



# CSP – Empowering Morocco with Solar Energy



OPEN FORUM

Sustainable Development - A New Dialogue  
between Europe and North Africa

Dr. Christoph Wolff, CEO Solar Millennium AG

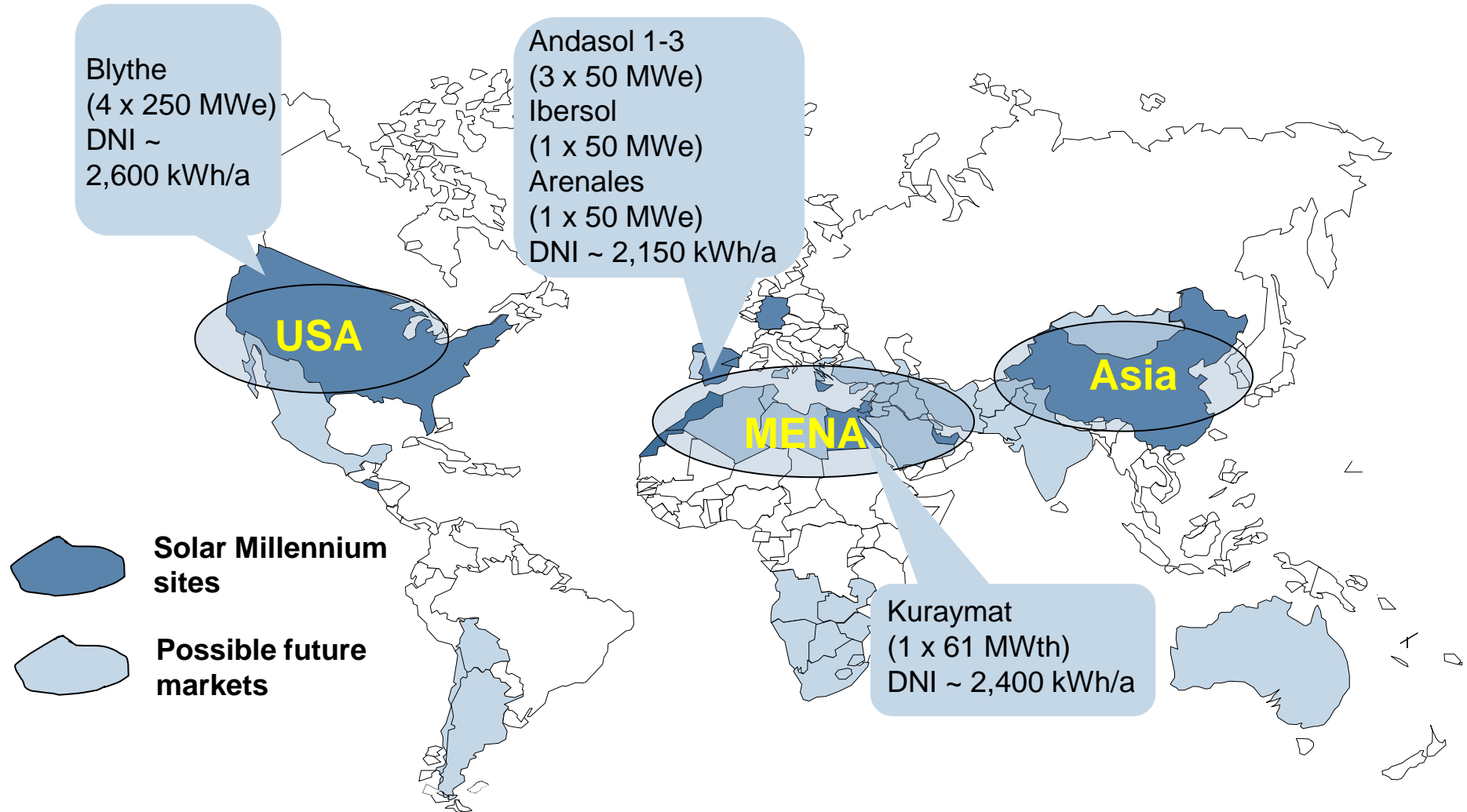
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# Experts for Solar Power

## Solar Millennium AG

- is a **successful pioneer** with a **long track-record** thanks to the **early entry into the market (1998)**
- is focused on development of **renewable energy technologies** and specialized on the realization of **CSP plants**
- developed the **first parabolic trough power plants in Europe (Andasol)**, the first modern **parabolic trough solar field of Egypt** and started construction of **Blythe (California), world's largest solar power plant** (received conditional commitment in April 2011)
- is a **founding member of the Desertec Industrial Initiative Dii** and since a long time involved in the development of **renewable energies in the MENA region**

# Worldwide activities of Solar Millennium (Selection)



# MENA's future challenges



# The Role of private Sector

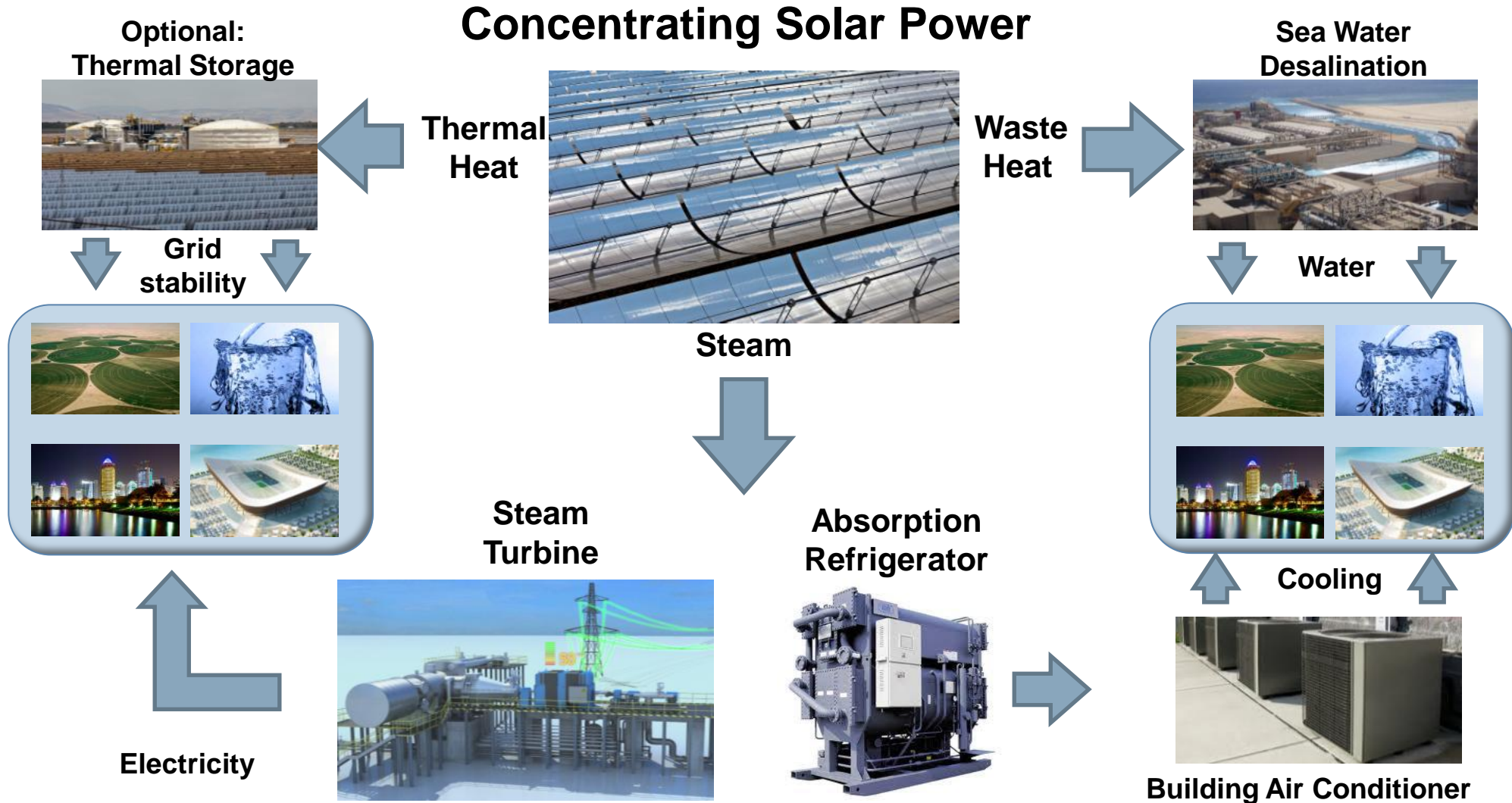


## Work together with private companies from neighboring countries in Europe

### This way:

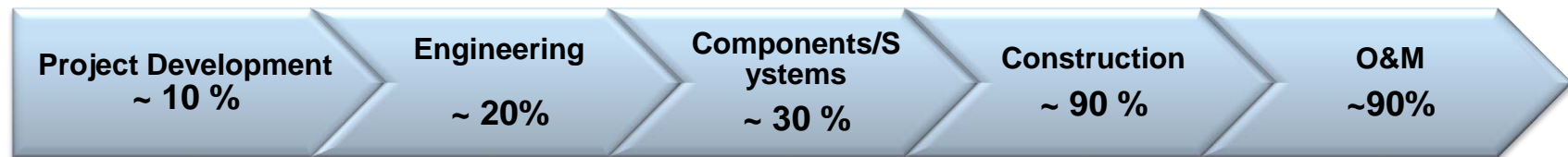
- Transferring Know-How, Technology, Skills and Money to companies from the private sector in North Africa
- Setting up a framework for Education: Vocational Training Programs, Exchange of Engineers, scientific exchange and training of young scientists
- Joint development and adapting standards for the building of new power plants
- Intensifying the cooperation based on the idea of sustainability
- Cross Culture Projects: Bridging the gap on both sides
- Joint sustainable development to overcome the economic, social and ecological challenges

# Future challenges: one solution – CSP



# Local added value creates win-win-situation

Local added value (Dii estimations for CSP projects):



- Local setups of suppliers / industry followers (e.g. glass & steel industry)
- GDP & Job effects
- Improved water supply (desalination)
- Enhanced grid infrastructure (upgrades, new establishments)
- Enhanced road infrastructure
- Reduction of CO<sub>2</sub> emissions
- Securing rapidly increasing local power demand

# Kuraymat: first reference project in Egypt

## **Kuraymat (Egypt), 150 MWe ISCC\*\* plant including 61 MWth**

- Operation of the solar field began at the end of 2010
- Total investment: € 250 million, approx. 30% for the 130,000 m<sup>2</sup> solar field
- Engineering, supervision and supply of key components for the solar field
- After start of operations, Flagsol and Orascom will operate the solar part of the power plant for two years before ultimately handing it over to the owner NREA

# Local added value created by Kuraymat project

- Local sourcing for parabolic trough collector steel structure
- Local assembly of collectors
- Local assembly of the solar field → about 60 percent of the value for the solar field was generated locally
- Pipe works and wiring of the solar field
- Civil Works
  
- *Solar Millennium developed its market strategy to a **win-win-situation** through cooperating closely with regional partners (e.g. Orascom)*
  
- Thus creating local jobs with positive social and economic effects especially to economically weak regions.

# NEXT: Ouarzazate – first Milestone for Morocco

- **Morocco** is about 97 percent dependent on energy imports.
- **Plan Solaire Marocain**: construction of solar power plants with a total capacity of **2,000 MW** by 2020, 14% of the total electricity capacity by 2020.
- **MASEN** made the first step in 2010 by tendering 125 MW at the **Ouarzazate** location in the High Atlas Mountains, **MASEN** wants to realize a total of 500 MW at this location by 2015, which will be split up into several tendering procedures.
- The consortium with **Orascom Construction Industries**, **Evonik Steag GmbH** and **Solar Millennium AG** is one of four bidding consortia to be pre-qualify for the first tender phase by MASEN, a 125-160 MW Parabolic Through Solar Plant with Thermal Storage at **Ouarzazate**.

# Contact

**Address:**

Solar Millennium AG  
Nägelsbachstr. 33  
91052 Erlangen  
Tel.: 09131/9409-0  
Fax.: 09131/9409-111  
E-Mail: [info@SolarMillennium.de](mailto:info@SolarMillennium.de)  
[www.SolarMillennium.de](http://www.SolarMillennium.de)

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