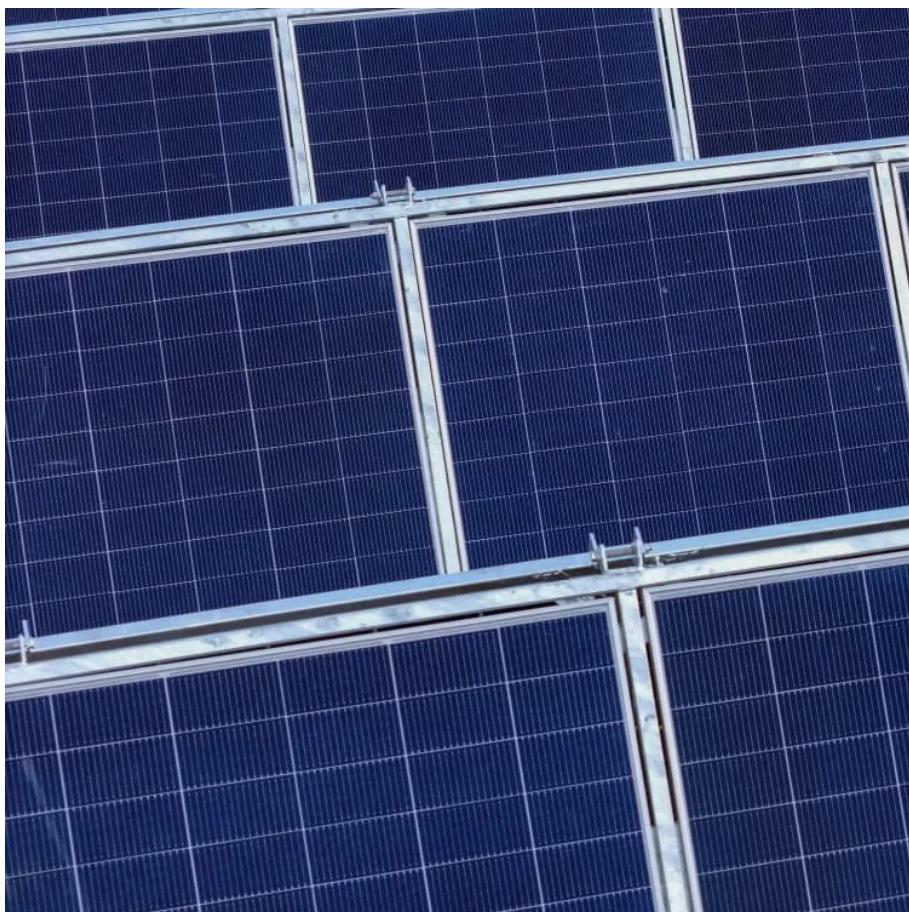




WALMER ENERGY

Air energy storage power generation conversion rate





Overview

What is the value of compressed air energy storage technology?

The dynamic payback period is 4.20 years and the net present value is 340.48 k\$. Compressed air energy storage technology is recognized as a promising method to consume renewable energy on a large scale and establish the safe and stable operation of the power grid.

What is the exergy efficiency of a compressed air energy storage system?

In the exergy analysis, the results indicate that the exergy efficiency of the compressed air energy storage subsystem is 80.46 %, which is 16.70 % greater than the 63.76 % of the reference compressed air energy storage system, showing that the system integration can decline the exergy loss.

What is thermo-economic performance of a compressed air energy storage system?

The thermo-economic performance of the system is linearly related with the pressure loss of the heat exchanger. When the charging pressure is 10MPa and the discharge pressure is 3.5MPa, the system has the best performance. Keywords:above-ground compressed air energy storage system, renewable energy, thermo-economic analysis NONMENCLATURE.

How much CO2 does a compressed air energy storage system emit?

Besides, the proposed system's CO2 emission is 258 kg/GWh. This study provides a new option for enhancing the performance of compressed air energy storage through the system integration.



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