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Patent Search

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Abstract:

This turbine is designed on future emerging technologies within the wind energy sector considering their potential, challenges, applications and technology readiness they might evolve in the coming years. These technologies were identified as originating primarily from the academic sector, some startup companies and a few large entities. The following areas were considered: airborne wind energy, offshore floating concepts, smart rotors, wind-induced energy harvesting devices, blade tip-mou unconventional power transmission systems, multi-rotor turbines, alternative support structures, modular high voltage direct current generators, innovative blade m techniques, diffuser-augmented turbines and small turbine technologies. The future role of advanced multiscale modelling and data availability is also considered. Tr design has highlighted that more research will be required to realise many of these emerging technologies. However, there is a need to identify synergies between fu and industrial research by correctly targeting public and private funding in these emerging technology areas as industrial development may outpace more fundamen faster than anticipated.

Complete Specification

Description: The future development of wind power presents a significant opportunity in terms of providing low carbon energy. It also presents several challenges. It needs to be cost competitive compared with the use of fossil fuels and other competitor renewable energy sources, most notably solar photovoltaics. The expectation now is that developments should be subsidy-free. The wind turbines of today have seen rapid developments in their underlying technology in order to increase their competitiveness. Nevertheless, we can expect further developments in the next few years and it is instructive to consider potential future directions. This design based on future emerging technologies (FETs) in the wind power sector is based on the opinion of Indian experts from a range of relevant technology areas. Although the technologies need not be considered exclusive to Europe, the review draws heavily on the European experience, particularly European projects. A large number of the FETs identified originate from academic work within universities and research institutes. Some of the technologies identified are being developed by university spin-outs or start-up companies. A few areas

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