

Improving grid integration of renewable energy

Context

When Morocco introduced its national energy strategy in 2009, it initiated an energy transition which aims to ensure that about half of installed electricity generating capacity will come from renewable energy sources by 2030. With the new development model published in June 2021, Morocco also wants to position itself as a driver of green and competitive energy. In view of this, the country is implementing ambitious projects to expand renewable energy sources.

In parallel to large-scale projects, it will increasingly generate green electricity from smaller, decentralised plants in the years ahead. But the integration of variable electricity production into the electricity grid poses a challenge compared with uniform generation from conventional coal or gas-fired power plants. For this reason, grid operation and planning needs to be optimised and adapted to meet the technical challenges.

Objective

The national electricity supplier and grid operator, as well as other actors in the Moroccan energy sector, are developing solutions and improving skills to enable the electricity system to account for a larger share of variable renewables.

Project title	Optimised integration of renewable energy into the Moroccan power system (INTOPER)
Comissioned by	German Federal Ministry for Economic Cooperation and Development (BMZ)
Country	Morocco
Main political partner	Morocco, Ministry of Energy Transition and Sustainable Development (MTEDD)
Overall term	2020 to 2024

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Morocco aims to increase the share of renewable energy to 52 percent by 2030.



Moroccan energy sector actors optimise network management and energy.

Approach

The project operates in the following areas of action:

- Adapting network management tools and processes to improve the integration of renewables. Municipal and private network operators are also given access to this experience.
- Optimising methods and processes to plan power plant and grid expansion that takes into account a high share of variable renewable energy sources.
- Establishing system services for flexibility and stability to be ready to compensate for future frequency fluctuations.
- Integrating innovative technologies and institutionalising these within an innovation network that promotes the exchange of knowledge between German and Moroccan public, private, technical and research institutions.

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