

Proceedings of the

SOLAR ENERGY WORKSHOP

EGYPT – ITALY Industries workshop on renewable energy sources, Following
the Italian-Egyptian Science Cooperation Day

Cairo, 15 June 2011

ASRT premises, 101 Kasr Eleiny Street, 2nd floor.

The workshop gathered together industries involved in the development and implementation of Concentrated solar power (CSP). The discussion table dedicated to CSP and involving private Italian and Egyptian Enterprises was to provide a boost to the start of industrial activities associated with the CSP in Egypt.

The meeting under the auspices of the Italian Embassy in Egypt was facilitated by ENEA, the Italian National Agency for New Technologies, Energy and Sustainable Economic Development and the Egyptian Academy of Scientific Research and Technology –ASRT.

Italian industry participation to the workshop will included:

RONDA HIGH TECH srl., www.ronda-hightech.com Italian leader in the production of components in stainless steel and aluminium. The company produces tailor made component dedicated to CSP

ARCHIMEDE SOLAR ENERGY (ASE), www.archimedesolarenergy.com The sole worldwide producer of a receiver tube commercially available for thermodynamic solarpower plants (CSP) with parabolic trough technology, using Sodium and Potassium nitrates (molten salts) as heat transfer fluid (patent ENEA).

MASSIMO MAFFEIS Engineering and Consulting,(MM) www.maffeis.it Engineering company offering a full range of engineering services to the international marketplace with core competencies in foundations, concrete structures and structural steel devoting the expertise to the development of the CSP plants.

Egyptian counterpart provided a large portfolio of companies and competent authorities to provide features of complementarity and redundancy to the expertise proposed.

AGENDA

Opening of the Italian representative that provided the fresh input of the Italian-Egyptian science day held the day before.

Prof. Franco Porcelli scientific counsellor of the embassy

The description of ENEA science and technology expertises

Dr. Domenico De Martinis, ENEA International Relations Unit

The description of the state of the art of the thermodynamic CSP

Dr. Paolo Martini, ASE

The improvement and optimisation of CSP performance in adverse environmental conditions

Eng. Massimo Maffeis, MM Eng. and Consulting

Roundtable presentation of the Egyptian representatives

Open discussion

Discussion covered substantially the following questions

- 1) What are the perspective in Egypt for renewable energies and specifically concentrated solar energy?
- 2) Can CSP technology be implemented in Egypt?
- 3) How Italian industries can provide support?
- 4) How Egyptian industries and government bodies can facilitate technological transfer for CSP?

It was observed how a recent study¹demonstrated the possibility to develop CSP in Egypt and in the south Mediterranean area in general (Q 1,2) yet how the technological transfer amont Italian and Egyptian companies could occur what are the technological hampers, also in terms of raw materials availability, to obtain the expected performance (Q 3,4).

However, being the first SOLAR ENERGY WORKSHOP held the meeting could not provide immediate conclusions. Yet, two direct deliverables could be considered:

- based on the participation it should be evaluated the creation of an Italian_Egyptian temathic network on CSP, this network should meet on regular basis by the use of virtual networking tools (email, teleconference etc.) and in person every 6-8 months; next meeting to be held in Italy for complementarity. Date and place to be defined

Annex 1 provides the complete list of partecipants to the meeting and other potential partners of the network

- to achieve substantial (and not occasional) collaborations an outlook agenda/action plan that should be defined

Annex 2 provides a draft Action Plan to be expanded and detailed.

¹ The World Bank MENA Assessment of the Local Manufacturing Potential for Concentrated Solar Power (CSP) Projects Final Report - October 2010
ASRT premises, 101 Kasr Eleiny Street, 2nd floor.

ANNEX 1 Complete stakeholders list, participants to the workshop in **blue**

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ANNEX 2 Draft Action Plan for sustainable development of Italian- Egyptian CSP technology

Mainstream actions to be implemented to expand the CSP technology based on bilateral collaboration between Italian and Egyptian dedicated enterprises.

The Action Plan draws the main priorities and conditions to achieve development and availability of the CSP technology

Within the Egyptian energy regulatory framework;

- CSP should be supported in terms of financing for plant construction and dedicated CSP-derived electricity price
- Regulatory framework
- Implementation within the Egyptian Energy plan of the criteria for CSP expansion indicating the potential MWe to be installed in a 2020 perspective.
- Identification of tools for budget mining for the implementation phases; R&D, demonstration, expansion. At EU level potential sources are: SET-PLAN, VII and VIII FP, World Bank e BEI, National and Regional funds

1. *road map* and main *milestones*:

- Agreement of relevant Ministry Enterprise and R&D institutions²
- Bilateral agreements, legislation and regulation development;
- Demonstration plans
- Capacity building on the Egyptian territory, coordinated by the Italian-Egyptian industrial-technology network
- Energy production to meet the Egyptian Energy Plan.

² ASRT and ENEA already signed, in 2009 a Cooperation Agreement in the area of CSP ASRT premises, 101 Kasr Eleiny Street, 2nd floor.