

Can Tunisia produce green hydrogen?

The country aims to generate 30 per cent of its electricity from photovoltaic systems and wind power plants by as early as 2030. This means that Tunisia is well placed to produce green hydrogen and derived products (Power-to-X, PtX). The Government wishes to position itself as a key actor in this area.

Is Tunisia ready to develop a hydrogen economy?

The Government wishes to position itself as a key actor in this area. Despite the political will and the potential described, Tunisia is not yet sufficiently prepared to develop a hydrogen economy. Tunisia has improved regulatory, technical and professional conditions for developing a value chain for green hydrogen and derived products.

Is a hybrid CSP-biomass power plant a good investment?

Peterseim and colleagues (Peterseim et al., 2014) evaluated the operation of a hybrid CSP-biomass power plant in Spain and found that the combination of a biomass and solar tower energy system is beneficial to maximize the cycle efficiency and reduce costs compared to solar only power plants.

Can a hybrid energy system be a proof-of-concept?

The environmental sustainability and economics of the prototype systems have been assessed, and the results obtained should be disseminated to industry and research, as a proof-of-concept of renewable electricity generation solutions. The hybrid system shows a result of GHG emissions close to 22 gCO₂ eq/kWh.

What are environmental impacts in a hybrid power plant?

Environmental Impacts are the result of the life cycle impact assessment (LCIA) phase in the LCA. These impacts have been assessed as described in the method and materials section. The assessment for hybrid power plant analyzed in this study is presented in Table 5 and Fig. 3. Table 5. Environmental impact results. m 3 depriv.

Does Tunisia have a role in the O&M phase?

Even though Tunisia has not a relevant role in the investment phase, the O&M phase is remarkable for the country as a host of the power plant, benefiting local long-term employment. Total employment created is estimated in 11.6 FTE jobs/year (290 FTE during the lifetime of the power plant). From that amount, Tunisia is creating 7.4 FTE (63.3%).

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The effects of biomass on job creation are among the highest in renewable energy (IRENA, 2017) and the expected benefits in rural and agricultural areas can help fighting against unemployment, which remains an issue in Tunisia (15.4% in 2018) where economic activity has stagnated in low-productivity sectors (International Labour Organization ...

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When estimating the energy yield from a hybrid energy system, a power distribution ratio is often considered (Desai et al., 2019). This ratio depends on various factors such as the project's objectives, available resources, and system design considerations.

The current review studies on HRES do not include a comparative analysis of both technical capabilities of hybrid energy models and ... rural Iran, water desalination unit installed in Kerkennah islands-south of Tunisia. ... solar, diesel genset, and wind) for electrification of single or group of villages [96]-Limited studies in the academia ...

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The findings demonstrate the technical and economic feasibility of powering large-scale desalination plants with hybrid renewable energy systems, reducing their environmental impact and energy costs. The optimal system proposed in this study can serve as a model for future desalination projects in Tunisia and other water-scarce regions.

Besides, using hybrid energy system can reduce the greenhouse gas emissions. Finally, the outcomes results by the present work may be helpful in the design, optimization and development of the breakeven hybrid energy systems (PV-Wind-Diesel) for electricity generation in the city of Bizerte in Tunisia.

The other section of the paper is organized as follows: Sections 2.0 describes the weight determination methods of CRITIC and CODAS while 2.3 describes ARAS method, Sections 3.0 and 4.0 describes the criteria description and optimisation model for optimal hybrid selection and objective function formulation for hybrid energy systems respectively, Section 5 ...

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Natural energy resources are a pre-requisite for promoting hybrid energy system technologies and implementing a sustainable energy policy. Also, due to the scarcity of these resources [31], minimizing their utilization at different scales is essential for promoting sustainable development [32]. Exergy analysis is a practical method for assessing the efficiency of energy ...

Optimal design and techno-economic analysis of hybrid renewable energy systems: A case study of Thala city, Tunisia Energy Sources, Part B: Economics, Planning, and Policy (IF 3.9) Pub Date : 2024-02-19, DOI: 10.1080/15567249.2024.2308843

Director & Co-Founder at Hybrid Energy Group/ Business All Star Renewable Energy Company 2023 · Highly motivated, positive and enthusiastic person with 17 years of business management and delivery.& It;br& gt;Solution focused and results driven with the opportunity to promote, design and manage renewable energy technologies for our ...

Innovative hybrid energy project for Eni Tunisia Athens, Greece - 13 May 2019 - MYTILINEOS S.A. (RIC: MYTr.AT, Bloomberg: MYTIL.GA) announces that its subsidiary METKA EGN has recently signed an EPC contract with Eni Tunisia B.V. ...

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Renewable energy-driven desalination has emerged as a sustainable, environmentally friendly, and economically viable solution for the growing global demand for fresh water [2]. Hybrid energy systems, which integrate renewable energy sources such as solar and wind power with traditional power sources, have gained research interest in recent years due ...

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