ENERGY



ADU-RES

Coordination Action for Autonomous Desalination Units Based on Renewable Energy Systems

A key objective of ADU-RES was to further the development of integrated plant designs for cost efficient autonomous desalination units (ADUs) that are based on renewable energy sources (RES). In addition, the project worked towards the formulation of political strategies for boosting ADU-RES implementation in the Mediterranean. Another key goal of ADU-RES was to strengthen and unite research work for the design of robust and cost-effective desalination plants that operate autonomously on RES. Such plants face many challenges, including the radical cost reduction, advanced management system and improved long-term reliability set-ups. In addition, large scale implementation of RES based ADUs requires favourable legislative and institutional framework conditions. The project proposed to examin the relevant legislation in the EU, associated and Mediterranean countries, and to elaborate a policy initiative for boosting RES based ADUs. The Egyptian participant organized a workshop in 2005.

- FP6: INCO-B.1 Environment
- Contract type: Coordination action
- Start date: April 2004
- Duration: 30 months
- EC contribution to the project: € 620,000

www.adu-res.org

Coordinator

Christian Epp
christian.epp@wip-munich.de
Wirtschaft Und Infrastruktur & Co Planung KG Wip-Renewable Energy (Germany)

Egyptian Partner

Hassan El-Banna Fath
h_elbanna_f @ hotmail.com
Egyptian Association for Water and Energy

List of Partners

- Fondation Marrakech 21 (Morocco)
- Royal Scientific Society (Jordan)
- Commission of the European Communities - Directorate General Joint Research Centre (Belgium)
- Instituto Tecnologico de Canarias, S.A. (Spain)
- Institut Agronomique et Veterinaire Hassan II cha agadir (Morocco)
- Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V. (Germany)
- ETA - energia, trasporti, agricoltura (Italy)
- Loughborough University (United Kingdom)
- Centre for Renewable Energy Sources (Greece)
- Centre de Développement des Energies Renouvelables (Algeria)
- Agricultural University of Athens (Greece)
- Earth Link and Advanced Resources Development (Lebanon)
- Institut National de Recherches en Genie Rural, Eaux et Forets (Tunisia)
- Palestinian Hydrology Group for Water and Environmental Resources Development (West Bank and Gaza Strip)

DISTRES

Promotion and Consolidation of All RTD Activities for Renewable Distributed Generation Technologies in the Mediterranean Region

The overall goal of DISTRES is to exchange and disseminate good practice developed in the field of renewable energy sources distributed generation (RES-DG) technologies by research activities and analyses for the Mediterranean needs. More specifically, DISTRES is interested in electricity generation from RES-DG. The main scientific and technological objectives of DISTRES are to co-ordinate RTD projects in RES-DG technologies, promote the electricity generation from solar energy, photovoltaic (PV) systems and solar thermal systems. These proposed activities would potentially pave the way for pilot systems and products, set capacity building methodologies and disseminate the results as widely as possible in the Mediterranean countries and in the EU. The Egyptian participant is working on reviewing the current RES policies and related socio-environmental benefits within EU and Mediterranean countries, marketing surveys and economic analyses in order to identify the various successful business models and market entry strategies for RES-DG.

- FP6: INCO Specific measures in support of international co-operation
- Contract type: Coordination action
- Start date: January 2007
- Duration: 36 months
- EC contribution to the project: € 999,832

www.distres.eu

Coordinator

Andreas Poullikkas
apoullik@eac.com.cy
Electricity Authority of Cyprus, Research and Technological Development (Cyprus)

Egyptian Partner

Bothayna Amin Rashed
brashed@nreaeg.com
New and Renewable Energy Authority

List of Partners

- Technofi S.A. (France)
- Cyprus International Institute for the Environment and Public Health in association with Harvard school of Public Health (Cyprus)
- Centre For Renewable Energy Sources (Greece)
- Cyprus Energy Regulatory Authority (Cyprus)
- Center for the Development of Renewable Energies (Morocco)
- Palestinian Energy and Environment Research Center (West Bank and Gaza Strip)
- Agence pour la Promotion et la Rationalisation de l'Utilisation de l' Nergie (Algeria)
- Centre de Developpement des Energies Renouvelables (Algeria)
- Hystore Technologies Ltd (Cyprus)
- Energy Consulting Network (Denmark)
- Copenhagen Business School (Denmark)
- Scholai Frederickou Ltd (Cyprus)
- Institute Of Communication and Computer Systems (Greece)
- Instituto Superior de Engenharia de Lisboa (Portugal)
- Universitaet St. Gallen (Switzerland)
- Association Libanaise pour la Maitrise de l' Energie et pour l' Environment (Lebanon)

HYRESS

Hybrid Renewable Energy Systems for Supplying of Services in Rural Settlements of Mediterranean partner Countries

The strategic objective of HYRESS was to remove the knowledge barriers against the installation of Hybrid Renewable Energy Systems and the creation of mini-grids based on renewable energy. In order to achieve this goal, the project proposed to develop, combine, install, test and assess (technically and socially) the performance of low-cost pilot hybrid Renewable Energy (RE) systems in remote areas of the Mediterranean, which are not yet grid-connected. The hybrid systems consisted of photovoltaics, small wind generators, hydrogen subsystems and they were installed in selected areas of the MP countries to provide energy and associated services. Three hybrid systems were installed in remote rural areas of Egypt, Morocco and Tunisia. The hybrid system in Egypt is also used as a training unit for the university students. Data is currenlty being collected to study the socioeconomic aspects of renewable energy in Egypt.

Coordinator

George Papadakis
gpap@aua.gr
Agricultural University Of Athens, Department of Natural Resources and Agricultural Engineering (Greece)

Egyptian Partner

Abdel Wahab Kaseem
kassen@menanet.net
Alexandria University

List of Partners

- Clean Power L.P. EV Kyritsis and Partners Limited Partnership (Greece)
- WIP - KG (Germany)
- National Agency for Energy Conservation (Tunisia)
- Institut Fuer Solare Energieversorgungstechnik E.V. (Germany)
- University Cadi Ayyad (Morocco)
- Instituto Tecnologico y de Energias Renovables, S.A. (Spain)

- FP6: INCO-2004-B1.5 Renewable energies, INCO Specific measures in support of international co-operation
- Contract type: Specific Targeted Research Project
- Start date: October 2006
- Duration: 36 months
- EC contribution to the project: € 1.25 million

www.hyress.org

MED-CSD

Combined Solar Power and Desalination Plants: Technico-Economic Potential in Mediterranean Partner Countries

The growing economies in the southern and eastern Mediterranean area increasingly need affordable and efficient energy and water for sustainable development. Hybrid solar/fossil thermal power plants with combined sea water desalination based on Concentrating Solar Power technology (CSP) offer a unique, cost efficient solution to the growing energy and water demand. Hybrid solar/fossil operation offers a smooth transition from the fossil fuel to a solar economy and provides firm power capacity to the grid with up to 8000 full load operating hours per year. The main objective of the MED CSD project is the assessment of the technico-economic potential of CSP for electricity and desalination in Mediterranean region, particularly in the Mediterranean Partners Countries (MPCs). The Egyptian partner is responsible for making feasibility assessments on hybrid CSP water desalination plants.

Coordinator

Pascal Ronchieri
ome@ome.org
Observatoire Mediterraneen de L'Energie (France)

Egyptian Partner

Laila Georgy
nre1@idsc.net.eg
New and Renewable Energy Authority (NREA)

List of Partners

- Office National de l'Eau Potable (Morocco)
- Center for the Development of Renewable Energies (Morocco)
- Mekorot Water Company Israel (Israel)
- Inven Engineering Gmbh (Germany)
- Techint Compagnia Tecnica Internazionale SPA (Italy)
- Kernenergien - the Solar Power Company (Germany)
- Sonelgaz SPA - Societe Algerienne de l'Electricite et du Gaz (Algeria)
- Palestinian Energy and Environment Research Center (West Bank and Gaza Strip)
- Electricite de France S.A. (France)
- Deutsches Zentrum fur Luft und Raumfahrt E.V. (Germany)
- National Energy Research Centre (Jordan)

- FP7: ENERGY-2007-2.5-02 Using CSP for water desalination
- Contract type: Support actions
- Start date: June 2006
- Project duration: 24 months
- EC contribution to the project: € 999,960

www.med-csd-ec.eu/eng

MEDISCO

MEDIterranean Food and Agro Industry Applications of Solar COoling Technologies

MEDISCO's main goal was developing, testing and optimizing solar thermally driven cooling concepts for the food and agro industry in the Mediterranean region that are economically and socially sustainable. It proposed to assess which systems would better accommodate the actual and future demand of the food and conservation industry sectors in the south edge of the basin and estimate in technical and economical terms the most appropriate approach for the application of solar thermally driven systems. The activities carried out by the Egyptian participant included analyzing the energy sector in Egypt, focusing on energy balance and structure of energy sector. In addition, the Egyptian partner contributed towards determining the indicators relevant to energy and environment market structure.

Coordinator

Mario Motta
mario.motta@polimi.it
Politecnico Di Milano - Dipartimento di Energetica (Italy)

Egyptian Partner

Ahmed Hegazy
genhegazy@gmail.com
Egyptian Environmental Affairs Agency (EEAA)

List of Partners

- Phototherme SARL (Morocco)
- Centre Internacional de Mèto des Numèrics en Enginyeria (Spain)
- Smvda Domaine Neferis (Tunisia)
- Center for Renewable Energies Development (Morocco)
- Agence Nationale pour la Maîtrise de l'Energie (Tunisia)
- Agence de l'Environnement et de la Maitrise de l'Energie (France)
- Tecsol S.A. (France)
- Robur S.P.A. (Italy)
- Fraunhofer-Gesellschaft zur Förderung der Angewandten Forschung E.V. (Germany)

- FP6: INCO Specific measures in support of international co-operation,INCO-2002-B1.5 Renewable energies
- Contract Type: Specific Targeted Research Project
- Start Date: October 2006
- Duration: 36 months
- EC Contribution to the project: € 1.4 million

www.medisco.org

MEDRES

Cost-Effective Renewable Energy for Rural and Peri Urban Areas in the Mediterranean Region

The objectives of the MEDRES research are to assess the opportunities for cost-effective renewable energies (RE) for rural areas and villages, assess the real effectiveness of new technologies through better knowledge of end-user acceptability for energy efficient technologies and practices and to measure the impact of electrification on socio-economic development in rural areas. MEDRESS proposed to disseminate the main results of the project in a set of recommendations and proposed adapted strategies in the region. The Egyptian participants have been responsible for analyzing the energy efficient use in peri-urban and rural areas and for assessing the impact of electrification on socio-economic development in rural areas. The research hopes to support the decision makers in Mediterranean countries to better define the best practices of sustainable energy in the rural and peri-urban areas.

- FP6: INCO Specific measures in support of international co-operation
- Contract type: Specific Targeted Research Project
- Start fate: January 2007
- Duration: 36 months
- EC contribution to the project: € 1.16 million

www.medres-ec.eu

Coordinator

Houda Ben Jannet Allal
allal@ome.org
Observatoire Mediterraneen De L'energie (France)

Egyptian Partner

Kamal Ahmed Abed
kaabed3@hotmail.com
National Research Centre

Laila Georgy
nre1@idsc.net.eg
New and Renewable Energy Authority (NREA)

List of Partners

- Electriciens Sans Frontières (France)
- Institut Fuer Angewandte Forschung und Zusammenarbeit mit den MENA-Laendern E.V. (Germany)
- Universitaet Kassel (Germany)
- Société Tunisienne de l'Electricité et du Gaz (Tunisia)
- Société Algerienne de l'Électricité et du Gaz (Algeria)
- SMA Technologie AG (Germany)
- Centre de Développement des Energies Renouvelables (Morocco)
- Fundacion Labein (Spain)
- Institut fuer Solare Energieversorgungstechnik E.V. (Germany)
- Electricité de France (France)
- Cesi Ricerca S.P.A. (Italy)
- Agence de l'Environnement et de la Maitrise de l'Energie (France)
- Agence Nationale pour la Maîtrise de l'Energie (Tunisia)

NACIR

New Applications for CP'S: A Fast Way to Improve Reliability and Technology Progress

The main goal of the project is to bring together the owners of the most advanced CPV technology in order to research new applications for CPV systems. By improving the current technology of the industrial partners (ISOFOTON and CONCENTRIX), NACIR hopes to reach the competitive market, and ultimately, lower the cost of flat panel PV significantly within 3-4 years. The Egyptian participant is responsible for the site preparation, integration and installation of the required infrastructure including water pumping, irrigation, and storage systems. In addition, the Egyptian partner is working towards identifying the parameters needed to evaluate the overall system performance, and designing and developing a local data acquisition system and database.

Coordinator

Gonzalo Leon
gonzalo.leon@upm.es
Universidad Politecnica de Madrid (Spain)

Egyptian Partner

Fouad Aboulfetouh
fuadpv1@iseet.org
National Water Research Center (NREA)

List of Partners

- Office National de l'Electricité (Morocco)
- Isofoton S.A. (Spain)
- Concentrix Solar Gmbh (Germany)
- Instituto de Sistemas Fotovoltaicos de Concentracion SA (Spain)
- Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung E.V (Germany)

- FP7: ENERGY.2008.2.1.1 Enhancing strategic international cooperation initiatives in the field of concentration photovoltaics
- Contract type: Collaborative project for specific cooperation actions dedicated to international cooperation partner countries (SICA)
- Start date: January 2009
- Duration: 48 months
- EC contribution to the project: € 4.4 million

www.ies.upm.es/NACIR

NEEDS

New Energy Externalities Development for Sustainability

The ultimate objective of the NEEDS project was to evaluate the full costs and benefits of energy policies and future energy systems, both for individual countries and for the enlarged EU as a whole. The project proposed to contribute to the three main areas of Life Cycle Assessment (LCA) of energy technologies, monetary valuation of externalities from energy production, transport, conversion and use. In addition, NACIR worked towards the integration of LCA and externalities information into policy formulation and scenario building. The Egyptian partner's activities included analyzing the energy sector in Egypt, focusing on energy balance and structure of the sector. Furthermore, NREA was involved in determining the indicators relevant to energy and environment market structure, and the main factors influencing energy and environment policies. The results of the research have been disseminated through a series of workshops and conferences with international experts in the field. The 3rd forum of the project was held in Cairo in 2008.

- FP6: SUSTDEV-1 Sustainable energy systems, SUSTDEV-3.8 Cross-cutting issue: Sustainable Development concepts and tools
- Contract type: Integrated Project
- Start date: September 2004
- Duration: 48 months
- EC contribution to the project: € 7.59 million

www.needs-project.org

Coordinator

Stefano Faberi
sfaberi@isis-it.com
Istituto di Studi per l'Integrazione dei Sistemi' (Italy)

Egyptian Partner

Laila Georgy Youssef
nre1@idsc.net.eg
New and Renewable Energy Authority (NREA)

List of Partners

- Spok APS (Denmark)
- Universitaet Stuttgart (Germany)
- Tallinna Tehnikaulikool (Estonia)
- Universiteit Antwerpen (Belgium)
- Paul Scherrer Institut (Switzerland)
- Consiglio Nazionale delle Ricerche (Italy)
- Cesi Ricerca SPA (Italy)
- Vlaamse Instelling voor Technologisch Onderzoek (Belgium)
- Akademia Gorniczo-Hutnicza (Poland)
- University of Bath (United Kingdom)
- Elsam A/S (Denmark)
- Stockholm Environment Institute Tallinn Centre (Estonia)
- Risoe National Laboratory (Denmark)
- Politecnico di Torino (Italy)
- Observatoire Mediterraneen de l'Energie (France)
- National Technical University of Athens (Greece)
- Universite de Neuchatel (Switzerland)
- University of Newcastle Upon Tyne (United Kingdom)
- Meteorologisk Institutt (Norway)
- Mineral And Energy Economy Research Institute - Polish Academy of Sciences (Poland)
- Ecole Polytechnique de Tunisie (Tunisia)
- Kanlo Consultants S.A.R.L (France)
- Institute of Occupational Medicine (United Kingdom)
- Consiglio Nazionale delle Ricerche (Italy)
- Jozef Stefan Institute (Slovenia)

(Continued in the Index)

POWERSOL

Mechanical Power Generation based on Solar Thermodynamic Engines

POWERSOL proposed to develop an environmental friendly improved-cost shaft power generation technology, based on solar thermal energy, optimised for supplying the basic electricity needs of rural communities. The project focused on the technological development of a solar thermal-driven mechanical power generation based on a solar-heated thermodynamic cycle. This technological development has the potential of optimising a solar-assisted thermodynamic cycle that generates mechanical power from low to medium temperature range. The Egyptian partners are responsible for designing, fabricating, installing and operating the POWERSOL solar thermal concentrator to enable the conversion of the heat of the sun into mechanical shaft power that may be consequently used to either generate electricity or to operate a high pressure water pump for desalinating sea or well water for the benefit of remote communities around the Mediterranean. In addition, they are responsible for testing its efficiency for heat generation and determining the instantaneous efficiency of a Solar Thermal Collector.

- FP6: INCO Specific measures in support of international co-operation
- Contract type: Specific Targeted Research Project
- Start date: January 2007
- Duration: 36 months
- EC contribution to the project: € 1.05 million

Coordinator

Julian Blanco Galvez
julian.blanco@psa.es
Centro de Investigaciones Energeticas, Medioambientales y Tecnologicas, Plataforma Solar de Almeria (Spain)

Egyptian Partner

Ahmed Safwat Mohamed Nafey
asnafey31@yahoo.com
Suez Canal University

Amr Abdel Mohsen
lotussolar@menanet.net
Lotus Solar Technolgies

Sabry Abdel-Mottaleb
solar@photoenergy.org
Ain Shams University

List of Partners

- University of Ouargla (Algeria)
- Alternative Energy Systems (Tunisia)
- Ecole National d'ingenieurs de Tunis (Tunisia)
- Instituto Nacional de Engenharia, Tecnologia E Inovação, I.P. (Portugal)
- Ecosystem Environmental Services, S.A. (Spain)
- ETH - Swiss Federal Institute of Technology, Zurich (Switzerland)
- Aosol - Energias Renováveis, LDA. (Portugal)
- Instituto de Engenharia Mecanica (Portugal)
- Universidad de la Laguna (Spain)

www.psa.es/webeng/projects/joomla/powersol/index.php?option=com_frontpage&Itemid=1

SOLATERM

Promotion of a New Generation of Solar Thermal Systems in the MPS

The Mediterranean Partner Countries (MPC) and the European Union are confronted with a rapidly increasing energy demand in the coming decades resulting from a bundle of demographic, socio-economic and resource-related factors. At the same time, the Mediterranean region has a large potential for the solar energy. SOLATERM aimed at the widespread application of a new generation of solar thermal and cooling systems in the MPCs. The project had three specific objectives: 1) transfer technological know-how on solar thermal and cooling systems to the MPC and adapt new technologies to the specific needs of MPC; 2) broaden the spectrum of solar thermal and cooling applications in the MPC; and 3) support the R&D, application of solar thermal and cooling systems in the MPC with political measures. The Egyptian partners were involved in analysing the specific political, socio-economic and climatic conditions of the Mediterranean countries within the context of solar thermal and cooling applications.

- FP6: INCO Specific measures in support of international co-operation
- Contract Type: Coordination action
- Start Date: October 2006
- Duration: 27 months
- EC Contribution to the project: € 800,000

www.solaterm.eu

Coordinator

Bettina Fellmer
bettina.fellmer@gtz.de
Deutsche Gesellschaft fur Technische Zusammenarbeit - Programmes of the Public Sector (Germany)

Egyptian Partner

Omar Elbadawy
elbadawy@cedare.int
Centre for Environment and Development for the Arab Region and Europe

Khaled Fekry
khfekry@nreaeg.com
New and Renewable Energy Authority (NREA)

List of Partners

- National Energy Research Centre (Jordan)
- University of Stuttgart (Germany)
- Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Germany)
- National Energy Research Centre (Syria)
- New Energy Algeria SPA (Algeria)
- Palestinian Energy & Environment Research Center (West Bank and Gaza Strip)
- Centre d'Information sur l' Energie Durable et l' Environnement (Morocco)
- Centre de Developement des Energies Renouvelables (Morocco)
- Technological Educational Institute of Crete (Greece)
- Malta Resources Authority (Malta)
- Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V. (Germany)
- Cyprus Institute of Energy (Cyprus)
- Barcelona Energy Agency (Spain)
- National Agency for Energy Conservation (Tunisia)
- Association Libanaise pour la Maitrise de l'Energie et pour l'Environment (Lebanon)

TERMISOL

New Low-Emissivity and Long Lasting Paints for Cost-Effective Solar Collectors

The project proposed to set up an improved kind of selective paints, with high photo-thermal performance in solar energy conversion, for coating solar collectors. These paints are expected to become widespread by being cost-effective and competitive with commercial technologies and making application processes easier (lower final costs at workshops). Solar thermal devices converting solar radiation into heat are mainly flat plate collectors, and their absorbent surface used to be a heavy metal. Nowadays, some manufacturers use options based on painting the solar panels, presenting a substantial economical advantage but of restricted use due to drawbacks related to high emissive-low energy efficiency and low durability in service life. To improve these drawbacks new coatings are provided for the hybrid-structured surfaces, at defined thickness ranges by control application methods and combining multi-layer systems to adjust the whole system performance. The Egyptian participant was involved in research in the fields of selective coatings and solar water collectors.

Coordinator

Javier Garcia-Jaca
javier.garcia@cidemco.es
CIDEMCO, Centro de Investigacion Tecnologica - Material Department (Spain)

Egyptian Partner

Moataz Soliman
m-soliman@yahoo.com
Alexandria University

List of Partners

- Centre International des Technologies de l'Environnement de Tunis (Tunisia)
- Universidad de Cadiz (Spain)
- Compagnie Africaine des Peintures, S.A. (Tunisia)
- Scientific and Technological Research Council of Turkey (Turkey)
- Solar Energy System (Tunisia)
- Silvasol Energía, Sistemas y Servicios, S.A. (Spain)
- Franco Hermanos S.A. (Spain)
- So. Test Engineering S.R.L. (Italy)
- Istituto di Chimica E Technologia dei Polimeri (Italy)
- Centre des Techniques et Materiaux de Construction (Morocco)

- FP6: INCO-2004-B1.5 Renewable energies, INCO Specific measures in support of international co-operation
- Contract type: Specific Targeted Research Project
- Start date: October 2006
- Duration: 36 months
- EC contribution for the project: € 875,000

www.cidemco.es/termisol