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K. S. Lee, Underground Thermal Energy Storage, Green Energy and Technology, DOI: 10.1007/978-1-4471-4273-7\_2, Springer-Verlag London 2013 15. Replacement of conventional heating systems also resulted in decreasing emissions of CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub> emitted from the combustion of fossil fuel.



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# UNDERGROUND THERMAL ENERGY STORAGE KUN SANG LEE



Kun Sang Lee. Hanyang University The current technical, economic, and environmental status of aquifer thermal energy storage (ATES) is promising. General information on the basic operation



Kun Sang Lee, simulation on the cyclic operation of an open borehole thermal energy storage system under regional groundwater flow, Geosciences Journal Vol. 14, No. 2, (2010) 217-2016 Modular and



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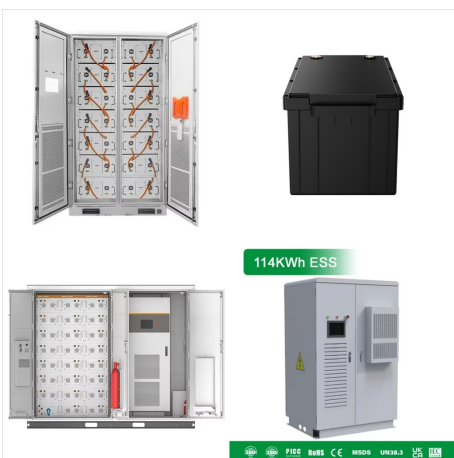
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to 1995, Kun Sang Lee worked on the analysis of geopressured geothermal reservoirs as a research assistant at Center for Petroleum and Geosystems Engineering, University of Texas at Austin, U.S.A. Obtaining a Ph.D. at the University of Texas at Austin in 1995, Kun Sang Lee worked as a research specialist at Kumho & Co. and as a ???

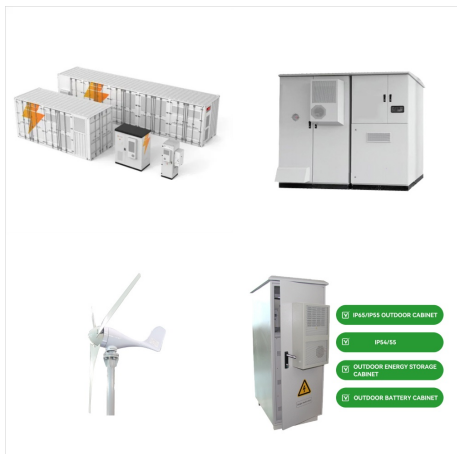


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If it is impossible to exploit a suitable aquifer for energy storage, a borehole thermal energy storage system (BTES) can be considered. Vertical ground heat exchangers (GHE), also called borehole heat exchangers (BHE) are widely used when there is a need to install sufficient heat exchange capacity under a confined surface area such as where the Earth is rocky close ???

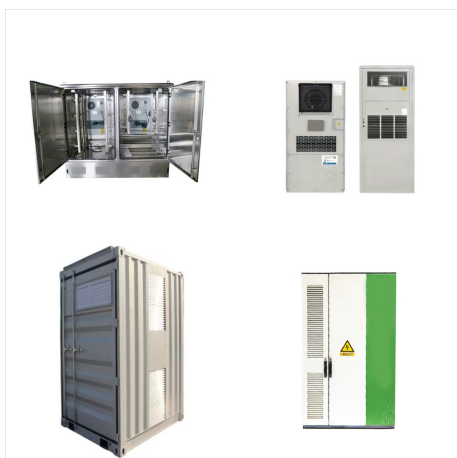
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In general, groundwater temperatures remain relatively stable at temperatures typically 10-20 °C higher than local mean annual temperatures between depths of 10-20 m. Below these depths, groundwater temperatures gradually increase at a rate of geothermal gradient. As a result, in areas where a supply of groundwater is readily available from an aquifer, a reliable source of ???



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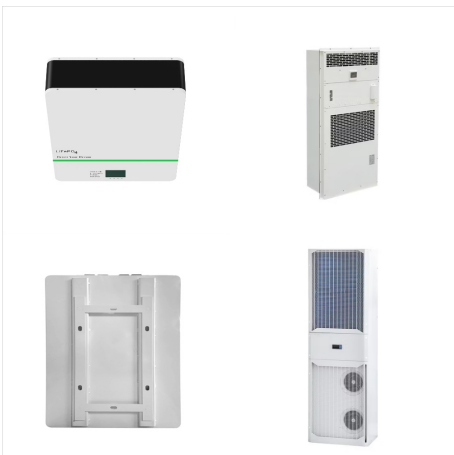


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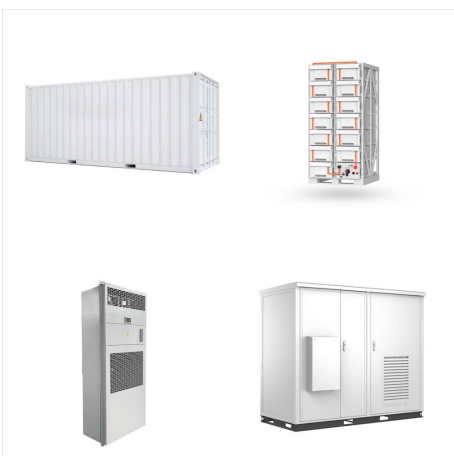
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Cavern thermal energy storage (CTES) belongs to the seasonal sensible liquid storage in various forms of underground cavities (EU Commission SAVE Programme and Nordic Energy Research 2004). Potential structures for CTES include abandoned mines, tunnels or rock caverns, natural karst structures, and artificially constructed caverns in rock or deep pits in soil.



Operation of Aquifer Thermal Energy Storage System Kun Sang Lee Kyonggi University S. Korea  
1. Introduction Underground thermal energy storage (UTES) is mostly used for large quantities of seasonal heat/cold storage (Nielsen, 2003). There are several concepts as to how the underground can be used



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Underground thermal energy storage (UTES) provide us with a flexible tool to combat global warming through conserving energy while utilizing natural renewable energy resources. Primarily, they act as a buffer to balance fluctuations in supply and demand of low temperature thermal energy. Underground Thermal Energy Storage provides an ???



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Underground Thermal Energy Storage gives a general overview of UTES from basic concepts and classifications to operation regimes. As well as discussing general procedures for design and construction, thermo-hydro geological modeling of UTES systems is explained. Kun Sang Lee. Springer London, Oct 12, 2012 - Science - 152 pages. 0 Reviews.



Underground thermal energy storage (UTES) is a technique for storing thermal energy that makes use of the subsurface to store both heat and cold. Kun Sang Lee; View. Review on sustainable



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