

Is battery transportation a new paradigm for maximizing renewable penetration?

A new paradigm of maximizing the renewable penetration by integrating battery transportation and logistics: preliminary feasibility study. In IEEE Power & Energy Society General Meeting, pp. 1-5 (IEEE, 2018). Energy Sector-Specific Plan (US Department of Homeland Security, 2015). Carload waybill sample data.

Can containerized batteries be transported by rail between power-sector regions?

Nature Energy 8, 653-654 (2023) Cite this article Transporting containerized batteries by rail between power-sector regions could aid the US electric grid in withstanding and recovering from disruption.

What is a fuel cell patent?

Distribution of patent filings related to various fuel cells technologies with respect to different transportation sectors. One of Toyota's patents for a fuel cell vehicle , includes a vehicle frame, locations for hydrogen tanks, a fuel cell, a motor, and a secondary battery.

What is the future of hydrogen technology in transportation?

The roadmap and market outlook for hydrogen technologies in transportation are discussed in detail by WIPO,the World Intellectual Property Organization,in their 2022 Patent Landscape Report . According to this report,by 2050,multiple countries (e.g.,US,Europe,China,Japan &South Korea) will touchstone the "Net Zero Scenario".

What is the Energy Storage Research Alliance (Esra)?

The Energy Storage Research Alliance will focus on advancing battery technologyto help the U.S. achieve a clean and secure energy future Berkeley Lab's contributions to ESRA include world-leading energy storage research expertise and capabilities,such as the Advanced Light Source. Credit: Marilyn Sargent/Berkeley Lab

Can mobile storage provide power-grid resilience?

Jill Moraski &Amol Phadke Lawrence Berkeley National Laboratory,Berkeley,CA,USA. "The use of mobile storage via road or rail to provide power-grid resilience has been exploredin the literature for some time.

Discover the Top 10 Energy Storage Trends plus 20 Top Startups in the field to learn how they impact your business in 2025. ... the Heat Map reveals that the UK and US see the most startup activity, followed by other Western ... The standardized stacks enable desirable storage capacity for obtaining stationary and portable power for the ...

3 · Subscribe to Newsletter Energy-Storage.news meets the Long Duration Energy Storage Council Editor Andy Colthorpe speaks with Long Duration Energy Storage Council director of markets and technology Gabriel ...

New us patent for transportation energy storage

The present invention provides novel designs and improved methods for the construction and operation of a gravity powered energy storage facility. This facility might also be called a gravity battery or a gravitational potential energy storage device. The device converts electricity into gravitational potential energy, and vice versa, by raising and lowering massive ...

Based on current price trajectories and a patent activity level of 444 patents per year using our model, battery prices will fall from 2016 to 2020 by 39%, which puts utility-scale battery storage ...

Looking more deeply, the activity in 2010 included patent applications by Lightsail Energy Inc and Expansion Energy LLC. Chart: Ben Lincoln / Potter Clarkson Mass-based energy storage . Turning to mass-based energy storage systems, pumped hydroelectric energy storage (PHES) has seen the most innovation among technologies.

Let's explore some of the most exciting and important patents of 2023, which span a range of industries, including aerospace, robotics, recycling and sustainability, transportation, green energy, and healthcare. New Patents Aerospace NASA OSIRIS-REx. OSIRIS-REx is the first U.S. mission to collect a sample from an asteroid.

A compact energy storage system includes a high speed rotating flywheel and an integral motor/generator unit. The rotating components are contained within a vacuum enclosure to minimize windage losses. ... Bc New Energy (Tianjin) Co., Ltd. ... 1995-02-06 US US08/384,573 patent/US5614777A/en not_active Expired - Fee Related; 1996.

An energy storage system converts variable renewable electricity (VRE) to continuous heat at over 1000°C. Intermittent electrical energy heats a solid medium. Heat from the solid medium is delivered continuously on demand. An array of bricks incorporating internal radiation cavities is directly heated by thermal radiation. The cavities facilitate rapid, uniform heating via reradiation.

Huawei has filed a new patent for a fireproof energy storage system. The company is planning to develop a method of storage technology that can enhance the safety aspects and avoid explosive accidents under high temperatures or other conditions. The Chinese tech giant has introduced several data and energy storage products for its enterprise ...

Transporting containerized batteries by rail between power-sector regions could aid the US electric grid in withstanding and recovering from disruption. This solution is shown ...

Adapted from a news release by the Department of Energy's Argonne National Laboratory.. Today the U.S. Department of Energy (DOE) announced the creation of two new Energy Innovation Hubs. One of the national hubs, the Energy Storage Research Alliance (ESRA), is led by Argonne National Laboratory and

co-led by Lawrence Berkeley National ...

Energy storage technologies allow us to store excess renewable energy and discharge it when there is too little electricity generation or too much demand. And in the future, with millions of vehicles connected to the grid to recharge, there will be plenty of added demand. ... 07.05.2020 / News Energy Storage Industry Calls on EU Policymakers to ...

According to the joint EPO-IEA report summarizing patent trends in the hydrogen economy (summarized here), technologies related to storage, distribution, and transportation of hydrogen are among ...

Source: United States Patent and Trademark Office (USPTO). Credit: Tesla Inc. A recently granted patent (Publication Number: US11888108B2) discloses an electrode film for energy storage devices ...

The energy storage system 100 illustrates a sealed container including various components and features described herein. With reference to FIG. 1B, an explode view of the energy storage system 100 of FIG. 1a is illustrated. With reference to FIG. 1B, the energy storage system 100 includes a frame structure 102, 120.

Understanding innovation of new energy industry: Observing development trend and evolution of hydrogen fuel cell based on patent mining ... storage, transportation, and other technological systems. ... Geographic and technological R& D spillovers within the triad: micro evidence from US patents. J Technol Tran, 34 (2009), pp. 196-211. Crossref ...

3 · SweetBunFactory /iStock. In a move that would provide major boost to battery technology in electric vehicles (EVs), Chinese tech conglomerate Huawei has filed a new patent application for a ...

EnerVenue builds the industry's most flexible energy storage solutions for large-scale and long-duration applications. ... He has authored numerous scientific publications and US patents. Steffen Pietzke. CFO. Read Bio. Steffen Pietzke is the Chief Financial Officer at EnerVenue, where he leads the company's financial activities, including ...

KULR Technology Group announces issuance of us patent covering li-ion battery storage and transportation solution. KULR Technology Group, Inc. (NYSE American: KULR) (the "Company" or "KULR"), a leading energy management platform company accelerating the global transition to a sustainable electrification economy, announced that the United States Patent ...

For example, a recent report by the European Patent Office on low carbon energy innovation showed that carbon capture utilization and storage inventions made up the highest percentage of international patent filings for from universities and public research organizations in that field. The same report showed that the top patent applicants in ...

United States 8 US NASA patents Tokuda Nobuyuki 8 JP Inventor Deeya Energy 8 US Redox flow battery developer, changed its name to Imergy Power Systems in December 2013 [42]

PDF | On Dec 1, 2022, Shiqi Zhang and others published Overview of US patents for energy management of renewable energy systems with hydrogen | Find, read and cite all the research you need on ...

Researchers at the Joint Center for Energy Storage Research have invented a wide and diverse range of technologies in the "beyond lithium-ion" space, including 30-plus ...

A California federal judge denied Unicorn Energy AG's request to depose Elon Musk on Tuesday in a case claiming Tesla infringes its energy storage technology patent, saying it was "speculative ...

With this report, the European Patent Office (EPO) is teaming up for the first time with the International Energy Agency (IEA) to offer key insights into patent trends in high-value inventions in the field of electricity storage. Because patents are filed many months, or even

MITEI's three-year Future of Energy Storage study explored the role that energy storage can play in fighting climate change and in the global adoption of clean energy grids. Replacing fossil fuel-based power generation with power generation from wind and solar resources is a key strategy for decarbonizing electricity. Storage enables electricity systems to remain in... Read more

The initiative is, of course, just one in a line of funding commitments from the US Department of Energy focused on energy storage, and on emerging and long-duration tech in particular, where the department's Energy Storage Grand Challenge R& D track aims to reduce the cost of LDES by 90% within this decade.

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