

JH Solar

Sinopec compressed air energy storage project



Overview

The project, invested and constructed by China Energy Engineering Group Co., Ltd., (CEEC), has set three world records in terms of single-unit power, storage capacity, and energy conversion efficiency. This milestone marks China's CAES technology entering the 300 MW era of engineering applications. Will China's first large-scale compressed air energy storage project be commercialized?

A state-backed consortium is constructing China's first large-scale compressed air energy storage (CAES) project using a fully artificial underground cavern, marking a major step in the technology's commercialization.

What is a compressed air energy storage project?

A compressed air energy storage (CAES) project in Hubei, China, has come online, with 300MW/1,500MWh of capacity. The 5-hour duration project, called Hubei Yingchang, was built in two years with a total investment of CNY1.95 billion (US\$270 million) and uses abandoned salt mines in the Yingcheng area of Hubei, China's sixth-most populous province.

What is Xinyang air storage?

Designated as a pilot project under China's National Energy Administration's new energy storage initiative, the Xinyang facility pioneers an innovative air-sealing approach for artificial underground storage, offering a significant boost to the commercialization of CAES technology in China.

How is China energy storage building a CAES facility?

Construction involves precision blasting, structural reinforcement, concrete lining, and a sealed steel layer to withstand an operating pressure of 14MPa. The project is led by China Energy Storage's Henan subsidiary, which has previously developed multiple CAES facilities, including 100 MW, 150 MW, and 300 MW installations.

How efficient is China energy storage?

Once operational, the facility is expected to achieve a conversion efficiency of 72.1% and generate 420 million kWh annually—enough to power 350,000 households. The system incorporates China Energy Storage's latest 300 MW CAES technology, featuring multi-stage compressors, high-load turbines, and advanced supercritical heat exchangers.

Sinopec compressed air energy storage project



Hydrostor's 1600MWh Australia project approved

Rendering of Hydrostor's Silver City 200MW/1,600MWh advanced compressed air project, in development in New South Wales, Australia. Image: Hydrostor. Canada-headquartered Hydrostor has ...

Shandong Tai 'an Compressed air energy storage ...

Recently, the world's largest 350 MW salt cavern compressed air energy storage project -- Shandong Tai 'an 2×300 MW compressed air energy storage innovation demonstration project was ...



List of Operational (Completed) Compressed-Air Energy Storage ...

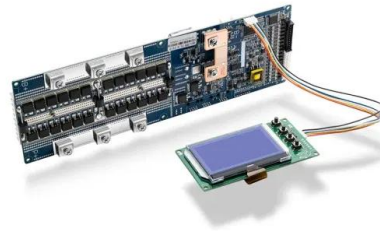
Search all the commissioned and operational compressed-air energy storage (CAES) projects, bids, RFPs, ICBs, tenders, government contracts, and awards in United States (US) with our ...



World's Largest Compressed Air Energy Storage Power Station ...

The power station, with a 300MW system, is claimed to be the largest compressed air energy

storage power station in the world, with highest efficiency and lowest ...



(PDF) Comprehensive Review of Compressed Air ...

As a mechanical energy storage system, CAES has demonstrated its clear potential amongst all energy storage systems in terms of clean storage medium, high lifetime scalability, low self-discharge

Top 10 Compressed Air Energy Storage startups (August 2025)

Country: USA , Funding: \$52.4M LightSail Energy develops breakthrough, high efficiency energy storage systems using compressed air.



1075KWHH ESS



Storing energy with compressed air is about to ...

Under pressure Storing energy with compressed air is about to have its moment of truth Technology will be used to store wind and solar energy for use later.

China's first compressed air energy storage in salt cavern c

The Jiangsu Jintan Salt Cavern Compressed Air Energy Storage Project is located in Changzhou, Jiangsu province. It has a 300 MWh storage capacity and a 60 MW power generation ...



Overview of current compressed air energy storage projects and ...

Compressed air energy storage (CAES) is an established and evolving technology for providing large-scale, long-term electricity storage that can aid electrical power ...

Advanced Compressed Air Energy Storage Systems: ...

Low-carbon generation technologies, such as solar and wind energy, can replace the CO2-emitting energy sources (coal and natural gas plants). As a sustainable engineering ...



18650 3.7V
Li-ion
RECHARGEABLE BATTERY
2000mAh



Air4NRG , Air isothermal compression technology for long term energy

Air4NRG's main objective is the development of an innovative, efficient (over 70% round-trip efficiency), long-term, sustainable Compressed Air Energy Storage (CAES) prototype, which ...

Chinese consortium building 1.2 GWh compressed ...

A state-led consortium is developing a 300 MW/1200 MWh compressed air energy storage (CAES) project in Xinyang, Henan province, featuring an entirely artificial underground cavern--China's

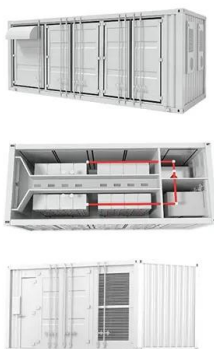
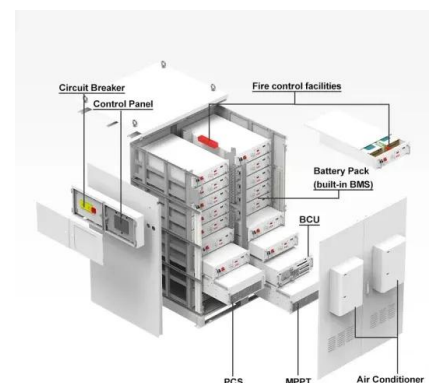


China unveils world's largest compressed air ...

China breaks ground on world's largest compressed air energy storage facility The second phase of the Jintan project will feature two 350 MW non-fuel supplementary CAES units with a combined

China: Work starts on 'world's largest' compressed ...

Construction has started on a 350MW compressed air energy storage project in, China, claimed to be the largest in the world of its kind.

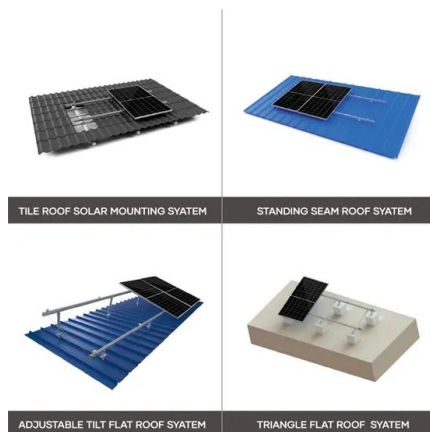


RICAS2020 Design Study

Project The RICAS2020 Design Study for the European Underground Research Infrastructure related to Advanced Adiabatic Compressed Air Energy Storage (AA-CAES) will provide ...

Microsoft Word

Liquid Air Energy Storage (LAES), also known as cryogenic energy storage, uses excess power to compress and liquefy dried/CO2-free air. When power is needed, the air is heated to its ...



Compressed Air Energy Storage (CAES)

Compressed Air Energy Storage has a long history of being one of the most economic forms of energy storage. The two existing CAES projects use salt dome reservoirs, but salt domes are ...

World's first 300 MW compressed air energy storage plant fully ...

A photo of the pressure-bearing spherical tanks at the "Nengchu-1" project. Photo: Courtesy of Dongfang Electric Corp The world's first 300-megawatt compressed air ...



51.2V 300AH

World's largest compressed air grid "batteries" will ...

California is set to be home to two new compressed-air energy storage facilities - each claiming the crown for the world's largest non-hydro energy storage system. Developed by Hydrostor, the

Compressed Air Energy Storage: How It Works

Compressed Air Energy Storage (CAES) represents an innovative approach to harnessing and storing energy. It plays a pivotal role in the advancing realm of renewable energy. This overview explains the ...



Standard 20ft containers



Standard 40ft containers



A comprehensive review of compressed air energy storage

...

Compressed air energy storage (CAES) is a promising solution for large-scale, long-duration energy storage with competitive economics. This paper provides a ...

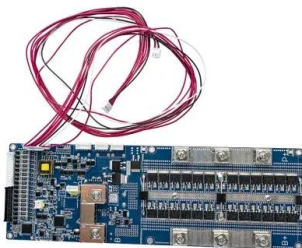
'World's largest' compressed air energy storage ...

The CAES project is designed to charge 498GWh of energy a year and output 319GWh of energy a year, a round-trip efficiency of 64%, but could achieve up to 70%, China Energy said. 70% would put it on par ...



China's innovative 1.2 GWh compressed air energy storage project

A state-led consortium is developing a 300 MW/1200 MWh compressed air energy storage (CAES) project in Xinyang, Henan province, featuring an entirely artificial ...



Compressed Air Energy Storage

Thermal mechanical long-term storage is an innovative energy storage technology that utilizes thermodynamics to store electrical energy as thermal energy for extended periods. Siemens ...



China: Work starts on 'world's largest' compressed air project

Construction has started on a 350MW compressed air energy storage project in, China, claimed to be the largest in the world of its kind.

World's Largest Compressed Air Energy Storage ...

The facility boasts a storage volume of nearly 700,000 cubic meters --equivalent to 260 Olympic swimming pools --and can store energy for eight hours while releasing it over five hours daily. This innovative ...



World's largest compressed air energy storage project breaks ...

Once completed, the Jintan project will hold the title of the world's largest compressed air energy storage facility, integrating groundbreaking advancements in both ...

Projects

Projects The Quinte Energy Storage Centre is an Advanced Compressed Air Energy (A-CAES) storage facility under development in Lennox and Addington County, that can help support the long-term supply options in ...



Massive underground air-battery project lands ...

An artist's rendering of Hydrostor's Willow Rock advanced compressed-air energy-storage project in California's eastern Kern County. (Hydrostor) Compressed-air energy storage, a decades-old but rarely ...

China's national demonstration project for compressed air energy

China's national demonstration project for compressed air energy storage achieved milestone in industrial operation Published in: iEnergy (Volume: 1, Issue: 2, June 2022)



World's first 300 MW compressed air energy ...

The completion of this project indicates that China's compressed air energy storage technology has entered a new era of commercial operation, leading the world in the sector and offering ...

Chinese Consortium Building 1.2 GWh Compressed Air Energy Storage Project

A state-led consortium is developing a 300 MW/1200 MWh compressed air energy storage (CAES) project in Xinyang, Henan province, featuring an entirely artificial ...

Commercial and Industrial ESS

Air Cooling / Liquid Cooling

- Budget Friendly Solution
- Renewable Energy Integration
- Modular Design for Flexible Expansion



First offtake deal signed for 500MW/4,000MWh advanced compressed air

Advanced compressed air energy storage company Hydrostor has signed PPA for one of its flagship large-scale projects in California.

Compressed air energy storage systems: Components and ...

Energy storage systems are a fundamental part of any efficient energy scheme. Because of this, different storage techniques may be adopted, depending on both the type of ...



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