



RÉPUBLIQUE  
FRANÇAISE

*Liberté  
Égalité  
Fraternité*



# NORTH AFRICA

FLAGSHIP PROJECTS IN THE ENERGY SECTOR  
FRENCH DEVELOPMENT AGENCY

# CONTEXT AND CHALLENGES OF THE ENERGY TRANSITION IN NORTH AFRICA

The energy transition of North African countries aims to promote the electrification of uses, decarbonize electricity mixes while ensuring the utilization of energy efficiency potential. At this stage, however, the region remains dependent on fossil fuels: three North African countries (Algeria, Egypt, Libya) are among the top five hydrocarbon-producing countries on the African continent.

A predominant role of fossil energies is also observed in the electricity sectors, representing between 60 and 100% of the primary energy supplying power plants in the region, with a significant difference between, on the one hand, Morocco (dependent on coal), and on the other hand Algeria, Tunisia and Egypt (dependent on natural gas). At the same time, the region is marked by a strong increase in its electricity consumption: electricity demand has tripled since the year 2000 and will continue to increase in the coming years. Population growth, urbanization and the development of industrial activities contribute to this trend.



Climate change is also a factor in increasing electricity consumption as it leads to a wider use of air conditioning equipment. In addition, in order to respond to more frequent situations of water stress, while freshwater needs are increasing, seawater desalination is spreading and contributes to the observed and projected increase in electricity consumption.

Positively, some countries have initiated policies to decarbonize their electricity mix. North Africa has a very high renewable energy potential in a region where land availability is significant. According to IRENA (International Renewable Energy Agency), the technical potential for deploying solar power plants in the region is 2,800 GW and that of wind power plants is 220 GW. North Africa is thus very well positioned to decarbonize its electricity mix and benefit from the decline in prices observed for several years in the renewable energy market (solar photovoltaic, wind, batteries).



In this context, countries in the region are pursuing, with varying levels of ambition, energy transition policies. These aim to take advantage of the strong competitiveness of renewable energy technologies, to utilize their gas resources on international markets rather than as primary energy for their electricity sector (for countries endowed with such resources). They also aim to integrate into their productive sectors certain segments of the value chains of the transition economy, notably by mobilizing their immense renewable energy potential (with green hydrogen for example).

The achievement of these objectives will depend closely on the quality of energy policies and associated economic incentives, as well as on the proper consideration of the technical and financial constraints faced by energy operators, particularly in the electricity sector (significant technical losses on networks, weakness of regional interconnections, deteriorated financial situation of some public operators).

# CONTEXT AND CHALLENGES OF THE ENERGY TRANSITION IN NORTH AFRICA



## Universal access to energy services

AFD aims to strengthen **access to reliable and affordable energy** by combining the extension of electricity networks and the development of decentralized solutions such as mini-grids or solar off-grids. Support for local sustainable fuel sectors contributes to job creation and strengthens the energy security of territories.



## Decarbonized energy supply

AFD is accelerating the deployment of renewable energies in order to **increase the share of clean energy in national mixes**, while improving security of supply. The Agency contributes to a gradual phase-out of carbon in systems still dependent on hydrocarbons. In this regard, **green hydrogen** constitutes an innovative and important avenue to promote the emergence of a competitive low-carbon economy.



## Demand management & energy efficiency

The Agency integrates energy efficiency into public policies and invests in favor of more prudent consumption, particularly in the building sector. The **PEEB Med** program combines technical assistance and financing for low-carbon buildings – schools, hospitals, social housing, etc. – resulting in energy savings, new skills and **green jobs** for youth.



## OUR ACCELERATION LEVERS

To amplify its impact, AFD relies on three complementary dynamics. It first supports strong public policies, by strengthening energy planning and low-carbon trajectories for a just and credible transition. It mobilizes and strengthens the capacities of sector stakeholders, by developing training and creating employment opportunities for youth. Finally, it stimulates innovation by supporting the emergence and dissemination of technological, digital or financial solutions capable of transforming energy systems at scale.



## OUR FLAGSHIP PROJECTS

SOLAR AND WIND ENERGY: SECURING ELECTRICITY SUPPLY

# OUARZAZATE, A SHOWCASE OF SOLAR MIRROR TECHNOLOGY IN MOROCCO

In Ouarzazate, AFD supports Morocco in the development of one of the most emblematic solar complexes in the world. With NOOR Ouarzazate I and NOOR Ouarzazate III, AFD supports the deployment of innovative solar thermal mirror technologies, integrating thermal storage systems to produce renewable, controllable and decarbonized electricity.

Led by the Moroccan Agency for Sustainable Energy (MASEN), these two projects contribute to strengthening the country's energy security, while reducing its dependence on fossil fuels, and contribute to positioning Morocco as a regional leader in the energy transition.



**500 000 tonnes**  
of CO<sub>2</sub> avoided per year



Expertise mobilized  
**MASEN, National Institute for Solar Energy (INES), Chambéry Grand Lac Economie**



Location  
**Morocco**

# GULF OF SUEZ WIND FARM, AN ACCELERATOR OF RENEWABLES IN EGYPT

AFD supports Egypt in the development of a large-scale wind farm, at the heart of one of the most favorable wind areas in the world. Designed as one of the country's first pilot renewable energy projects, it has made it possible to demonstrate the technical, economic and institutional feasibility of large-scale wind power in Egypt. With an estimated annual production of 700 GWh, the project contributes to reducing dependence on fossil fuels and to containing electricity production costs. It will also make it possible to avoid 380,000 tonnes of CO<sub>2</sub> per year.

This project strengthens the country's electricity supply security, while supporting the diversification of its energy mix. It has thus created favorable conditions for the replication of similar projects at the national level and for the gradual entry of the private sector (including Proparco) into the sector.



**400 000 households**  
benefit from green electricity



Expertise mobilized  
**Vestas**



Location  
**Egypt**




# SMART GRIDS TO ACCELERATE THE ENERGY TRANSITION





© AFD - Raja Abdelkhalek

AFD is supporting the modernization of Tunisia's electricity system with €120 million in financing for a Smart Grid program led by the Tunisian Electricity and Gas Company (STEG). This large-scale infrastructure project aims to optimize the management of electricity flows in order to reduce technical losses, while creating the flexible architecture required to achieve the country's target of integrating 35% renewable energy into the grid by 2030. Initially deployed in pilot areas (Sfax, Sousse, Le Kram, etc.), the program combines smart metering (for electricity and gas), digitalization of information systems, and change management support within the public utility operator.

By strengthening demand management, service quality, and grid resilience, the project helps reduce the country's dependence on natural gas, limit greenhouse gas emissions, and lay the foundations for a more energy-efficient, inclusive, and sustainable electricity system.

 **1,3 million people** will benefit from improved access to electricity in the regions of Greater Tunis, Sousse, Sfax, Béja, and Sidi Bouzid.

 Expertise mobilized  
**Sagemcom, Siemens, efluid, VertiGIS et Sia Partners**

 Location  
**Tunisia**

# REHABILITATION OF THE ALEXANDRIA REGIONAL CONTROL CENTER

AFD supports the Egyptian Electricity Transmission Company (EETC) in the rehabilitation of the Alexandria regional control center. The modernization of the control center will contribute to the improvement and consolidation of the electricity network. It will play a key role in the future integration of renewable energies, as well as in strengthening the transmission capacities necessary to attract interconnection projects.


As part of this rehabilitation, actions to modernize and improve energy efficiency will be implemented, thanks to a PEEB Med grant, making it possible to generate energy savings that may reach nearly 63%. These improvements could also pave the way for obtaining EDGE certification for the building.



© ENVATO

 **+ 9 500 000 people** will benefit from improved access to electricity/électricité

 Expertise mobilized  
**NEPSEN**

 Location  
**Alexandria, Egypt**

# BUILDING A SUSTAINABLE ENERGY FUTURE IN EGYPT

In Egypt, AFD supports the energy transition through two complementary budget support operations in favor of the energy and electricity sectors, for a total amount of €325 million. These interventions contribute to the implementation of the Energy Strategy 2030, which aims for a 42% share of renewable energies in the electricity mix. They contribute to improving governance, operational performance and the financial sustainability of a sector historically heavily subsidized. Particular emphasis is placed on the development of renewable energies and the promotion of low-carbon growth. Technical assistance programs complement the financing to strengthen institutional capacities and enhance French expertise.



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**42 % renewable energy by 2030**



Expertise mobilized  
**Sofreco, Siemens, Exergia**



Location  
**Egypt**

# 2050 FACILITY – PREPARING THE CLIMATE FUTURE IN NORTH AFRICA



© AFD - Mokhtar Chemaou

AFD helps North African countries to project themselves toward more sustainable development in the face of climate change. The 2050 Facility makes it possible to support governments in defining long-term visions in the energy, transport and cities sectors in particular. It supports the preparation of studies, scenarios and roadmaps to reduce emissions and better cope with climate impacts. This work makes it possible to anticipate the transformations necessary for the economy and jobs. The facility promotes dialogue between administrations, experts and civil society around transition choices. It helps decision-makers to take informed and consistent decisions over time.



**Achievement of carbon neutrality in Morocco between 2050 and 2060**



Expertise mobilized  
**IDDR, CIRED, AIE, Pathways2050**



Location  
**North Africa**

**OUR FLAGSHIP PROJECTS**  
*GREEN HYDROGEN, A SOLUTION FOR THE FUTURE*

# BUILDING A SUSTAINABLE ENERGY FUTURE IN EGYPT AND MOROCCO

Through two projects carried out in Egypt and Morocco, AFD supports the development of hydrogen as a lever for the energy transition. In Egypt, the support focuses on the development of a national hydrogen strategy and on strengthening the capacities of the National Council for Green Hydrogen, through the mobilization of French expertise and a grant of €500,000. In Morocco, a call for projects supports three projects dedicated to applied research and innovation, by promoting cooperation between Moroccan and French partners. These initiatives contribute to the emergence of pilot projects, to strengthening local ecosystems and to preparing sustainable investments.



**Support to 3 R&D projects in green hydrogen in Morocco; support to the governance of the green H<sub>2</sub> sector in Egypt**



Expertise mobilized  
**ESPELIA, P3 Solutions, SATT Paris-Saclay, H2X, MGH Energy, Energy Pool, IRESEN**



Location  
**Egypt and Morocco**

## SUPPORTING THE DECARBONIZATION OF OCP

AFD supports the OCP Group, a global leader in plant nutrition solutions and phosphate fertilizers, in the implementation of its decarbonization program. The supported program aims to significantly reduce the Group's carbon footprint while securing its energy and water needs. By 2027, OCP plans to cover all of its electricity needs through clean energy, relying on the deployment of 1.2 GW of new solar and wind capacities. The project also

supports the development of innovative solutions around green hydrogen. In the face of water stress, the OCP Group is investing in desalination and the reuse of treated wastewater to cover its industrial needs and contribute to the water supply of neighboring territories.



**Achievement of carbon neutrality in 2040**



Location  
**Morocco**

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## For a World in Common

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The AFD Group finances and accelerates transitions for a more just, safe and resilient world, by committing to populations with its partners, everywhere in the world. Drawing on its complementary entities – the French Development Agency for public financing, Proparco for responsible private investment, and Expertise France for technical expertise – the Group addresses all issues related to sustainable development.

Active in more than 160 countries as well as in Overseas territories, it adapts its interventions to local realities, actively supporting local initiatives. With more than 4,000 projects aligned with the Sustainable Development Goals (SDGs), the AFD Group, on behalf of the French people, mobilizes all actors engaged in economic development and the preservation of common goods: the climate, biodiversity, peace, gender equality, as well as global health. On the side of others, for a world in common.



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