

# **Annual power consumption of solar glass project**





## Overview

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How does the glass industry meet its energy needs?

The Chinese glass industry meets its energy needs with fuel oil (13.1%), natural gas (15.5%), coal (44.3%), electricity, and other sources (27.1%). On the other hand, the USA and Europe use natural gas as an energy source in the glass industries with a share of 80% and 90%, respectively (Zier et al. 2021).

What are the energy requirements for glass production?

The theoretical energy requirements for glass production are endothermic heat for glass reaction, sensible heat for glass heating, and sensible heat for intermittent gases (gases from the glass reaction) (Sardeshpande et al. 2007).

What energy sources are used in glass production?

Historically, wood, coal, natural gas, and electricity have been used as energy sources in glass production (Griffin et al. 2021). Since the outbreak of the oil crisis in the last century, the need to reduce energy consumption per unit product has become one of the key factors in industrial furnace designs (Weber et al. 2020).

How much energy does a solar panel produce a day?

Based on data provided from Şişecam Co. for the Turkey/Eskişehir-Polatlı factory, based on Table 12.2, solar panels can produce an average daily photovoltaic energy  $E_{elec, pv}$  of 41,737 (kWh/day), a minimum of 21,548 (kWh/day) of energy for December and 69,676 (kWh/day) for July.



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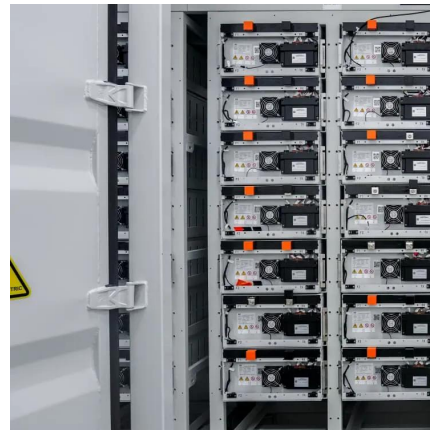


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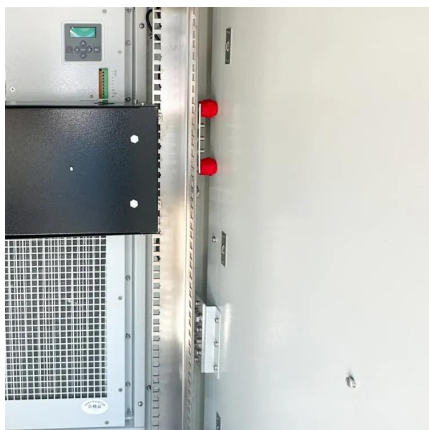
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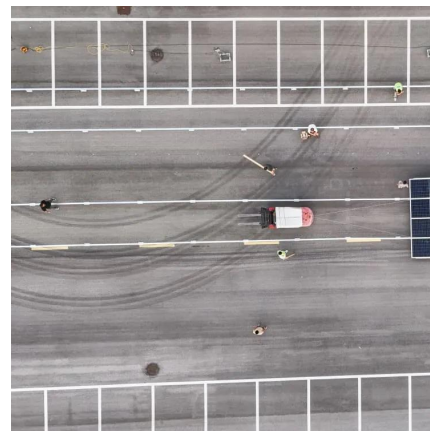


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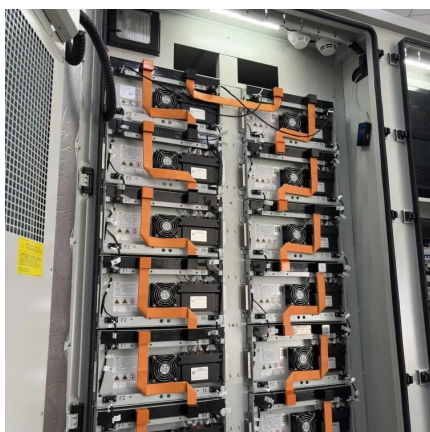
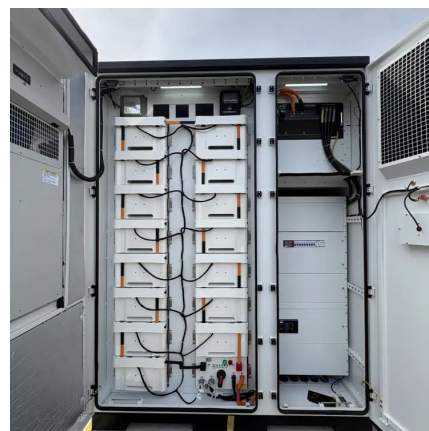


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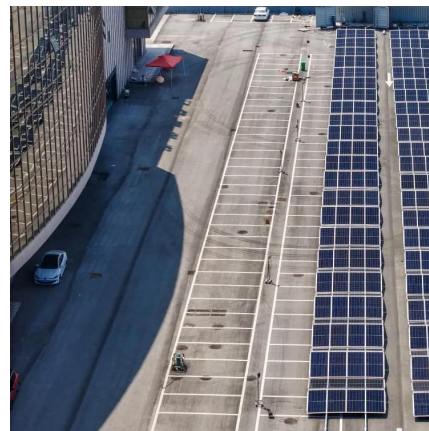


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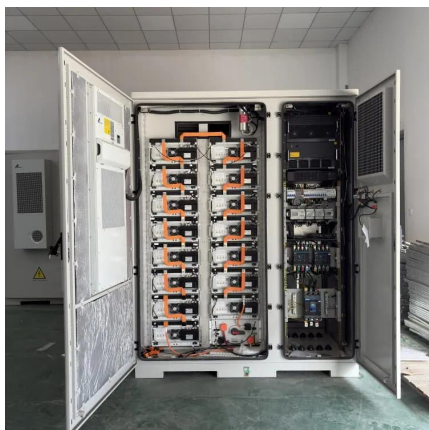
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