

Middle East and North Africa



THE SITUATION

The Middle East and North Africa (MENA) region has among the world's most favorable geographic conditions for solar energy generation. But instead of investing to capture its solar potential, the region has depended primarily upon inexpensive fossil fuels to meet its growing energy demand over the past several decades.

THE TRANSFORMATION

To increase energy security, strengthen regional integration, and promote industrial growth and diversification, five countries of the MENA region are implementing an ambitious plan to

harness the region's vast, but largely untapped, solar energy potential. Enabled by US\$750 million from the Clean Technology Fund (CTF), Algeria, Egypt, Jordan, Morocco, and Tunisia have designed and are implementing a regional investment plan to develop 1GW energy generation capacity across nine utility-scale concentrated solar power (CSP) plants, along with associated transmission infrastructure upgrades in the Maghreb and Mashreq. CTF financing is expected to leverage an additional US\$4.1 billion in public and private support to accelerate regional adoption of CSP, a proven technology with high initial capital costs. The plan is designed to ensure clean, renewable domestic energy supply, and enable eventual energy exports to Europe.



CTF IMPACT: Ouarzazate I CSP to save Morocco 240,000 MtCO₂e/y

Morocco is home to Ouarzazate I, the first project to be approved under the MENA region's CTF investment plan. US\$197 million from the CTF is supporting the construction of a CSP complex at Ouarzazate, Morocco, which will generate 120–160 MW in its first phase by 2014 and 500 MW in total, making it the largest CSP plant in world. The project is structured as a public private partnership (PPP) between the Moroccan Solar Energy Agency (MASEN) and a private partner and aims to develop domestic renewable energy industries as well. It is mobilizing nearly \$1 billion from other private and public sources. Ouarzazate I will help Morocco avoid 240,000 tons of CO₂ emissions a year—the same as removing 80,000 cars from the road annually.

MENA REGION QUICK FACTS

ECONOMY

Projected GDP growth (2013): **3.7%**

ENERGY

Average annual electricity demand growth (1990–2008): **4.8%**

Projected annual electricity demand growth (to 2030): **3.3%**

Regional renewable primary electricity capacity (2008): **3%**

Regional economy energy intensity (vs. world average): **+40%**

Electricity demand met by fossil fuels (% total, 2012): **96%**

CLIMATE

Regional power sector CO₂ emissions (% total): **44%**

Regional GHG emissions (% global, 2008): **6%**

MENA REGION CTF QUICK FACTS

CTF financing: **US\$750 million**

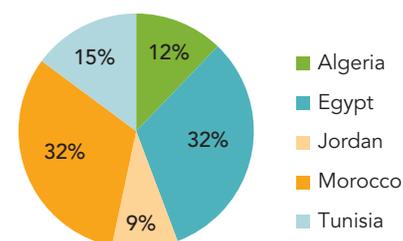
Expected to leverage: **US\$4.145 billion**

Expected CTF GHG savings: **42.3MtCO₂e**



Workers at the Ouarzazate plant are gaining skills and knowledge to be competitive in the region's fast-growing renewable energy sector.

MENA ALLOCATIONS BY REGION



MENA CTF PROJECT FOCUS AREAS

INDUSTRIAL GROWTH AND DIVERSIFICATION

RATIONALE: CTF funds will help address cost, risk, and knowledge barriers to demonstrate the viability of CSP and accelerate the development of the region's untapped renewable resources.

EXPECTED RESULTS:

- Demonstrate the commercial viability of large-scale CSP investments to stimulate broader private sector engagement in the sector.
- Stimulate local private sector economic activity through construction, maintenance and other associated sectors, and enhance competitiveness of firms and workers through capacity building and skills upgrading.
- Reduce local pollutants and GHG emissions, improving public health and quality of life.

REGIONAL INTEGRATION

RATIONALE: The MENA region's fragmented grid network is a barrier to regional integration and economic development. CTF financing for smart grid upgrades will help accelerate clean regional economic growth.

EXPECTED RESULTS:

- Smart grid upgrades will enable the integration of intermittent renewables throughout the region and provide an essential foundation for scaled-up renewable energy investments.
- Grid upgrades will improve energy access and connectivity within MENA, enable clean energy exports to Europe, and enhance the efficiency of the region's energy transmission and use.

ENERGY SECURITY

RATIONALE: Scaled-up CTF investments in CSP will help diversify the sources of the region's energy supply to enhance energy security.

EXPECTED RESULTS:

- Enhance energy security by providing clean, domestic source of energy and reduce the need to import fossil fuels.
- Enable higher value-add use of fossil fuel resource endowments, such as industry or export.
- Reduce vulnerability to international energy market shocks, improving prospects for stable economic growth.

