IMK CONTAINERS

High-efficiency solar-powered containerized oil refineries price reduction

Overview

There is an urgent need to shift away from the present heavy dependence on fossil fuels and embrace renewable energy sources, particularly in the context of the energy-intensive oil refining process. Built on.

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 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.

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 abun-dant, are expensive and not yet implemented at the whole industrial scale. Solar energy is not yet economical to har-vest.

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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Published at Energy Conversion and management

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 ...

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Analysis of a Solar-Assisted Crude Oil Refinery System

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 ...

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Solar-assisted hybrid oil heating system for heavy ...

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 ...

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Using concentrated solar power for crude oil ...

It was published on Energy under the title "Concentrated solar heat for the decarbonization of industrial chemical processes: a case study on crude oil distillation". About 30-40% of refineries' overall energy use ...

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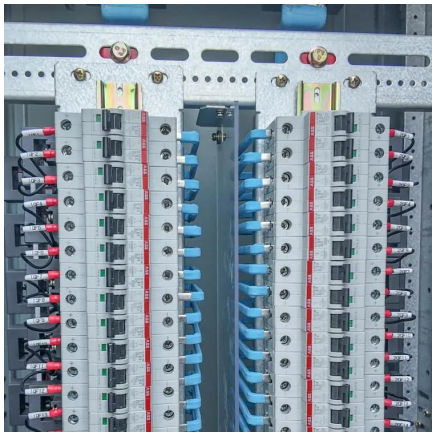

From challenge to opportunity: Enhancing oil refinery plants ...

Consequently, in response to these challenges, numerous companies within the oil and gas sector are formulating strategies to mitigate their carbon footprints, diligently exploring ...

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Solar-assisted hybrid oil heating system for heavy refinery ...

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 ...

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The chemistry and concept of solar reforming, suggestions of key metrics and proposed directions to realize solar-powered refineries for a future circular economy are discussed.

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Using concentrated solar power for crude oil

distillation: a ...

It was published on Energy under the title "Concentrated solar heat for the decarbonization of industrial chemical processes: a case study on crude oil distillation". About ...

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Solar oil refinery: Solar-driven hybrid chemical cracking 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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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. ...

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(PDF) Integration of Solar Cells in Selected Petroleum ...

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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