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Collection, treatment and disposal of waste fibre composite materials from wind turbines

风能发电系统 风力发电机组废弃纤维复合材料回收方法

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1.Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee for Standardization of Wind Power Generation (SAC/TC50). This document was drafted by: China Quality Certification Center Co., Ltd., Beijing Goldwind Huineng Technology Co., Ltd., Shanghai Electric Wind Power Group Co., Ltd. Co., Ltd., Zhuzhou Times New Materials Technology Co., Ltd., CGN Environmental Technology (Shenzhen) Co., Ltd., Chinese Academy of Sciences Guangzhou Energy Research Institute, CRRC Shandong Wind Power Co., Ltd., Jiangsu Coastal Renewable Energy Technology Innovation Center, Jiangsu Goldwind Technology Co., Ltd., China Material Recycling Association, Hohhot Branch of China Academy of Agricultural Mechanization Sciences Co., Ltd., Three Gorges New Energy Offshore Wind Power Operation and Maintenance Jiangsu Co., Ltd., Shanghai Electric Power Industry Co., Ltd., China Huaneng Group Clean Energy Technology Research Institute Co., Ltd., CRRC Zhuzhou Electric Locomotive Research Institute Co., Ltd. Wind Power Division of the Institute of Technology, Siemens Gamesa Renewable Energy Technology (China) Co., Ltd., Shanghai Electric Group Co., Ltd. Central Research Institute, Mingyang Smart Energy Group Co., Ltd., Windey Energy Technology Group Co., Ltd., Sinovel Wind Power Technology (Group) Co., Ltd. Co., Ltd., Beijing Boyirui Technology Co., Ltd., Shanghai Second Polytechnic University, Yancheng Quality and Technical Supervision Comprehensive Inspection and Testing Center, Beijing Jianheng Certification Center Co.,

Ltd., Hunan Xinglan Wind Power Co., Ltd., Guoneng Longyuan Environmental Protection Co., Ltd., Guodian United Power Technology Co., Ltd., Sinoma Wind Blade Co., Ltd. The main drafters of this document are. Kang Wei, Li Fu, Yue Jian, Zhao Dawen, Feng Xuebin, Bai Bing, Yuan Haoran, Jiang Dong, Zhu Xin, Li Lishan, Cheng Gangqi, Tian Dong, Wuyun Gaowa, Wang Hui, Zhang Zhiwei, Li Yuan, Yao Hui, Dong Guoqing, Li Yue, Sun Jun, Sun Ying, Ji Lingyun, Li Jihui, Zhou Xiaoliang, Liu Xuefei, Zhang Shuli, Zhang Chenglong, Sun Tongjin, Zhang Jinfeng, Wang Qi, Hou Bo, Li Peixin, and Li Chengliang. Wind power generation system wind turbine waste fiber Composite material recycling methods

1 Scope

China's national standard for the collection, treatment and disposal of waste fibre composite material from wind turbines. Wind turbine blades are the industry's unsolved waste problem. They are thermoset composite - glass or carbon fibre in cured epoxy or polyester, bonded with balsa or foam - which cannot be melted and reformed, and they are made deliberately durable and enormous, so a decommissioned blade is 50 or 80 metres of material that must be cut up where it lies before it can be moved at all. The first large Chinese wind fleet is now reaching the end of its design life, and the volume arriving is substantial. The routes available - mechanical grinding into filler, cement kiln co-processing that uses both the resin's energy and the glass as raw material, and pyrolysis to recover fibre - all have limits. The standard covers blades, nacelles, fairings and composite items discarded at any stage from production to decommissioning.

This document describes the collection, treatment and disposal of waste fibre composite materials from wind turbines. This document applies to wind turbine blades, nacelles, fairings and other fiber-optic products discarded during production, testing, transportation, use and decommissioning. Recycling of fiber composite products.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB 8978 Comprehensive sewage discharge standard

GB 12348 Environmental noise emission standard for industrial enterprises

GB 16297 Comprehensive Emission Standard of Air Pollutants

GB 18599 General Industrial Solid Waste Storage and Landfill Pollution Control Standard

GB/T 19001 Quality Management System Requirements

GB/T 20861 Terminology for recycling of waste products

GB/T 23331 Energy Management System Requirements and Usage Guide

GB/T 24001 Environmental Management System Requirements and Usage Guide

GB/T 36132 General principles for green factory evaluation

GB/T 45001 Occupational health and safety management system requirements and usage guidelines

HJ1091 Technical Guidelines for Pollution Prevention and Control in Solid Waste Recycling

3 Terms and definitions

The terms and definitions defined in GB/T 20861 and the following apply to this document.

3.1 Recycle Dispose of waste by physical, chemical or other methods and obtain materials that meet the use requirements of raw materials or are used for other purposes process.

3.2 disassembly The activity of disassembling and breaking up waste by manual or mechanical means to facilitate sorting, storage and transportation.

3.3 Treatment Activities to decontaminate, disassemble and crush collected materials to facilitate subsequent disposal.