

Title (en)
WIND ENERGY EXTRACTION SYSTEM

Title (de)
WINDENERGIEGEWINNUNGSSYSTEM

Title (fr)
SYSTEME D'EXTRACTION D'ENERGIE EOLIENNE

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Abstract (en)
[origin: WO2006007696A1] A habitat friendly, pressure conversion, wind energy extraction system is disclosed for safely extracting usable energy from wind. The invention includes one or more shrouds or concentrator wings that convert the dynamic pressure of wind into relatively lower static pressure and thereby induces a vacuum that draws wind into a turbine centralized within the shrouds or concentrator wings. As such, the turbine impellor blades may be significantly smaller than the large diameter rotor blades of current popular designs and may be enclosed within the shrouds or concentrator wings that present themselves as highly visible objects and as such are easily avoided by birds in flight. The invention in particular includes a device and method of airflow regulation that minimizes or prevents the stalling, or the generation of a turbulent flow of wind over or between the shrouds or concentrator wings of the invention. This stalling has been shown to occur when airflow is quickly accelerated by force of vacuum and drawn out of the turbine shroud which then mixes with and disturbs the otherwise smooth flow of wind over or between the shrouds or concentrator wings. The system may also include an aerobrake that responds quickly to protect the impellor blades or associated mechanisms from overspeeding or exceeding other design limitations under gusting or violent wind conditions. The invention may also include several other novel features such as power converters for extending the impellor or impellers into the free flowing accelerated wind, an aerobrake to protect the impellor from overspeeding, and two novel forms of intowind guidance systems. Other advantages and objects are as well disclosed that increase safety and wind energy extraction efficiency and allow the invention to be effectively installed within urban settings.

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