

1. Record Nr.	UNINA9910595077103321
Autore	Imre Attila R
Titolo	Seasonal Energy Storage with Power-to-Methane Technology
Pubbl/distr/stampa	Basel, : MDPI Books, 2022
Descrizione fisica	1 electronic resource (146 p.)
Soggetti	Technology: general issues History of engineering & technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>For a sustainable future, the need to use renewable sources to produce electricity is inevitable. Some of these sources—particularly the widely available solar power—are weather-dependent; therefore, utility-scale energy storage will be more and more important. These solar and wind power fluctuations range from minutes (passing cloud) to whole seasons (winter/summer differences). Short-term storage can be solved (at least theoretically) with batteries; however, seasonal storage—due to the amount of storable energy and the self-discharging of some storage methods—is still a challenge to be solved in the near future. We believe that biological Power-to-Methane technology—especially combined with biogas refinement—will be a significant player in the energy storage market within less than a decade. The technology produces high-purity methane, which can be considered—by using green energy and carbon dioxide of biological origin—as a Renewable Natural Gas, or RNG. The ease of storage and use of methane, as well as the effective carbon-freeness, can make it a competitor for batteries or hydrogen-based storage, especially for storage times exceeding several months.</p>