

HEAG
华仪风能

华仪风能有限公司
HUAYI WIND ENERGY CO., LTD.

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PIONEERING
NEW ENERGY
CREATING
NEW LIFE
开拓新能源 创造新生活



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公司简介

COMPANY INTRODUCTION

PIONEERING
NEW ENERGY
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华仪风能有限公司成立于2002年，公司注册资本金9亿6千万元人民币。主要从事：风力发电系统、风力发电机组及零部件的开发、制造、销售和服务；风资源测量与评估；风电场开发、建设及风电场项目工程总承包；风电场建设运营业务的技术咨询服务。

华仪风能秉承“开拓新能源，创造新生活”的企业使命，公司现已建成乐清管理中心、上海风力发电机组研发中心和北京风电销售中心“三大中心”；打造完成乐清华仪工业园、吉林通榆华仪工业园、上海临港华仪工业园、宁夏平罗华仪工业园、黑龙江牡丹江华仪工业园“五大制造基地”（新疆吐鲁番华仪工业园正在筹建当中）。

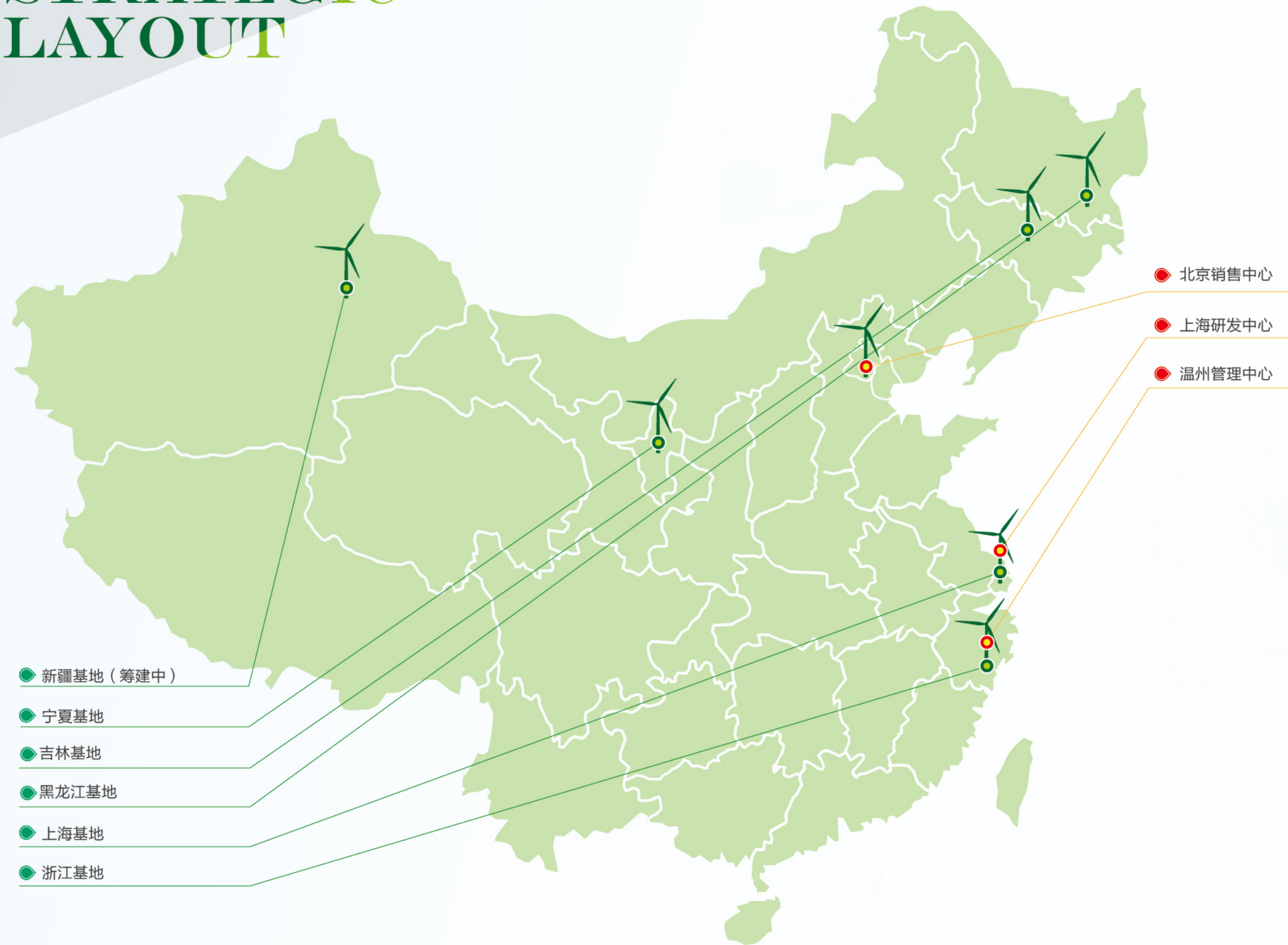
目前公司已批量生产HW1（780kW）、HW2（1500/2000kW）和HW3（2500/3000kW）系列产品，且正与荷兰MECAL公司合作，共同设计开发HW6（5000/6000kW）系列大型海上风力发电机组。2007年华仪独立研发的HW1系列机组出口智利并顺利运行，使华仪风能成为中国第一家大型机组整机出口企业。近年来，华仪风能生产的风力发电机组设备在广东、浙江、山东、山西、吉林、内蒙、宁夏等地运行良好，并出口智利、白俄罗斯、哈萨克斯坦等地，受到用户的肯定和好评。

Huayi Wind Energy Co., Ltd. is established in 2002, the company registered capital is 960 million. Huayi Wind Energy primarily engages in development, manufacture, sales and service of wind power system, wind turbine generator system and parts, wind resources measurement and evaluation, development, construction and project operation of wind farm, service of technique consulting for wind farm construction and operation.

Huayi Wind Energy Co., Ltd. adhere to the "Pioneering New Energy, Creating New Life" as the enterprise mission. Now it has established Yueqing Management Center, Shanghai WTG R&D Center and Beijing Wind Power Marketing Center as three centers, also established Yueqing Huayi industrial park, Tongyu Huayi industrial park of Jilin, Lingang Huayi industrial park of Shanghai, Pingluo Huayi industrial park of Ningxia and Mudanjiang Huayi industrial park of Heilongjiang as five manufacture bases (Tulufan Huayi industrial park of Xinjiang in the preparation).

Huayi Wind Energy has series production of HW1 (780kW), HW2 (1500/2000kW) and HW3 (2500/3000kW). At present, Huayi and MECAL are jointly developing the HW6 (5000/6000kW) for offshore WTGS. HW1 was developed independently by Huayi and exported to Chile in 2007, made Huayi Wind Energy became the first domestic large units export enterprise. Recently, the wind turbine equipment of Huayi run well in Guangdong, Zhejiang, Shandong, Shanxi, Jilin, Inner Mongolia, Ningxia, and were exported to Chile, Belarus, Kazakhstan and etc., which gain good recognitions and praises from users.

STRATEGIC LAYOUT



- 新疆基地 (筹建中)
- 宁夏基地
- 吉林基地
- 黑龙江基地
- 上海基地
- 浙江基地

- 北京销售中心
- 上海研发中心
- 温州管理中心

温州管理中心
 成立于2002, 位于乐清华仪工业园。集企业管理中心和风力发电机组制造为一体的总部基地。
Huayi Wind Energy Co.,Ltd.
 Established in 2002, Huayi Wind Energy located at Yueqing Huaying Industry Park, being the headquarter of corporation management center and manufacturing base.

上海研发中心
 华仪风能全资子公司, 设立华仪风能研发中心, 是海上大型风力发电机组及海外出口设备的制造基地。
Shanghai Huayi Wind Energy & Electric Co., Ltd.
 Huayi Wind Energy wholly owned subsidiary, Huayi Wind Energy R&D center, offshore wind turbine manufacturing and equipment export base.

北京销售中心
 华仪风能全资子公司, 专业的风力发电系统服务供应商, 为客户提供风电场建设前期, 中期, 后期一站式综合服务解决方案。
Beijing Huashi New Energy & Engineering Co., Ltd.
 Huayi Wind Energy wholly owned subsidiary, the supplier of special wind power generation system service, provides the integrated services and solutions to each stage of the wind farm construction for users.

吉林基地--通榆华仪工业园
 占地面积: 180亩
Jilin Manufacturing Base - Tongyu Huayi Industrial Park
 Area cover: 180 acres

上海基地--上海临港华仪工业园, 海上、海外多兆瓦级风力发电机组制造基地
 占地面积: 一期100亩; 二期300亩
Shanghai Manufacturing Base - Shanghai LinGang Huayi Industrial Park, the offshore and multi-megawatt class wind turbine manufacturing base.
 Area cover: Phase I-100 acres; Phase II-300 acres

宁夏基地--平罗华仪工业园
 占地面积: 一期100亩; 二期100亩
Ningxia Manufacturing Base - Pingluo Huayi Industrial Park
 Area cover: Phase I-100 acres; Phase II-100 acres

浙江基地--乐清华仪工业园, 打造风力发电机组制造产业链
 占地面积: 一期80亩; 二期500亩
Zhejiang Manufacturing Base - Yueqing Huayi Industrial Park, wind turbine manufacturing chain.
 Area cover: Phase I-80 acres; Phase II-500 acres

黑龙江基地--牡丹江华仪工业园
 占地面积: 一期150亩
Heilongjiang Manufacturing Base - Mudanjiang Huayi Industrial Park
 Area cover: Phase I-150 acres

新疆基地 (筹建中) --吐鲁番华仪工业园
 占地面积: 一期105亩
Xinjiang Manufacturing Base (In the Preparation)-Tulufan Huayi Industrial Park
 Area cover: 105 acres

DEVELOPMENT HISTORY

华仪风能自2002年成立至今，先后与德国AERODYN，荷兰MECAL，英国GH等公司建立良好的战略合作关系。华仪风能每年对新产品、新技术领域持续高投入，坚持走引进技术和自主研发相结合的道路，不断加强科技创新、提升自创能力，力争成为中国风电行业的领军企业。

After Huayi Wind Energy was formally founded in 2002, it has established strategically cooperative relations with Aerodyn (Germany), MECAL (the Netherlands) and GH (England). Every year Huayi Wind Energy continues high investment in new product and technology, sticks to the road combining independent research and development with introduction of technology, and continuously enhances independent innovation ability, so as to strive to be the leader in wind power industry in China.

2003年

开始全国各地的风资源调查，同时生产600kW和750kW风力发电机组
Started to research wind resource many parts in China, and began manufacturing of 600kW and 750kW turbines.

2002年

成立华仪风能有限公司，进军风电行业
Huayi Wind Energy was formally founded, entered the wind industry.

2004年

投资建设洞头风电场，投资1.2亿元
Invested in building Dongtou wind farm (120 million RMB).

2005年

首次提出“以资源换市场”的经营策略，以风电场开发为突破口
Brought forward operational strategy of "Exchange Nature Resources for Market Share" firstly, and Wind Farm Development would be the breakthrough.

2006年

自主成功研发780kW风力发电机组，并批量下线运行
780kW wind turbine was independently developed and batch rolled off the production run.

2007年

780kW机组出口智利，成为中国首家大型风力发电机组整机出口企业
780kW wind turbine exported to Chile, became the first Chinese enterprise exporting complete set of wind turbines.

2008年

引进德国艾罗迪技术，联合开发1.5MW风力发电机组，并在全国多个风场成功并网运行
Introduced the technology of Aerodyn (German) and jointly developed 1.5MW wind turbine, and which have been successfully operated and combined to the grid.

2010年

1.5MW机组出口智利及白俄罗斯
1.5MW wind turbine exported to Chile and Belarus.

2011年

780kW机组出口哈萨克斯坦，完成2.5MW/3.0MW风力发电机组的研发，实现运行且成功并网
与荷兰MECAL联合开发的6.0MW海上风力发电机组项目正式启动
780kW wind turbine exported to Kazakhstan. 2.5MW/3.0MW wind turbine were successfully developed and combined to the grid. Starting cooperation with MECAL, 6.0MW wind turbine was jointly developed.

2012年

取得低电压穿越认证报告和电能质量认证报告
完成1.5MW低风速和高海拔两款风力发电机组的研发
Obtaining the Low voltage ride-through certification report and the Electric energy quality certification report. Two types of 1.5MW turbine applied for low wind speed and high altitude were successfully developed.

2013年

完成2.0MW风力发电机组的研发，试制，安装，调试，并实现并网
1.5MW低风速和高海拔两款风力发电机组实现运行且成功并网
2.0MW wind turbine was successfully developed, trial-produced, installed, debugged and combined to the grid. Two types of 1.5MW turbine applied for low wind speed and high altitude were combined to the grid.

SERVICE SYSTEM

项目前期

PRE PROJECT

经济性分析

Economic Analysis

风资评估

Wind Resources Assessment

机组选型

Turbine Selection

微观选址

Mirco-sitting Selection



项目执行

PROJECT EXECUTION

技术培训

Technical Training

零部件监造

Parts & Components Manufacture

Supervision

风机安装技术指导

Technical Guidance for Turbine Installation

调试试运行

Debugging & Test Run



质保期后

AFTER-WARRANTY PERIOD

备件供应

Spare Parts Suppliment

维护维修

Maintenance & Repair

运行评估

Operational Assessment

技术改善

Technology Improvement



质保期内

IN-WARRANTY PERIOD

运维管理

Operations management

故障处理

Fault Handling

数据分析

Data Analysis

技术优化

Technology Optimization



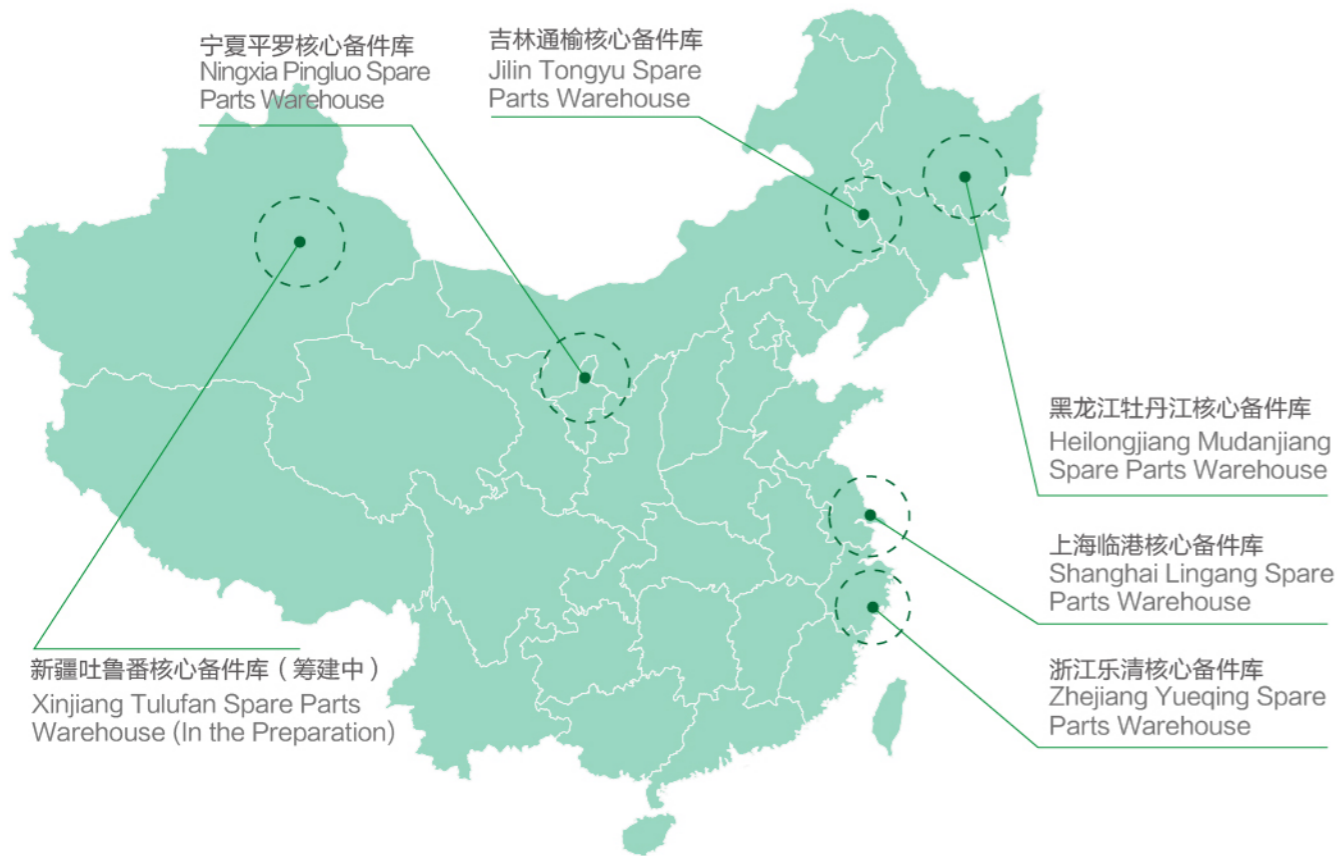
服务理念

SERVICE CONCEPT

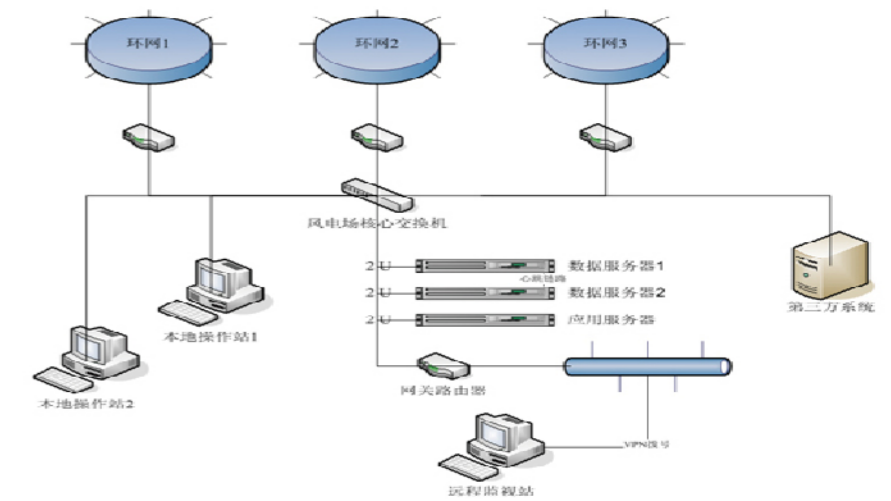
高素质的服务团队 High Qualified Service Time



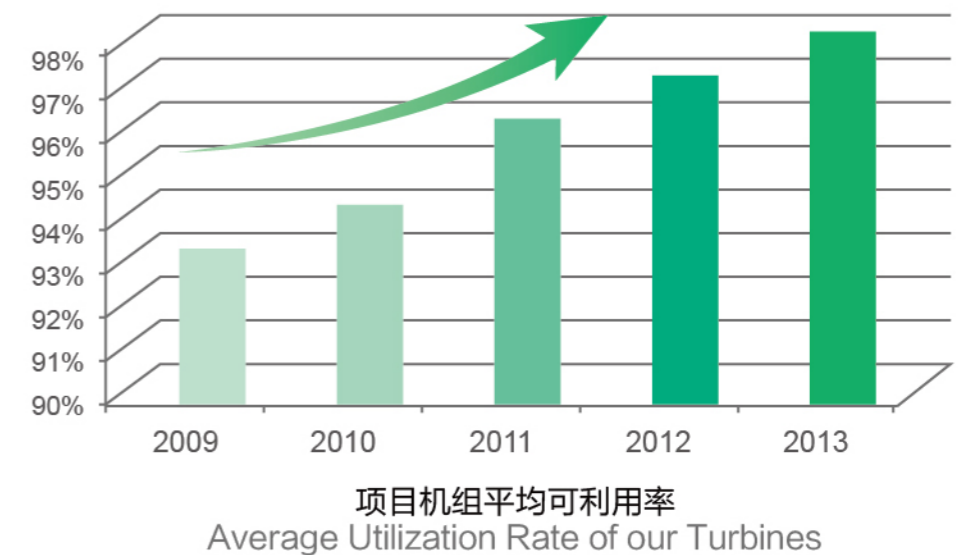
完整的备件网络 Complete Spare Parts Network



便捷的远程管理中心 Convenient Remote Management Center



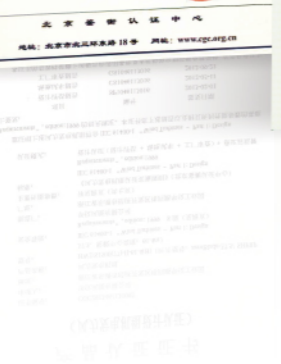
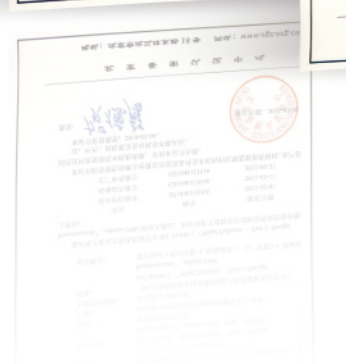
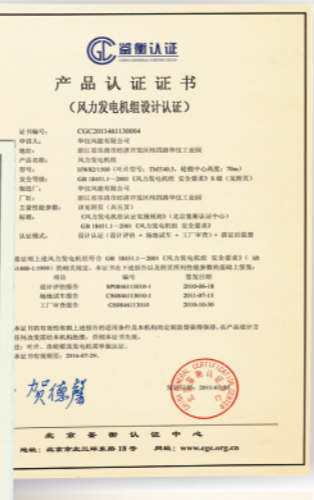
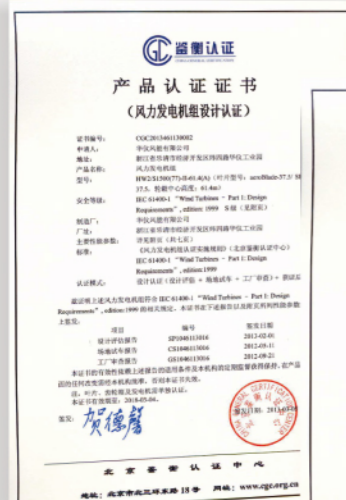
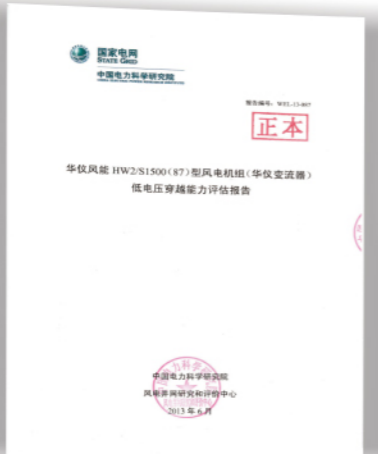
持续改进的产品质量 Continuously Improved Quality of the Products



资质证书

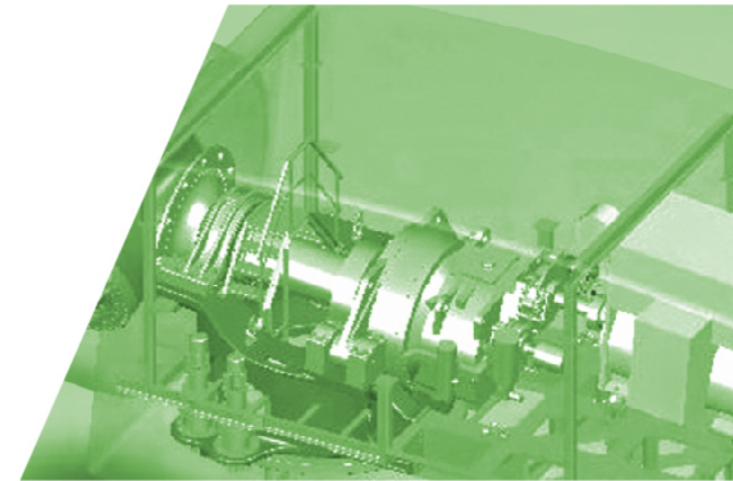
CERTIFICATES

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产品系列

PRODUCTS SERIES



- 常温型机组
Normal climate applications
- 低温型机组
Cold climate applications
- 抗台风型机组
Typhoon-resistant applications
- 低风速型机组
Low wind speed applications
- 超低风速型机组
Ultral low wind speed applications
- 高海拔型机组
High-altitude applications

Widely Designed for Different Applications:

HW1	HW2	HW3	HW6
HW1/S780 (50) IEC IA 抗台风型	HW2/S1500 (77) IEC IIA+ 抗台风型	HW3/S2500 (97) IEC IIA+ 抗台风型	HW6/S6000 (152) IEC IIB
	HW2/S1500 (82) IEC IIIB低温型	HW3/S2500 (103) IEC IIIA	
	HW2/S1500 (87) IEC IIIB低风速型 IEC IVA高海拔型	HW3/S2500 (110) IEC IIIB 低风速型	
	HW2/S1500(92) IEC IIIB 超低风速型	HW3/S2500 (121)	
	HW2/S2000(110) IEC S 低风速型	HW3/S3000 (103)	
	HW2/S2000(103) IEC IIIB		

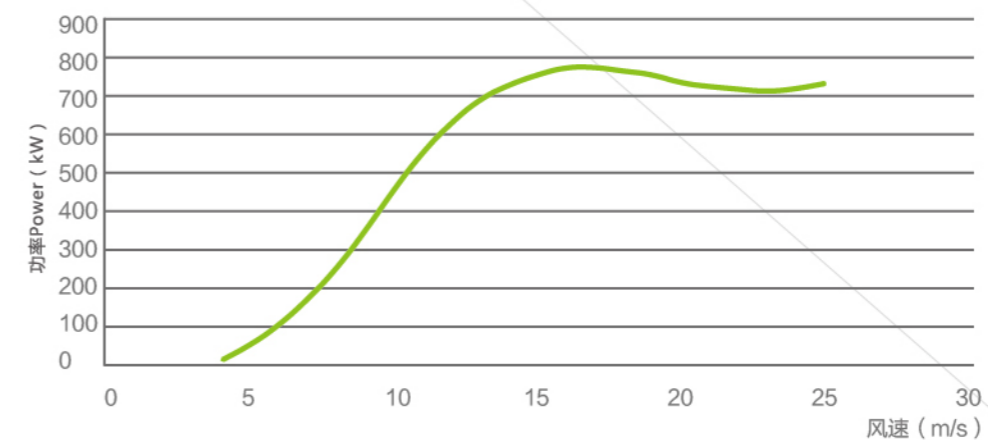
TECHNICAL DATA

HW1 series HW1系列

型号	HW1/S780(50)
Class安全等级	IEC IA
OPERATING DATA运行参数	
Cut-in wind speed切入风速	3.5 m/s
Rated wind speed额定风速	14 m/s
	($\rho = 1.225\text{kg/m}^3$)
Cut-out wind speed切出风速	25 m/s
Rated power额定功率	780kW
COMPONENT DATA部件参数	
Number of blades 叶片数量	3
Orientation 结构形式	Upwind上风向
Diameter 风轮直径	50 m
Power regulation 功率调整方式	Stall失速
DRIVE TRAIN 传动系统	
	3 stage gear box (1 planetary and 2 parallel axes)
Gearbox 齿轮箱	3级传动齿轮箱 (一级行星和两级平行轴)
GENERATOR 发电机	
Type 类型	Asynchronous generator 异步电机
Rated power 额定功率	780kW
Frequency 频率	50Hz
Voltage 电压	690V
Type 类型	Tubular steel tower圆锥钢塔
Hub height 轮毂高度	50 m
WEIGHT 重量	
Rotor (hub and blades) 风轮 (含轮毂和叶片)	15.5 t
Nacelle without rotor 机舱 (不含风轮)	24 t
Tower 塔架	49 t



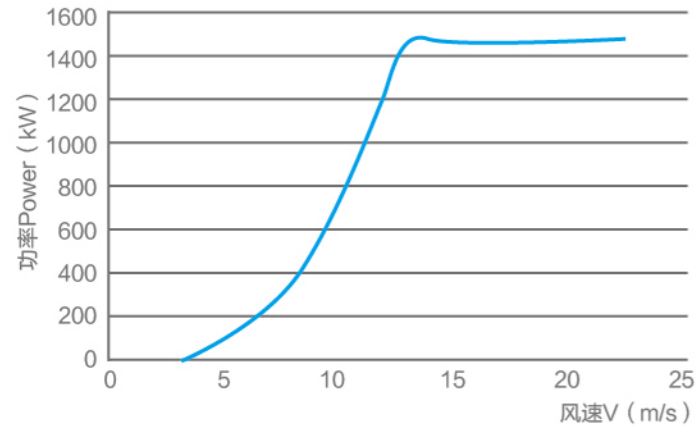
HW1/S780(50)标准功率曲线 ($\rho = 1.225\text{kg/m}^3$)



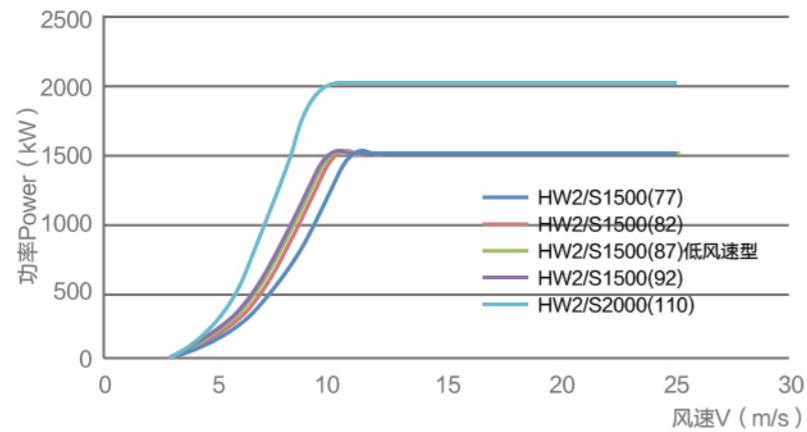
TECHNICAL DATA

HW2 series HW2系列

HW2/S1500(87)高海拔型机组标准功率曲线
($\rho = 0.9\text{kg/m}^3$)



HW2系列机组标准功率曲线
($\rho = 1.225\text{kg/m}^3$)



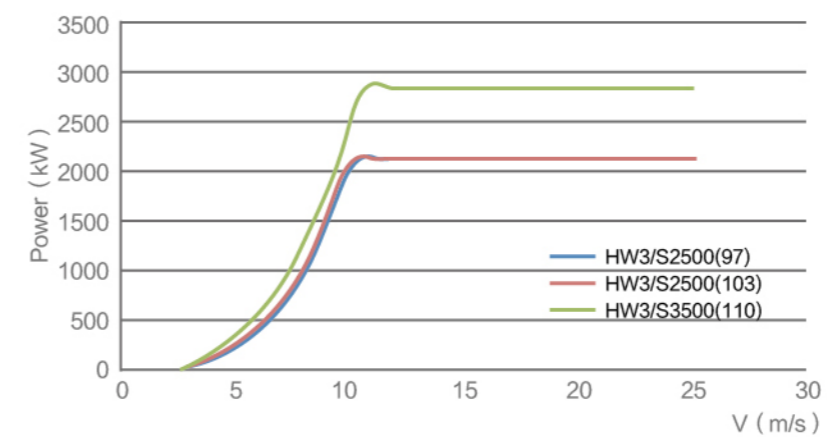
型号	HW2/S1500(77)	HW2/S1500(82)	HW2/S1500(87)	HW2/S1500(87)	HW2/S1500(92)	HW2/S2000(110)
			高海拔型	低风速型		
Class安全等级	IEC IIA+	IEC IIIB	IEC IVA	IEC IIIB	IEC IIIB	IEC S
OPERATING DATA运行参数						
Cut-in wind speed 切入风速	3 m/s	3m/s	4m/s	3 m/s	3 m/s	3 m/s
Rated wind speed 额定风速	12 m/s ($\rho = 1.225\text{kg/m}^3$)	11.3 m/s ($\rho = 1.169\text{kg/m}^3$)	11.4 m/s ($\rho = 0.945\text{kg/m}^3$)	10.8 m/s ($\rho = 1.169\text{kg/m}^3$)	9.6 m/s ($\rho = 1.225\text{kg/m}^3$)	9.6 m/s ($\rho = 1.225\text{kg/m}^3$)
Cut-out wind speed 切出风速	25 m/s	25 m/s	22 m/s	22 m/s	25 m/s	25 m/s
Rated power 额定功率	1500kW					2000kW
COMPONENT DATA 部件参数						
Number of blades 叶片数量	3					
Orientation 结构形式	Upwind 上风向					
Diameter 风轮直径	77.13 m	82.63 m	87 m	87 m	92 m	110 m
Power regulation 功率调整方式	Pitch Control 变桨控制					
PITCH SYSTEM 变桨系统						
Actuation 驱动形式	Motor Drive 电机驱动					
DRIVE TRAIN 传动系统						
Gearbox 齿轮箱	3 stage gear box (1 planetary and 2 parallel axes) 3级传动齿轮箱 (一级行星和两级平行轴)					
GENERATOR 发电机						
Type 类型	DFIG双馈异步发电机					
Rated power 额定功率	1550kW					2081kW
Frequency 频率	50Hz					
Voltage 电压	690V					
TOWER 塔架						
Type 类型	Tubular steel tower 圆锥钢塔					
Hub height 轮毂高度	61.4 m / 70 m	70 m / 80 m	80 m	70 m / 80 m	80 m / 90 m	100 m
WEIGHT 重量						
Rotor (hub and blades) 风轮 (含轮毂和叶片)	31 t	32 t	33 t	33 t	34.5 t	50 t
Nacelle without rotor 机舱 (不含风轮)	59 t					80 t
Tower 塔架	105 t/117 t	106 t/116 t	110.331 t	83.405 t/114.33 t	133 t/143 t	161 t

HW3 series HW3系列

Class安全等级	HW3/S2500(97) IEC IIA+	HW3/S2500(103) IEC IIIA	HW3/S2500(110) IEC IIIB
OPERATING DATA 运行参数			
Cut-in wind speed 切入风速	3 m/s		
Rated wind speed 额定风速	12 m/s ($\rho = 1.225\text{kg/m}^3$)	11.7 m/s ($\rho = 1.169\text{kg/m}^3$)	10.5 m/s ($\rho = 1.169\text{kg/m}^3$)
Cut-out wind speed 切出风速	25 m/s		
Rated power 额定功率	2500kW		
COMPONENT DATA 部件参数			
Number of blades 叶片数量	3		
Orientation 结构形式	Upwind 上风向		
Diameter 风轮直径	97 m	103 m	110 m
Power regulation 功率调节方式	Pitch Control 变桨控制		
PITCH SYSTEM 变桨系统			
Actuation 驱动形式	Motor Drive 电机驱动		
DRIVE TRAIN 传动系统			
Gearbox 齿轮箱	3 stage gear tbox (2 planetary and 1 parallel axe) 3级传动齿轮箱 (二级行星和一级平行轴)		
GENERATOR 发电机			
Type 类型	DFIG or High-speed Permant-Magnetic Generator 双馈异步发电机或高速永磁发电机		
Rated power 额定功率	2700kW		
Frequency 频率	50Hz/60Hz		
Voltage 电压	690V		
TOWER 塔架			
Type 类型	Tubular steel tower 管状锥形塔筒		
Hub height 轮毂高度	70 m / 80 m	80 m / 90 m	80 m / 90 m
WEIGHT 重量			
Rotor (hub and blades) 风轮 (含轮毂和叶片)	55 t	57 t	59
Nacelle without rotor 机舱 (不含风轮)	102 t		
Tower 塔架	170t/190t	190t/200t	190t/200t



P-V Curve ($\rho = 1.225\text{kg/m}^3$)



技术参数

TECHNICAL DATA



HW6 series HW6系列

型号 Class安全等级	HW6/S6000(152) IEC IIB
OPERATING DATA运行参数	
Cut-in wind speed 切入风速	3.5 m/s
Rated wind speed 额定风速	11.4 m/s ($\rho = 1.225 \text{kg/m}^3$)
Cut-out wind speed 切出风速	25 m/s
Rated power 额定功率	6000kW
COMPONENT DATA 部件参数	
Number of blades 叶片数量	3
Orientation 结构形式	Upwind 上风向
Diameter 风轮直径	152 m
Power regulation 功率调整方式	Pitch 变桨控制
DRIVE TRAIN 传动系统	
Type 类型	Direct drive直驱
GENERATOR发电机	
Type 类型	Synchronous Direct Drive Motor 同步直驱电机
TOWER 塔架	
Type 类型	Tubular steel tower圆锥钢塔
Hub height 轮毂高度	96 m



白俄罗斯GRODNOENERGO风电场
Belarus GRODNOENERGO Wind Farm

哈萨克斯坦 Kurday风电场
Kazakhstan Kurday Wind Farm

智利Toro风电场
Chile Toro Wind Farm



1 哈萨克斯坦 Kurday风电场
Kazakhstan Kurday Wind Farm



2 智利Toro风电场一期
Chile San Diego Toro Wind Farm Phase I



3 白俄罗斯GRODNOENERGO风电场
Belarus GRODNOENERGO Wind Farm

- 中电投集团**
China Power Investment
中电投内蒙古翁牛特旗煤窑山风电场
China Power Investment Inner Mongolia Meiyaoshan Wind Farm
石嘴山宁夏中瑞一期风电场
ShiZui Mountain NingXia ZhongRui Wind Farm Phase I
诚达山西省繁峙县云雾峪一期/二期风电场
ChengDa ShanXi FanZhi YunWuYu Wind Farm Phase I/ Phase II
浙江上电天台山风电场
ZheJiang ShangHai Electric Power TianTai Mountain Wind Farm
中电投宁夏平罗红崖子风电场
China Power Investment NingXia PingLuo HongYaZi Wind Farm
中电投宁夏平罗五堆子风电场
China Power Investment NingXia PingLuo WuDuiZi Wind Farm
中电投宁夏石嘴山惠农(落石滩)风电场
China Power Investment NingXia ShiZui Mountain HuiNong(LuoShiTan) Wind Farm
中电投黑龙江鸡西平岗风电场
China Power Investment HeiLongJiang JiXiPingGang Wind Farm

- 华电集团**
China HuaDian
华电浙江舟山长白风电场
HuaDian ZheJiang ZhouShan ChangBai Wind Farm
华电浙江舟山小沙风电场
HuaDian ZheJiang ZhouShan XiaoSha Wind Farm
华电浙江长兴弁山风电场
HuaDian ZheJiang ChangXing BianShan Wind Farm
华电内蒙古化德三胜一期/二期风电场
Huadian HuaDe SanSheng Wind Farm Phase I/ Phase II
华电内蒙古大西坡魏家村一期/二期风电场
Huadian Inner Mongolia Wei Village Wind Farm Phase I/ Phase II
华电内蒙古正蓝旗大敖包一期/二期风电场
Huadian Inner Mongolia ZhengLan Banner DaAoBao Wind Farm Phase I/ Phase II
华电内蒙古正蓝旗北围子一期风电场
Huadian Inner Mongolia ZhengLan Banner BeiWeiZi Wind Farm Phase I

- 华能集团**
China HuaNeng
华能吉林四平鑫丰风电场
HuaNeng JiLin SiPing XinFeng Wind Farm
华能通榆团结AB风电场
HuaNeng TongYu TuanJie AB Wind Farm
华能通榆新华风电场1C/1D/1E/1F
HuaNeng TongYu XinHua Wind Farm 1C/1D/1E/1F

- 国电集团**
China GuoDian
国电浙江舟山岑港风电场
GuoDian ZheJiang ZhouShan CenGang Wind Farm
国电阳江海陵岛风电场
GuoDian YangJiang HaiLingDao Wind Farm

- 晋能集团**
JinNeng Group
平鲁瑞丰败虎堡风电场一期/二期风电场
PingLu YuFeng BaiHuBao Wind Farm Phase I/ Phase II
平鲁红石峁风电场一期工程
PingLu HongShiMao Wind Farm Phase I
山西国际电力福光平鲁败虎堡风电场一期扩容/二期工程
ShanXi FuGuang PingLu BaiHuBao Wind Farm Phase I Expansion/ Phase II

- 国华集团**
China GuoHua
国华广饶风电场一期风电场
Guohua GuangRao Wind Farm Phase I

- 温州新能源**
WenZhou New Energy
温能源苍南霞关风电场
WenZhou New Energy CangNan XiaGuan Wind Farm
温能源平阳西湾风电场
WenZhou New Energy PingYang West Bay Wind Farm

- 中航新能源**
ZhongHang New Energy
中航金州百灵庙风电场
The CNAC JinZhou BaiLingMiao Wind Farm

- 宁夏达力斯**
NingXia DaLiSi
宁夏达力斯贺兰山头关一期
Ningxia DaLiSi HeLan Mountain TouGuan Wind Farm Phase I

- 宁夏电投**
NingXia Electric Investment
宁电投太阳山一期风电场
Ningxia Electric Investment Sun Mountain Wind Farm Phase I

- 华仪电气**
Huayi Electric
洞头大门岛、鹿西岛风电场
DongTou DaMen Island / LuXi Island Wind Farm

- 林甸东明园**
LinDian DongMingYuan
大庆林甸花园风电场
DaQing LinDian HuaYuan Wind Farm
大庆林甸东明园风电场
DaQing LinDian DongMingYuan Wind Farm

- UPC亚洲风电**
UPC Renewables
UPC浙江黄岩风电场
UPC ZheJiang HuangYan Wind Farm
UPC广西全州六字界风电场
UPC GuangXi QuanZhou LiuZiJie Wind Farm

- 海外项目**
Oversea Projects
白俄罗斯GRODNOENERGO风电场
Belarus GRODNOENERGO Wind Farm
智利Toro一期/二期风电场
Chile San Diego Toro Wind Farm Phase I/ Phase II
哈萨克斯坦Kurday风电场
Kazakhstan Kurday Wind Farm

