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Why do we need energy storage systems?
Decarbonizing the energy sector is essential, with the Energy Storage Systems (ESS) being of great importance in the achievement of this goal. These technologies enhance the integration of renewable sources, improving supply stability and efficiency, thus facilitating the transition to a more sustainable energy model .

How efficient are electrochemical storage systems?
Electrochemical storage systems,notably lithium-ion batteries,have demonstrated round-trip efficiencies as high as 90%and energy densities of approximately 150-250 Wh/kg [31,33].

What are the challenges of energy storage?
The ability to integrate the capabilities of storage technologies to the specific requirements of each industrial process is one of the main challenges of energy storage, with the selection of the optimal storage system depending on the needs of the industrial process.

What platforms are used to search for energy systems and storage technologies?
Searches were conducted using the Scopus,Web of Science,Google Scholar,and ScienceDirectplatforms,complemented by a manual selection from institutional and governmental websites relevant to energy systems and storage technologies.

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