Levelized cost of storage Trinidad and Tobago

Is Trinidad and Tobago an industrial Sid?
Trinidad and Tobago represents a unique case study as an industrial SID,whereby knowledge and guidance on multiple decision criteria can aid in reducing national carbon footprints.

Does Trinidad and Tobago have a power generation capacity?
However,Trinidad and Tobago power generation capacity surpasses its current demand(Inter- American Development Bank,2015),which provides avenues for energy storage through low carbon H 2,MeOH and NH 3 production directly within the local downstream supply chain.

Does Trinidad and Tobago produce electricity?
The authors greatly acknowledge the Trinidad and Tobago national electricity power producesfor assisting in data collection and model verification. No funding sources were received for this study. Energ. J. (2018),10.3390/en11061412

What makes Trinidad and Tobago unique?
Trinidad and Tobago is heavily dependent on its oil and gas reserves(Fig. 3),petrochemical and other hydrocarbon related downstream industries (Indar,2019). Thus,the country is unique amongst SIDS and must maximise its benefit from these natural resources,in terms of energy production.

Does Trinidad and Tobago have competing financial interests?
The authors declare that they have no known competing financial interestsor personal relationships that could have appeared to influence the work reported in this paper. The authors greatly acknowledge the Trinidad and Tobago national electricity power produces for assisting in data collection and model verification.

We first review the energy and economic status of Trinidad and Tobago and the cost of electricity generation from wind power as well as the need for a wind resource assessment in Section 2. Then, in Section 3, we describe the in-situ wind data used and outline the methods applied in performing a technical and economic assessment.

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The Levelized Cost of Storage (LCOS) for a utility-scale 100 MW, 1-hour lithium-ion battery bank in 2023 is between $249 and $323 USD. The V2G program is 12% more expensive per MWh than the higher-end LCOS per MWh.

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The levelized cost of electricity (LCOE) using current offshore wind capital cost is between 3.67 and 3.03 times the subsidized average domestic electricity rate. The LCOE improves when using 2035 capital cost projects to between 1.1 and 0.96 times the subsidized average domestic electricity rate.

Financial analysis includes a detailed cost breakdown and calculation of the levelized cost of electricity (LCOE), providing insights into the economic feasibility of off-grid solar solutions. Results indicate significant discrepancies between simulated and actual performance, underscoring factors such as lower-than-anticipated solar irradiance ...

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The southernmost Caribbean islands, Trinidad and Tobago, have one of the lowest electricity rates in the region due to an indigenous source of hydrocarbons. In this study, technical and economic assessments were conducted to determine the levelized cost of electricity (LCOE) generation from the wind in these Caribbean islands.

Chadee et al. (2018) conducted the technical and economic assessments to estimate the expected cost of electricity generation from wind in Trinidad and Tobago islands based on long-term ...

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