SOLAR PRO.

# What are the patent directions of the energy storage industry

Can patents be used to map energy storage technologies?
Albeit a gush of recent work using patents in connection with energy storage for particular technologies (e.g. ,,,),patents remain under-exploitedfor conducting integrative mapping exercises of battery development,i.e. across types,geographies and long stretches of time (some exceptions being ,,).

How fast do batteries & electricity storage technology develop?
It reveals that between 2005 and 2018,patenting activity in batteries and other electricity storage technologies grew at an average annual rate of 14% worldwide,four times faster than the average of all technology fields. Innovation in Batteries and Electricity Storage - Analysis and key findings. A report by the International Energy Agency.

Which technologies grew in relevance to battery patenting?
We find that several battery-related technologies and applications, such as energy storage systems, battery management systems, wireless power transmission, electric vehicle charging, and uncrewed aerial vehicles (i.e., drones), grew in relevance both in absolute terms and relative to general battery patenting activity.

Why do we need patents for green innovation?
Recently,patents have been increasingly mobilized to track developmentsin green innovation,including in strategic emerging sectors like clean technology and renewable energy ,.

Why is battery patenting a global trend?
We find that global battery patenting activity grew significantly in the 2000-2019 period. This stylized fact means that the comparative advantages of secondary approaches (rechargeable, redeployable, reusable batteries) have been continuously on the rise driven by innovation, making a direct contribution to socio-technical circularity.

Are national battery patent applications considered in IEA & EPO?
Given the IPF constraint deployed for this study and the IEA and EPO report ,these solely nationally filed applications are not consideredin either one. In fact,in the current study's dataset,IPFs make up only 19.4% of all battery patent families.

To make the patent database for the analysis, first, a comprehensive survey on green hydrogen projects worldwide was conducted and hydrogen-related technologies were ...

As of the end of July 2021, the Qinghai shared energy storage market has accumulated 2648 transactions, and the new energy stations have increased power ...

Innovation in energy storage is mostly directed at improving batteries. Energy prices promote the share of

storage patents while electricity prices hinder it. Citation-adjusted past ...

Energy storage has received much attention to achieve clean energy transitions. Innovation in energy storage has dramatically increased in the last three decades. Using ...

The main countries and regions of patents that accepted gravity energy storage technology patents are shown in Fig. 2(a). The figure clearly illustrates, China is the most ...

The commercialization process of energy storage patents affects the development of the energy storage industry. Clarifying the relationships between the characteristics of the ...

In Gravitricity Ltd"s UK patent GB 2 585 124 B the energy storage system is said to enable a "gravity-based energy storage to have a significantly larger capacity in a single shaft for given capital cost and thus an improved ...

Patent collaborators can identify and utilize their network resources based on the recommendations of this study to improve the efficiency and benefits of patent transfers and ...

Sustainability 2020, 12, 2005 4 of 19 expandable decentralized storage and decentralized communication. The back-end code of most Dapps runs on the decentralized ...

Our focus is on storage technologies that benefit the electricity industry; those widely used in the supply side of electricity market. 7 We review the most common methods of ...

The world is rapidly adopting renewable energy alternatives at a remarkable rate to address the ever-increasing environmental crisis of CO2 emissions....

With this shift, we are seeing that companies within the energy storage sector are safeguarding their R& D efforts by investing heavily in intellectual property, particularly patents. This paper ...

Specifically, we reveal that patent filings in batteries and electricity storage have soared over the past ten years, at an annual growth rate of 14% versus just 3.5% on average i - highlighting a ...

Energy storage is one of the hot points of research in electrical power engineering as it is essential in power systems. It can improve power system stability, shorten energy ...

To address these challenges, energy storage has emerged as a key solution that can provide flexibility and balance to the power system, allowing for higher penetration of ...

Patent transfer is a primary form and important component of technology transfer [12] and enables the

commercialization and dissemination of technology [13].Over 90% of ...

This joint study by the International Energy Agency and European Patent Office underlines the key role that battery innovation is playing in the transition to clean energy ...

Patents play a crucial role in this evolving landscape, helping to protect innovative solutions and drive further advancements. In this article, we will explore the importance of patents in ...

On the agenda for COP29 is the Global Energy Storage and Grids Pledge - a pledge which targets a sixfold increase in global energy storage capacity to 1.5 TW by 2030. As reported by ...

Despite significant research progress, there are still unresolved issues in the existing studies. First, some scholars rely solely on a single patent analysis method to analysis ...

As the roll out of clean energy and electrification accelerates, demand for electric mobility grows and the energy transition advances. The Clean Industrial Deal is one of several ...

Based on panel data of Chinese 101 energy storage enterprises from 2007 to 2022, this paper examines the effectiveness of government subsidies in the energy storage industry ...

Patent analysis is one of the most prevalent methods used to analyze technological innovation. Patents are a good proxy measure for innovation activities--they have been used ...

Therefore, whether to the exploit the cost-effective power battery has a crucial impact on the development of EV industry. The application in EV energy storage technology is ...

The policy direction of the Taiwan government on energy storage can be broadly summarized as working to solve the problem of intermittent renewable energy grid connection ...

The number of patents related to data storage, energy. power, and energy consumption is 47, 46, 44, respectively. ... directions. Therefore, the market gradually ...

This report analyses the worldwide patent landscape for energy and its storage. Energy and its storage encompasses many different technologies, but the current report has ...

The technological composition of the hydrogen energy industry chain is divided into upstream, midstream, and downstream; the upstream industry chain is the infrastructure of the ...

Anticipation and analysis of industry convergence using patent-level indicators Sajad Ashouri1,2 · Anne-Laure Mention1,3,4,5 · Kosmas X. Smyrnios6 Received: 15 October ...

# What are the patent directions of the energy storage industry

To ensure grid reliability, energy storage system (ESS) integration with the grid is essential. Due to continuous variations in electricity consumption, a peak-to-valley fluctuation ...

Patents are an important way to measure the results of cooperative research [6], [7].Currently, China"s energy storage industry has established an extensive patent cooperative ...

The energy sector, which is an indispensable part of our modern life and plays a critical role in the formation and maintenance of great powers in the world economy, has been ...

Web: https://eastcoastpower.co.za