



# Implementation of Solar Thermal Energy Projects in Developing Countries

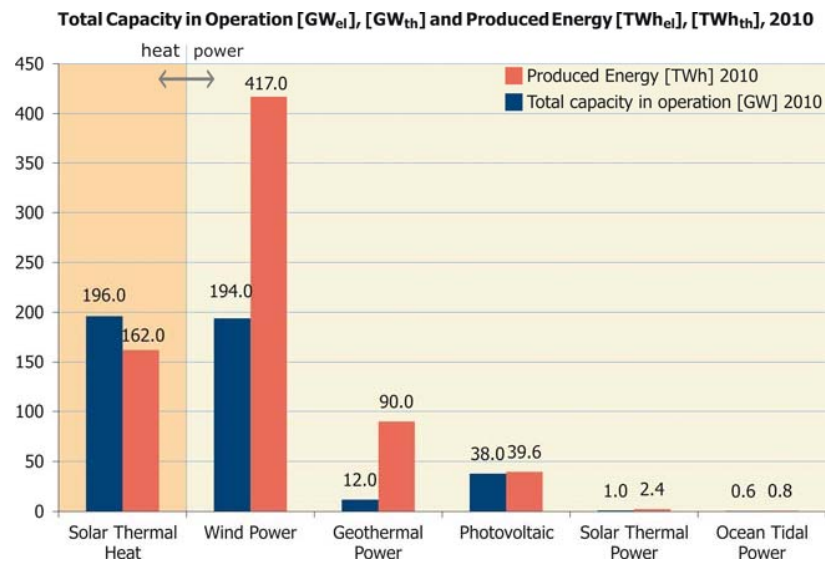
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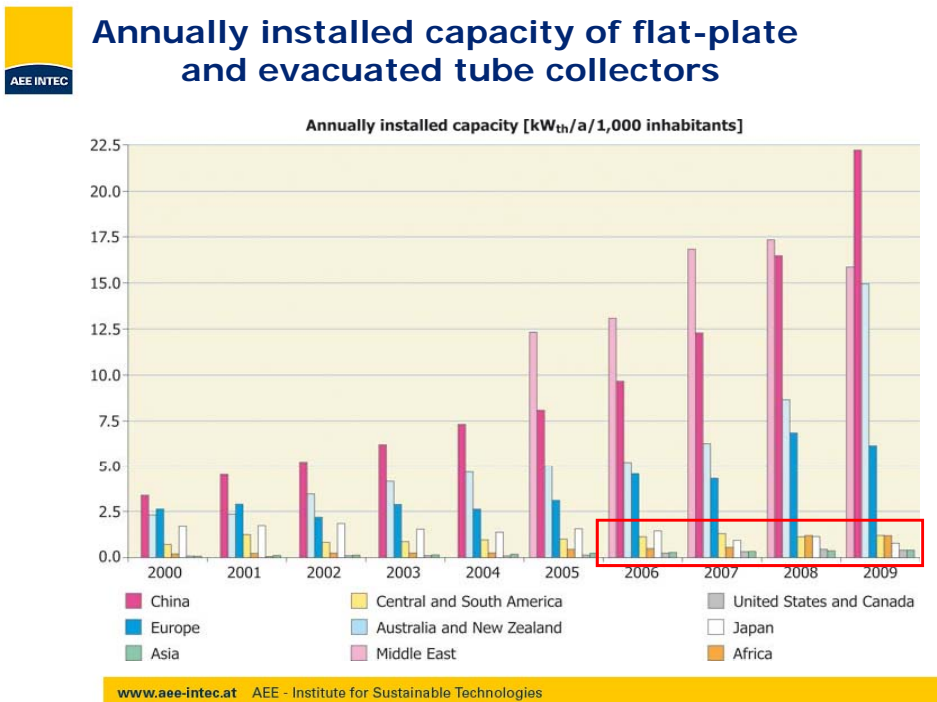
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## Achievements - 2010



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### Solar Thermal in Developing Countries?

**Potential**

**Contribution to Energy Supply**

**Target Groups**

**Applications**

**Challenges**

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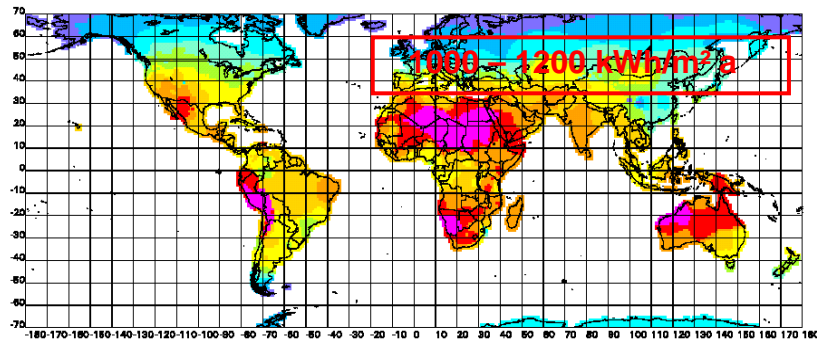
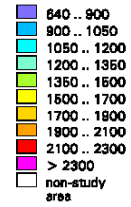


## Potential

METEONORM 4.0



Global Irradiation: year [kWh/m<sup>2</sup>]



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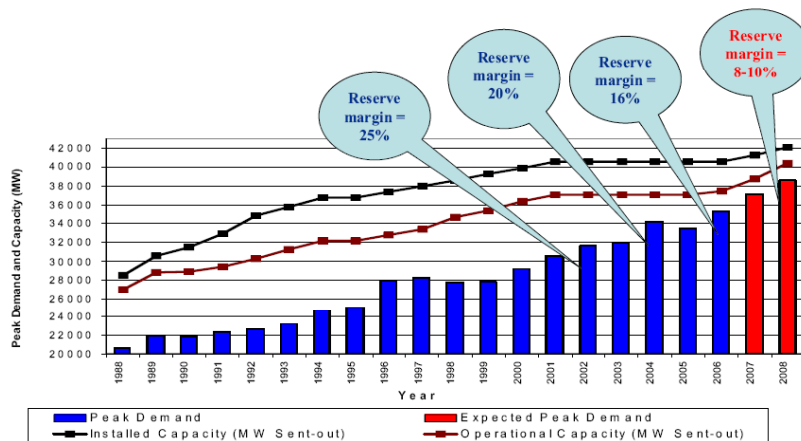


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## South Africa's Electricity Production



## Reserve Margin – Electricity Production



Source: [www.info.gov.za](http://www.info.gov.za)



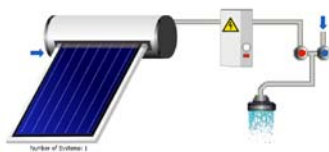
## 1 Million Solar Water Heaters Programme, South Africa



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## South African 1 Million Systems Programme



### System parameters

3 m<sup>2</sup> collector area = 2.1 kWth

Hot water storage: 200 ltr.

Daily hot water consumption: 150 ltr.

### Annual Savings

3400 kWh **electricity**

CO<sub>2</sub>: 2300 kg

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## Market penetration like in Cyprus or Israel

22.05 GWth



34 TWh **electricity**



**Basic electricity for 3.4 Million people**

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## Target Groups?



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## Import or local production?



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## Solar Water Heating Systems







## Hammam in Attaouia, Morocco



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## Katutura State Hospital in Windhoek, Namibia



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## Solar Drying in Guatemala



Source: CONA

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## Combined SWH and Cooling



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## Water Treatment, Mozambique



Source: SoWaDis, SPF

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## Sea Water Desalination



Source: CIEMAT, INETI  
252 CPC AO SOL (499 m<sup>2</sup>)

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## Biggest System Worldwide, Saudi Arabia

36.000 m<sup>2</sup> / 25 MW<sub>th</sub>



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## Challenges

**Lack of (sustainable) political support mechanisms**

**Lack of trained people**

**Upfront investment**

**Low (subsidised) energy prices**



**SolTrain**

financed by  
Austrian  
Development Cooperation

**Train the Trainer Programmes**



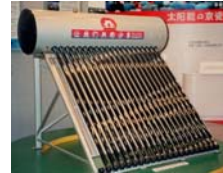
**Dissemination Courses**



Intelligent Infrastructure

**Demonstration Systems**

**Support to Policy and Administration  
Public Awareness**



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**Thank you for your Attention**



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