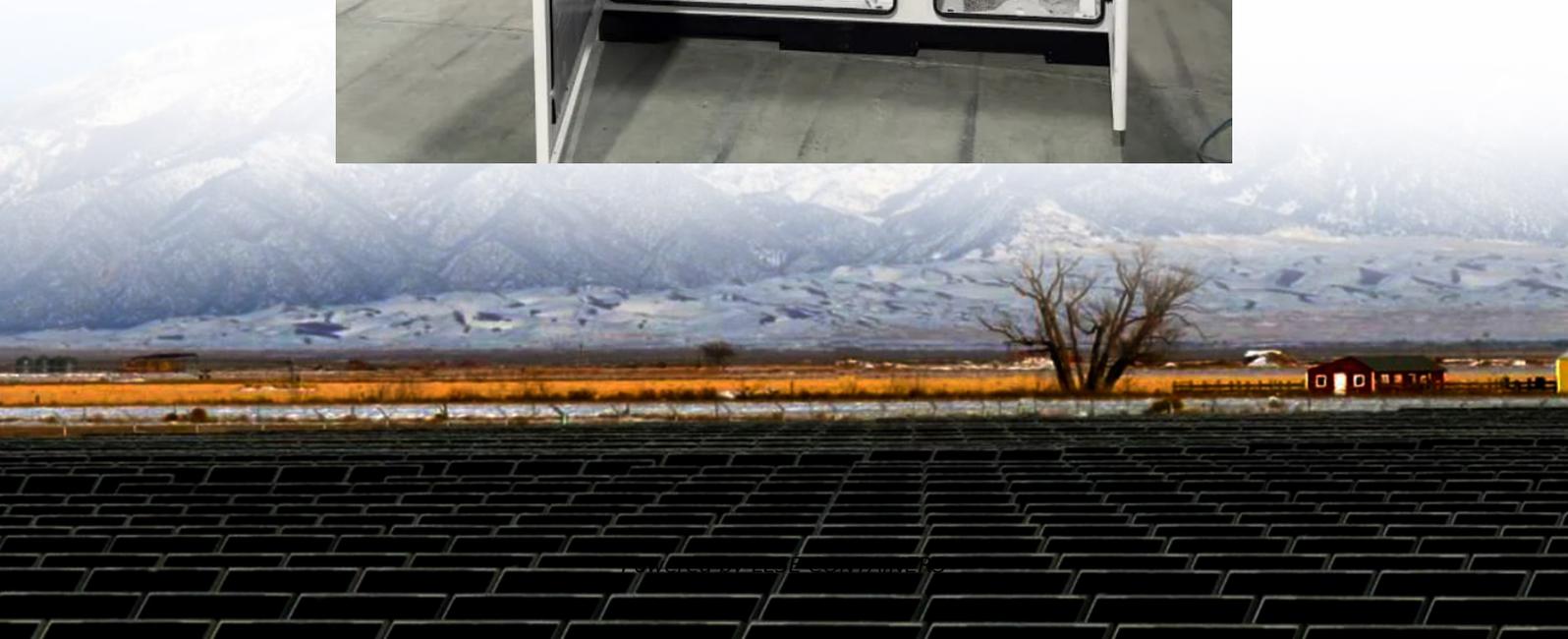


Mainstream cooling solutions for energy storage power stations





Overview

Is indirect liquid cooling a viable solution for cabinet power density reduction?

Indirect liquid cooling is currently the main cooling method for the cabinet power density of 20 to 50 kW per cabinet. An integrated energy storage batteries (ESB) and waste heat-driven cooling/power generation system was proposed in this study for energy saving and operating cost reduction.

What are the energy-saving solutions for waste heat recovery in data centers?

The energy-saving performance of the proposed system was compared with previous studies in Table 2. The energy-saving solutions for waste heat recovery in data centers include adsorption refrigeration , absorption refrigeration , heat pumps , and organic Rankine cycles .

How much energy is saved by a cooling system?

Coupled waste heat recovery and energy storage subsystems were included. Refrigeration modes were clarified to save cooling energy. Power usage effectiveness is reduced from 1.317 to 0.981. Maximum energy saving reaches 90.8 GWh/year with 1000 cabinets. Maximum net present value reaches 998 million CNY.

What is the PUE of a liquid cooling data center?

The PUE of the liquid cooling data centers can usually be reduced to below 1.3 [6, 7]. For places with low ambient temperatures, their PUE is supposed to be lower than this value for a higher cooling system efficiency and larger natural cooling time.



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