Natural gas cold energy liquefied air energy storage

The increasing global demand for reliable and sustainable energy sources has fueled an intensive search for innovative energy storage solutions [1]. Among these, liquid air ...

A novel concept for energy integration across the liquefied natural gas (LNG) supply chain is proposed by using liquid air as a medium for recycling c...

Over the past decades, a variety of different approaches to realize the utilization of liquefied natural gas (LNG) cold energy have been ...

This study systematically presents a novel technical solution for the integration of external cold energy with LAES systems, marking the first investigation into the coupling of ...

Abstract A novel power-management-system design coupling liquid air energy storage (LAES) with liquefied natural gas (LNG) regasification is proposed that combines flexibility in ...

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. Currently, both domestic ...

In order to solve the main problems of the external cold source for compressed gas energy storage systems, and to effectively utilize the liquefied natural gas (LNG) cold ...

Liquified natural gas (LNG) is a clean primary energy source that is growing in popularity due to the distance between natural gas (NG)-producing countries ...

Liquid air can be employed as a carrier of cold energy obtained from liquefied natural gas (LNG) and surplus electricity. This study evaluates ...

The International Gas Union (IGU) claimed that the global liquefied natural gas (LNG) trade achieved 316.5 million tonnes in 2018 with the annual increasing rate of 9.8% [1]. ...

In order to solve the main problems of the external cold source for compressed gas energy storage systems, and to effectively utilize the liquefied natural gas (LNG) cold energy, two ...

Liquefied natural gas (LNG) is natural gas that has been cooled to about -160 °C and turned into a liquid to facilitate transportation and storage. ...

Natural gas cold energy liquefied air energy storage

Beneficially, PTTLNG, as the first liquified natural gas (LNG) terminal in Thailand, has processed the import, receiving, storage and ...

Liquid air energy storage (LAES) technology, unrestricted by geographical conditions and capable of flexible integration with external energy sources,...

Abstract and Figures Liquid air energy storage (LAES) technology is characterized by its high energy storage density, geographical independence, and ease of ...

Currently, research on external cold energy coupling predominantly concentrates on the regasification cold energy of Liquefied Natural Gas (LNG), with scant ...

The cold recovery of liquefied natural gas (LNG) is an important issue and power generation is widely recognized as a potential option. However, the amount of generated ...

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 ...

One of the solutions to utilizing liquefied natural gas (LNG) cold energy at import terminals is supplying it to an air separation unit (ASU), ...

TL;DR: In this article, a power management system design coupled liquid air energy storage (LAES) with liquefied natural gas (LNG) regasification is proposed that combines flexibility in ...

The cold recovery of liquefied natural gas (LNG) is an important issue and power generation is widely recognized as a potential option. However, the amount of generated power from LNG ...

Liquid air energy storage (LAES) is a promising technology for large-scale energy storage applications, particularly for integrating renewable energy sources. While ...

This paper proposes a novel liquefied-air energy-storage system that is coupled to liquefied natural gas (LNG) cold energy and organic rankine cycle (ORC) ...

A novel cryogenic air separation process with LNG (liquefied natural gas) cold energy utilization that produces liquid nitrogen and oxygen is proposed and analyzed. Air ...

Abstract Liquid air energy storage is an efficient and clean energy storage technology. This paper studies an advanced integrated energy system that couples biomass ...

In modern times, worldwide requirements to curb greenhouse gas emissions, and increment in energy demand

due to the progress of humanity, have become a serious ...

In the LAES, the recovered cold energy from the liquid air is insufficient to cool the compressed air to the lowest temperature with the ...

This study offers crucial references and a foundation for the engineering application of LNG cold energy in energy storage and power plant peak regulation.

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

The increasing penetration of renewable energy has led electrical energy storage systems to have a key role in balancing and increasing the efficiency of the ...

To facilitate long-distance transoceanic transportation [4], it is customary to cool NG to temperatures below -162 °C to produce liquid natural gas (LNG), which is endowed ...

This study proposes the integration of an external cold source with the LAES system to recover cold energy and enhance the system"s energy efficiency.

This paper presents a thermodynamic analysis of a cryogenic energy storage system, based on air liquefaction and storage in an insulated vessel. This technology is ...