IRENA
International Renewable Energy Agency

RENEWABLES READINESS ASSESSMENT:

THE REPUBLIC OF TUNISIA

EXECUTIVE SUMMARY

The report recommends **eight key actions** to accelerate the country's uptake of renewables:

1. **Establish a renewable energy planning and scheduling framework**
2. **Enhance renewables resource assessment through zoning**
3. **Simplify procurement procedures for power grid development**
4. **Clarify institutional roles and strengthen human resources**
5. **Establish an independent electric power regulator**
6. **Operationalise the Energy Transition Fund**
7. **Create a dedicated financing mechanism for solar water pumping**
8. **Involve local banks in the financing of renewable energy**

Amid the coronavirus outbreak in early 2020, renewables and energy efficiency have become a key part of the country's recovery plans.

June 2021

EXECUTIVE SUMMARY

Tunisia has witnessed growing deficits in its energy balance over the past two decades. This trend is largely the result of increasing energy consumption in all economic sectors, coupled with the decline of hydrocarbon production. This led to an energy deficit amounting to 50% in 2019 compared to 7% in 2010, thus leading the country to become more dependent on imported fossil energy.

The electricity generation mix is dominated by natural gas, while renewable energy resources represented only 3.0% in 2019. This strong dependence on natural gas has serious implications for Tunisia's energy security, since domestic production of gas has stagnated to the point of even declining in recent years.

In response to the energy security challenges of the early 2000s, and Tunisia's vulnerability to volatile international energy prices, the country has decided to embark on an energy transition process as part of its wider sustainable economic and social development strategy. Amid the coronavirus outbreak in early 2020, renewables and energy efficiency have become a key part of the country's recovery plans.

Tunisia's energy transition is notably based on:

- Diversification of the energy mix and integration of renewable energies
- Strengthening energy efficiency
- Rationalization of the energy subsidy
- Strengthening of the grid and the interconnections

The implementation of an energy management strategy that is built on the increase of two components: (i) energy efficiency and the development of renewable energy, with a 30/30 target to reduce primary energy demand by 30% in 2030 compared to the trend scenario; and (ii) renewable energy to 30% of the electricity production by 2030.

The Tunisian Solar Plan (TSP) is intended as the key tool to implement the strategy to increase the share of renewable electricity. The latest TSP version was updated by Tunisia's National Agency for Energy Management (ANME – Agence Nationale pour la Maîtrise de l'Energie) in 2015 and adopted by the government in July 2016. To achieve the country's update objectives, the TSP has established a target for total installed renewable energy capacity at 1860 megawatts (MW) by 2023 and 3815 MW by 2030, a five-fold and ten-fold increase, respectively, from the 2017 installed renewable energy capacity.

The targets were updated to reflect Tunisia's climate commitment, specifically as pledged in Nationally Determined Contributions (NDCs) under the Paris Agreement. The bulk of the country's mitigation potential arises from the energy sector, including 68% from energy efficiency and 32% from renewables.

The considerable amount of installed renewable energy capacity needed to meet the targets set out in the TSP will require extensive private investment support. In response, the Tunisian state adopted regulatory reforms in 2015 through a new law (Law No. 2015-12) relating to the production of electricity from renewable energy. The objective is to establish a legal framework that is conducive to private-sector investment in the production of electricity that will arise from renewable energy sources through three new regulatory regimes: (i) self-generation/consumption; (ii) independent power production for local consumption (concession and authorization); and (iii) independent power production for export.

Notwithstanding the new legal framework and the various measures adopted by the Tunisian government over the past two years, several of these measures include enabling policy initiatives, update of the current documentation surrounding current electricity purchase agreements, and establishment of guarantees to encourage the development of renewable energy. There remain several challenges that hinder the transition, however; these have been identified under Tunisia's national energy strategy.

Various barriers to renewable energy development were identified through the Renewables Readiness Assessment (RRA) process. These could be addressed through eight key recommended actions.

The RRA's main recommendations can be summarised as follows:

1. Establish a renewable energy planning and scheduling framework

- With the TSP calling for additions of abou 4 gigawatts (GW) of variable renewable energy (VRE) sources (i.e. solar and wind power) to the grid, the country will require a holistic long-term planning methodology that will include realistic scheduling for capacity additions to the national electricity system beyond 2023. Advance plans on new capacity, locations and technologies can help to address system constraints. VRE deployment must be supported by robust long-term energy and power sector planning.

- The plan could also address electricity grid infrastructure development to enable the smooth integration of VRE into the system. The plan should provide long-term visibility on renewable energy development prospects in Tunisia. In this context, the opportunities for regional dialogue and collaboration are significant and may lead to broader flexibility solutions (IRENA, 2020a).

2. Enhance renewables resource assessment through zoning

- Long-term energy planning relies on data from resource databases. Tunisia's current resource database, therefore, should be improved to reflect the recent assessment campaigns on renewable energy resources. More detailed resource data will be essential to define promising development zones across Tunisia's territory for different renewable energy technologies. The Global Atlas for Renewable Energy, an online resource assessment platform hosted by the International Renewable Energy Agency (IRENA), provides guidance on identifying cost-effective zones with high renewable energy potential.

3. Simplify procurement procedures for power grid development

- The acquisition and implementation of grid transmission infrastructure by the Tunisian Company of Electricity and Gas (STEG) is subject to long-running public procurement procedures, resulting in a time lag between renewable energy plant completion dates and connection to the grid to send out the electricity produced.

- IRENA has established that integrated studies with key renewable energy stakeholders could help identify grid infrastructure scenarios. Such studies would reflect planned additions of both solar and wind capacity totalling 1000 MW under the Concessions scheme. This would ensure alignment between renewable generation development and grid infrastructure reinforcement.

4. Clarify institutional roles and strengthen human resources

- Private-sector developers have faced difficulties understanding the procedures to obtain authorisation for projects, given the considerable number of ministries and public institutions involved in renewable energy projects. In response, the Government of Tunisia has taken preliminary measures, supported by international partners in the field, such as the United Nations Development Programme. Measures include a Help Desk provided by the ANME that would provide guidance to the private sector.

- IRENA has found that combining efforts and creating a single online platform may ensure transparency and clarity of the roles of the various involved institutions in terms of project agreements. The platform would include guidelines under a standard template and would list the public institutions involved, including the roles and responsibilities of each during the various stages of project implementation (Section 4.3).

- Renewable energy transition will bring with it ample benefits, including the opportunity to build human resources and skills. In this context, public institutions may opt to strengthen their current human capacity through enhanced training sessions on the technical, economic, administrative and legal aspects relating to the development of renewable energy projects.

Meteline – Kchabta wind park in Bizerte
Photograph: National Agency for Energy Conservation (ANME)

5. Establish an independent electric power regulator

- The procedures to create and establish an independent regulatory authority for the electricity sector are being finalised as part of Tunisia's NDCs to ensure the achievement of its renewable energy targets. The authority will ensure compliance with regulations and will promote a transparent and fair competitive environment for private producers.[1]

- The regulatory authority will, among other responsibilities, oversee a range of project development procedures for renewable energy, including the monitoring of legislation to ensure effectiveness and the validation of technical conditions for electricity evacuation. It also will ensure the streamlining of not only the governing administration but also of the various market actors.

6. Operationalise the Energy Transition Fund

- The Energy Transition Fund (FTE – Fonds de transition énergétique) is the principal financing tool for energy efficiency and renewable energy activities in Tunisia. For the fund to effectively support renewables in the country, work must begin to mobilise the necessary funding from the public and private sectors to foster their development. To do this effectively will require a combination of incentives, loans and credit lines from international finance institutions.

7. Create a dedicated financing mechanism for solar water pumping

- Design a programme encouraging farmers to substitute solar photovoltaic (PV) energy for diesel, given the important socio-economic impacts of solar water pumping. This programme may be developed under the broader Prosol and Prosol électrique programme mechanisms, such that the state subsidy, including the credit system, is compatible with the repayment capacity of farmers.

8. Involve local banks in the financing of renewable energy

- The development of renewable energy applications in Tunisia, particularly for farmers and small- and medium-size enterprises, requires involvement by local banks. To improve the capacity for project risk assessment at local financial institutions and boost their confidence to develop lending schemes, the government should reinforce their human and technical capacity.

- The search for favourable foreign financial lines should be strengthened, particularly through bilateral co-operation and climate financing programmes guaranteed by the Tunisian Guarantee Company (Société tunisienne de garantie)[2] or reinforced by the Central Bank of Tunisia. This should reduce concerns that surround private sector investment risk over the need to commit 30% equity for PV installations and thus improve financial viability.

- The Energy Transition Fund, Tunisia Investment Authority and Tunisian Guarantee Company can be complemented with guarantee funds or secure credit lines (e.g. liquidity guarantees or credit lines) to local commercial banks by international finance institutions like the French Development Agency (AFD) and International Finance Corporation.

1 Several international partners are working with ANME to establish an electricity regulatory authority to oversee licenses, power grid connections and third-party access for auto producers.

2 A public interest company that guarantees various loans granted to small- and medium-size enterprises by credit institutions.

This document summarises IRENA (2021), ***IRENA Renewables Readiness Assessment: The Republic of Tunisia***, International Renewable Energy Agency, Abu Dhabi (ISBN 978-92-9260-296-3).

Report and summary available online: www.irena.org/publications

For further information or to provide feedback: publications@irena.org