Liquefied gas energy saving and storage solution

Can liquefied natural gas be combined with liquid air energy storage?
Coupling the cold energy of liquefied natural gas (LNG) with liquid air energy storage (LAES) technology presents an innovative solution to the aforementioned problems.

How efficient is liquefied natural gas cold energy?
In practice,the utilization efficiency of liquefied natural gas (LNG) cold energy remains suboptimal. In traditional LNG cold energy power generation technologies,the secondary medium approach,despite being more efficient than the direct expansion method,still fails to fully harness the cold energy of LNG.

Could liquid air energy storage be a low-cost option?
New research finds liquid air energy storage could be the lowest-cost optionfor ensuring a continuous power supply on a future grid dominated by carbon-free but intermittent sources of electricity.

What happens if liquefied natural gas is left unutilized?
Author to whom correspondence should be addressed. The vaporization of liquefied natural gas (LNG) liberates a substantial quantity of cold energy. If left unutilized,this cold energy would cause significant energy waste.

Is liquefied natural gas a transitional energy source?
Amidst the global energy transition toward low-carbon and clean energy systems,liquefied natural gas (LNG) plays a critical role as a transitional energy source,with its consumption continuing to rise steadily.

How is LNG liquefied?
LNG is pressurized to 7500 kPa by pump P1 and then vaporized through the propane heat exchanger group (P-HX1 to P-HX4) in the cold storage device before entering the cold energy power generation section directly. The propane in the cold storage device is liquefied and stored in the propane cryogenic storage tank (PCST).

According to the study, cryogenic energy storage and liquefied gases research has evolved from foundational concepts to more advanced areas, focusing on improving energy ...

Energy carriers that are gaseous at am-bient conditions like natural gas or ammonia can be liquefied at low temperatures in order to in-crease their density and being able to store reaso-nable amounts of ...

Abstract Utilizing liquefied natural gas (LNG) cold energy is a novel idea to reduce energy consumption of cryogenic CO2 capture. Two innovative configurations, pre-cooling system ...

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Although ammonia offers a more energy-efficient method than liquefied hydrogen for storing hydrogen on the scale of weeks or months, this analysis suggests that from both an energy efficiency ...

Abstract Natural gas is crucial for sustainable economic development. Over longer distances, it may be transported in the liquefied state through supply chains that involve floating storage and regasification ...

This makes hydrogen-based energy systems particularly attractive for reducing greenhouse-gas emissions. Despite these advantages, the widespread implementation of hydrogen ...

An example of energy-efficient technical solution for increasing the holding time of non-drainage storage of liquefied natural gas during storage and transportation in multimodal transport ...

Energy supply is an essential factor for a country& #8217;s development and economic growth. Currently, our energy system is dominated by fossil fuels that produce greenhouse gases. ...

Our study addresses this need by optimizing the industrial process of liquefied natural gas (LNG) storage, focusing on enhancing thermal performance and energy efficiency.

The ongoing transition in the energy sector demands more efficient and reliable energy storage solutions. Our study addresses this need by optimizing the industrial process of ...

Abstract Floating liquefied natural gas platforms offer a flexible solution for offshore natural gas production, storage, and transfer, but their energy-intensive operations require reliable ...

Abstract The concept of heat integration with cryogenic energy storage (CES) is a possible option for the recovery of wasted cold energy from liquefied natural gas (LNG). For ...

Abstract Liquid air energy storage (LAES) represents one of the main alternatives to large-scale electrical energy storage solutions from medium to long-term period such as compressed ...

The Space-Saving Underground Liquefied Petroleum Gas (LPG) Storage Tank is an innovative and efficient solution designed to optimize storage space while ensuring safety and reliability. By being ...

Finally, the LNG supply chain with cryogenic CCS minimizes the sustained energy waste between the natural gas liquefaction and regasification stages owing to the geographical ...

ABSTRACTThe ongoing transition in the energy sector demands more efficient and reliable energy storage solutions. Our study addresses this need by optimizing the industrial process of liquefied ...

Abstract Liquefied natural gas (LNG) has emerged as a crucial component of the global energy mix, driving

the need for innovative technologies to enhance efficiency and safety in LNG ...

Abstract Cryogenic energy storage (CES) is a viable method for grid-scale electrical energy storage. Considering the high energy density and mature application of liquefied natural gas ...

Fortune Gases offers vacuum cryogenic and flat storage tanks for safe, efficient storage and transport of liquefied gases like oxygen, nitrogen, and LNG. Ideal for various industries. Contact us for details.

Abstract Liquefied natural gas (LNG) is widely used in many countries around the world primarily as a mode of transport for natural gas. However, massive amount of energy (around 830 ...

Abstract The global energy transition, prompted by concerns regarding emissions and climate change, has resulted in a surge in demand for clean energy, including natural gas. Natural ...

The proposed liquefied natural gas-thermal energy storage-liquid air energy storage (LNG-TES-LAES) process uses LNG cold energy via two different mechanisms. During on-peak ...

This study presents a three-tiered cold energy utilization system that integrates liquid air energy storage (LAES), cold energy power generation, and cold energy air conditioning.