ENERGY REQUIREMENTS FOR MENA INVESTMENT: OPPORTUNITIES AND RISKS IN THE POWER SECTOR

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Outline

• Context

• Investment needs

• Opportunities for RE development in EUMENA market

• Risks

• The role of the World Bank and other IFIs
The MENA Context

• **Physical attributes**
  ▫ Abundant sunshine and wind
  ▫ Flat unused land close to roads and transmission grids
  ▫ Biggest oil and gas reserves worldwide,

• **Proximity** to EU electricity markets

• **Fastest growing** electricity consumption in the world
  ▫ Mainly due to population growth, rapid urbanization and economic growth

• **yet also worst performer in energy intensity**
  ▫ Mainly because of fuel subsidies -> electricity growth greater than GDP growth

• **High unemployment rate**
Investment needs
South Mediterranean Power Generation 2030

Source: OME 2011

South Easter,n Med:
Algeria Egypt
Libya Tunisia Morocco
Turkey Israel Jordan Lebanon Palestine Syria

Investment needs of 340 billion € by 2030 for 170 GW additional capacity
Current RE national plans in MENA

- Ambitious plans already in motion
  - Morocco: 6 GW RE by 2020 ($13 billion)
  - Algeria: 22 GW RE by 2030 (of which 10 GW export)
  - Egypt: 7.2 GW RE by 2020

- GCC entering the scene
  - EAU: 7% RE by 2020
  - KSA: 41 GW solar by 2032 ($109 billion)
Investment needs
RE Power Generation & Electricity transmission infrastructure

• Mediterranean Solar Plan (MSP): 20 GW RE target by 2020 (solar, wind and hydro) in Southern and Eastern Mediterranean Countries
  ▫ Around 46 billion € investment required for power plants

• MSP estimations for this target:
  ▫ South-South grid connections: 2 billion €
  ▫ Interregional North-South HVDC interconnections: 6 billion € (HVDC submarine cables) for about 5 GW
Opportunities for RE development in EUMENA market

• Developing RE can put MENA economies on a green growth path by contributing to energy policy, climate change, and economic policy
  ▫ Energy security
  ▫ Climate change mitigation
  ▫ Creating new industries, stimulating growth and spurring job creation

• Regional energy market integration
  ▫ Source of low cost RE for EU
  ▫ Source of revenues for MENA
  ▫ Institutional framework « à la » South Eastern Europe

• A plethora of complementary initiatives
Current worldwide RE Investments

- Worldwide RE investment surged in 2011: $257 billion
- 1/3 from developing countries
- MENA: only 2.1% of global total ($5.5 billion)

UNEP, 2012
Risks

- **RE expensive compared to conventional energy**
  - Need for concessional financing until RE costs reduced

- **Lack of policy, legal and regulatory frameworks for RE and electrical integration**
  - Lack of incentives, eg feed-in-tariffs
  - No framework to export to Europe

- **Political turmoil in parts of the MENA region**
  - Negative investment climate perceptions

- **EU economic crisis**
  - May impact concessional financing and exports in short-run
The Role of the World Bank/IFIs

• Dialogue facilitation
  ▫ E.g. exports of solar electricity from MENA to EU

• Analytical Work and Studies
  ▫ Integration of Electricity Networks in the Arab World (in partnership with League of Arab States)
  ▫ Transmission Expansion for RE Scale-Up
  ▫ Regional Power Integration Case Studies

• Technical Assistance
  ▫ System Planning Tools for Enhanced RE integration in the Maghreb
  ▫ Morocco Low Carbon Growth Planning Tools

• Financing
  ▫ Concessional loans (CTF)
  ▫ Lending (national and transborder)
  ▫ Public Private Partnerships TA/financing (AFFI)
  ▫ Guarantees (PRG - MIGA)
  ▫ Grants (GEF, other TFs)
  ▫ Transition Fund (in progress)
The Clean Technology Fund provides initial financing for CSP projects

- Clean Technology Fund (CTF) is a multi-billion fund ($4.5 billion) for climate change mitigation set up in 2008, managed by WB to finance “transformational” projects in developing countries.

  - Concessional public sector terms:
    - 40 y repayment,
    - 10 y grace,
    - 0.25% service fee;
    - Private sector terms benchmarked to public sector terms.

- CTF supports CSP scale-up in MENA with the US$ 5.6 Billion MENA CSP scale up Investment Plan (MENA CSP IP) endorsed by CTF in December 2009, launched by WB and AfDB.

- Ouarzazate I is the first project in CSP MENA IP.
Merci, Thank you, شكرا
Annex: Mediterranean Integration Opportunities

**NORTH**

**European interest in low carbon energy sources**

**Favourable regulatory framework**
- 20% share of RE in the power consumption by 2020
- Article 9, encouraging energy cooperation with third party countries

**How to achieve EU targets at lowest cost**

**SOUTH**

**Inherent strengths of MENA**
- Solar Irradiance
- Land
- Proximity with EU (esp. Maghreb)

**Morocco, first mover**
- job and technological lead

**Future interconnection with Italy (ELMED), existing interconnection with Algeria**

**Energy security, low carbon growth**

Legal, Technical, Commercial constraints

Discussions in progress to institutionalise exports
RE outlook: an increasing role for Southern Mediterranean

- RE Electricity production by 2030
  - Wind: 125 TWh, 32% of all the Med region
  - Solar PV: 44 TWh, 30% of all Med region
  - Solar CSP: 30 TWh, 50% of all Med region

Source: OME
Installed Capacity by 2050 (Dii Scenario)
Power Flows by 2050 (Dii Scenario)