## Tunisia black box energy systems



## What is the energy system in Tunisia?

In BAU, the Tunisian energy system is based on the continuation of already legislated policies, current trends, existing plans and cost improvements in low-carbon technologies, without considering additional climate targets, with fossil fuels remaining the prime forms of energy until 2050 (Table 1). Table 1.

How is Tunisia promoting the diversification of its energy supply?

Despite its increasing energy consumption needed to meet growing mobility, industrial and residential requirements, Tunisia is promoting the diversification of its energy supply through the deployment of renewable energies based on the exploitation of domestic hydro, wind and solar resources [8].

Does Tunisia need a gas-powered power plant?

Despite recent policy developments, Tunisia's energy consumption has been rapidly increasing in the last few decades and is still dominated by fossil fuels, while the plans for expansion of gas-powered electricity plants raise significant concerns.

Can energy sector restructuring help a Tunisian economy achieve deep decarbonization? The study provides insights into the challenges to achieve the deep decarbonization of the Tunisian economy but also into the opportunities from energy sector-restructuring, including reduced energy import dependence and increased low-carbon investment.

How much does electricity cost in Tunisia?

Electric grid In Thala, Tunisia, the cost of purchasing electricity from the grid is measured in euros per kilowatt-hour (EUR/kWh). For households with a monthly consumption ranging from 300 to 500 kWh, the cost per unit of electricity is approximately 0.063 US\$. This price reflects the tariff structure set by the local utility or energy provider.

How will the Tunisian energy system evolve?

The evolution of the Tunisian energy system in the next few decades will highly depend on the implementation of its Nationally Determined Contribution by 2030and its potential long-term low-emission strategies.

Tunisia''s lack of domestic oil and gas production can be turned into an opportunity if the country takes full advantage of its renewable energy resources and its strategic location between North Africa and Europe to ...

FRIEDRICH-EBERT-STIFTUNG - SUSTAINABLE TRANSFORMATION OF TUNISIA''S ENERGY SYSTEM 2.1 THE ORIGINAL PHASE MODELS1 The phase model for energy transitions towards renewa-bles-based low-carbon energy systems in the MENA coun-tries was developed by Fischedick et al. (2020). It builds on the phase models for the German energy system transfor-



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GOAL: to promote an understanding, on a global scale, of the dynamics of change in energy systems, quantify emissions and their impacts, and accelerate the transition to carbon-neutral, environmentally benign energy systems while providing affordable energy to all.

This study explores the techno-economic feasibility of, both off-grid and on-grid, hybrid renewable energy systems for remote rural electrification in Thala City, located in the highest region of Tunisia, using wind and biomass resources.

We are developing novel technology for distributed power generation and energy storage systems. Our direct drive microturbine generator systems can be used for waste heat capture, grid-tie backup generators or off-grid power production.

Tunisia is currently facing significant challenges in terms of energy supply security and climate change in the path to energy transition. Being one of the countries most exposed to climate change in the Mediterranean (Waha et al., 2017; World Energy Council, 2019), Tunisia''s energy system is heavily dependent on imported natural gas and oil ...

Ambitious climate policies would induce deep transformations in Tunisia''s energy system, based on four inter-connected pillars: uptake of renewable energy, electrification of end-uses, energy efficiency improvements and the reduced carbon intensity of the fuel mix.

By 2030, Tunisia plans to develop second-generation clean energies (concentrated solar thermal power (CSP), pumped storage and turbines (STEP)) to boost hydrocarbon exploration and production by upgrading energy infrastructure (storage) and to develop new electrical technologies (mobility).

Hence, the prime objective of this article is to conduct a thoughtful assessment of four prominent renewable energy options for electricity generation and explore the most potential barriers hindering their development in Tunisia.

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their renewable energy potential, such as Tunisia. The objective of this report is to look into the potential of Battery Energy Storage System (BESS) development in Tunisia, in line with national efforts towards a clean and sustainable energy transition as well as ensuring the optimal use of energy sources and improving energy security.



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