

Solar-powered containerized type for oil refineries with grid connection



Overview

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.

Is solar energy a viable alternative to crude oil?

As is well known, the methods and industries of exploiting, refining, transporting, and trading crude oil are well established. This is not the case with solar energy resources, which, although highly abundant, are expensive and not yet implemented at the whole industrial scale. Solar energy is not yet economical to harvest.

Can solar-assisted petrochemical refineries greenize oil refineries?

This paper proposes a solar-assisted method for a petrochemical refinery, considering hydrogen production deployed in Yanbu, Saudi Arabia, as a case study to greenize oil refineries.

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The oil and gas industry is increasingly seeking operational improvements to reduce costs and emissions while improving resilience. This study describes techno-economic ...

Abstract: Built on the Solar Reactive Utilization framework, this study presents an innovative concept called the Solar Oil Refinery, applying solar energy in the energy ...

Phillips 66, a global oil refiner, announced it has partnered with NextEra Energy to construct a solar facility to power its Rodeo, California refinery. The solar facility is designed to ...

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 ...

The present study investigates the feasibility of solar hybrid system to generate steam in the oil refinery to maintain the temperature of heavy crude oil products before ...

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. ...

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 ...

The goal of this research is to study the technical and economic feasibility of the integration of photovoltaic solar power systems in two of the biggest Iraqi oil refineries: ...

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In an unusual merger of renewable energy and fossil fuels, solar energy is being tapped to power an existing oil refinery. The Rodeo, ...

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

...

In an unusual merger of renewable energy and fossil fuels, solar energy is being tapped to power an existing oil refinery. The Rodeo, California, facility operated by Phillips 66 ...

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