

100kWh Solar-Powered Container for Oil Refineries





Overview

The purpose of this study is to investigate the potential use of solar energy within an oil refinery to reduce its fossil fuel consumption and greenhouse gas emissions. A validated ASPEN HYSYS model w.

Can solar energy drive crude oil refineries?

Employing solar energy to drive crude oil refineries is one of the investigated pathways for using renewable energy sources to support lowering the carbon emissions and environmental impact of operating the processing of fossil-based fuels.

Can solar energy systems decarbonize oil refineries?

Other studies in the literature considered coupling solar energy systems to oil refineries to decarbonize their operation. The applicability and feasibility of introducing a concentrated solar power (CSP) system to reduce partial reliance on process heaters of a crude oil refinery was studied by Danish et al.

Can solar energy be used in the oil industry?

In Absi Halabi et al. , the application of solar energy in the oil industry is reviewed. As noted there, petroleum (oil) energy is the major contributor to energy inputs worldwide, with 34.25%, meaning 172 EJ (Exa Joules = 10^{18} J).

Can solar catalytic chemical looping Biomass Refinery produce high purity hydrogen?

A techno-economic analysis of solar catalytic chemical looping biomass refinery for sustainable production of high purity hydrogen. Energy Convers. Manage. 243, 114341 (2021) Mohammed, S.A.; Al-Azawiey, S.S.; Ali, A.H.: Treatment of organic compounds resulting from oil refineries under solar light and reuse it for industrial purpose.



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