

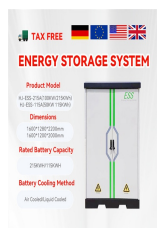
WHAT WILL BE TESTED IN 825 ON ENERGY STORAGE PRINCIPLES



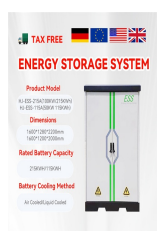
What is thermodynamic energy storage? Thermodynamic electricity storage adopts the thermal processes such as compression, expansion, heating and cooling to convert electrical energy into pressure energy, heat energy or cold energy for storage in the low period of power consumption, and then convert the stored energy into electrical energy at the peak of electricity consumption.



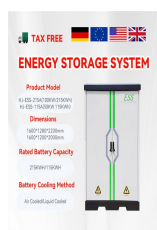
What are the three thermodynamic electricity storage technologies? In this paper, three thermodynamic electricity storage technologies, namely CAES, CCES and PTES, are comprehensively reviewed. For each technology, the basic principle is firstly clarified and then system structures and storage devices are summarized. Thereafter, the corresponding demonstrations and costs of different routes are sorted out.



Is energy storage a key technology for achieving the 'dual carbon' goal? Energy storage is a key technology for achieving the 'dual carbon' goal and the development of energy storage is of high strategic importance. Compared to other storage technologies, the thermodynamic electricity storage technology represented by CAES, CCES and PTES is more suitable for large-scale and long-term storage.



Which thermodynamic electricity storage technology is most suitable for long-term storage? Compared to other storage technologies, the thermodynamic electricity storage technology represented by CAES, CCES and PTES is more suitable for large-scale and long-term storage. In recent years, CAES, CCES and PTES technologies have been widely investigated and vigorously developed.



Does PTES require fluid storage? Pumped thermal energy storage Compared to CAES and CCES, PTES does not require fluid storage. Therefore, there is no presentation of storage devices here. Similarly, considering the small number of PTES papers, there are only three parts in this section, including basic principles, system structures and

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demonstrations.

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What are the different types of energy storage? If we take out ???mechanical??? energy storage (for instance,the kinetic energy of a flywheel,the potential energy of a pressurized gas or that of a water reservoir),the direct storages of electrical energy can be narrowed down to two large families of elements: the ???potential energy??? storage: capacitors,supercapacitors and batteries. 3.1.



Energy Storage Enables use of energy at a later time. Examples: batteries, ice/steam. Not all energy is equal. A tour of the essential principles behind the energy machine that puts fuel in our tanks and brings electricity to ???



In the scenarios studying energy system transitions, the industrial sector is only sparingly included and often entirely overlooked [8].Currently, the industry sector accounts for ???



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