Prospects of renewable energy e-learning/capacity building in Africa

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ENEA, Italian National Agency for new technologies, energies and the environment
ENEA learning activities for a sustainable development in developing countries

- DESIRE-net: e-learning platform for Development and Sustainability with International Renewable Energies network
- The capacity building and the technological transfer in our laboratories
- The project with the Italian schools on sustainable future
- The agreement with the African Engineering Association
The DESIRE-net project is based on the statement that in order to promote the renewable energies at least three targets have to be reached:

- the **decision makers** or technical officers belonging to public administration who have to make decisions and fund activities intended to promote the renewable energies in their country;

- the **designers** who need to design the best renewable energy plants for the particular location taken into considerations;

- the **operators** who need to know how to build, to operate and, above all, to maintain the renewable energy plants.
A web site for all:
www.desire-net.enea.it
Subjects of the training courses

- ENERGY AND SUSTAINABLE DEVELOPMENT
- THERMO SOLAR
- PHOTOVOLTAIC
- BIOMASS/ BIOGAS
- WIND ENERGY
- HYDROGEN AND FUEL CELLS
- GEOTHERMAL
- SMALL HYDRO POWER
- ADVANCED TECHNOLOGIES FOR ENERGY EFFICIENCY FOR HOUSES
- GIS to support decision makers
- …
The key role of decision makers and teachers
The virtuous improvement circle

- Legislation
- Public procurement
- Standardization
- Awareness
- R & D
- Education & training
The DESIRE-net e-learning system characteristics

- Based on a model set up by ENEA and recognized as one of the best 10 international e-learning practices by CEN (CWA 15660: Providing good practice for E-Learning quality approaches)
- Very user friendly
- Synchronous lessons especially prepared for decision makers and managers
- Asynchronous lessons for designers and operators
The asynchronous courses interface
The asynchronous lessons for designers and operators
The recorded synchronous lessons list

Date: 16/04/2007

**Molten Carbonate Fuel Cells: an opportunity for decentralized generation**

9.00.00 - 9.30.00: **Molten Carbonate Fuel Cells: an opportunity for decentralized generation**
Chair: Viviana Cigolotti, ENEA

9.45.00 - 10.15.00: **Molten Carbonate Fuel Cells: an opportunity for decentralized generation part 2**
Chair: Viviana Cigolotti, ENEA

- Molten Carbonate Fuel Cells: an opportunity for decentralized generation (16/04/2007)
- Biogas production by anaerobic digestion: process basis and monitoring (28/03/2007)
- Biomass Supply chain assessment (22/03/2007)
- OFFSHORE WIND ENERGY RESOURCES (21/03/2007)
- Wind Farm Performances Monitoring and O&M Issues (15/03/2007)
- MOLLEN CARBONATE FUEL CELLS (14/03/2007)
- Molten Carbonate Fuel Cells: State of the Art & Perspectives (13/03/2007)
- Solar desalination Part 2 (08/03/2007)
- Solar desalination Part 1 (07/03/2007)
GIS: It is important for each country to know all the possible useful renewable resources to make a customized strategy for each area.
# The user registration interface

## User Registration

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Submit
The capacity building and the technological transfer

- The e-learning is only a common base to build up a new generation of decision makers, engineers and technicians.
- Stage in research centers or in places where good practices can be learned have to be promoted to learn by doing.
- Common effort in solving similar problems will be beneficial to everybody.
The project with the Italian schools on sustainable future

- Sustainable future for all the children because they have a common environment which doesn’t see any border
- Students from Italy donates photovoltaic plants to African schools and start an exchange of information on technical as well as social sciences
- Community of Italian schools and public administration donate equipment for a sustainable development of rural village to help them to self sustain.
The agreement with the African Engineering Association

- A very important knowledge resource is represented by African engineers studying or living in Europe and in Italy in particular.
- The advanced knowledge reached by them can be used to help their countries to develop in a sustainable way.
- The Italian network is working in the translation of the DESIRE-net courses in French but other languages could be added as well as new content more suitable for the African reality.
Main conclusions

- The e-learning system realized for DESIRE-net is very powerful.
- Very important results have been achieved and new resources will ensure the update and the translation of the courses in other languages.
- ENEA is open to international collaboration in order to improve the system and spread the renewable resources technology among all the developing countries for a sustainable future for all.
- African engineers association, located in Rome, is ready to promote the courses in their own countries in different languages.
- The Italian school network is working for building a sustainable future for our children.
Final thoughts

if you plan for a year sow a seed
if you plan for a decade plant a tree
if you want to plan for a century educate the people

*Chuang Tsu (Third century BC)*

nothing great has never been achieved without someone dreaming...that it should be so, someone believing... that it could be so, and someone being convinced ...that it must be so?

*Charles F. Kettering (1878-1958)*