SFERA - Solar Facilities for the European Research Area

2009-2013

Free Access to European CSP Facilities
EU Project SFERA

SolarPACES 2011
11.09.2012 Marrakech

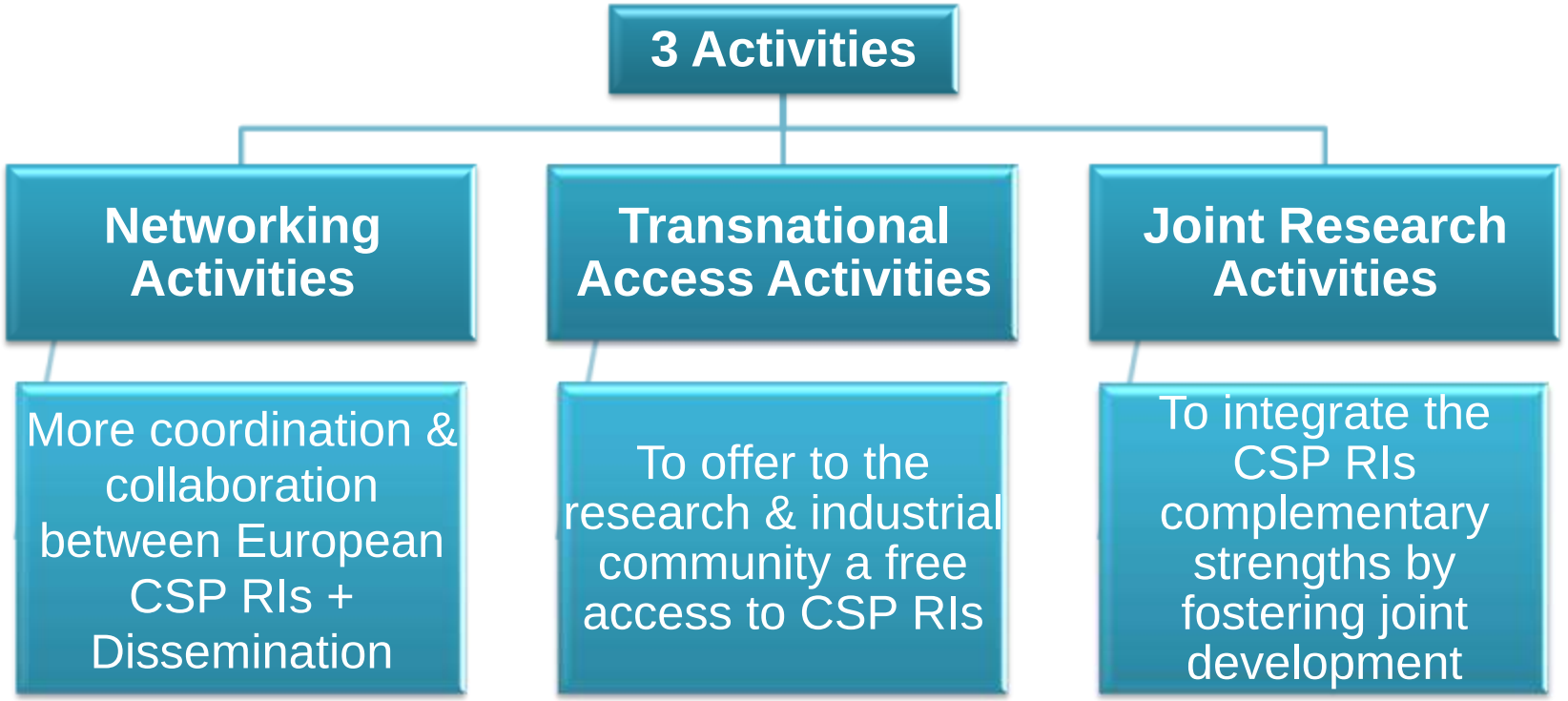
SFERA Presentation

- European FP7 Framework – Research Infrastructure - To optimize the use and development of CSP RIs in Europe
- Collaboration of existing Research Infrastructures in CSP
- 12 european partners

Organisation name	Country
CIEMAT (coordinator)	Spain
DLR	Germany
CNRS	France
PSI	Switzerland
ETH	Switzerland
WEIZMANN	Israel

Organisation name	Country
ENEA	Italy
DIN	Germany
UPS	France
AUNERGY	Spain
CEA	France
INESC-ID	Portugal

SFERA Objectives



⇒ To create a unified European Laboratory for Concentrated Solar System

SFERA Schools

- **1st School**
  - 33 participants

Topic

RADIATION IN SOLAR SYSTEMS

- **2nd School**
  - 49 participants

Topic

SOLAR FUELS & MATERIALS

- **3rd School**
  - 40 participants

Topic of the 3rd SFERA Summer School:

Solar Thermal Electricity Generation

Next Summer/Winter School

- Spring 2013
- By DLR, GERMANY
- Topic : To be discussed with the organizer

For more information on SFERA Networking Activities or to participate to the event, visit our website at http://sfera.sollab.eu/

Doctorial Colloquiums

- PhD students from the partners institutions
- Already 3 DCs (organized together with the SFERA school)
- No external participants
- Book of PhD abtracts
  http://sfera.sollab.eu/index.php?page=downloads_dc_book

Transnational Access Activities

PSA - CIEMAT
Almeria
SPAIN
WP7

PROMES - CNRS
Odeillo
France
WP8

PSI
Villingen
SWITZERLAND
WP9

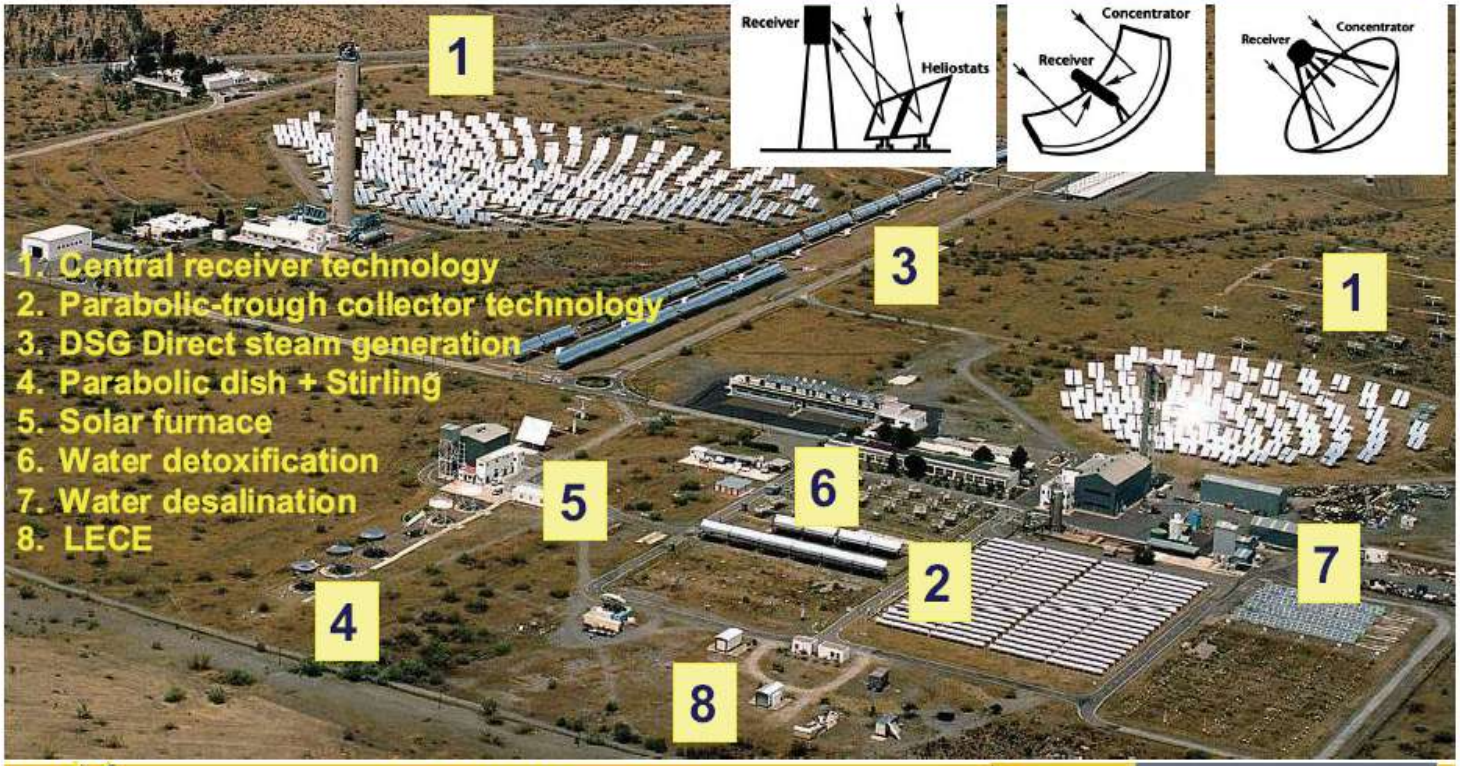
WEIZMANN
Rehevot
ISRAEL
WP10

ENEA
Casaccia
ITALY
WP11

Free access to 5 CSP Facilities

Covering all CSP technologies and large range of CSP power

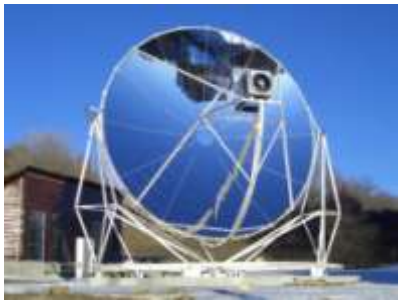
PSA TEST FACILITIES



PROMES-CNRS solar facilities

» The solar tower Thémis

» The 1 MegaWatt Solar Furnace



» The EuroDish system

» 11 high flux solar furnaces

PAUL SCHERRER INSTITUT PSI

ETH Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich

Concentrating Solar Research Facilities

PSI's High-Flux Solar Furnace

Peak concentration: 5,000 suns

Total power: 40 kW_{th}

Power on 6-cm diameter target: 10 kW_{th}

Max. temperature: 2500 K

Commissioned: 1997 / 2009

PSI's High-Flux Solar Simulator

Peak concentration: 11,000 suns

Total power: 50 kW_{th}

Power on 6-cm diameter target: 20 kW_{th}

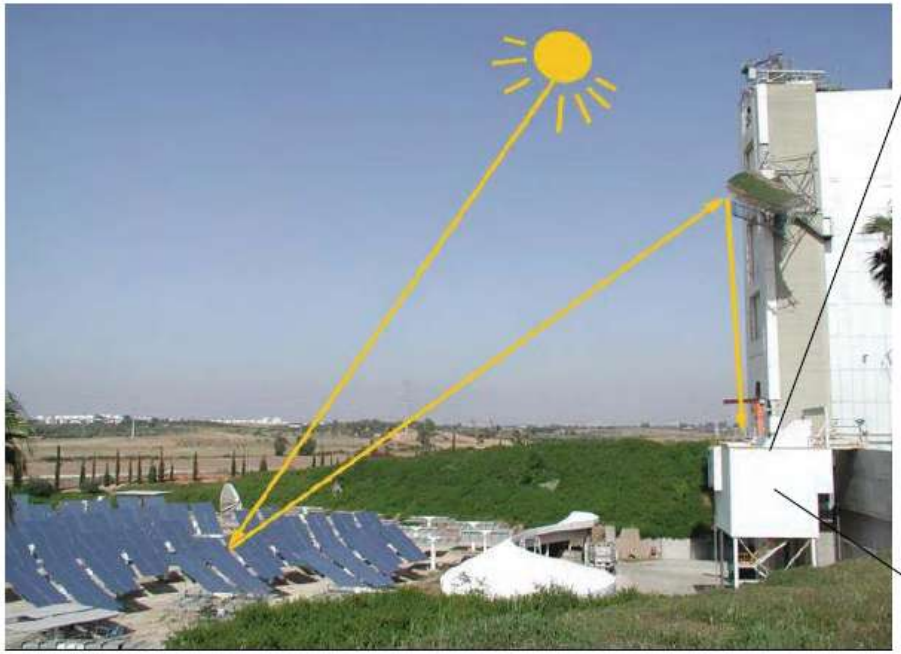
Max. temperature: 2500 K

Commissioned : 2005

WEIZMANN INSTITUTE OF SCIENCE

SOLAR RESEARCH FACILITIES UNIT

Beam-Down Optics



Solar facilities at WIS (with beam down optics)

2MW tower

Secondary concentrator

ENEA Facilities- Solterm (Casaccia)

The **PCS** facility is the main testing loop built in the SOLTERM unit and it is unique in the world.
It consist in a two lines of high temperature parabolic trough collector using as heat transfer fluid a binary component salt (60% of Sodium nitrate and 40% of Potassium nitrate) operating up to 550 °C. It is working since 2004 and it is constituted by a close loop totally instrumented (flow rate, pressures, temperatures, etc.) a molten salt storage (5 m3 of useful volume), electric heaters and Salt to air heat exchanger.

The **MOSE** facility cover the experimental needs related to materials characterization in respect to their behaviour with molten salt. It is suitable for dynamic corrosion testing and all other durability testing of steels, sealings, weldings.

Selection and Funding Process

- **Who can apply?**

  All EU countries + EU Associated countries (Turkey, Croatia, Norway,…)

  + ICPC countries

- **How to apply?**

  Submission of a SFERA Research Proposal Form on the website http://sfera.sollab.eu/

- **How the projects are selected?**

  Through a selection panel composed of 5 independant experts

- **What is funded by the EC?**

  The RIs access costs plus travel & accomodation costs (2-3 weeks for 2-3 users)

- **Expected deliverables**

  A report summarizing the achievements during the access period

  The publication of a least one paper in a scientific journal

SFERA Access Call for Proposals

- **Continuously open until the end of the SFERA project June 2013**
- **Constant selection of the user projects and constant hosting**
- **Different from previous years (only one selection per year) but it enables more applications (for now, 88 projects)**

SFERA II

- SFERA II (4 years): Negotiation to be started with the European Commission
  - Beginning : At the end of SFERA I (September 2013)
  - A follow-up of the SFERA I project
  - More targeted to involve industrials in CSP research (ESTELA will be a partner of the project)
  - New JRA activities up to date with what is at stake in R&D

Thanks for your attention!

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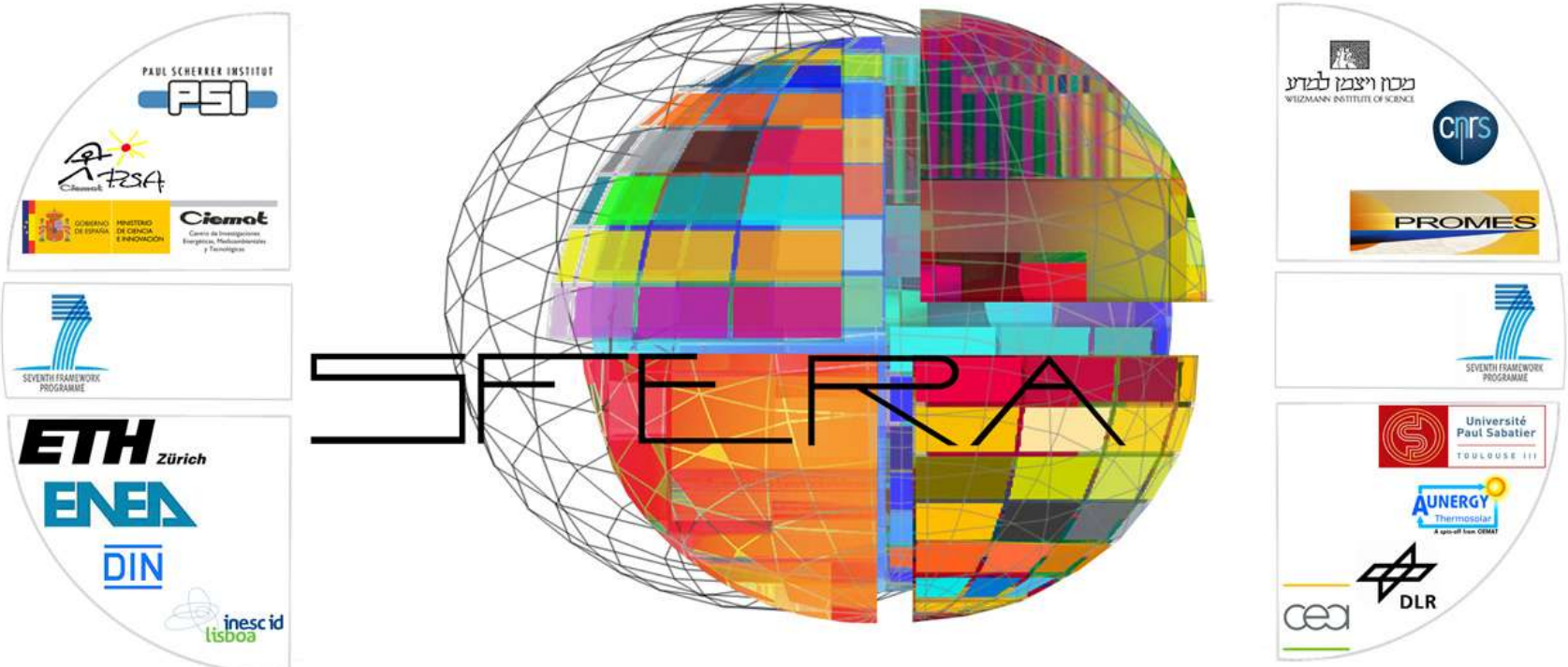

http://sfera.sollab.eu/