Solar-powered containerized hybrid type for oil refineries

Can solar hybrid system generate steam in oil refinery?
Conclusion The present study investigates the feasibilityof solar hybrid system to generate steam in the oil refinery to maintain the temperature of heavy crude oil products before despatching from storage tanks. Due to the intermittent behaviour of solar energy,the solar hybrid system is integrated with a sensible heat storage tank.

Can a solar hybrid system be integrated into a refinery?
The amount of fuel and cost savings by the integration of a solar hybrid system into the refinery and the payback period of the system by using different types of fuel in the furnace are shown in Table 6. Table 6. Payback period of the proposed system by using different fuel.

Can solar energy systems decarbonize oil refineries?
Other studiesin 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 a hybrid energy system support a crude oil refinery decarbonization?
Estimated cash flow for two initial cost cases A hybrid energy system is proposed and analyzed thermodynamically with a solar heliostat field, tower, and receiver integrated to support the decarbonization of a crude oil refinery for the city of Yanbu, Saudi Arabia, as a case study.

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 ...

The research conducted a comprehensive techno-economic analysis and optimal design of a hybrid renewable energy system (HRES) integrated with grid connection, utilizing a case study ...

MOBIPOWER hybrid clean power containers combine battery energy storage systems with off-grid solar containers for remote industrial sites in Canada & USA. Mining area; Oil field exploration; Remote ...

Semantic Scholar extracted view of "Solar-assisted hybrid oil heating system for heavy refinery product

storage" by Naseer Ahmad Khan et al.

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With the growing urge to decarbonize the energy sector, actions toward reducing emissions of the oil and gas sector can contribute to bringing large cuts to carbon emissions. One of ...

This includes the framework and outline of the solar reactive utilization, model and construction of the solar-driven hybrid chemical cracking oil system, cyclic voltammetry ...

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