

Windenergy in the MENA Region Trends and Opportunities

**TERNA Expert Dialogue
Windenergy and Development
18. September 2008 in Berlin**

Presented by

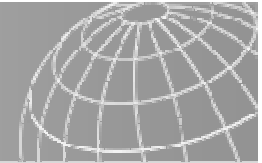
Dr. Kilian Bälz, GTZ

Regional Centre for Renewable Energy and Energy Efficiency, Cairo



Wind energy in the MENA Region – Trends and Opportunities

- The economic, political and regulatory framework
- Market potential: general trends and individual projects
- Regional Centre for Renewable Energy and Energy Efficiency („**RCREEE**“) – our role in the wind sector



The MENA Region





The Economic Framework

- The MENA Region comprises countries with very different levels of development and different resources of fossil energies > key issue: dealing with diversity
- Energy sector in most countries is state dominated and electricity prices are heavily subsidized > to implement wind projects means dealing with the public sector
- Increasing energy consumption (conforming to the general trend in emerging markets) > ambitious goals in RE development/high pressure to develop wind energy
- All countries are oriented towards the EU in their economic relations (although inner Arab FDI is increasing) > EU (in particular German) industries are expected to play key role in expansion of wind energy.



The Political Framework

- Since 2005 there is a general trend to promote renewable energies (RE), focus on wind and solar (wind conditions are good to excellent in the region!) > promotion of RE is high on the political agenda
- RE is becoming an integral part of the energy mix in countries with energy scarcity (e.g. Jordan, Tunisia, Morocco) > energy security as driver
- Development of RE is also intended to promote indigenous RE industry (project developers, engineering firms, wind turbine manufacturers) > industrial diversification and creation of jobs as further incentive
- Union pour la Méditerranée, 13 July 2008: development of “alternative energy sources” as one of six key target (focus on solar, but open to wind)

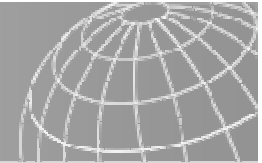


The Regulatory Framework

- Amendment of **energy laws** and creation of **incentives** for RE on the way (e.g. in Morocco, Egypt and Jordan):
 - feed-in tariffs (German model)
 - quotas for RE in electricity production (UK model)
 - > use of standard instruments to promote RE

- Enhancement of **private sector financing**: future of renewable energies will depend on private sector investment
 - Clean energy funds (equity)
 - Project finance (debt)

“Bankability” is dependent on legal framework (feed-in laws and other off-take obligations, zoning and planning, collateral, land law)



The Market Potential: development of key MENA markets

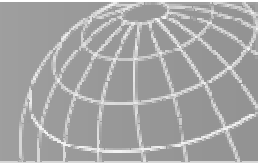
	Installed Capacity 2008 (MW)	Planned Capacity 2020 (MW)	Installed Capacity p.a. (average, in MW)	Investment p.a. (average) € million	Total Investment € million
Egypt	305	7200	574	804	9,653
Morocco	174	4000	318	446	5,356
Tunisia	55	1100	87	121	1,463
Total	534	12,300	979	1,371	16,472



Business Opportunities

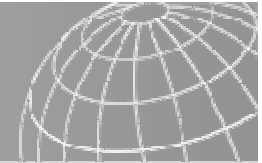
- Developed areas of business:
 - Project development and implementation
 - Supply of wind turbines and other equipment
 - Consultancy services (technical, financial, legal etc.)
 - Financing (debt and equity).

- Future areas of business/growth areas:
 - Licensing of wind technology for manufacturing
 - JV in wind industry (O&M, manufacturing of wind turbines and other equipment, construction etc.)
 - CDM (trade in and sourcing of CERs).



Projects in the Region (1) (selection)

- **Morocco:** Plans to install 1000 MW capacity in wind farms until 2012 (e.g. 300 MW Tarfaya, 240 and 200 MW Layoune, 140 MW in Tanger).
- **Tunisia:** A total of 120 MW capacity to be installed in 2009 in Bizerte, Jendouba and Beja.
- **Libya:** One pilot wind farm in Zwara with 1.5 MW installed capacity.



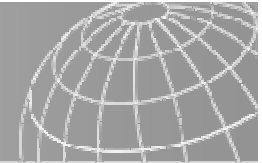
Projects in the Region (2) (selection)

- **Egypt:** Has announced to install 400 to 600 MW capacity per annum until 2020; two projects of MW 120 capacity each to be completed by 2009/2010; 420 MW capacity project in Gulf of El-Zayt in pipeline.
- **Jordan:** Windfarm with 30 to 40 MW in Karamsheh envisaged completion 2009; further projects under investigation (Wadi Araba 40 to 50MW; Fajeej 70 to 80 MW; Tafileh 100 to 200 MW).
- **UAE:** Very active in RE (MASDAR Initiative of Abu Dhabi); pilot wind farm on Sir Banyas Island/Abu Dhabi with 0.85 MW; estimated potential of 1000 MW in near future; several wind farms with 150 to 200 MW planned in Fujeirah.



RCREEE – who we are and what we do (1)

- International Organisation with 10 member states (Morocco, Algeria, Tunisia, Libya, Egypt, Lebanon, Syria, Jordan, Yemen, Palestinian Territories)
- Based in Cairo, secretariat with staff from Tunisia, Syria, Egypt and Germany.
- Sponsored by Egypt (NREA), Germany (BMZ/GTZ), Denmark (DANIDA) und EU.



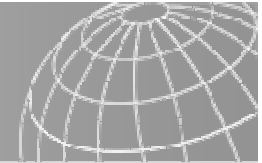
RCREEE – who we are and what we do (2)

- Formulation and dissemination of policies to promote renewable energy and energy efficiency/goal: to build up **MENA policy network** in RE/EE
- Support of R&D and scientific collaboration (within MENA and MENA-EU)
- PPP and private sector participation (point of contact for foreign investors, matchmaking events, round tables on investment framework and opportunities)



Role of GTZ

- Assisting in setting up RCREEE (capacity development as GTZ core competence)
- Rendering advice in RE/EE policy matters (longstanding experience of GTZ in RE/EE in the region)
- RE as focus area of German development co-operation/excellent reputation of German wind and solar industries.



Thank you for your attention!

Questions?

kilian.baelz@gtz.de

Senior Advisor

Regional Centre for Renewable Energy and Energy Efficiency

c/o GTZ Cairo Office 4d, El Gezira Str., Zamalek, Cairo