



The World Bank CSP MENA Initiative

Using the CTF to spur green growth in Tunisia and other MENA countries and supply green electricity to EU

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*Tunur CSP Solar Project, Tunis
January 26th, 2012*



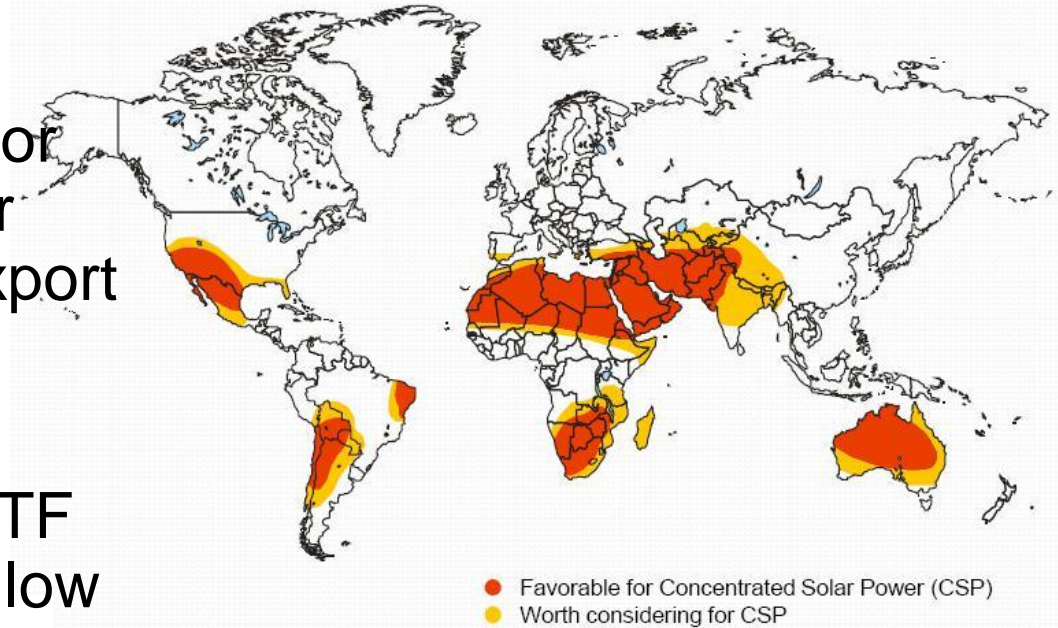
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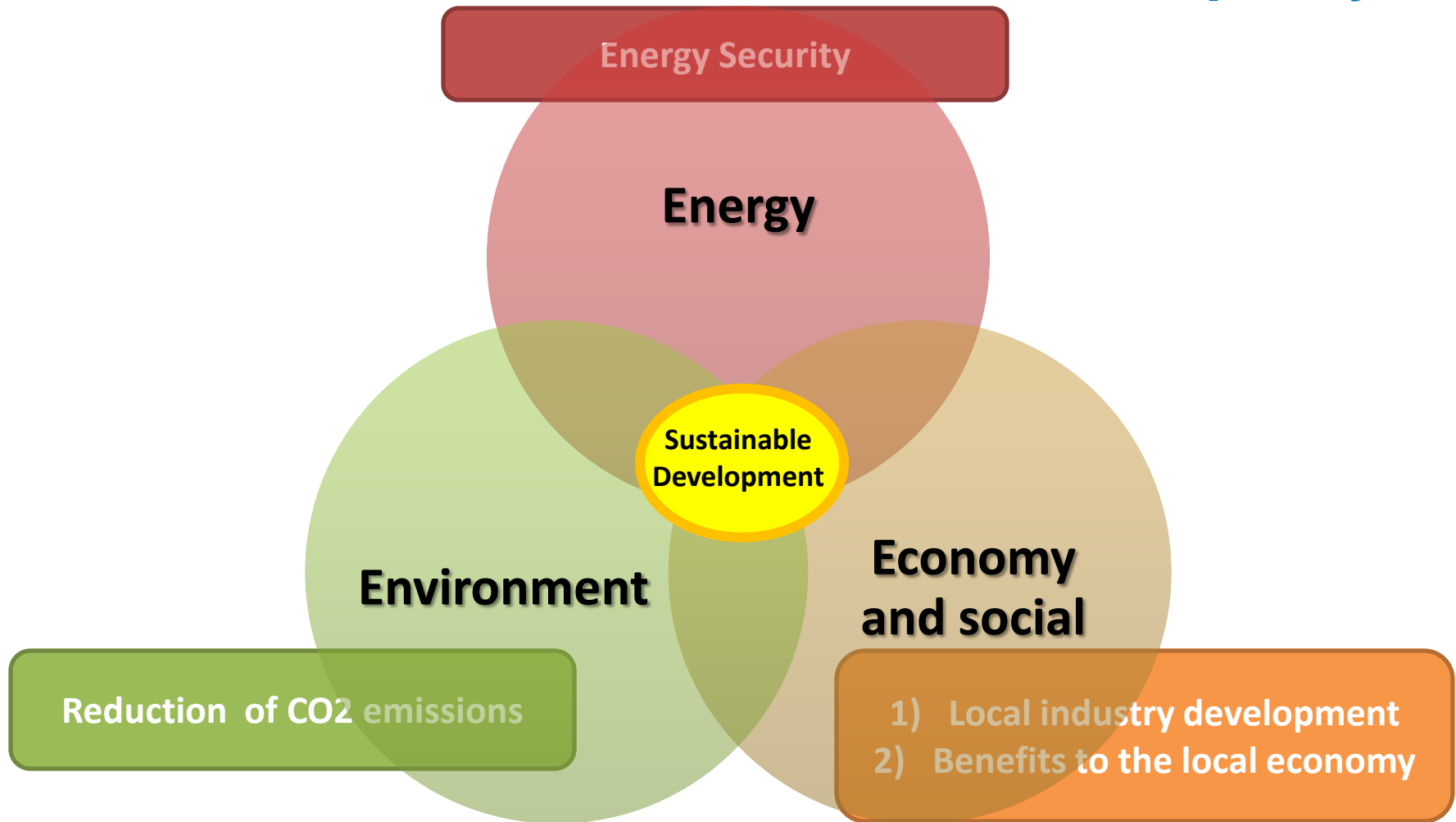


Context

- CSP very promising: grid friendly, cost reduction potential
- MENA prime location for CSP: exceptional solar potential, European export market
- CSP still expensive: CTF and donors to provide low cost financing for CSP to take off in MENA



A technology at the crossroads of energy, environmental, social and economic policy



The Clean Technology Fund:

A precursor to the Green fund, initial financing for CSP


- Clean Technology Fund (CTF) is a multi-billion fund (\$4.5 billion) for climate change mitigation set up in 2008.
- One of the main mitigation financing instruments currently available
- Managed by World Bank to finance “transformational” projects in developing countries
- Very concessional 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



The CTF CSP MENA Investment Plan

- US\$ 5.6 Billion MENA CSP Investment Plan, endorsed by CTF in December 2009, implemented by the World Bank and the African Development Bank
- CTF contribution: US\$ 750 Million
- Current project pipeline (as proposed by participating countries): ~1000 MW of generation capacity (of which ~ 250 MW in Tunisia) + two transmission projects (including ELMED)
- Ouarzazate I (125-160 MW, first phase of Ouarzazate 500MW) is the first project to be developed under the MENA CSP scale up initiative
- STEG CSP (>50 MW) is the second



197 M\$ concessional loan approved for Ouarzazate by CTF in June 2011– by WB Board on Nov 17 and signed in Durban on Dec 7 2011



CSP local manufacturing potential

What can be done?

- In addition to construction and civil works, most components could be manufactured locally

Are existing MENA industries suitable for CSP local manufacturing?

- Promising prospects in the future

How can the potential of industries be encouraged?

- National strategies for industrial development and energy policy should be well coordinated and involve **substantial R&D efforts**, more technology **parks/clusters**, stronger **regional integration** of policies

What are the benefits for MENA by 2020?

- Transformational scenario – 5 GW by 2020
- Total potential of the local manufactured added value of CSP plants could reach 60% of the value chain
- Total local economic impact of US\$ 14,3 billion
- Permanent jobs to be created: 34000



Local manufacturing in MENA: Pros and Cons



- ▶ Low labor cost
- ▶ Existing industries: metal structures, electric and electronic equipment
- ▶ Existing CSP experience
- ▶ Ambitious development plans for renewable energies (Moroccan solar plan, Tunisian solar plan...)
- ▶ Strong political will to favor local integration
- ▶ Local acceptability



MENA risk as perceived by potential investors:

- ▶ Institutional, fiscal and legal framework
- ▶ Infrastructures
- ▶ Financing instruments for innovative projects
- ▶ Availability of skilled labor
- ▶ Knowledge of CSP
- ▶ Competition from other markets
- ▶ Last but not least: visibility/credibility of CSP programs



Local manufacturing: Making it happen

- Supporting local manufacturers
 - Regulatory framework
 - Coordination of national industry and energy policies
 - R&D, education
 - Financing (business creation, diversifications): capital subsidies, strategic funds, subsidized loans
 - Technology parks, industrial clusters, etc.
 - Local content clauses/incentives in project bids
 - International and regional cooperation
- Donors Assistance- Study under way
 - Identify regulatory and policy measures to improve the investment climate
- Credibility and visibility:
 - Steady flow of projects, at regional level
 - Credible financing of CSP investment
 - Credible financing of offtake



Mediterranean North-South Integration

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

Morocco connected to Spain

Future interconnection Tunisia with Italy (ELMED, TuNur), existing interconnection with Algeria

Energy security, low carbon growth

Legal, Technical, Commercial constraints

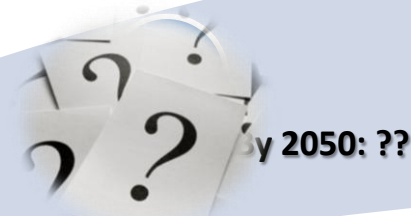
Discussions in progress to institutionalise exports



Moving from predominantly public projects for local consumption to private for exports– Ouarzazate kickstarting

Accelerating factors:

Kick start Concessional funding
Opening of EU market
Fossil Fuel Subsidies Phasing-out



By 2050: ??

By 2030: between 3 and 5 GW

Ownership: MENA, Europe and global companies with long-term contracts, once the regulatory environment and market for green power matures in Europe

Financing: Similar to financing for other RE projects, with commercial financing playing a key role, export credit financing can be exploited

Risk sharing: More risks will be shifted towards the private sector as the green energy market in Europe matures and there is clarity on power export's framework

By 2020: up to 1 GW

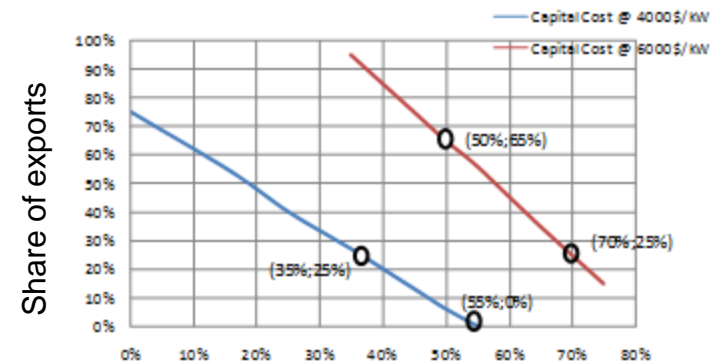
Ownership: Public or long-term contract-based PPPs

Financing: concessional funding will play a key role until 2015

Risk sharing: development risks and market risk; MENA Governments, part of the financing risk



Ouarzazate
Phase I



Share of concessional financing





Thank you!

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Project Appraisal Document of Ouarzazate

<http://www->

wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&siteName=WDS&entityID=000406484_20111118174227

MENA Assessment of the Local Manufacturing Potential for
Concentrated Solar Power (CSP) Projects

http://arabworld.worldbank.org/content/awi/en/home/research/mena_solar.html

