Potential and Requirements for CSP Desalination in MENA

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The MENA Water Outlook Project

- Project supported by the World Bank
- In collaboration with Governments in the MENA Countries
- Objectives:
  - review of desalination potential in combination with CSP
  - development of a water supply scenario for MENA
Project structure

Water Demand Model
- Climate change models
- Monthly approach for water scarcity calculation
- Result: water deficit per country/sector in the period 2000 - 2050

Configuration of typical CSP+DES plants
- Capacity: 100,000 m³/d
- 100 MW_{el}
- Different configurations considered
- Result: typical land use

CSP Potential in MENA
- GIS analysis
- Exclusion map overlay
- Result: Area of suitable areas for CSP+DES plants

Water Supply Scenario for MENA
MENA Water Outlook water supply scenario

- Decreasing renewable water resources
- Increasing gap between demand and sustainable supply
Conclusions

- High uncertainty on future water availability! Unmet water demand of MENA in 2050 between 85 km$^3$ and 283 km$^3$ (average scenario 199 km$^3$)

- Yearly adaptation cost US$ 103 Billion €$^{2010}$. Yemen (11.8%), Iraq (7.5%), Morocco (4.7%), Jordan (4.0%) and Egypt (2.4%) will face the highest cost in relation to the GDP.

- Almost all countries have enough potential to develop CSP also on coastal areas

- Start to act now in order to build-up the required industrial capacities. Political support is required!
Thank you for your attention!

For more Infos:
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