

Athens Compressed Air Energy Storage Power Generation





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.

How does compressed air energy storage technology work?

At its core, Compressed Air Energy Storage Technology works on a fairly simple principle: use electricity to compress air, store it under pressure, and then release it later to generate power. Think of it like charging a giant “air battery.”.

How does compressed air energy storage impact the energy sector?

Compressed air energy storage has a significant impact on the energy sector by providing large-scale, long-duration energy storage solutions. CAES systems can store excess energy during periods of low demand and release it during peak demand, helping to balance supply and demand on the 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.



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