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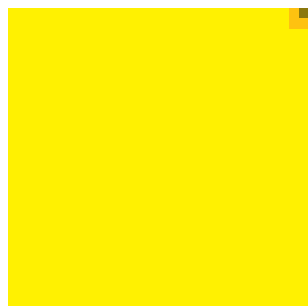


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## Promotion of Renewable Energy and Energy Efficiency - the "PEREN" Project

### Renewable energy - a real blessing for Morocco

Demand for energy, especially electricity, is rapidly increasing in Morocco. Since 2002, primary energy consumption is growing by some 6 per cent a year, while electricity use is increasing by some 7 per cent. In 2011, energy demand was covered by almost 90 per cent by oil, gas and coal - and 95.5 per cent of it was imported. The « energy bill », amounting to 90 billion MAD in 2011, is heavily burdening the country's trade balance. Yet Morocco has large renewable energy (RE) resources to provide for all the country's energy needs without contributing to global warming.



- Electricity consumption in Morocco in 2008
- Expected electricity consumption in Morocco in 2030
- Technical electricity production potential from renewable energy in Morocco

### Objective: sustainable energy for a sustainable development

Morocco has committed itself to increase the share of RE to 10-12 per cent of primary energy and 42 per cent of installed electrical capacity (or some 27 per cent of electricity consumption) in 2020. The Moroccan programmes for solar and wind energy foresee the construction of five solar power plants with a combined capacity of 2.000 MW and wind farms totalling another 2.000 MW.

In terms of energy efficiency (EE), Morocco has launched several action plans to help contain energy consumption across different sectors with the ambition to save 12 per cent in 2020 and 15 per cent in 2030 over a business-as-usual scenario.

### GIZ in Morocco

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is active in Morocco since 1975. The current priority areas are the sectors of sustainable economic development, use and management of water resources, as well as environment and climate change, including promotion of renewable energy.

The services delivered by GIZ draw on a wealth of regional and technical expertise and tried and tested management know-how. As a federal enterprise, we support the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Most of our work is commissioned by the German Federal Ministry for Economic Cooperation and Development. GIZ also operates on behalf of other German ministries – including, amongst others, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety – as well as public and private sector clients in Germany and abroad.

Since 2008, the project "Promotion of Renewable Energy and Energy Efficiency for Sustainable Development in Morocco (PEREN)", carried out by GIZ and the "Agence pour le Développement des Énergies Renouvelables et de l'Efficacité Énergétique" (ADEREE), supports Morocco in this effort.

### Approach: international expertise for Morocco

PEREN supports its partners through advisory activities and capacity transfer in four areas:

#### 1. A coherent legal framework

Based on international experience, PEREN provides technical advice for the design of laws, regulations and support mechanisms for RE/EE.

## 2. Stronger institutions

In terms of organisational development, PEREN supports the Ministry of Energy, Mines, Water and Environment (MEMEE) in strengthening its management processes. Concurrently, PEREN assists the newly-founded ADEREE in establishing effective structures and procedures.

## 3. Know-how and regional implementation

Through their studies and a range of dedicated pilot projects, GIZ and ADEREE disseminate knowledge about RE/EE potentials and application options for public and private actors, including at regional level.

### Studies on RE potentials

- The potential of biomass resources in the regions Oriental and Souss-Massa-Drâa is currently being studied in close cooperation with ADEREE and its regional partners.
- A technical and economic study for the new landfill of the city of Meknès has demonstrated the feasibility of a system for sorting and recycling household organic waste by bio-methanisation (production of biogas).
- In the area of photovoltaics, a study on the technical and economic potential showed that this technology has already reached grid parity in Morocco under a net-metering approach. The country could thus realise an economic potential of up to 26,000 MW by 2030 without any subsidies at all.
- With the support of energy efficiency experts, technical guidelines were developed - jointly with ADEREE - to prepare for thermal regulation concerning energy efficiency in buildings under Moroccan conditions.

### Preparing the ground for actor's commitment

- In 2010 and 2011, Morocco has adopted laws and decrees related to RE and EE and the transformation of the former CDER into the ADEREE, whose extended mission includes also energy efficiency and energy services.
- Since 2009, some 250 MEMEE civil servants participated in a management strengthening process to improve the overall performance and interaction between the different units of the central and regional directorates.
- In December 2011, ADEREE's supervisory board approved the new organisational chart which had been jointly developed by about thirty of its employees with an expert in organisational development.
- In 2012 - building on a study conducted through PEREN - a strategic process was initiated to enable the regions throughout the country to engage in and benefit from RE/EE according to their priorities.
- The Euro-Moroccan university network was established to strengthen training and applied research in RE/EE. For the Moroccan actors busy in this sector, such systematic exchange expands international cooperation and scientific expertise.

## 4. University network for education and applied research

In consultation with the Ministry of Higher Education (MESFCRS), MEMEE, ADEREE, universities and engineering schools, PEREN supports the activities of a Euro-Moroccan network to facilitate scientific exchange and cooperation on RE/EE.

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<b>Target region</b>	Based in Rabat, operating in the entire country	
<b>Project duration</b>	01/2008 - 12/2014	
<b>Updated</b>	April 2012	