

Powering Morocco with the world's largest concentrated solar plant

The Africa Development Impact Awards recognise excellence, innovation, results and quality of operations in each of the High 5s. The Awards go to operations supported by the African Development Bank which have demonstrated unique development impact and improved peoples' lives in Africa.

Through a transformative investment, Morocco now provides energy to more than half a million people — benefiting households, businesses, agriculture and industries — by producing 520 GWh per year through new solar power capacity. Building on a public-private partnership, this solar plant located on the edge of the Sahara desert brings the cost of power generation from the sun to levels comparable with other less clean existing sources of energy, while at the same time reducing green gas emissions.

Challenge

Morocco has made remarkable progress in terms of providing universal access to electricity throughout the entire country. With a rising GDP, a growing population and expanding cities, demand for electricity in Morocco has grown by an average of 7% each year. Driven by a dynamic economy, population growth and the rise in the increased living standards, electrical energy demand is expected to quadruple between 2010 and 2030. Morocco is already the largest energy importer in North Africa, depending on energy costs from abroad. Meanwhile, the Ouarzazate region benefits from a monthly average of over 250 sunhours, which for too long remained untapped. The energy sector plays a huge role in ensuring economic development and social growth in Morocco, but it faces a number of challenges. At the same time, Morocco is heavily dependent on energy imports to meet its needs with 95% coming from abroad.

Approach

Growing the country's power infrastructure was among the government's main priorities set out in its energy strategy, which emphasised wind and solar power to move toward a low carbon development. In fact, the innovative Ouarzazate solar energy complex is part of the Moroccan Solar Programme (NOOR) which aims to generate electricity capacity reaching an additional 2 GW by 2020 through an energy mix that involves solar power and photovoltaic plants.

Concentrated solar power is a proven technology that provides reliable energy even on cloudy days, as it retains power from previous hours, and is most appropriate in sun-abundant areas.

To lower production cost, the Bank designed a Public-Private Partnership (PPP) between government, the private sector and donors. This allows for power producers to sell the electricity generated by the plant to the government. At the same time the structure of the PPP allows for the reduction of investment costs in solar energy to levels of existing sources of energy.

In providing funding for this project, the Bank built on its long-standing relationship with Morocco's energy sector. The financing of the project was arranged by the African Development Bank and the World Bank. Other funders included the Clean Technology Fund of the Climate Investment Funds, the German KfW Development Bank, the French Development Agency, the European Investment Bank, the European Union, MASEN and private investors.

Light up
and power Africa



Sector	Energy
Country	Morocco
Project full name	Ouarzazate solar power generation project – Phase I
Project duration	2012–2016
Project total cost	\$1.28 billion
Bank contribution	\$318 million

 **520 Gigawatt hour**
produced yearly

 **500 000 people**
can enjoy solar power

 **240 000 tonnes of CO₂**
saved each year

Design: www.credesign.net

Impact

This project's impact on people's lives is proof that countries transition effectively to green growth with planning and support.

- The solar power plant now provides electricity supply to more than half a million Moroccans by producing 520 GWh per year.
- Producing solar energy avoids the release of 240,000 tonnes of CO₂ per year, which is equivalent to 6 million tonnes of CO₂ over the plant's 25-year lifespan. It is expected to reduce Morocco's fossil fuel dependence by 2,5 million tons of oil.
- The plant is also contributing in covering national electricity demand at peak hours by using the storage system.
- The plant also helped the Ouarzazate area with new infrastructures built nearby, including roads, water supply and electricity grids.



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