西班牙可再生能源助力碳中和

Promoting Spanish Renewable Energies for Carbon Neutrality

西班牙驻华大使馆经济商务处
Economic & Commercial Office – Embassy of Spain in China

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1 绿色转型 - 共同的使命

Green Ecological Transition - A shared mission

2030年的目标

Targets for 2030

	中国 China	西班牙 Spain
温室气体排放量（*单位国内生产总值） Emission Reduction (*base on GDP)	-65%* (vs 2005)	-23% (vs 1990)
可再生能源消耗占能源消耗总量 Renewable energy penetration in final energy consumption	**25%** 14.2% (2021)	**42%** 22.4% (2021)
可再生能源发电量 Electricity from renewable energy in the national grid	**>50%** 29.7% (2021)	**74%** 46.7% (2021)
碳中和 Carbon Neutrality	2060	2050

资料来源：中国国务院的2030年前碳达峰行动方案、西班牙国家能源与环境综合规划2021-2030

Sources: the Action Plan for Carbon Peaking Before 2030 by the State Council of PRC, Spanish Integrated National Energy and Climate Plan (2021-2030)

2 西班牙：全球碳中和的关键角色及合作伙伴

Spain: Key Player and Partner for Carbon Neutrality

为实现绿色生态转型的一系列相关法律和战略路线图

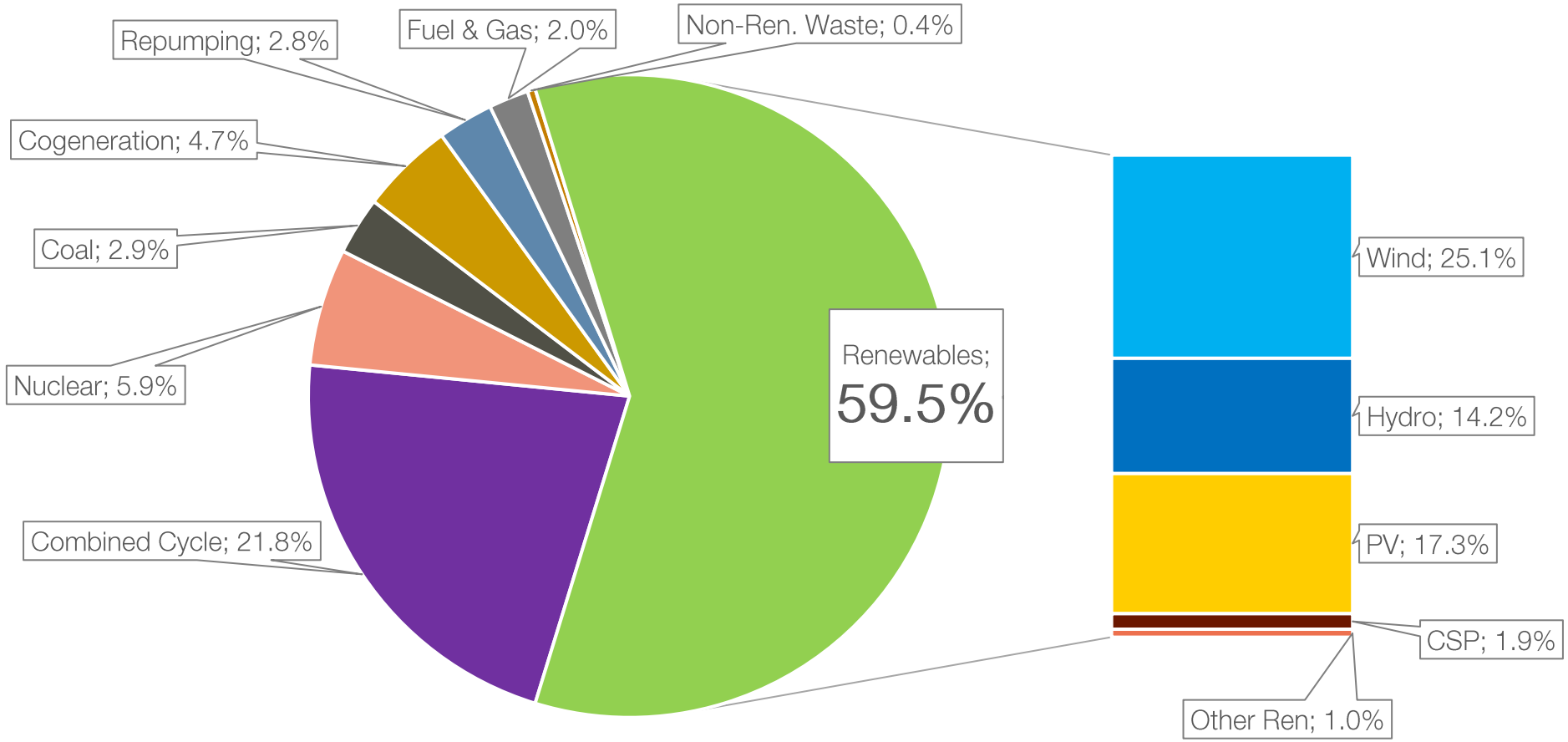
Extensive development of legislation and strategies to achieve a green ecological transition

气候变化和能源转型法	国家氢能项目路线图	沼气路线图	储能战略
Climate Change and Energy Transition Law	Hydrogen Roadmap	Biogas Roadmap	Storage Strategy

海上风能和海洋能源路线图	绿色基础设施与生态连通修复战略	长期脱碳战略
Offshore Wind and Ocean Energies Roadmap	Green Infrastructure and Ecological Connectivity and Restoration Strategy	Long Term Decarbonisation Strategy

西班牙发电装机容量 – 截止2023年5月底 (120,385 MW)

Installed Electrical Capacity in Spain – 31.05.2023 (120,385 MW)



资料来源：国际可再生能源机构、西班牙国家电网、西班牙风电行业协会 / Source: International Renewable Energy Agency (IRENA), Red Eléctrica de España, Asociación Empresarial Eólica (AEE)

西班牙可再生能源

Renewable Energies in Spain

8th 可再生能源 (71,738 MW)	❖ 8th on the list of countries with the highest installed renewable energy capacity
5th 风电 / 12th 光电	❖ 5th in wind power and 12th in solar power
国际知名度	❖ Spanish companies have strong presence in the world
30多家 在华企业	❖ Over 30 Spanish companies are settled in China

资料来源：国际可再生能源机构、西班牙国家电网 / Source: International Renewable Energy Agency (IRENA), Red Eléctrica de España,

在华产业链中的一些西班牙企业

Spanish companies that are part of the sector's value chain in China

GNC Nicolás Correa
DANOBAT
GRI Renewable Industries
ORMAZABAL velatia
Ingeteam
IRAETA
VICINAY Cemvisa
antec® Reliability is a must.
acciona
NORDEX
kintech engineering
HINE
MONDRAGON ASSEMBLY
NABRA WIND ADVANCED WIND TECHNOLOGIES
SIEMENS Gamesa RENEWABLE ENERGY

前期勘测	设备及零部件	主机厂&业主
Preliminary Investigation	Equipment and component parts	OEM and developers

资料来源：公司的年度报告和网站 / Sources: Companies' annual reports and websites

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中西企业在第三方市场的一些合作

Chinese companies involved in projects with Spanish companies in oversea markets

- 2018年，三一重工与ACS集团旗下的西班牙公司COBRA签署了一项协议，在智利建造一个风力发电厂，该发电厂拥有共50台三一重工的风电主机 (In 2018, the company signed an agreement with the Spanish company COBRA, part of the ACS Group, to build a wind farm in Chile that would have a total of 50 SANY turbines)

- Goldwind与西班牙Sacyr公司在智利合作建设风力发电厂，与Elecnor在墨西哥合作开发风电项目 (Goldwind has collaborated with the Spanish company Sacyr Industrial in the construction of a wind farm in Chile, and with Elecnor for the development of wind projects in Mexico)

- 华锐风电与西班牙公司Iberdrola和南非的Group5组成联合体，为西开普敦的风电厂项目提供EPC总承包服务 (Sinovel has formed a consortium with the Spanish company Iberdrola and South Africa's Group5 to provide EPC services for a wind farm project in Western Cape Town)

- 联合动力在西班牙多个地方有过合作项目，并与欧洲企业在德国、保加利亚和波兰等国家合作建设风力发电厂 (United Power has carried out projects in various locations in Spain and has collaborated with European companies in the construction of wind farms in countries such as Germany, Bulgaria and Poland)

资料来源：公司的年度报告和网站 / Sources: Companies' annual reports and websites

中西企业在第三方市场的一些合作

Chinese companies involved in projects with Spanish companies in oversea markets

中国能建 ENERGY CHINA

- 曾与Elecnor和Cobra等公司在葡萄牙合作开发风能项目 (has worked with companies such as Elecnor and Cobra in the development of wind projects in Portugal)

elecnor cobra

Envision

- 2019年，远景能源和西门子歌美飒可再生能源公司（SGRE）签署了一项合作协议，承诺在全球范围内共同促进和发展海上风电 (In 2019, Envision and Siemens Gamesa Renewable Energy (SGRE) signed a partnership agreement committing to work together on the promotion and development of offshore wind power worldwide)
- 远景能源还与西班牙公司ACCIONA在墨西哥和澳大利亚合作开发风电项目 (Envision has also collaborated with the Spanish company ACCIONA on several wind projects in Mexico and Australia)

SIEMENS Gamesa RENEWABLE ENERGY

acciona

MINGYANG SMART ENERGY 明阳智能

- 2022年，明阳智能和西班牙海之翼集团参与了地中海地区的第一个海上风电厂Beleólico的建设 (MingYang Smart Energy and the Spanish company Haizea Wing Group took part in 2022 in the construction of Beleólico, the first wind farm in the Mediterranean. Spanish companies have strong presence in the world)

haizea windgroup

资料来源：公司的年度报告和网站 / Sources: Companies' annual reports and websites

最新的中西企业合作意向

The most recent news about Sino-Spanish Cooperation

远景能源将为中国最高塔架Nabralift提供所需风电机组

Envision selected to supply wind turbine for China's tallest Nabralift Tower

资料来源：公司的年度报告和网站 / Sources: Companies' annual reports and websites

3 西班牙风电产业

Wind Power Industry in Spain

西班牙风力发电概况 Wind Power Generation in Spain

29,737 MW
的风力发电装机容量
installed wind power capacity

61,194 GWh
的风力发电产量
wind power production

22.21%
的供电占比
demand coverage with wind energy

1st 西班牙
电力系统的技术
1st technology of the Spanish electricity system

资料来源：国际可再生能源机构、西班牙国家电网、西班牙风电行业协会 / Source: International Renewable Energy Agency (IRENA), Red Eléctrica de España, Asociación Empresarial Eólica (AEE)

西班牙风电产业概况

Wind Power Industry in Spain

西班牙的风电产业链齐全

Spanish companies are in the entire value chain of wind power industry

西班牙是世界第三大风机出口国，2021年总销售额为17.50亿欧元

Spain is the fifth ranked exporter of wind turbines in the world, forth in Europe, with 1,750 million euros in sales in 2021

6th

西班牙是世界上第六多的风能专利国家，在欧洲位居第三。2021年，有493项风能领域的专利申请

Spain is the sixth country in the world and the third in Europe in wind patents. In 2021 there were 493 publications of patent applications in Spain for the wind sector.

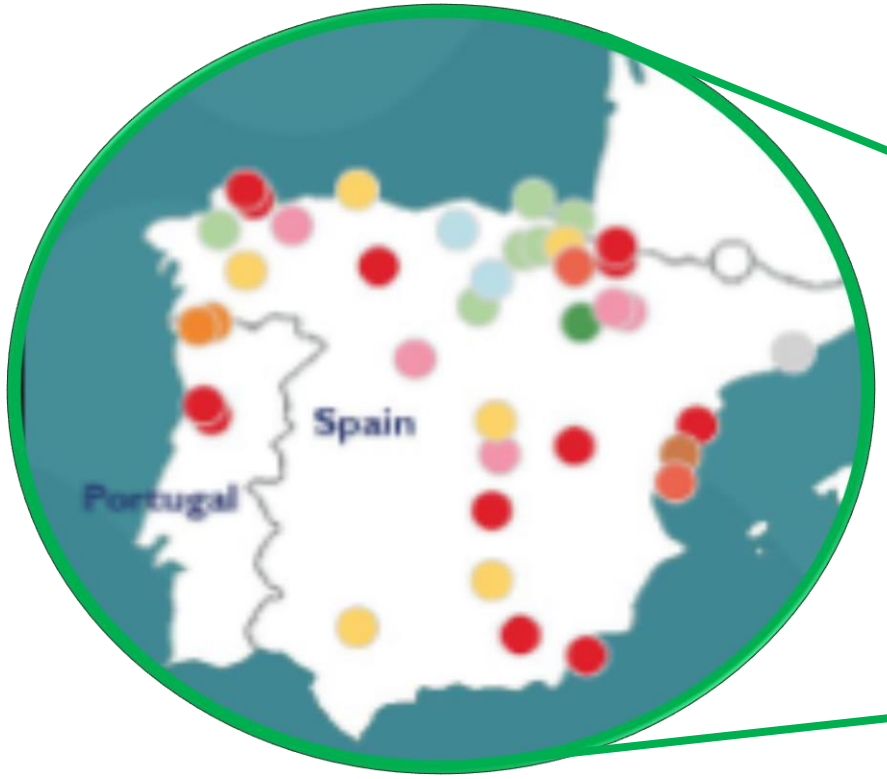
风力发电是西班牙电力系统的一个主要来源

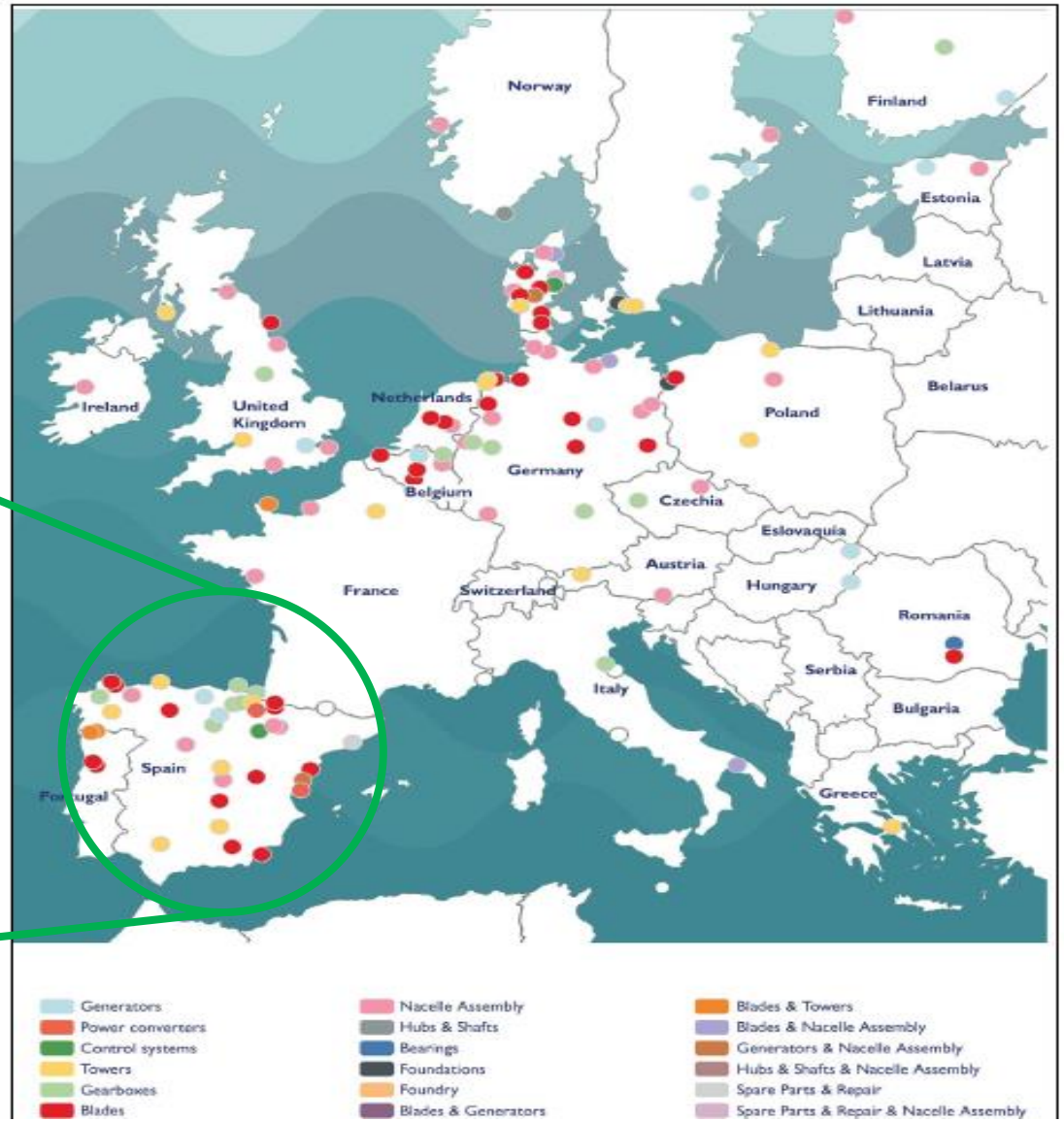
Wind power is a main source of the Spanish electricity system

资料来源：国际可再生能源机构、海关数据 、世界知识产权组织 / Source: International Renewable Energy Agency (IRENA), Customs Statistics, WIPO

西班牙风电组件制造企业分布

Wind component manufacturing facilities in Spain

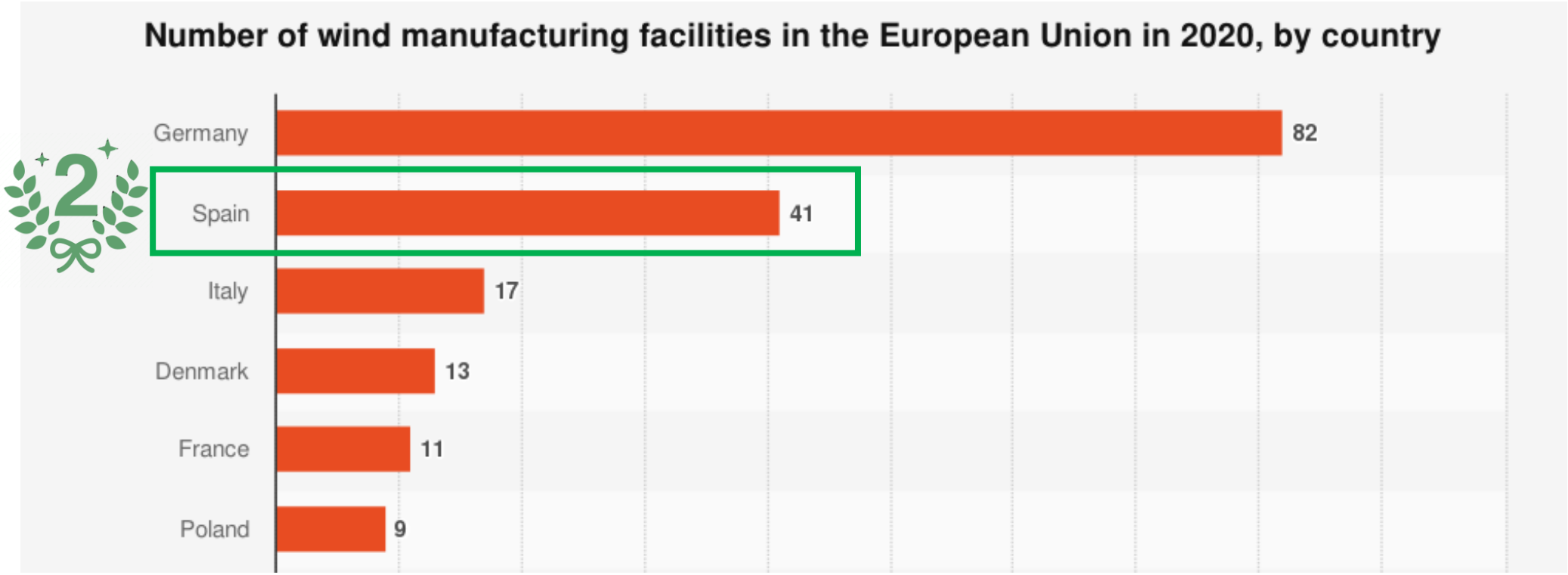




资料来源：欧盟联合研究中心统计 / Sources: Joint Research Centre of the European Commission

西班牙风电组件制造企业数量

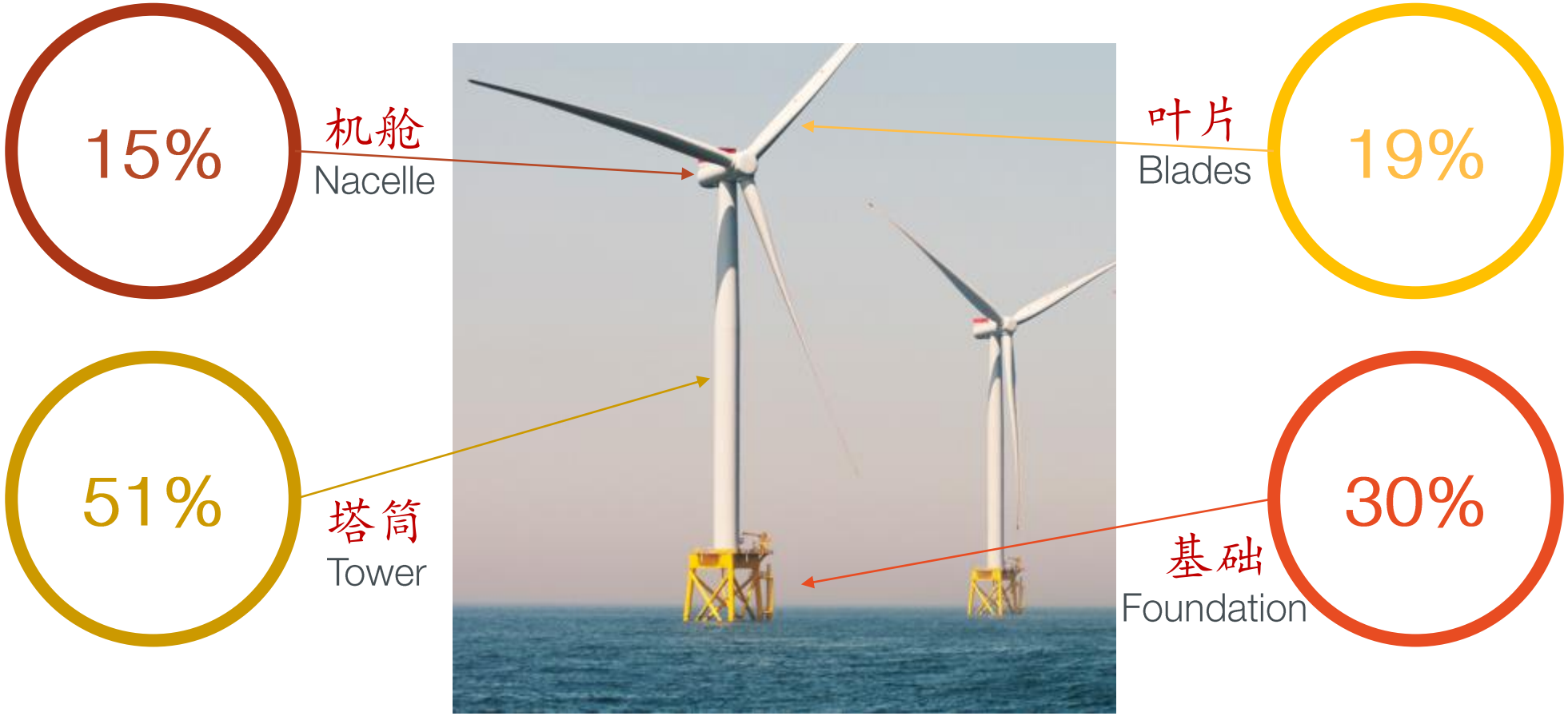
Wind component manufacturing facilities in Spain



资料来源：欧盟数据、欧洲风电协会、Statista统计 / Sources: EU, WindEurope, Statista

西班牙风电组件制造企业在欧洲的占比

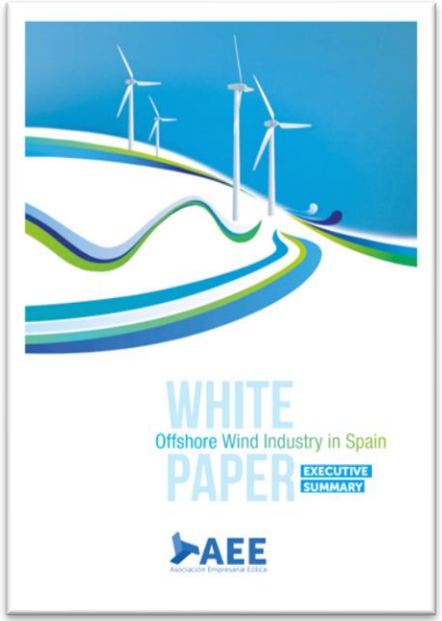
Weight of Spanish manufacturing facilities in Europe

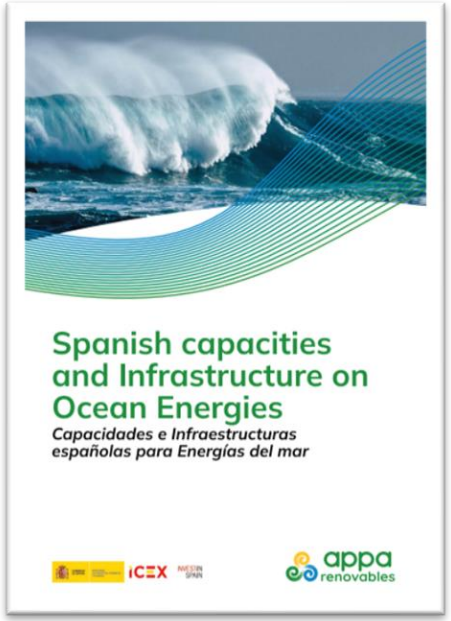


资料来源：Rystad Energy 研究和分析； 公司的年度报告和网站 / Sources: Rystad Energy research and analysis; Companies' annual reports and websites

西班牙具备行业相关的全套政策与机制

Spain offers a complete policies and mechanisms related to renewable energies





4 中国风电企业在西班牙的投资案例

Examples of Chinese investment in Spain

中国企业在西班牙的投资案例

Examples of Chinese investment in Spain

Goldwind

金风科技投资的一家西班牙风电叶片制造厂

Goldwind acquired E·Blades Technology's windmill blade factory

600万欧元

6 million euros of investment

E·BLADES TECHNOLOGY

还在西班牙安装了第一套风机组

Vensys/Goldwind 136 3.5MW

Goldwind installed the first wind turbine Vensys/Goldwind 136 3.5MW in Spain

资料来源：公司的年度报告和网站 / Sources: Companies' annual reports and websites

中国企业在西班牙的投资案例

Examples of Chinese investment in Spain

远景能源与西班牙政府之间的协议

The agreement between Envision Group and the Spanish government

Envision

4 个项目
projects

38 亿欧元的资金
billion euros of investment

GOBIERNO DE ESPAÑA

一个电池制造厂、一个制氢厂、一个零碳数字中心和一个风机组装厂

A battery plant, a green hydrogen plant, a net zero digital center and a smart wind turbine assembly plant

acciona

其中，远景能源计划利用Acciona的可再生能源发电基建建设一座锂电池制造厂，据媒体报道该项目需要25亿欧元的资金。

ENVISION is planning to build a battery manufacturing plant with Acciona's reneweable resources, the Project require 2.5 billion euros of investment according to the media.)

资料来源：公司的年度报告和网站 / Sources: Companies' annual reports and websites

5 风电行业供应链如何应对欧盟2030年气候目标

How does wind industry supply chain meet the EU 2030 Targets

每年新增
风电装机量
+30GW
per year

到2030年
By 2030

累计装机量
510GW
255.5 (2022)

资料来源：欧盟委员会、欧洲风电协会 / Sources: European Comission, WindEurope

组件 Segment	产业 Industry	细分市场 Sub-segment	2022–2030年增量需求 2022-2030 demand growth*	紧迫性 Urgency
风机 Turbines	Onshore & Offshore wind	Total Market	3x Capacity (MW)	
	Offshore wind	>12MW turbines	0-29 GW	
塔筒 Towers	Onshore & Offshore wind	All	2.5x Metric tons	
基础 Foundations	Offshore wind	Monopiles	12x Metric tons	
		Other grounded	7x Metric tons	
		Floating	23x Metric tons	
施工船舶 WTIVs	Offshore wind	Total Market	7.5 Vessel years	
		>12MW turbines	0-25 Vessel years	

资料来源：Rystad Energy 基于2030年目标情景的研究和分析 / Sources: Rystad Energy research and analysis based on 2030 Targets Scenario

感谢您的聆听

GOBIERNO DE ESPAÑA

MINISTERIO DE INDUSTRIA, COMERCIO Y TURISMO

ICEX España Exportación e Inversiones

MUCHAS GRACIAS POR SU ATENCIÓN