnership in high technology complexes.

## ENEA's activities in Energy include:

1. Research and development on alternative energy sources such as solar energy, wind energy, energy from biomass and organic solid waste, new materials for photovoltaic technology, etc.
2. Development of energy saving systems & components, energy systems and new technologies related to power generation, transmission and use.
3. To co-ordinate Italian national fusion Programme and conduct research in collaboration with the National Research Council and universities under an association agreement with EURATOM.
4. To conduct research on nuclear fission in collaboration with Italian National Electrical Utility (ENEL), industrial concerns and the universities. Development of innovative and high-safety reactor designs, efficient fuel-cycle technologies and decommissioning of older nuclear plants, are other topics of interest.

**THE ENVIRONMENT:** the purpose of ENEA's activities in this area are:

- Environmental survey and creation of a network to monitor environmental parameters such like air, soil and water.
- Assessment of the effects on human health and environment caused due to departmental nuclear as well as other productive activities.
- Development of advanced technologies for both clean environment and treatment & disposal of urban, industrial and harmful wastes.
- Set-up pilot and industrial scale experimental plants to validate the processes & technologies as well as answer both different technical problems encountered during experimentation.

# ENEA ACTIVITY IN THE SECTOR OF THE PROMOTION OF ENERGY TECHNOLOGY AND RENEWABLE ENERGY SOURCES

ENEA activity in the sector of the promotion of energy technology and renewable energy sources started in 1982 in support of national energy policies. ENEA is Italian representative for IEA working group, contractor to European Commission on various energy programmes (VALOREN, JOULE-THERMIE including OPET, SAVE,ALTENER).

In reference to the workshop, it is to be noted that activities on renewable energies are undertaken by a strong group of nearly 250 persons supervised by Ing. G. Palazzi, Head, Energy Department at ENEA research Centre Casaccia (Rome) with about 40 persons working at section ENE-BIO at Trisaia, in Southern Italy.

# ENEA Research Centre Trisaia

The Energy group at Trisaia is actively engaged on the research activities related to **Biomass** and **testing of solar collector**.

The work on biomass is focussed on two transformation processes, steam explosion and gasification that are studied using advanced equipment.

Activities on gasification concentrate on the design, development and experimental testing of both fixed bed and fluidised bed gasification systems (for production of electric energy).



**WORK ON SOLAR ENERGY** on the other hand is focussed primarily on the testing of solar collector (quality test) and solar water heating system: factory made-system (performance test).

It is in the above reference that during the year 1999, ENEA completed the installation of an solar collector testing laboratory equipped with advanced equipment and functioning in accordance with the international standards ISO and CEN.

From 2003 the solar laboratory, has been accredited to conduct tests on solar collectors according to EN 12975 and it was during the last year that the laboratory has also been accredited according to EN 12976.

**IN ADDITION**, the laboratory provide technical support to the national enterprises formulating norms and regulations, control monitoring activities (acquisition of data and analysis of the results obtained) for the plants realised for diffusion, provide technical support for both national and regional tenders, technical-scientific support for the initiatives taken for the diffusion of solar energy programme.

**IT IS WORTH** to note that a number of workshop/summer school/and training courses both at the national and international levels sponsored by UNESCO, European Commission, Basilicata Region and ENEA, with participation, mainly from Eastern European and South Mediterranean Countries, are usually held from time to time. Moreover, research activities on solar cooling seawater desalination, etc., are in progress as well.