



WALMER ENERGY

Air energy storage equipment cost





Overview

How much does compressed air energy storage cost?

Our base case for Compressed Air Energy Storage costs require a 26c/kWh storage spread to generate a 10% IRR at a \$1,350/kW CAES facility, with 63% round-trip efficiency, charging and discharging 365 days per year.

What is compressed air energy storage (CAES)?

What opportunities?

Compressed Air Energy Storage (CAES) seeks to smooth out power grids, using excess electricity to compress air into storage tanks or underground reservoirs at high pressures (e.g., 40-80 bar). The energy needed to compress air to different temperatures is plotted below.

How much storage can A CAES system provide?

In theory a CAES system could thus provide 24-hours of storage for as little 30-40c/kWh. These numbers are generally lower than for 24-hour storage in lithium ion batteries, comparable to redox flow batteries, but still higher-cost than the costs of 24-hour storage in thermal energy storage systems.

Will additional storage technologies be added?

Additional storage technologies will be added as representative cost and performance metrics are verified. The interactive figure below presents results on the total installed ESS cost ranges by technology, year, power capacity (MW), and duration (hr).



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