

# Japanese aluminum alloy energy-saving energy storage equipment processing





## Overview

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Relying on advanced material selection, forming process and welding technology, we focus on the research and development and manufacturing of battery trays, liquid cooling plates, energy storage pack boxes and radiators. Is aluminum electrolysis energy saving technology based on steady flow and heat preservation?

A series of technical research and industrial experiments have been carried out [1-5], and a deep knowledge in energy-saving technology system for aluminum electrolysis has been formed. Aluminum Electrolysis Energy Saving Series Technology based on Steady Flow and Heat Preservation (FHEST) has been successfully developed.

How much electricity does aluminum use?

Assuming a current efficiency of 95%, these voltages result in an electrical consumption of 13, 15 and 13.3 MWhe/tAl respectively. When comparing to the energy stored in aluminum, this corresponds to efficiencies of 66.2%, 57.4%, and 64.7%, when only considering electricity as the energy input.

How much energy does alumina use?

Calcination alone requires around 1.6 MWh of thermal energy per tonne of aluminum produced, which is currently provided using natural gas. 31 Alumina processing should eventually be decarbonized, either through direct electrification, the use of clean fuels, or even concentrated solar power. 32.

Can aluminum be used to store electricity?

The Hall-Héroult process, reducing aluminum oxides to aluminum, is already a technology deployed at an industrial scale. The maturity of this industry could therefore be leveraged to store electricity. To convert aluminum back to power, it can be fully oxidized with high-temperature liquid water.



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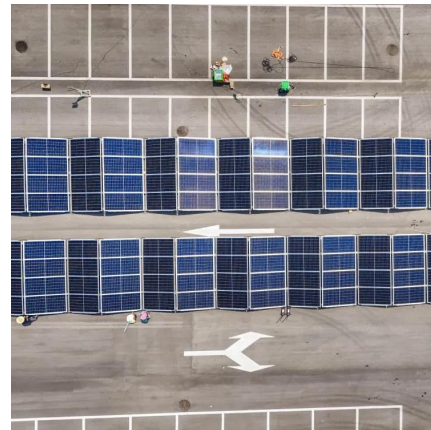


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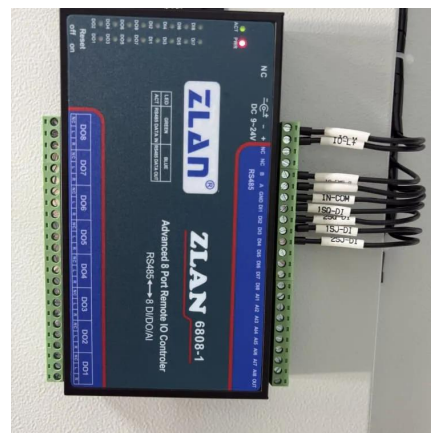
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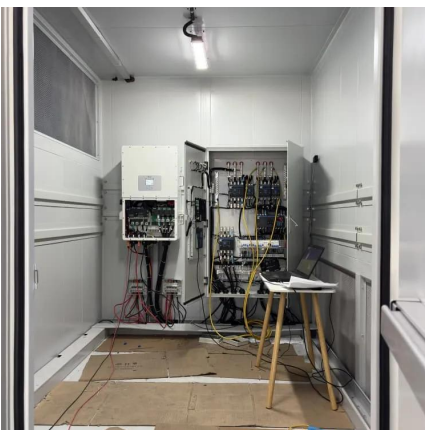
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