

المملكة المغربية  
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Kingdom of Morocco

# MINISTRY OF ENERGY TRANSITION AND SUSTAINABLE DEVELOPMENT



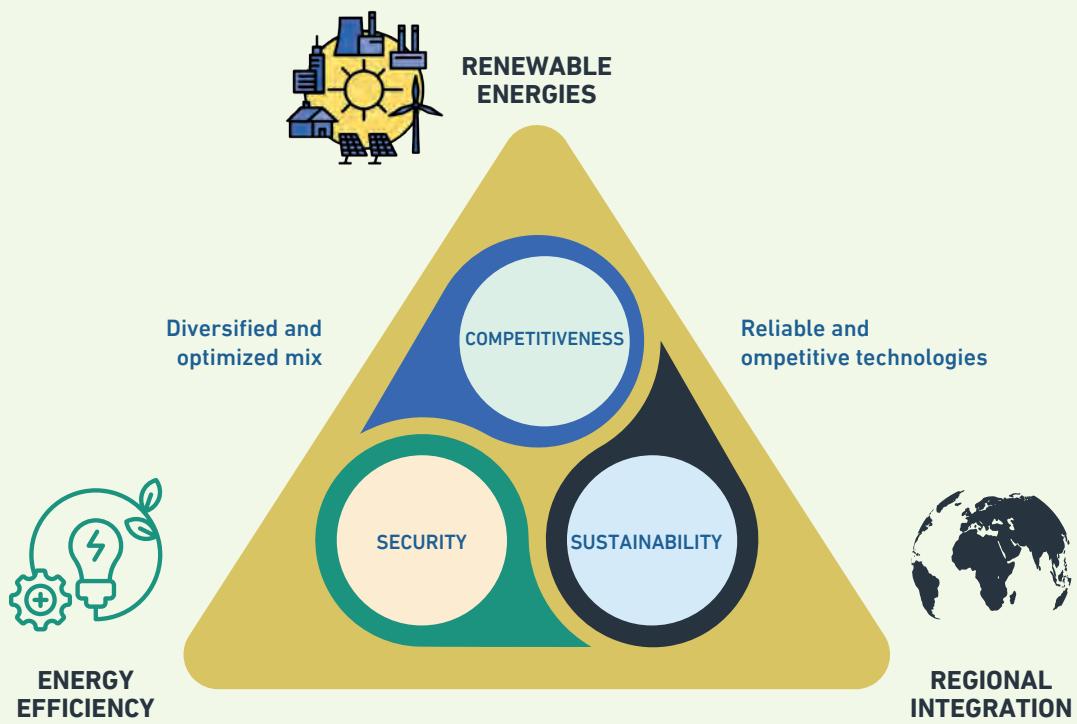
وزارة الانتقال الطاقي والتنمية المستدامة

# TOWARDS A SUSTAINABLE ENERGY TRANSITION IN MOROCCO



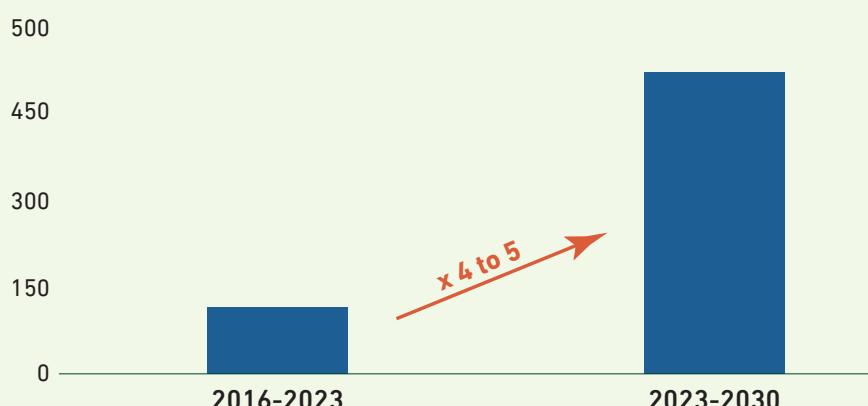
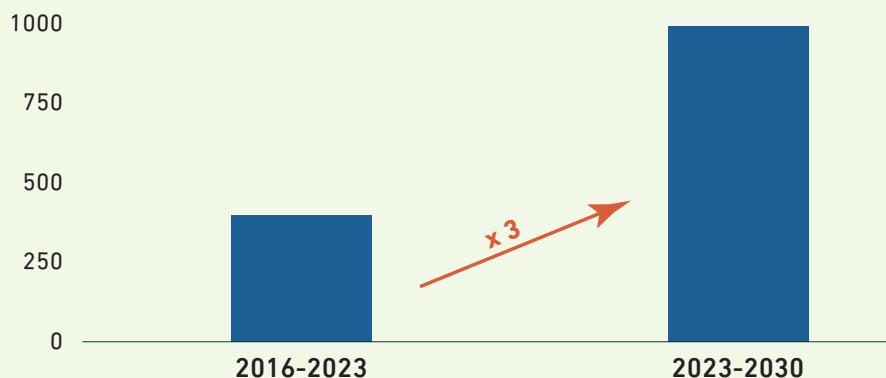
## THE 3 PILLARS OF MOROCCO ENERGY STRATEGY

In 2009, the Kingdom of Morocco launched its energy strategy: deployment of renewables, promotion of energy efficiency and regional integration. This visionary strategy enabled the country to become one of the renewable energy leaders in the region.



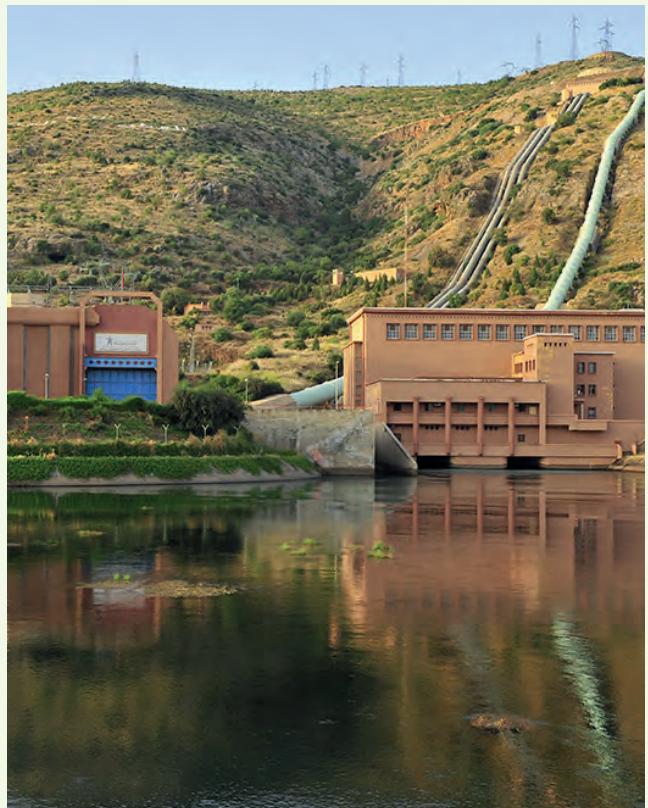
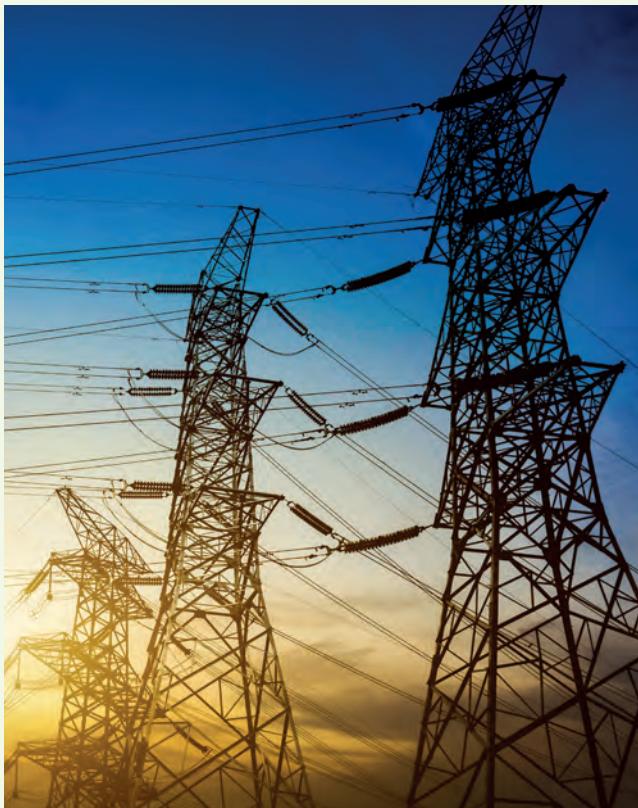
## ACCELERATION OF THE COUNTRY'S INVESTMENT PACE FOR THE TRANSITION

Need to continuously invest over \$1 billion per year in the sector for business as usual (generation and transmission).



## NEED FOR FLEXIBILITY, STORAGE AND STRENGTHENED GRID

- **Natural Gas as a transition fuel:** development of additional gas power plants (CCGTs and OCGTs) to manage the intermittency of renewables.
- **Storage:** Morocco is developing Pumped-storage hydroelectricity and is also looking at large-scale Battery energy storage systems (BESS).
- **Grid:** Renewable energy dispatching, transmission network strengthening and development of new regional interconnections.



# GAS INFRASTRUCTURE STRATEGY

## • CONTEXT

- > Consolidating the Kingdom's energy independence.
- > Contribute to the decarbonization of the Moroccan electricity system by using natural gas as a transitional energy source (phasing out fuel oil and reducing coal consumption).
- > Fostering the development of "decarbonized" domestic industry.
- > A flexible infrastructure that can be used in the long term to transport and/or de-risk green hydrogen.

## • ROADMAP

### Phase 1: Short term (2024-2026)

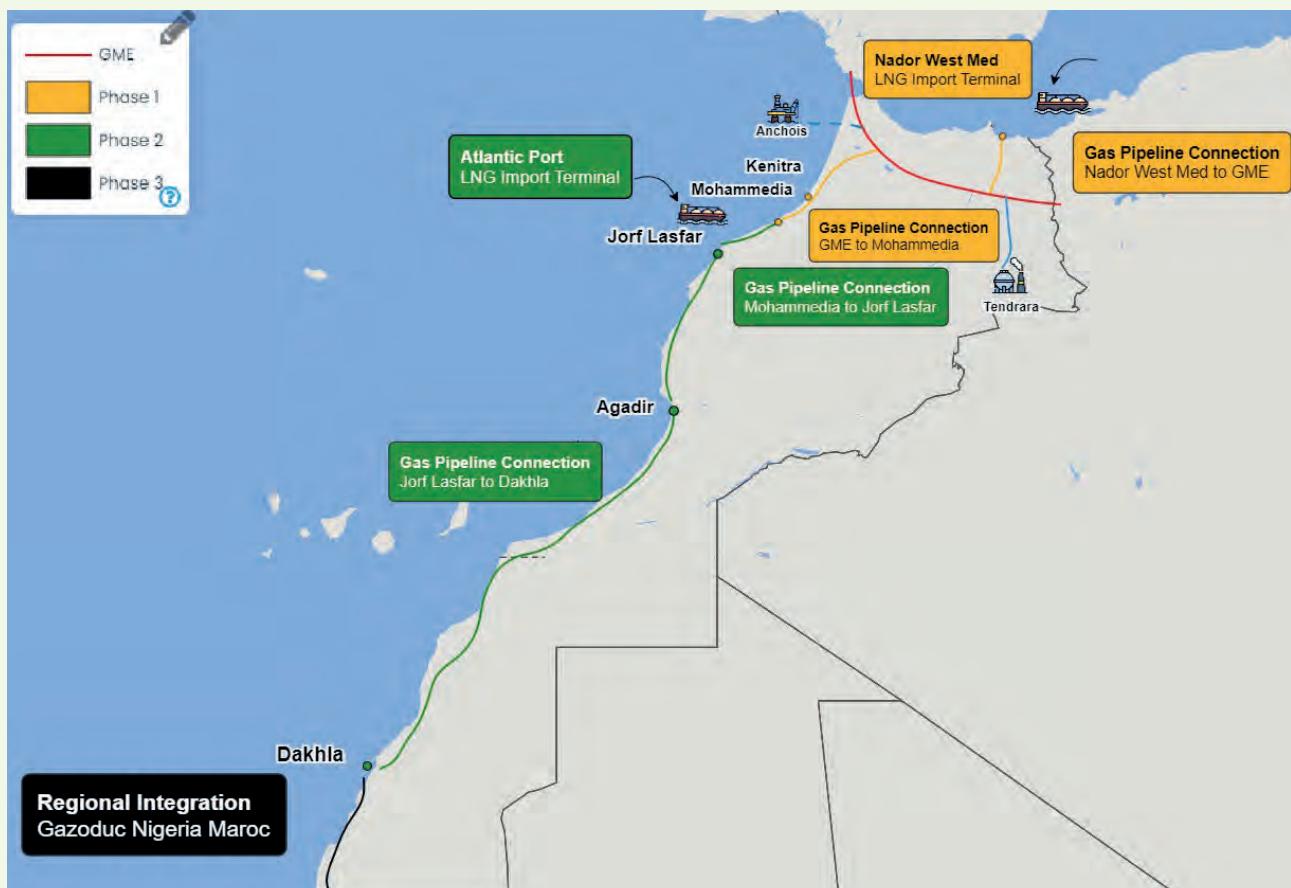
- Domestic production: construction of pipelines to connect the Tendrara and Anchois production projects to the Gazoduc Maghreb Europe pipeline.
- New LNG entry points:
  - > **Port Component:** tender, construction and commercial operation start of an LNG regas terminal at the port of Nador West Med (NWM).
  - > **Pipeline Component:** tender, construction and commercial operation start of natural gas pipelines from NWM Port to the GME and from the GME to Mohammedia.
  - > Module 3: update of pre-feasibility study of an LNG regas terminal on the Atlantic coast.

### Phase 2: Medium term (after 2030)

- Module 3: delivery of the Atlantic coast LNG regas terminal.
- Module 4: development of an LNG regas terminal at Dakhla Atlantic port.
- Module 5: construction of further pipelines to connect the gas network.

### Phase 3: Long term

- **Regional integration:** connection to the Mauritanian and Senegalese gas networks through the African Atlantic pipeline
- **Green hydrogen expansion:** harness synergies with green hydrogen and by-products



## MOROCCO'S GRID INVESTMENT PROGRAM - BUILDING A MODERN ELECTRICAL GRID FOR THE ATLANTIC CORRIDOR

- **Strengthening the 400 kV Network to support Renewables integration:** the total investment for ONEE's transmission power grid from 2024 to 2030 is estimated at approximately USD 3 bn, excluding the 3 GW South-Center transmission project.
- **South-Center 1400 km transmission line (3GW):** open to private operators in a PPP model (estimated Capex of USD 2bn).

- Strengthening of 400 kV AC power grid from southern to central regions to transmit RE generation: 2 100 km of 400 kV AC transmission lines.
- Expansion of the 400 kV network to enhance and secure electricity supply across various regions of Morocco, supporting the rapid growth of renewable energy production and rising electricity consumption: 5,000 km of 400 kV AC transmission lines.
- Establishment of new 400/225 kV injection points and reinforcement of existing substations, resulting in a total capacity increase of approximately 13,500 MVA.

