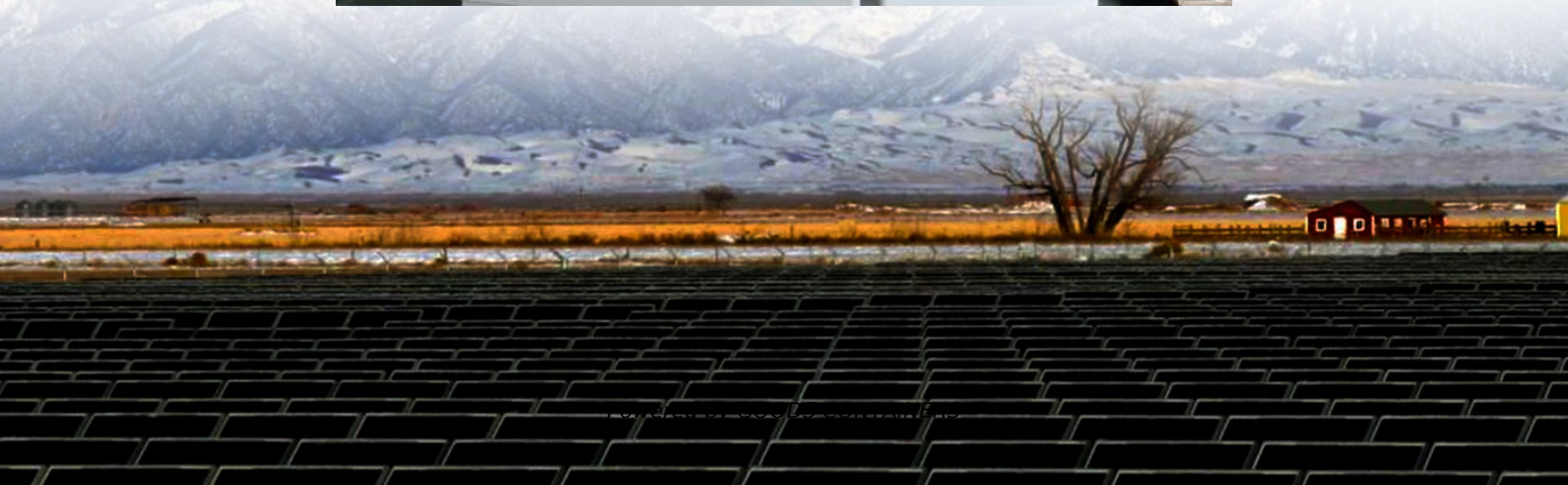


Cost-effectiveness of solar-powered containers used in oil refineries





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.

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).

What is the exergy efficiency of a refinery?

Most of the steam is to be used for the atmospheric distillation process, which is one of the most energy-intensive processes of a refinery. Furthermore, the exergy balance is shown in Fig. 12 c, which attests to an exergy efficiency of the plant of 55.5%. The energy efficiency determined from the energy balance is 82.4%.



Cost-effectiveness of solar-powered containers used in oil refineries



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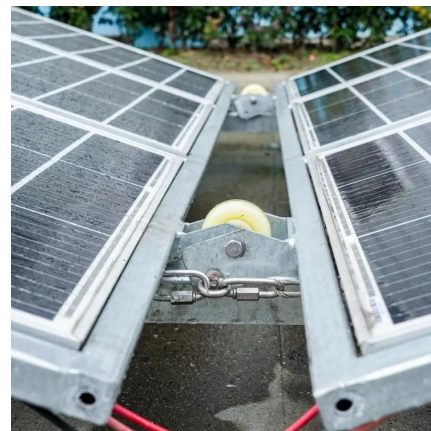


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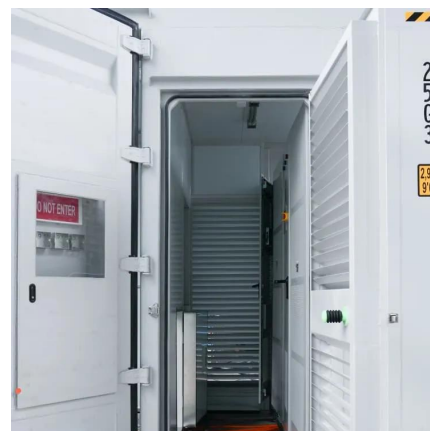
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