Lebanese Association for Energy Saving and environment - ALMEE - (Lebanon)

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Profile

- Founded in 1993
- Non Governmental Organization – NGO
- Member of International and Regional Networks
  - MEDENER
  - IMEDER
  - WEEO
  - …
- Main Activities
  - Renewable Energy Sources
  - Energy Efficiency Measures
  - Other “Green issues” (Climatic Change-GHG, …)
  - Environmental impacts of the energy

(www.almeelebanon.org)

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Working group

Multidisciplinary group of experts

- Energy Efficiency
- Renewable Energy
- Climate Change
- Energy Policies

ALMEE’s team goal

- Develop
- Increase
- Promote

Scientific method, means contributing to better management of energy and related economic policies

- Build awareness and support

Local, regional and international collaborations

- Governments
- Civil society
- Private sector

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Ongoing and achieved projects

- RAMseS (EU Synergy Program)- [http://www.ec-ramses.net](http://www.ec-ramses.net)
- REACT (EU-FP6)
  [www.crear.unifi.it/react](http://www.crear.unifi.it/react)
- RESSOL (EU-FP7)
  [http://www.ressol-medbuild.eu](http://www.ressol-medbuild.eu)
- Med-Algae (EU-ENPI CBC Mediterranean Sea Basin Programme)

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Self-Sufficient Renewbale Energy Air-Conditioning

Set-up 2 innovative pilot Renewbale Energy systems for Solar cooling in highly sun-irradiated Mediterranean Countries:
- Moulad Houssef Hospital in Casablanca, Morocco
- Dead Sea Hotel in Amman, Jordan
The system produces hot water and air-conditioning

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Main objective:

To improve the research and technological Development (RTD) capabilities of mediterranean partner countries, and encourage the establishment of links between partner’s research centers and other stackholders in society.

Project Partners

CREAR Centro Ricerca Energie Alternative e Rinnovabili at the University of Florence, Italy

Deutsches Zentrum für Luft- und Raumfahrt, Germany

Solitem Energy Technologies Co. Ltd, Turkey

Lebanon Association Libanaise pour la Maitrise de l’Energie et de l’Environnement

Jordan National Energy Research Center

Morocco Centre de Développement des Energies Renouvables

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Manufacturing of collectors in Ankara

Kick off meeting - Rome, March 14-18

Packaged modules

Module frames

Ribs of collector modules

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Assemble the solar field at EU laboratory

Unloading of truck arriving at Cologne

(ALMEE, Rita NAJJAR)
Solar Cooling Installation at Casablanca

Collectors above parking area

Chiller
Solar Cooling Installation at Dead Sea Spa Hotel
Renewable Energy Agriculture Multipurpose System for Farmers

Provides rural communities _ agriculture work_ an integrated solar power system which includes battery storage, usable as to power an all purpose vehicle

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Ramses

Outputs of the project

- Vehicle can transport a load of 500Kg agricultural products with 2 persons on a distance 30 Km and return
- Working time in the greenhouse or garden 4-5 hours (pure time) per 24 h day
- Max charging time 6-8 hours per day
- Supplying necessary house equipment (TV, fridge, air conditioners etc.)

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Surface tilling;  
deep tilling;  
chisel plough;  
Seed bed  
praration;  
sowing; thinning  
out;grafting;  
harvesting;  
pruning;  
harrowing  
Moving; rolling;  
transportation;  
clod breaking;  
fertilization
RESearch Elevation on Integration of Solar Technologies into MEDiterranean Buildings

RESSOL-MEDBUILD

RESearch Elevation on Integration of SOLar Technologies into MEDiterranean BUILDings

Annual Direct Solar Irradiance

Jordan: 5–7 kWh/m²/day
Lebanon: 4–6 kWh/m²/day

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RESSOL

Project concept

Field 1
- Solar thermal heating and cooling and PVs in buildings

Field 2
- Simulation models and optimization of solar heating/cooling systems and PV technologies

Field 3
- Energy modeling and decision support in energy planning

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RESSOL

Project objectives

Overall Goal
Capacity building to NERC and ALMEE

Objective 1
Enhance scientific knowledge and research experience

Objective 2
Upgrade research equipment

Objective 3
Establish international and national networking relations

Objective 4
Enrich scientific staff

Objective 5
Disseminate knowledge

ALMEE prepared in the frame of RESSOL project a market studies for Solar Water Heater and PV in Lebanon

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Production of biodiesel from Algae in selected Mediterranean Countries
Partners

PROJECT PARTNERS:
Cyprus Energy Agency
Malta Intelligent Energy Management Agency
FondazzjoniTemiZammit
Studio Sardo
National & Kapodistrian University of Athens
National Research Centre
The Lebanese Association for Energy Saving & for Environment
Faculty of Science, Alexandria University
American University of Beirut
National Technical University Of Athens
Universita’ Mediterranea Di Reggio Calabria

Cyprus
Malta
Malta
Italy
Greece
Egypt
Lebanon
Egypt
Lebanon
Greece
Italy
Med-Algae

Objectives
To enhance regional and cross-border collaboration for the development of a new generation of biofuels from micro-algae

experimental laboratory & pilot growth systems

to enable production of bio-diesel

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Med-Algae

ALMEE has secured supporting ways for development of a regional network, and facilitate its development through:

• an IMS platform:

The Med-Algae VCE supports the network structures. The Mediterranean Renewable Energy Stakeholder Networks

- Currently have over 302 members from across the globe including countries such as China, the USA, France, Ukraine, Russia and Indonesia...
- The members of the networks are diverse and include universities, NGOs, government bodies, consultancies, technology companies and green energy businesses.

Easy to access through the home page of Med-algae project home page: www.med-algae.eu

(ALMEE, Rita NAJJAR)
Med-Algae

ALMEE has secured supporting ways for development of a regional network, and facilitate its development through:

- and professional social media:
  - MED-ALGAE group on LinkedIn
    ALMEE created a LinkedIn account for the Med-Algae project,
    and a group entitled “Biofuel & co-products from Microalgae Network”
Med-Algae

- Virtual Learning Environment, VLE.

ALMEE has developed a Virtual Learning Environment to undertake internal e-learning courses. It provides the communication among the project participants, Network members a character of training.

Easy to access through the home page of Med-algae project home page: www.med-algae.eu

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Med-Algae

- GIS.

Algae cultivation near power plants is fairly simple. The idea is to pipe the flue gas from the exhaust to the open or closed algae cultivation systems which are preferably located nearby the power plant. For this purpose ALMEE prepared an inventory of GHG emissions from industrial and power sector in Lebanon breakdown by municipalities.

Easy to access through the home page of Med-algae project home page: [www.med-algae.eu](http://www.med-algae.eu)
GRASS - Green Recovery And Sustainable Solutions

“GRASS” is a new rating system that covers the main features of Green Buildings Standards that are suitable for Mediterranean Climate, Environment and Lifestyles.

GRASS- A new approach of rating system for new designed and existing commercial & Residential buildings in Mediterranean region
Its intent is to mitigate negative impacts of the environment including CO2 emissions, heat island effect, intensive energy consumption, etc.

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Steps that you need to certify your project according to the **GRASS** building rating system.

1. **Registration**
2. **Agreement**
3. **Assessment**
4. **Report**
   - by assessor to ALMEE
5. **Certification**
   - issued by ALMEE

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Consists of four major indicators
Four levels with respect to the percentage of Awarded points

1. ≥ 80.1%
2. 70.1% – 80%
3. 60.1% – 70%
4. 50% – 60%
Working Group

Present the expertise your organization intends to bring about the project (urban and regional planning, environmental impact assessment, life cycle assessment, landscape design, RES technologies, GIS, SMEs involvement, …)

- Environmental impact assessment (ALMEE has expertise in analyzing EIA of projects – ALMEE is using the Ministry of Environment Referential regarding EIA assessment – Also Site assessment is an important part of GRASS green building rating system developed by ALMEE)
- Life cycle assessment (ALMEE Developed the Thermal Standard of Building in Lebanon – Life cycle assessment method was used by ALMEE for the parametric economic analysis – Also LFA is commonly used by ALMEE to compare EE and RE projects – More ALMEE has a good experience in developing BUDGET ALOCATION CHART that compare the potential of energy efficiency measures at level of town or country)
- RES technologies (projects-www.almeelebanon.com)
- GIS (e.g GIS_MED-ALGAE project www.med-algae.eu)
- SMEs involvement (ALMEE work closely with SME)
Target curricula

As research is not a one person business and as ALMEE is in line with the spirit of the university.

What kind of students (level, course, curriculum) are you planning to involve in task “2.4 - Testing of Cmap 2.0 tool” (10 students for each partner country university are expected)

Students that might be involved:
• 2 students MASTER Renewable Energy (LU and USJ)
• 4 Students (Civil Engineers UL and ESIB) Level final year
• 4 Students (Architects and Urban Planning from UL) Level Final year

(Partner organization name and speaker’s name)
Acheivemnents models
This question aims to understand the differences among educational models in the involved countries

Please specify:

• structure of the courses (duration, usual number of students per course, …)

Course can be of 18- 36- 48 or 62 hours

Number of students from 20 to 30 students

• most used “tools” (frontal lecture, laboratories, …)

Frontal lecture & laboratory

• availability of e-learning platform or other web based tools

Yes, e-learning experience with GRASS and Med-Algae

• use of GIS

• point out if the education model your organization is following can be considered in your country ordinary or advanced/experimental

Advanced

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Thank you for your attention!

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