

Cost of containerized chemical energy storage





Overview

Is chemical storage a promising option for long term storage of energy?

With respect to these observations, the chemical storage is one of the promising options for long term storage of energy. From all these previous studies, this paper presents a complete evaluation of the energy (section 2) and economic (section 3) costs for the four selected fuels: H₂, NH₃, CH₄, and CH₃OH.

How much does methanol cost to store?

Its storage cost is therefore negligible. As its storage is straightforward, the methanol can be stored for long term, without losses, and it can be used as a pure fuel in engines and other combustion processes. 4.5.

How much does it cost to transport hydrogen?

Hydrogen in gas phase transported by pipeline is evaluated at 492 €/MWh H₂, and 239 €/MWh H₂ in liquid phase (in a truck). Storage of hydrogen in gas phase is the most expensive part of the process. This cost is due to the huge volume of storage required for 1 kg of hydrogen gas. The total cost of ammonia is moderate at 261 €/MWh NH₃, by pipeline.

How much does CO₂ cost?

Indeed, the economic contribution of the capture and the storage of CO₂ is small relative to the global cost. The storage and the transport of CH₄ are not problematic, with a reduced cost. The global cost of CH₄ is estimated at 262 €/MWh CH₄, with a transport by pipeline.



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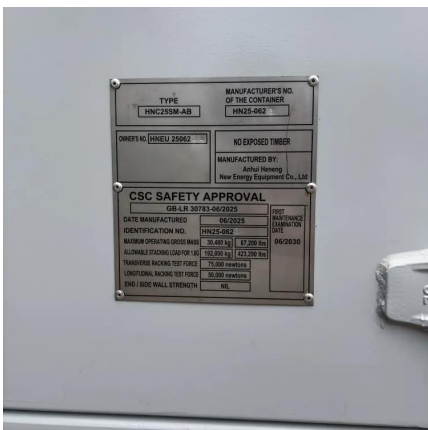
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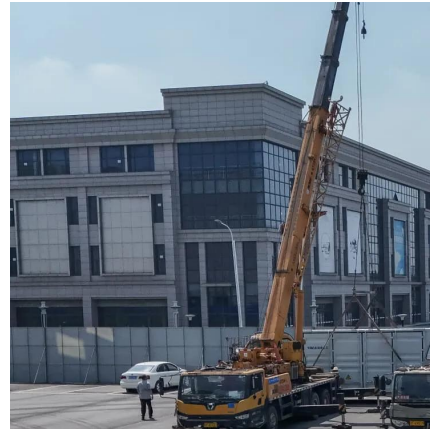
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