

What drives Tunisia's energy transition?

Three key drivers will dictate Tunisia's energy transition: energy security, given Tunisia's growing energy balance deficit; economics, given the relative decrease in the price of renewables; and environment, given the Country's commitment to reduce domestic greenhouse gas emissions.

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.

What percentage of Tunisia's electricity is generated from natural gas?

In 2020, natural gas made up 86% of Tunisia's installed capacity and 95% of power generation, while renewable energy made up 13% of installed capacity and 5% of power generation. Fossil fuels represent the majority of Tunisia's electricity generation mix (approximately 97%), with natural gas being the primary fuel source.

Why does Tunisia need more electricity?

As one of the most climate vulnerable Mediterranean countries, Tunisia's electrical system is expecting increased demand resulting from expanding peak-hour demand patterns, intensifying cooling needs stemming from greater warm spells, and increasing desalination needs.

Who produces the most electricity in Tunisia?

While STEG controls the vast majority (91.7%) of installed generating capacity and generates 84% of the country's electricity, there is one independent power producer, Carthage Power Company, operating in Tunisia. Carthage Power Company owns and operates a 471-MW combined cycle power plant.

How much energy does Tunisia use a year?

With reference to the SAPS economic aspect, the year-round load consumption is 131.4 kWh. As regards the Tunisian Company of Electricity and Gas (STEG) commercial, its tariff is 0.338 Dt per kWh. As a result, the

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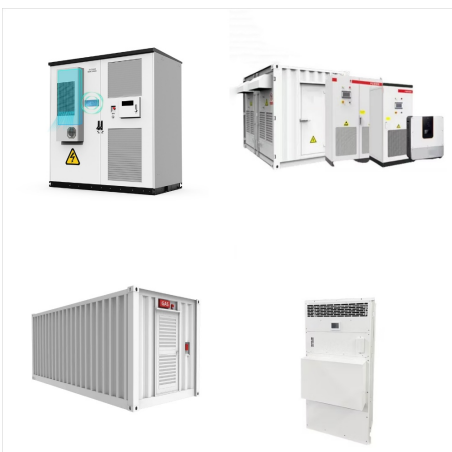
total cost savings from purchasing power from the grid system is 44.413 Dt per year. (NB: 1 Dt = 0.29 Euros).



Certainly, large-scale electrical energy storage systems may alleviate many of the inherent inefficiencies and deficiencies in the grid system, and help improve grid reliability, ???



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Energy storage systems for electricity generation operating in the United States Pumped-storage hydroelectric systems. Pumped-storage hydroelectric (PSH) systems are the oldest and some ???

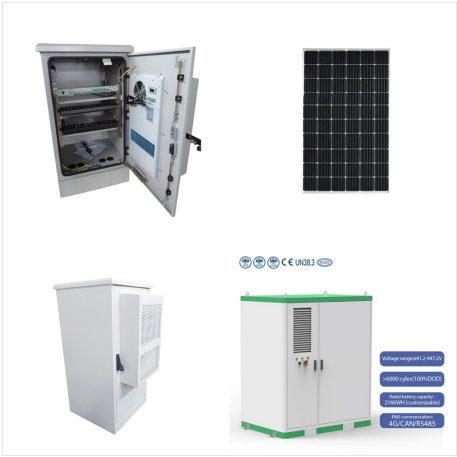


Fig. 4.3 Energy balance deficit in Tunisia 19 Fig. 4.4 Electricity peak load in Tunisia 20 Fig. 4.5 Suitable regions for wind power in Tunisia 21 Fig. 4.6 Direct and global solar irradiation map of Tunisia 22 Fig. 4.7 Distribution of installed capacity in 2019 25 Fig. 4.8 Structure of electricity production by type of equipment 26



Figure 3: Energy Storage Installations Predictions (GW installed) 33 Figure 4: Global gross energy storage installations, 2015 - 2030 33 Figure 5: Electricity system flexibility by source in the ???



To support the ambitious plans for decarbonizing the Tunisian power system, GET.transform teamed up with GIZ's program, Support for an Accelerated Energy Transition in Tunisia (TETA) through a Leveraged Partnership and contracted Energynautics to do an assessment on Battery Energy Storage Systems (BESS) for the integration of Variable

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Integrating 35% renewable energy into the national grid will require storage services and systems to help manage the variability and uncertainty in the use of solar and wind energy fed into the grid, the experts said, calling on authorities to prepare now by identifying and deploying appropriate energy storage technologies.



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This work deals with the optimal design of a stand-alone photovoltaic system (SAPS) based on the battery storage system and assesses its technical performance by using PVsyst simulation.

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This study investigates the feasibility of a breakeven hybrid energy system (PV???Wind???Diesel) for electricity generation in the northernmost city in Africa, city of Bizerte in Tunisia. It was found that this location is endowed by an important wind resource for exploiting the power of electrical energy generation.



The single-line diagram in Figure 3 represents the renewable energy system architecture in Thala. The proposed system includes wind turbines, batteries, a hydro-pumped storage system, and a biogas generator. In the hybrid system, the electrical demand is coupled at the alternating current (AC) bus side.



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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. To ???