

Are patents filed for energy storage technologies reflected in the data?

Patents filed for energy storage technologies - Our World in Data Figures in recent years are subject to a time lag; submitted patents may not yet be reflected in the data. Figures in recent years are subject to a time lag; submitted patents may not yet be reflected in the data. Our World in Data Articles by topic Latest About Donate All charts

Which companies have the most advanced batteries patent families?

The ten companies with the largest number of advanced batteries patent families are: Samsung SDI(1,224); Panasonic (1,198); Toyota (1,127); LG Chem (1,120); Bosch (786); Hitachi (641); Sony (559); NEC (428); Nissan (405); and Toshiba (391). Nine of these ten companies are based in Asia, with the tenth (Bosch) based in Europe.

What are the most promising battery storage companies in 2024?

Let's have a look at four most promising battery storage companies in 2024. 1. Alpha ESS Company Profile Alpha ESS is a Chinese company operating worldwide since 2012, they are covering both residential and commercial markets with energy storage solutions based on lithium battery technologies.

What are the best energy storage companies in 2024?

Dozens of companies are now offering energy storage solutions. In this article, our energy storage expert has selected the most promising energy storage companies of 2024 and demonstrates how their technologies will contribute to a smart, safe, and carbon-free electricity network. 1. Alpha ESS 2. Romeo Power 3. ESS Inc 4. EOS 1. Enapter 2. LAVO 3.

What are energy technology patents?

Patents provide early indications of technological developments that may transform the economy and drive the energy transition. The H2020 data portal has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 952363. Energy Technology Patents Data Explorer - Data tools.

Which patent families are based on VTO-funded advanced batteries Research?

Many of the patent families in Table 6 are relatively new, and are examples of how VTO-funded advanced batteries research has helped form part of the foundation for recent advances made by leading companies. Samsung SDI has the two patent families at the head of this table (representative patents US #9,979,019 and US #9,368,791).

Abstract: 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. Heat delivery via flowing gas establishes a thermocline which maintains high outlet temperature throughout discharge.

Year-to-year change in primary energy consumption by source. Year-to-year change in primary energy consumption from fossil fuels vs. low-carbon energy. Year-to-year percentage change ...

of patents related to fuel cells, hydrogen production, delivery, and storage resulting from HFTO R& D funding\* o In FY2017 the scope was expanded to include analysis of patent applications resulting from HFTO-funded R& D U.S. Patent data has been tracked from the inception of DOE activities in 1977

Energy Fuel Cell Technologies Office. ... o Private companies have the most applications overall, leading in fuel cell and production & delivery applications o National laboratories have the most storage patents (equal to private companies and universities combined) 0 100 200 300 400 500 600 700 800 900 1000 1100.

In continuation of the article on energy storage technologies dated 05.06.2022 and articles dated 20.06.2022 and 22.12.2022 on CSP tracking systems, below we provide for your consideration a short analysis of patent documents related to solar energy storage systems employing latent heat approach.

The report covers three distinct technologies - fuel cells, hydrogen production, and hydrogen storage. These are considered to be separate technologies. 906 fuel cell patents are confirmed to be associated with HFTO funding (571 U.S. patents, 154 EPO patents, and 181 WIPO patents).

Patent data can help inform governments about their comparative advantage at different stages of a technology's value chain and shed light on innovative companies and institutions that may be in a position to contribute to economic recovery and ...

An energy storage system and method that enables gravity-based energy storage to have a significantly larger capacity in a single shaft for given capital cost and thus an improved cost per unit energy for large scale energy storage as well as enabling continuity of power input and output at an external connection point across the extent of the system's ...

(a) Installed renewable energy generation capacity per nominal power of individual plant in Germany as of December 31, 2012 (data from [12]). It is apparent that small systems contribute ...

With the increasing focus on clean energy and sustainable technologies, patents in areas such as renewable energy, energy storage, and environmental technologies hold significant value. Strategic Considerations for Maximizing Patent Value. To maximize the value of a patent, organizations should consider the following strategies:

Patents indicate Danish stronghold in green energy. Green Power Denmark has - with the help of the Danish

## The company with the most energy storage patents

Patent and Trademark Office - reviewed the green patents that have been published at the European Patent Office (EPO) and the US Patent Office (USPTO). Danish companies have obtained 551 green patents at the European Patent Office in 2021.

CAMPBELL, Calif, January 10, 2024 -- Tigo Energy, Inc. (NASDAQ: TYGO), a leading provider of intelligent solar and energy storage solutions, today announced the expansion of the Company's patent portfolio in rapid shutdown technology with the issuance of U.S. Patent No. 11,855,578. This patent continues Tigo's commitment to significantly increase solar safety by ...

In simple terms, potential licensees tend to be larger companies with active patent filing histories. Most patents were filed after 2008, indicating a readiness to license technology rather than ...

The companies holding the most active AI and machine learning patent families are now tech giant Tencent and search engine provider Baidu, ahead of U.S. firm IBM, South Korea's Samsung, Chinese ...

CAMPBELL, Calif.--(BUSINESS WIRE)--Tigo Energy, Inc. (NASDAQ: TYGO), a leading provider of intelligent solar and energy storage solutions, today announced the expansion of the Company's patent ...

Electricity storage inventions show annual growth of 14% over past decade, joint study by European Patent Office (EPO) and International Energy Agency (IEA) finds Amount ...

Figure 16 - Percentage of Leading Geothermal Energy Company Patent Families Linked via Citations to ... gas exploration, energy storage, materials handling and wastewater treatment. More detailed findings from this report include: o In geothermal energy technology, in the period 1976-2018, we identified a total of 3,408 ...

Similar to Li-ion energy storage technology, Japanese companies (e.g., Panasonic Co., Ltd, Semiconductor Energy Laboratory, and HITACHI) have the majority of patents in Zn-ion energy storage ...

"The company sees a rising tide of latecomers" deliberate and blatant unauthorised use of its patents across a wide range of commercialised products, including batteries for consumer electronics, energy storage systems (ESS), and electric vehicles (EV)," it said today (24 April).

In continuation of the article on energy storage technologies dated 05.06.2022 and articles dated 20.06.2022 and 22.12.2022 on CSP tracking systems, below we provide for your consideration a short analysis of patent ...

A cryogenic energy storage system comprising a liquefaction apparatus for liquefying a gas to form a cryogen, wherein the liquefaction apparatus is controllable to draw power from an external power source to liquefy the gas, a cryogenic storage tank in fluid communication with the liquefaction apparatus for storing cryogen produced by the liquefaction ...

Turbo Energy's Energy Storage Solution. Valencia, Spain, Oct. 18, 2023 (GLOBE NEWSWIRE) -- Turbo Energy, S.A. (Nasdaq: TURB), a Spain-based company specializing in photovoltaic solar energy ...

In recent months, a veritable open patent war has erupted between Tesla Motors and Toyota. Both companies have been widely cited in the industry and financial press for their respective announcements opening up their electric vehicle (Tesla) and fuel cell (Toyota) patents. Tesla CEO Elon Musk opened the first salvo with a blog post last June in which he announced ...

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 &quot;speculative ...

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According to GlobalData's company profile on Enphase Energy, Smart energy mgmt systems was a key innovation area identified from patents. Enphase Energy's grant share as of September 2023 was 47%. Grant share is based on the ratio of number of grants to total number of patents. Ac coupled battery storage system for energy management

To discover the key companies in the field of grid-connected LIB ESS the top 10 inventors and the assignees are presented in Fig. 8. Palo Alto Res ct from Palo Alto Research Centre Inc. has the highest number of patent documents (5). ... Number of patents; Y02E 60/10: Energy storage using batteries: 51: H01M 10/0525: Lithium-ion batteries: 29 ...

Companies Universities Total Storage 95 43 31 169 Production/Delivery 122 214 98 434 Fuel Cell 225 322 106 653 Total 442 579 235 1256 0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 Number of Patents. 10. Types of Organization Receiving Patent Awards. Most number of patent awards: 1. Private companies (lead in fuel cells and ...

Leading UK & North American flow battery firms - redT and Avalon - combine to create a leading global vanadium flow battery company - Invinity Energy Systems. Combined company will be active across all key international energy storage markets: Europe, North America, Asia, Australasia and Africa. Vanadium flow batteries are a form of non ...

With its diverse patent portfolio, future as a public company, and utility scale storage capacities that double New York's 6 hour duration requirement, ESS Tech would be an excellent contender for New York's energy storage initiative. Patent activity leads market activity, and companies with larger and more diverse patents will likely come ...



## The company with the most energy storage patents

With 185 Energy Storage related patents published between 2002 and 2022, Johnson & Johnson holds the most number of Energy Storage patents in the global Packaging sector, of which 35.7% was contributed by its subsidiary Cilag GmbH International.

Types of Organization Receiving Patent Awards. Most number of patent awards: 1. Private companies (lead in fuel cells and production/delivery) 2. National laboratories (lead in storage) 3. Universities (mainly fuel cells and production/delivery) National Laboratories Private Companies Universities Total Storage 80 28 26 134 Production/Delivery ...

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