

GS Battery and EPC Power have developed an energy storage system that utilizes zinc-bromide flow batteries to save fuel on a military microgrid. This report contains the testing results and some limited analysis of performance 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 technologies. It provides global data and analysis based on the international patent families filed in the field of electricity storage since 2000 (over 65 000 in total).

Appendix A. GTO-funded Geothermal Energy Patents used in the Analysis 40 Appendix B. ... An Analysis of the Influence of GTO-funded Geothermal Energy Patents Report prepared by 1790 Analytics LLC Page i ... we identified a further 128 geothermal energy patents (87 U.S. patents, 13 EPO patents and 28 WIPO patents) that are associated with ...

In a collaborative effort between the European Patent Office (EPO) and the International Renewable Energy Agency (IRENA), this patent insight report examines the global evolution of patent filings published between 2005 and 2020 in the domain of electrolyzers used to produce hydrogen. When policymakers and researchers agree on a vision for

Patent protection is key for innovators to transform hydrogen research into market-ready inventions. Patents enable enterprises and universities to reap the rewards of their creativity and hard work. As the patent office for Europe, the EPO provides high-quality patents to protect innovations in up to 44 countries (including all EU member states).

This study by the EPO and IEA is the most comprehensive, global and up-to-date investigation of hydrogen-related patenting so far. It covers technologies for the full range of hydrogen supply, storage, distribution, transformation and end-user applications, as well as introducing new search strategies to compare incremental innovation related to established fossil fuel processes with ...

tency, energy storage solutions capture surplus energy from renewable energy systems (RES) which can be discharged to cover the load in times of RES short-ages or higher market prices. This optimizes the contribution of the local energy system to energy supply and saves costs. Our offering includes: o Assessment of storage applications

Munich, 27 April 2021 - The number of patents for inventions related to low-carbon energy technologies around the world grew by an average rate of 3.3% per year in the 2017-19 period, a new joint study published

today by the European Patent Office (EPO) and the International Energy Agency (IEA) shows. The report, Patents and the energy ...

Patent-based Technology Analysis Report - Alternative Energy FIGURE 45. TOP APPLICANTS FOR WAVE AND TIDAL POWER TECHNOLOGIES..... 86 FIGURE 46. TOP APPLICANTS FOR HYDROGEN AND FUEL CELL TECHNOLOGIES..... 89 FIGURE 47. TOP APPLICANTS FOR CARBON CAPTURE AND STORAGE TECHNOLOGIES..... 91 FIGURE 48.

A successful transition to a clean energy future will be supported by rapid changes in the global economy and in people's patterns of energy consumption, all of which have the potential to sustain healthier societies, more equitable outcomes and a more resilient planet.

The EPO-IRENA study is focused on renewable energy and therefore contributes to UN SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all). Further reading. Patent insight reports. Full report - Innovation trends for electrolyzers in hydrogen production. Excel workbook with search strategies (XLS, 72 MB)

The report, Innovation in batteries and electricity storage - a global analysis based on patent data, shows that batteries account for nearly 90% of all patenting activity in ...

By 2019, pumped hydropower accounted for 91% of the world's installed energy storage capacity, making it by far the most established technology in this area. However, between 2000 and 2018, nearly 90% of electricity storage patents related to battery technologies.

Since its initial launch a year ago, EPO patent examiners and data analysts have compiled almost 70 datasets within this platform, encompassing such diverse technologies as offshore wind energy, smart solar systems, the optimisation of energy storage technologies and solutions for carbon-intensive industries such as steel and cement production.

All in all, this report aims to shed light on how key technological challenges are being addressed via innovation. Using a proven EPO data analysis methodology, this report's findings consider information from roughly 17 000 patents (from the EPO's patent database).

EPC European Patent Convention EPO European Patent Office EV Electric vehicles GHG Greenhouse gas ICT Information and communications technology IEA International Energy Agency IPF International patent families LCE Low-carbon energy LED Light-emitting diode Li-ion Lithium-ion OCGT Open-cycle gas turbine PATSTAT EPO's worldwide patent statistical ...

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 ...

Unlocking the potential of Carbon Capture and Storage (CCS) technologies is becoming a global priority in the fight against climate change. With COP 28 and the EU Green Deal emphasizing decarbonization, the European Commission is gearing up to unveil a ground-breaking Net-zero industrial carbon management strategy. This strategy aims to guide the EU ...

It was the signing of the European Patent Convention (EPC) on 5 October 1973 that helped make many of these technological advances possible. ... is contributing to the huge increase of innovation in energy storage technologies. ..., the International Energy Agency predicts in its latest global Energy Technology Perspectives report that "if all ...

Latest EPO-IEA report is the most comprehensive and up-to-date study of global trends in hydrogen technologies for 2011-2020. Hydrogen production technology patents have massively shifted towards alternative, low-emissions methods such as electrolysis. Patenting related to hydrogen is led by EU (28%) and Japan (24%), while US (20%) is only major ...

2024 2024: The role of European universities in patenting and innovation. The report sheds fresh light on the role of universities as a source of innovation in Europe. By using data on European patent applications to track such transfers across a broad variety of channels over a long period of time, the study provides the first ever comprehensive overview of the role European ...

EPC contracts can be used by utilities to take advantage of preexisting sites that may be well situated for new generations. This is particularly true for battery energy storage, which has a relatively small footprint and can often be developed by utilities on utility-owned land that is immediately adjacent to substations and where such energy ...

Quantum technologies and space. A new patent insight report published in early November reveals the extent of the growth in patent filings for the period 2001-2020 for quantum technologies (QT) related to space for earth observation, navigation and communication.. This report, which was drawn up by the European Patent Office (EPO) and the European Space ...

On Tuesday, the European Patent Office (EPO) and the International Energy Agency (IEA) released a joint study titled "Innovation in batteries and electricity storage - a ...

The number of patents for inventions related to low-carbon energy technologies around the world grew by an average rate of 3.3% per year in the 2017-19 period, a new joint study published today by the European Patent Office (EPO) and the International Energy Agency (IEA) shows. The report, Patents and the energy transition: global trends in ...

2 Worldwide patent analysis 2.1 Overview Table 1 gives a summary of the extracted and cleaned dataset used

for this analysis of energy and its storage. All of the analysis undertaken in this report was performed on this dataset or a subset of this dataset. The worldwide dataset for energy and its storage published between 2004 and

Today, the European Patent Office (EPO) and the International Renewable Energy Agency (IRENA) have published a joint patent insight report on offshore wind energy. The new report, which summarises the results of patent analyses in this field, found that about 17 000 offshore wind energy patent families were published between 2002 and 2022, at an average ...

EPC Agreements for Utility-Scale Battery Projects By Michael Ginsburg The negotiation of an engineering, procurement and construction (EPC) agreement for a battery energy storage systems (BESS) project typically surfaces many of the same contractual risk allocation issues that one encounters in the negotiation of an EPC

To date, with the addition of a new chapter on carbon capture technologies under energy storage, EPO patent examiners and data analysts have compiled almost 70 datasets to support scientists and engineers in accessing patent information containing some of the most advanced technical knowledge on clean energy. See our demonstration video.

A total of 118 geothermal energy patents are confirmed to be associated with GTO funding (95 U.S. patents, 9 EPO patents, and 14 WIPO patents). Geothermal energy research funded by GTO, and by DOE in general, has had a significant influence on subsequent developments, both within and beyond geothermal technology.

The second study between the EPO and the International Energy Agency looks at low-carbon energy technologies across all sectors of the economy, identifies the leading players and highlights the urg Patents and the energy transition - Global trends in clean energy technology innovation | epo

224 hydrogen storage patents are confirmed to be associated with HFTO funding (143 U.S. patents, 37 EPO patents, and 44 WIPO patents). The Influence of Fuel Cell, Hydrogen Production, and Hydrogen Storage Patents Funded by the U.S. Department of Energy's Hydrogen and Fuel Cell Technologies Office and Other DOE Offices.pdf

Innovation in hydrogen is shifting towards low-emission solutions, with Europe and Japan in the lead and the United States losing ground, according to a new joint study of hydrogen technology patents by the European Patent Office (EPO) and the International Energy Agency (IEA). The report uses global patent data to provide a comprehensive, up ...

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