Wind energy storage patent

How do wind energy patents work?
Methodology for wind energy application can be generalized for patent searching to target other technology domains. 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).

How many patents are used in a wind energy application?
The number of patents used in all four samples on the wind energy application are outlined in Table C1. The sample size used for Sample 2 (Keyword Set - WEDD1) is 257, which is between 5 and 10% margin of error.

How many patents are related to wind turbine technology?
It was found that 10%were related to manufacturing,load testing,or material advancements in wind turbine blade technologies,8% of patents were related to vibration and fault detection for diagnostic testing,5% of patents were related to hybrid charging stations with battery storage,and 4% were related to offshore wind construction.

Who reviewed wind energy patents?
The wind energy experts who reviewed the patents in this study are UMass Wind Energy Fellows,who are PhD Candidates at the University of Massachusetts Amherst. The patent reviewers were selected on a volunteer basis. Two of the four patent reviewers suggested keywords for this study after they completed the patent review process.

Can wind energy patents be retrieved using conventional codes?
Patents retrieved using conventional codes for wind energy underrepresent patents from Chinaand published since 2010. Methodology for wind energy application can be generalized for patent searching to target other technology domains.

What is the population proportion of a wind energy patent?
For the application to wind energy in Section 3,the population proportion (P) is assumed to be 50%since determining whether a patent is related or unrelated to the technology in question is a binary outcome. This assumption also results in the largest sample size for the population. The margin of error is then tested at 5% and 10%.

? Patenting offshore wind and energy storage, is it all plain sailing? Patent Attorneys Lawrence Paleschi and Gabriel Bracken look at patent protection for offshore wind and energy storage in ...

At Carpmaels, our multi-disciplinary Energy team is well-placed to advise on these matters and can assist in gaining broad and enforceable protection for offshore wind turbines and energy ...

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Wind turbines can be thought of as two distinctly different resources which operate at the same rotational speed: a wind turbine and a flywheel storage device. The ability to access energy ...

Colocating wind and solar generation with battery energy storage is a concept garnering much attention lately. An integrated wind, solar, and energy storage (IWSES) plant ...

The above-mentioned wind turbine and method of controlling the current flow to and from the battery storage of an energy generator is advantageous over traditional ...

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

A system for increasing power capture comprising a turbine having a rotor, a generator having a rated power limit, and an energy storage system, wherein the rotor generates a super-rated ...

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).

Executive Summary This report provides a synthesis of a series of recent patent analyses carried out for the Office of Energy Efficiency & Renewable Energy (EERE) in the U.S. Department of ...

In this way, commercially valuable IP can still be obtained for offshore wind turbines and co-located energy storage innovations. At Carpmaels, our multi-disciplinary Energy team is well ...

IP and patent managers use IntelStor(TM) to present industry and competitor technology innovation trends to their top management. IntelStor(TM) has over ...

The literature review presented significant findings and scientific facts regarding building energy systems. It highlighted the potential of renewable energy integration in reducing greenhouse ...

Using a combination of keywords and classification codes identified through expert input and manual review, we construct an expanded domain with a 7.5% increase in ...

According to reports, California-based computing technology giant Apple Inc. has filed patents that involve a kind of on-demand wind energy storage system ...

An improved wind turbine device with energy storage comprises a turbine rotor with rotatable vertical shaft, at least one bearing for said vertical shaft, and multiple rotor vanes disposed ...

The Italian regulatory framework concerning energy storage facilities has been evolving rapidly in recent

years. However, the legislation is relatively fragmented, given the high. Contact online ...

The wind generator system comprises a drive shaft; one or more retreating blades and one or more advancing blades attached to the drive shaft and extending radially outwardly therefrom; ...

These patents cover inventions related to ofshore wind energy, including key technology concept groupings such as: fixed and floating foundations, towers, mechanical power transmission, ...

Description Field of invention [0001] The present invention relates to energy gener-ation and energy storage in wind turbines from a source other than the wind.

The Italian regulatory framework concerning energy storage facilities has been evolving rapidly in recent years. However, the legislation is relatively fragmented, given the ...

The present invention is directed toward the use of stored inertial energy within a wind turbine for the provision of ancillary grid services, and more particularly directed to the combined use of ...

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 ...

The results of patent analysis show that more and more new renewable energy generation systems based on gravity energy storage sys-tems have emerged in recent years. The most ...

Clean energy sources like wind and solar have a huge potential to lessen reliance on fossil fuels. Due to the stochastic nature of various energy sour...

Canadian patent 2,643,380 was issued March 22, 2011 for a method to store variable wind and solar power as heat in heavy oil formations, including oil sands and oil shale, and assigned to ...

Energy storage is maintained until such time as it is need and then converted from potential mechanical energy to electricity by gravitational forces. By storing energy, one can supplement ...

Green Heat, Magaldi among the Italian Renewable The solutions of the Magaldi Group are confirmed as key players in the "100 Italian Renewable Energy Stories" Report the Report ...

A system for reversible storage of energy, the system comprising: means for generating energy; first conversion means for converting the energy into stored energy by means of low ratio (3.2:1 ...

As wind changes velocity over the area of the wind farm and interacts with individual windmills over varying time periods, and/or turbulent wind flow is created by passing weather systems, ...

Wind energy storage patent

The rapidly growing state of energy consumption and the urgency of mitigating the harmful effects of climate change have accelerated our transition to renewable energy. This ...

The Darrieus wind turbine has been widely used in urban environments where space is limited, and has helped to expand the reach of wind energy as a viable alternative to ...

U.S. Pat. Nos. 4,204,126 and 4,206,608 disclose sys tems for storing wind energy with hydraulic fluid in pressure tanks ("608 patent) and columns (126 patent). A disadvantage of pressure tank ...

A system for harvesting, storing, and generating energy, that includes floating structure supporting machinery to extract energy from wind, waves, surface generators, or currents. At least one ...

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