DEVELOPMENT OF AN EGYPTIAN PROTOTYPE CSP THERMAL TEST LOOP

Project ID: STDF-1586 (2010-2013)
Faculty of Engineering- Cairo University

Presented by
Adel Khalil
Concentrated Solar Power in Egypt

Concentrated Solar Power in Cairo-
Frank Shuman
1913
Concentrated Solar Power
Potential for Local Manufacturing

- Industrial Modernisation Center study (IMC) /CU Energy Research Center in 2006
- World Bank Study on CSP Local Manufacturing in MENA (2011)
- Egypt Renewable Energy Master Plan (2014)
Percentage Breakdown of Cost for CSP Technologies (Fraunhofer ISE)

- Equipment solar field and HTF system: 41.19%
- Conventional plant components and plant system: 14.47%
- Overheads: 10.85%
- Labor cost Site and solar field: 17.36%
Example of Academia/Industry cooperation
Installation of Egypt CSP Prototype

Site Erection

Lifting Trough at shop

Transport & handling

Trough Units at site

Mirror mounting

Actuator & dummy Tube Assy.

Erection completed
Mechanical Design System

Design Concept Analysis

![Graph showing force vs. wind velocity](image)

![3D model of CSP](image)

- Drag (N)
- Lift (N)
- Torque (N⋅m)
Intercultural M.Sc. Program

Renewable Energy and Energy Efficiency for the Middle East and North Africa (MENA) Region (REMEENA)

Presentation MENAREC 2016