Wind energy storage patent

Do patent statistics reveal technological trends in the offshore wind supply chain?
This patent insight report on innovation trends in the offshore wind supply chain,jointly prepared by the European Patent Office (EPO) and the International Renewable Energy Agency (IRENA),assesses patent statistics to reveal technological trends in the offshore wind industry.

Will offshore wind reach 494 GW and 2 465 GW?
Despite these positive developments,further innovation and action are required by the international community to ensure the global capacity of offshore wind reaches 494 GW and 2 465 GW by 2030 and 2050,respectively,in compliance with IRENA's 1.5 ° C scenario.

How many GW of offshore wind are there in 2022?
According to IRENA statistics,a cumulative 63 GWof offshore wind capacity was installed worldwide as of 2022,and the levelised cost of electricity (LCOE) generated from offshore wind fell by 59% in the period 2010-2022.

Abstract: A micro-power wind-solar hybrid energy harvesting and power generating device including a solar power generation module, a wind power generation ...

Key Patent in Renewable Energy Storage Central energy storage for wind turbines (DE202022000452U1) A wind turbine design that allows the turbine to store excess energy ...

An offshore wind turbine generator system and an energy storage system, relating to the technical field of wind power energy storage. The offshore wind turbine generator system comprises a wind turbine generator system (1), an air compressor set (2), an air expander set (3), a first electric generator (4), and a three-in-one motor (5) which are arranged inside a wind turbine nacelle, ...

Wind energy patents are conventionally defined using Cooperative Patent Classification (CPC) and International Patent Classification (IPC) codes that represent wind motors (F03D) and wind energy (Y02E 10/70). This study examines whether these codes sufficiently represent the wind energy patent domain. Using a combination of keywords and ...

There are three patented wind energy storage systems using potential mechanical energy, one onshore with a registered patent, one offshore with a patent issued and one located in the ...

the adjusting the reference output power for the energy storage system based on a change in predicted wind power output at the next time point may comprise any one of: increasing the reference output power for the energy storage system if an increase in the predicted wind power output is larger than a predetermined increase threshold; and decreasing the reference output ...

the advantages for the energy storage system in a dual-use platform are also significant versus stand-alone energy-storage concepts, as there are a number of capital-intensive infrastructure pieces that the energy-storage system is sharing with the wave or wind or other energy-conversion system, which reduce the overall Cost of Electricity for ...

Apple files wind energy storage patent Energy Storage - Factor This(TM) ... Apple files wind energy storage patent. January 5, 2014. Clarion Energy Content Directors. 1 min read.

6. On-site energy storage and hydrogen production to balance power systems and create additional value. There is a growing focus on flexible energy systems to counter the variability of renewable technologies. Patent data in offshore wind energy technologies also show a growing interest in energy storage options,

The rated line voltage 690V because direct-drive wind power generation convertor gets access to grid, all can utilize line voltage that electric capacity is charged when usually considering the precharge problem of storage capacitor, existing current transformer storage capacitor precharge scheme is the two-phase line voltage to be carried out rectification electric capacity is charged, ...

Search within the title, abstract, claims, or full patent document: You can restrict your search to a specific field using field names.. Use TI= to search in the title, AB= for the abstract, CL= for the claims, or TAC= for all three. For example, TI=(safety belt). Search by Cooperative Patent Classifications (CPCs): These are commonly used to represent ideas in place of keywords, ...

Innovation in renewable energy and decarbonisation-related fields has exploded, with patenting activity at the European Patent Office in low-carbon energy (LCE) technologies overtaking that in fossil fuels around the year 2000. Renewable energy includes solar and wind energy, as well as marine, hydro and geothermal energy.

In megawatt wind turbines, the generator, gearbox, and control converter produce massive amounts of heat (Yuan, 2008). The excess heat from wind farms has a relatively low temperature ...

There is described an energy storage system (300, 310) for storing energy in connection with a renewable energy generating facility (100). The energy storage system (300, 310) is operable to employ one or more of: (a) compressed air energy storage apparatus (300, 310) for storing energy generated by the energy generating facility (100), the stored energy ...

FLASC was developed during Buhagiar"s PhD in offshore wind, hydraulic transmission and energy storage at the University of Malta. The university recognised the ...

Janssen, W. Wind Energy Turbine. Patent US7168251, 2007. [Google Scholar] Bellac, A.H. Wind powered electricity generating system including wind energy storage. Patent US5384489, 1995. [Google Scholar] ...

FLASC was developed during Buhagiar"s PhD in offshore wind, hydraulic transmission and energy storage at the University of Malta. The university recognised the potential of the work and encouraged the inventors to patent their invention, providing support throughout the process.

an existing wind farm system may be retrofitted with the present compression assembly 100 and the retrofitted compression assembly may: a) provide compressed gas to the same energy storage assembly or assemblies as a new wind turbine system (i.e. both old and new turbines harvest wind energy for the same energy storage assembly), b) provide compressed gas to its ...

Key Patent in Renewable Energy Storage Central energy storage for wind turbines (DE202022000452U1) A wind turbine design that allows the turbine to store excess energy directly in its own structure, rather than needing external storage. The turbine stores energy by raising a weight using a winch or hydraulic system, or by compressing air.

An embodiment of an apparatus in accordance with the present invention comprises an energy storage system comprising a wind turbine, a gas compressor configured ...

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A system (1) for harvesting wind energy from passing vehicles (2), storing the energy and using the energy to generate electricity. The thrust of wind from passing vehicles (2) is...

The precision rate from WEDD1 to WEDD3 reduced slightly from 98% to 97%, indicating that a few non-wind energy patents are being included in the domain definition, but the estimated recall rate increased from 86% to 92%, indicating that we are missing fewer wind energy related patents. The following subsections go through this process in detail.

Dramatic cost declines in solar and wind technologies, and now energy storage, ... measuring policy-induced innovation using patent data. Appl. Energy 179, 1351-1359 (2016).

As a leader in renewable energy investment, China"s wind energy industry (WEI) has received extensive academic attention [[5], [6], [7]].Currently, risk and uncertainty are the main issues faced while investing in the electricity market; however, diversified investments combining hydro and wind energy decrease risk and increase the reliability of the power supply [8].

Number of patents; Y02E 60/10: Energy storage using batteries: 51: H01M 10/0525: Lithium-ion batteries: 29: H01M 10/052: Li-accumulators: 25: Y02E 70/30: Systems that combine energy storage with non-fossil energy generation: 20: ... Jan Frank invented a translationally transportable wind power plant consisting of a WT, ...

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A wind-powered system for charging batteries in an electric vehicle when the vehicle is moving at insufficient speed for a turbine to drive the generator or when the wind is insufficient to rotate the turbine. The turbine rotates about a horizontal axis and is rotatably engaged with flywheels, wherein the flywheels store mechanical energy while the vehicle is moving at a high speed.

The portable solar and wind-powered energy generating system provides an ecologically friendly, portable system for generating electricity. The system includes a portable enclosure having a roof, along with first and second solar modules. The first solar module is mounted on the roof of the portable enclosure. A portable vertical support is removably positioned adjacent the portable ...

The share of renewable energy technologies, particularly wind energy, in electricity generation, is significantly increasing [1].According to the 2022 Global Wind Energy Council report, the global wind power capacity has witnessed remarkable growth in recent years, rising from 24 GW in 2001 to 837 GW in 2021.

In view of this, the present invention provides an offshore wind turbine generator set and energy storage system to solve at least one of the following technical problems: the offshore wind...

A joint study published today by the International Renewable Energy Agency (IRENA) and the European Patent Office (EPO) assesses patent statistics to reveal the most recent technological trends that have been taking ...

These patents protect novel technologies in areas like solar power, wind energy, hydrogen fuel cells, energy storage systems, smart grids, biofuels, and electric vehicles (EVs). Securing a patent in clean energy provides market exclusivity, prevents competitors from copying innovations, and allows patent holders to license their technologies ...

Web: https://eastcoastpower.co.za

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