

SolarTech Power Solutions

Coal Mine Energy Storage Project



Overview

Could energy storage give a coal mining hub a new lease of life?

An energy storage system that drops heavy weights down mine shafts could be the centrepiece of plans to give a NSW coal mining hub a new lease of life, after former BHP executive Mark Swinnerton struck an agreement with Yancoal.

What is the goal of coal storage?

No matter the size of your reserve, the main goal of coal storage is to minimize loss by preventing spontaneous combustion and minimizing coal loss. Spontaneous combustion occurs in coal piles when low-temperature oxidation slowly heats up the material to a volatile point.

Could underground gravity energy storage repurpose old mines?

An international team of scientists recently proposed another innovative and resourceful solution that involves repurposing old mines: Underground Gravity Energy Storage (UGES). They outlined the idea in the journal *Energies*. UGES involves lowering large amounts of sand stored in containers attached to a central cable down a deep underground shaft.

Can old coal mines be converted into gravity batteries?

Old coal mines can be converted into "gravity batteries" by retrofitting them with equipment that raises and lowers giant piles of sand. Underground Gravity Energy Storage system: A schematic of different system sections. (Credit: JD Hunt et al., *Energies*, 2023).

Can old mine shafts be used to generate electricity?

Scientists recently proposed repurposing old mine shafts to generate electricity by lowering containers of sand and storing electricity by raising the sand back up again. While the method cannot generate as much power for the grid as batteries or pumped hydro, it can cheaply store energy for months or

years with no loss.

Can Uges revitalize coal communities?

UGES can revitalize coal communities as mines continue to be shuttered worldwide. “The world is transforming its energy system, halving coal extraction for energy-related purposes,” the researchers wrote. “UGES can provide an alternative source of revenue to the people working in the mines and the community.”

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