

The background image shows a vast blue sea under a clear sky. On the left, a large white offshore wind turbine stands prominently. To its right, a complex offshore oil or gas platform with multiple levels and yellow structural elements is visible. The platform has the label 'WKOSS' on its side. In the distance, another smaller wind turbine and a yellow support vessel can be seen on the horizon.

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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How does wind industry supply chain meet the EU 2030 Targets

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)
非化石能源占能源消耗总量 Non-fossil energy penetration in final energy consumption	25% 17.7% (2023)	47,9% 33,9% (2023)
可再生能源发电量 Electricity from renewable energy in the national grid	>50% 33.0% (2023)	81% 72,6% (2023)
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2023-2030
 Sources: the Action Plan for Carbon Peaking Before 2030 by the State Council of PRC, Spanish Integrated National Energy and Climate Plan (2023-2030)



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

Climate Change and
Energy Transition Law

国家氢能项目
路线图

Hydrogen Roadmap

沼气路线图

Biogas Roadmap

储能战略

Storage Strategy

海上风能和海洋
能源路线图

Offshore Wind and Ocean Energies
Roadmap

绿色基础设施与生态
连通修复战略

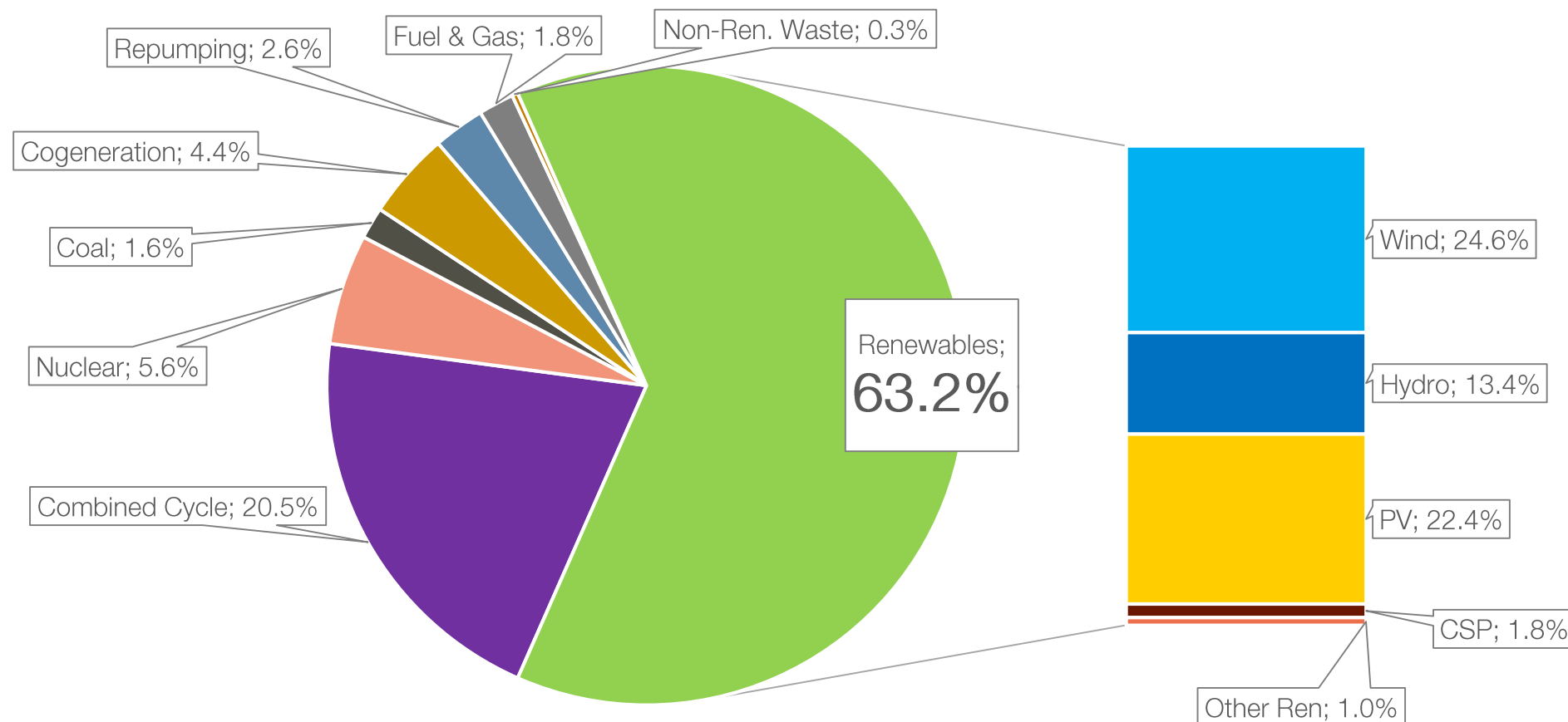
Green Infrastructure and Ecological
Connectivity and Restoration Strategy

长期脱碳战略

Long Term Decarbonisation
Strategy

西班牙发电装机容量 - 截止2024年三季度 (128,093 MW)

Installed Electrical Capacity in Spain – 30.09.2023 (128,093 MW)

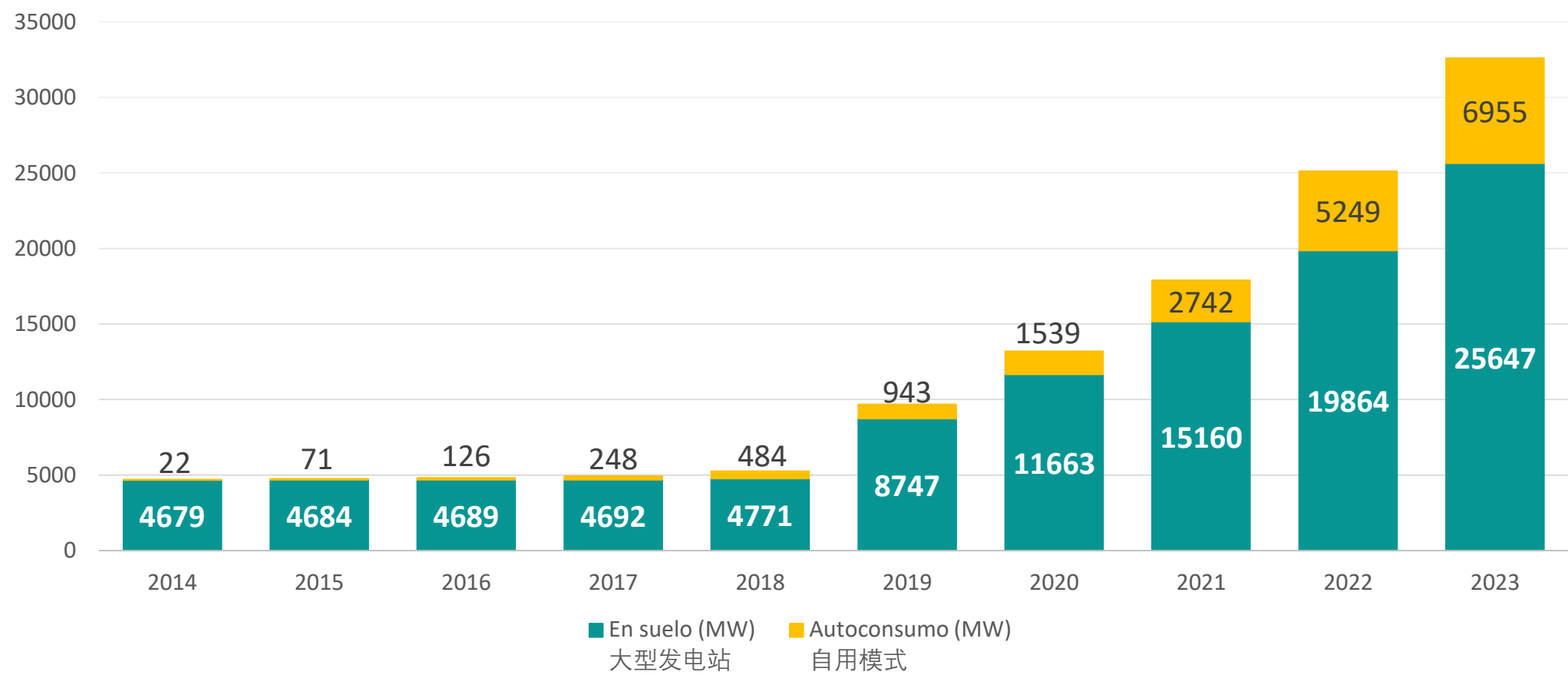


资料来源：国际可再生能源机构、西班牙国家电网、西班牙风电行业协会 / Source: International Renewable Energy Agency (IRENA), Red Eléctrica de España, Asociación Empresarial Eólica (AEE)

西班牙光伏历年累计装机量

Evolution of PV installation in Spain

ACUMULATED CAPACITY IN SPAIN 2014-2022



资料来源：西班牙国家电网、西班牙光伏产业联合会 / Source: Red Eléctrica de España, Unión Española Fotovoltaica (UNEF)

西班牙储能历年累计装机量 Evolution of Energy Storage installation in Spain



3,331 兆瓦

抽水蓄能

3,331 MW of repumping capacities

1,823 兆瓦时

太阳能储能累计量

1823 MWh of cumulative solar storage capacity (2023)

128

在建项目

128 projects in construction



资料来源：西班牙国家电网、西班牙储能联盟 / Source: Red Eléctrica de España, BatteryPlat

西班牙氢能产业 Hydrogen industry in Spain

123

在建项目

123 projects in construction

40+

企业和机构参与

More than 40 enterprises and institutes participating in these projects

210

亿欧元的资金投入

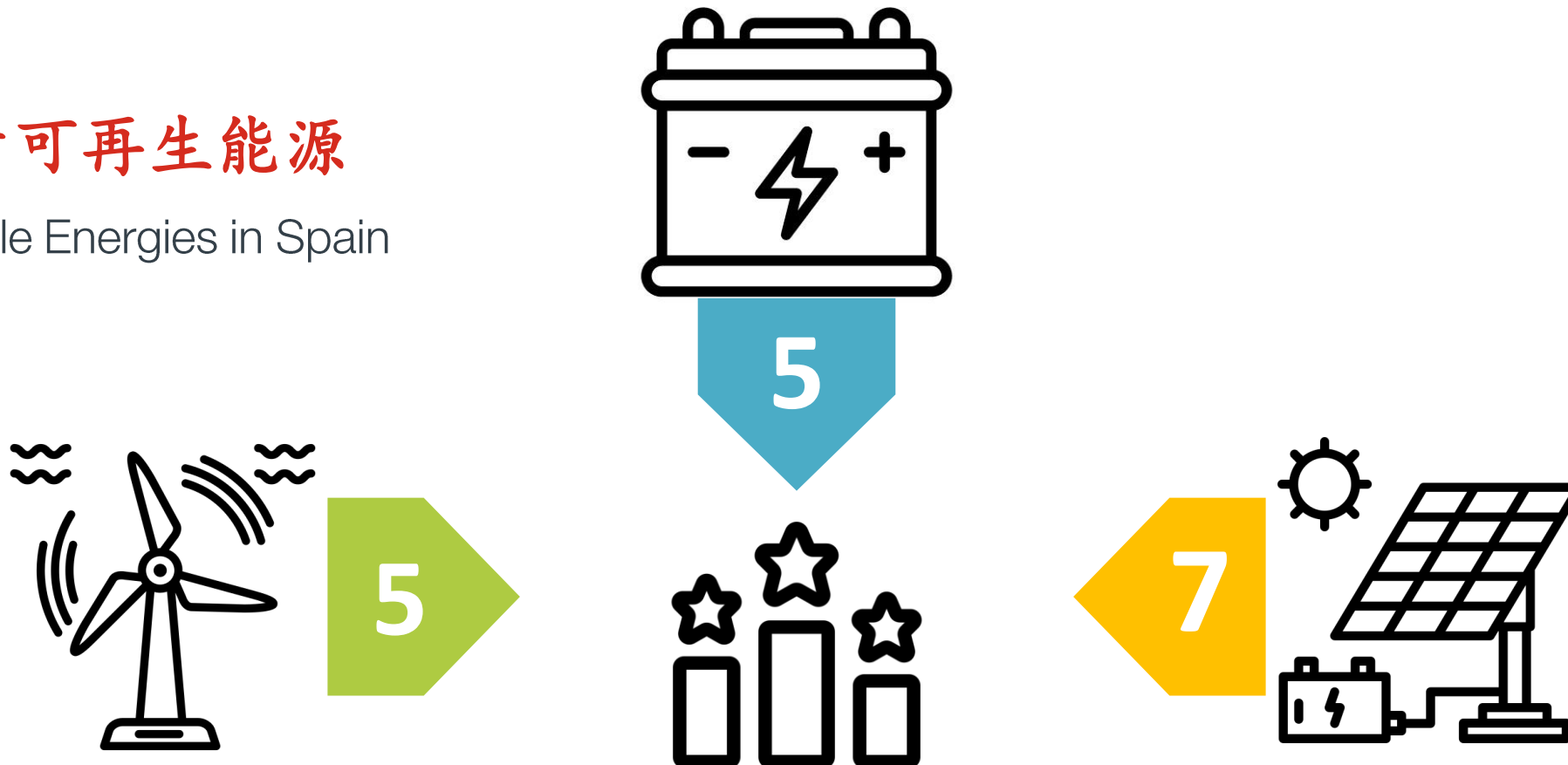
21 billion euros of investment



资料来源：西班牙氢能行业协会 / Source: Asociación Española de hidrógeno (AeH2)

西班牙可再生能源

Renewable Energies in Spain



8th 可再生能源 (83,500 MW)

8th on the list of countries with the highest installed renewable energy capacity

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,

3

西班牙风电产业

Wind Power Industry in Spain

西班牙风电历年累计装机容量 Evolution of wind power installation in Spain



资料来源：西班牙国家电网、西班牙风电行业协会 / Source: Red Eléctrica de España, Asociación Empresarial Eólica (AEE)

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



30,425 MW
的风力发电装机容量

installed wind power
capacity



62,594 GWh
的风力发电产量

wind power
production



23.5%
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

西班牙风电产业概况

Wind Power Industry in Spain



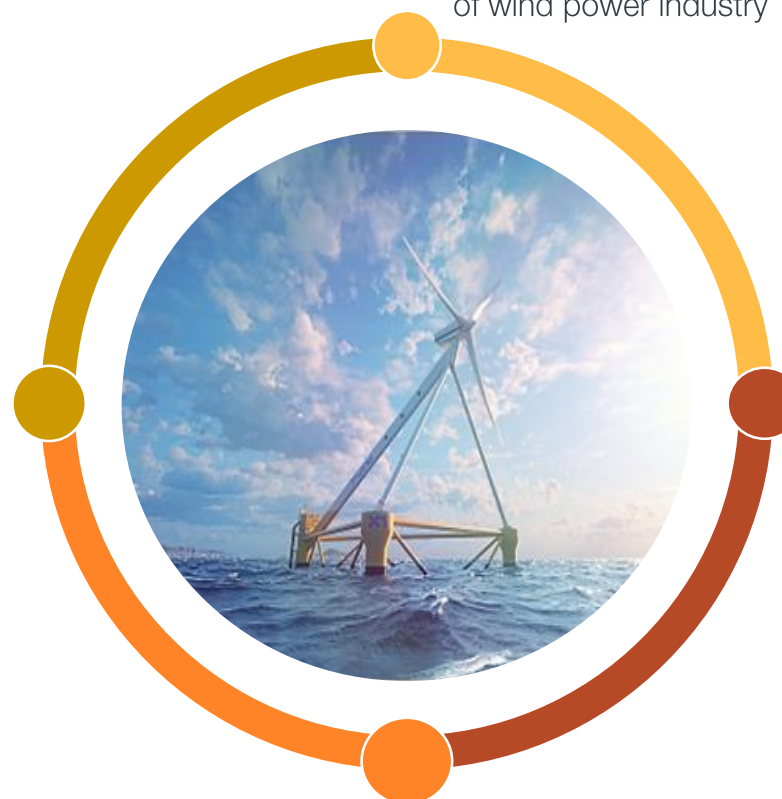
西班牙的风电产业链齐全

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



西班牙是欧洲第三大风机设备出口国，2023年总销售额为25.12亿欧元

Spain is the third ranked exporter of wind turbines in Europe, fifth in the world, with 2,512 million of sales including services



西班牙是欧洲第三多的风能专利国家，在世界位居第四。2022年，有353项风能领域的专利申请

Spain is the third in Europe and sixth in the world in wind technology patents. In 2021 there were 353 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

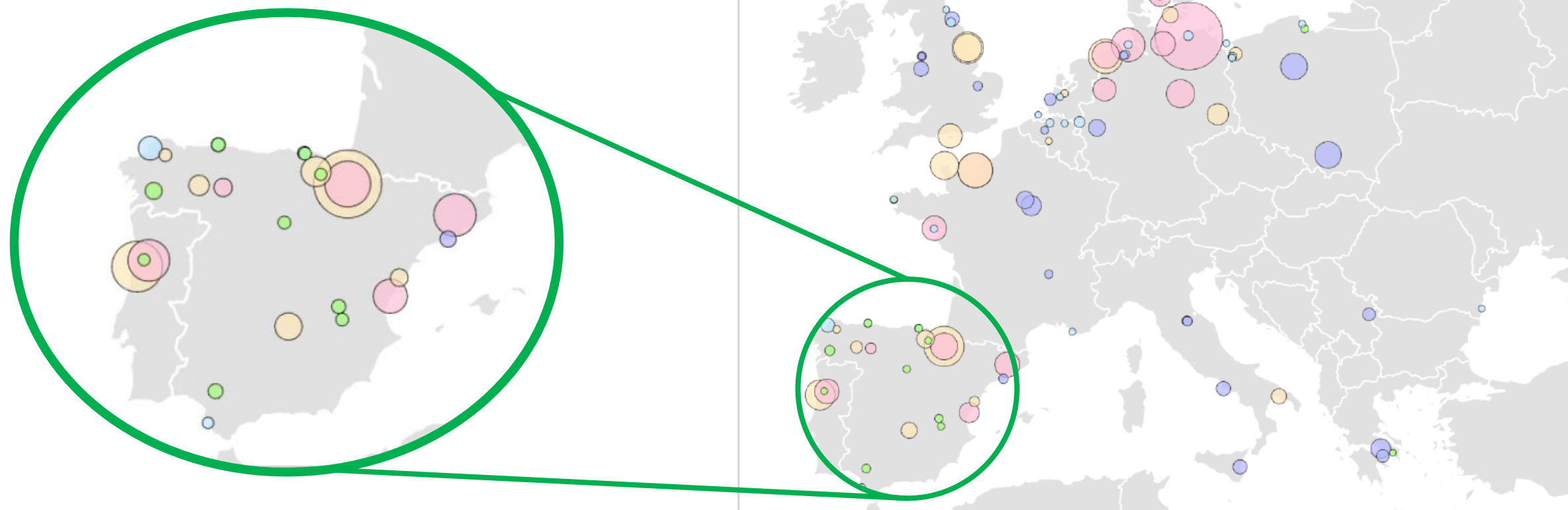
Wind power is a main source of the Spanish electricity system

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

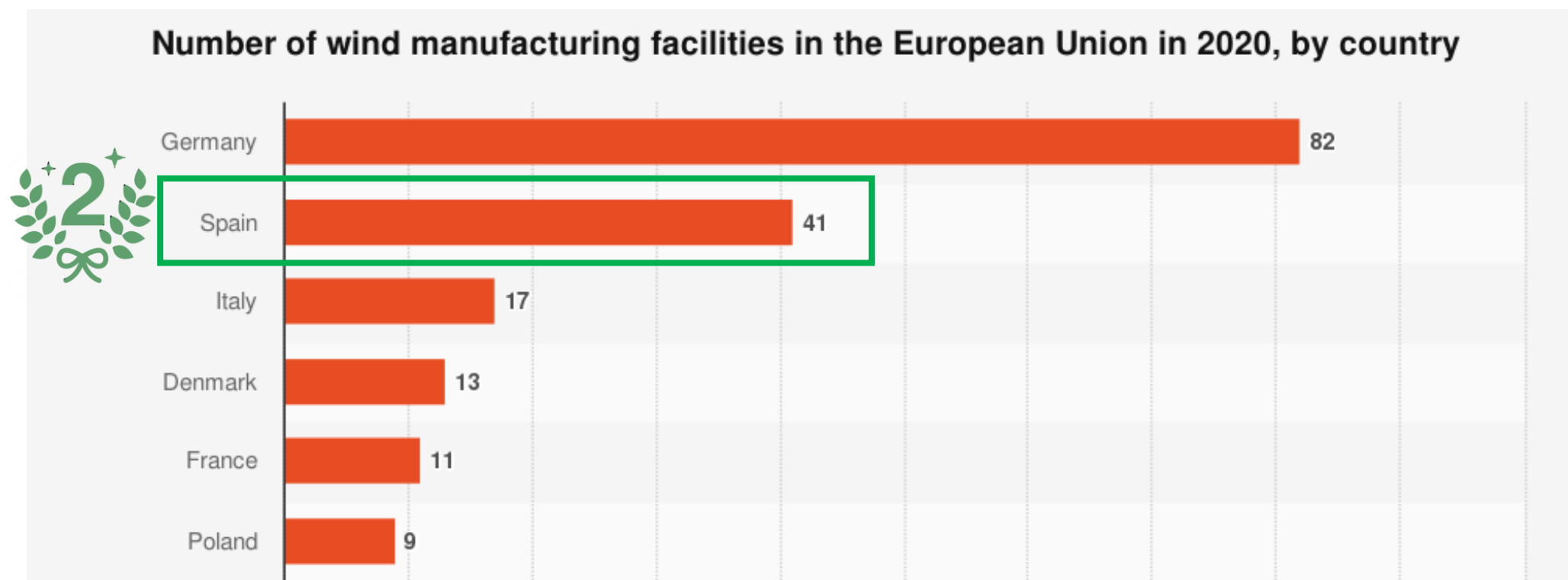
Figure 8: Operational manufacturing sites for main wind power components in Europe, as of 2023 year-end*



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

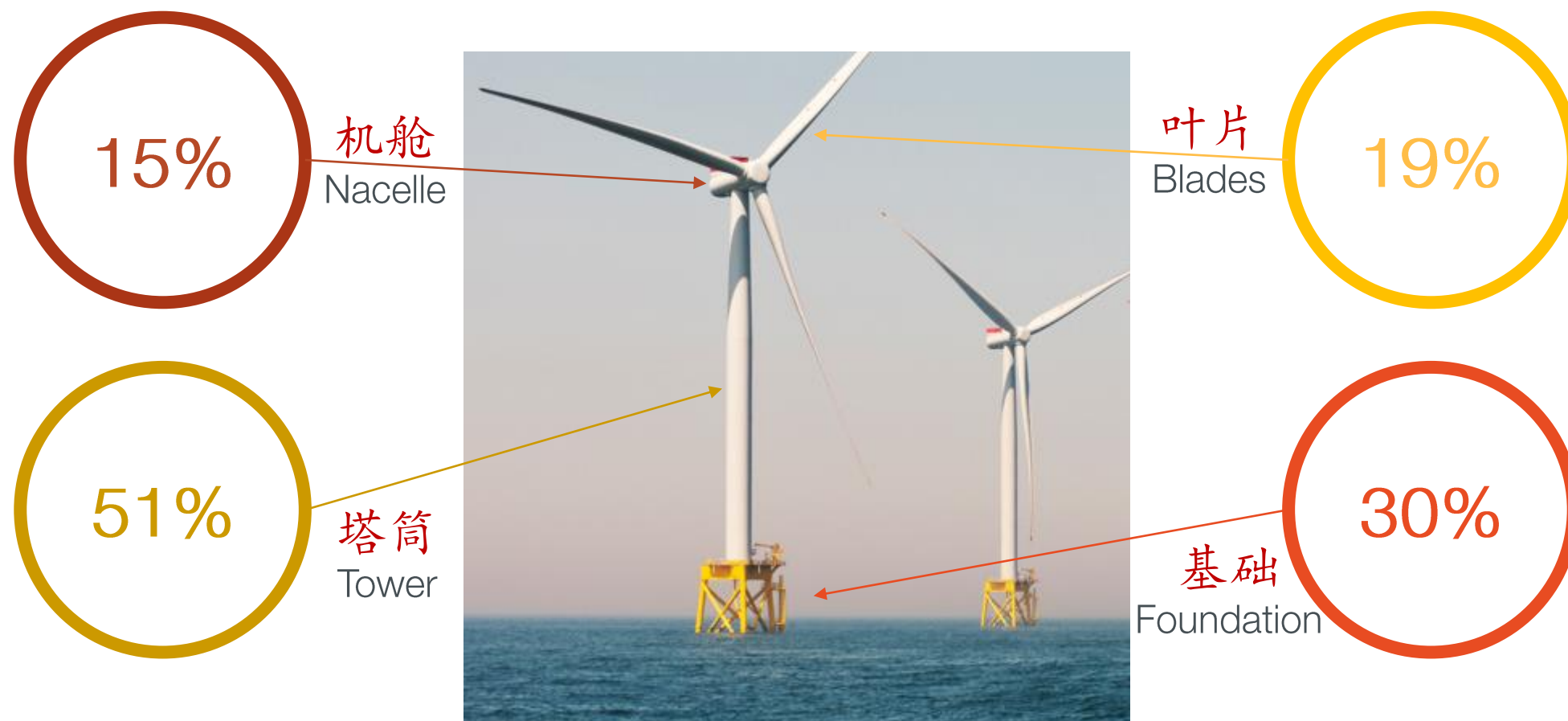
Wind component manufacturing facilities in Spain



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

西班牙海上风电造船厂分布

Shipyard facilities for offshore wind power in Spain



西班牙是第二大
海工辅助船舶
供应国

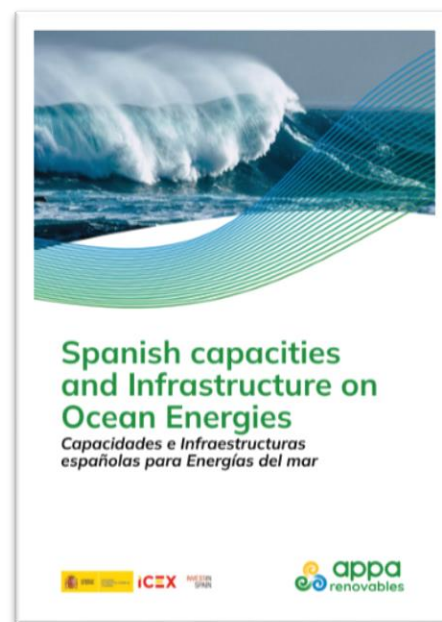
Spain is the second
ranked supplier of
Offshore Support Vessels
(OSV) in the world



资料来源：西班牙中小型造船厂联盟 / Sources: Pymar (Pequeños y Medianos Astilleros, Sociedad de Reconversión, S.A.)

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



9月24日，西班牙政府批复了新的海上风电和可再生海洋能源法规（皇家法令962/2024）
On September 24th, Spanish government approved the NEW regulation of offshore wind power and renewable marine energy. (Real Decreto 962/2024)

全球产业链中的一些西班牙企业

Spanish companies in the world



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

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



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

近期的中西风电企业合作意向

Recent Sino-Spanish Cooperations



- ❖ 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



- ❖ BlueFloat Energy 与大金重工携手加强全球浮动海上风电供应链
- ❖ BlueFloat Energy and Dajin Heavy Industry Join Forces to Strengthen Global Floating Offshore Wind Supply Chain



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



- ❖ 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



- ❖ 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)



- ❖ 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在墨西哥合作开发风电项目 (Envision has also collaborated with the Spanish company ACCIONA on several wind projects in Mexico)



- ❖ 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)



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

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



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



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



4 个项目
projects

38 亿欧元的资金
billion euros of investment



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

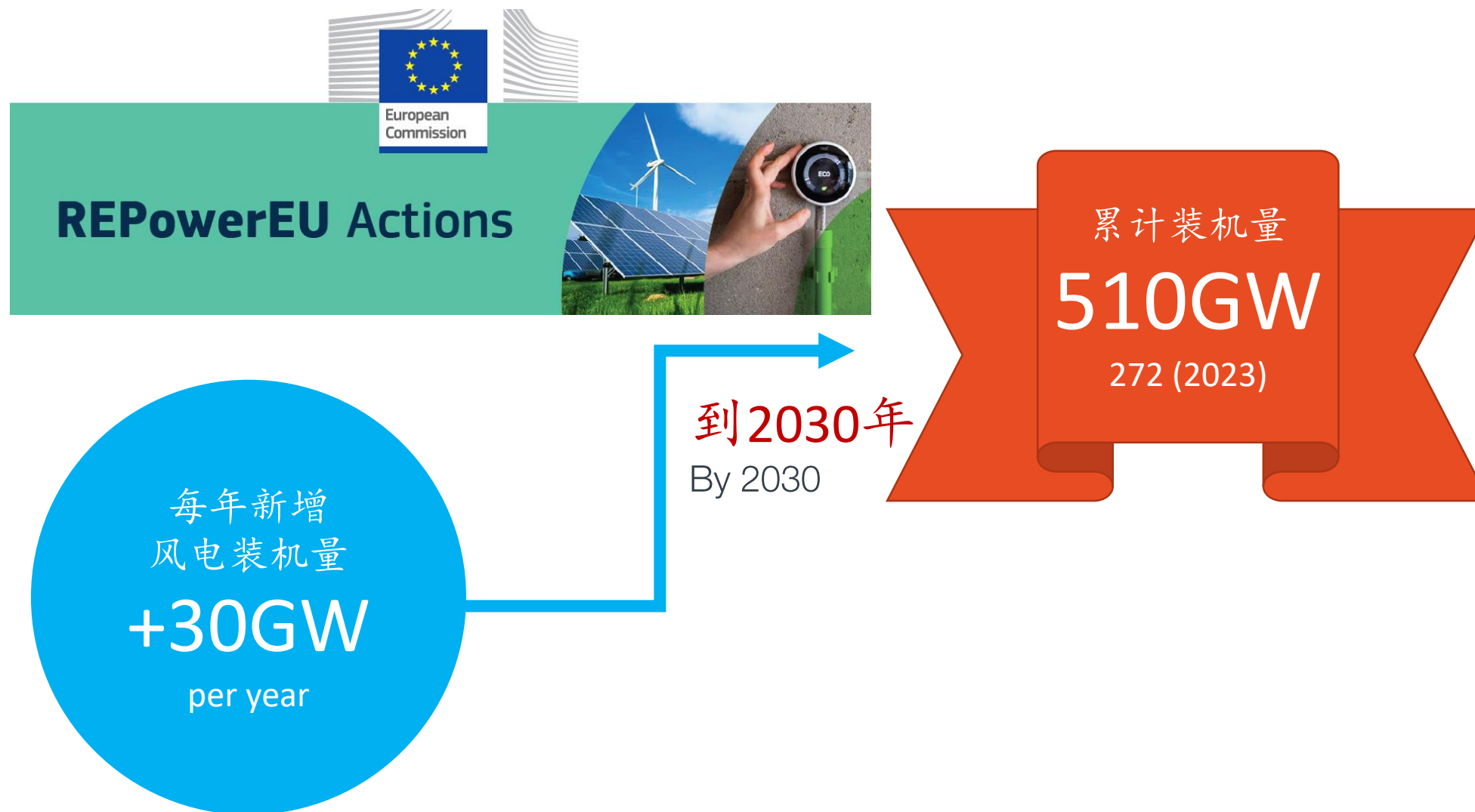
A battery plant, a green hydrogen plant, a net zero digital center and a smart wind turbine assembly plant

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



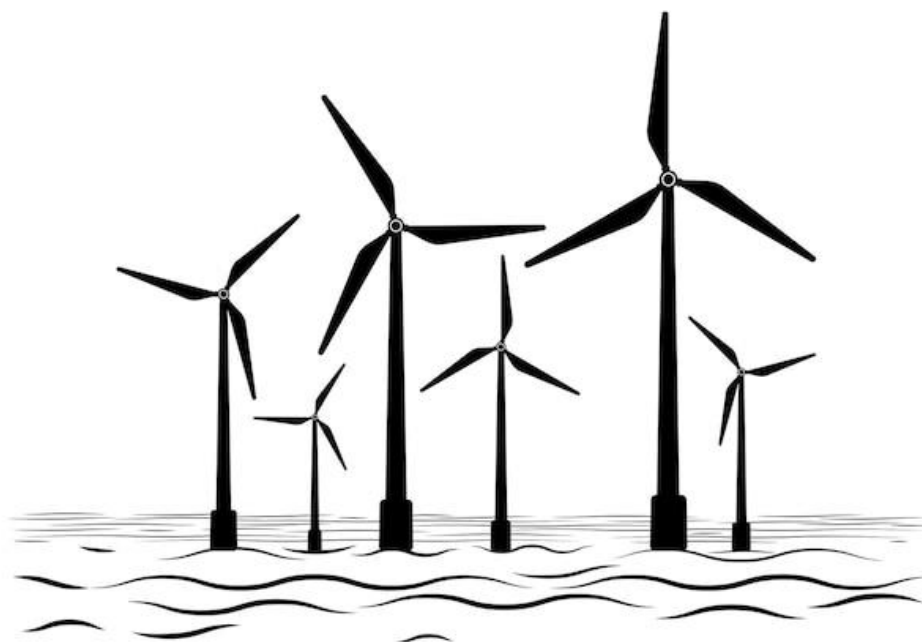
资料来源：欧盟委员会、欧洲风电协会 / Sources: European Comission, WindEurope

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	
		Monopiles	12x Metric tons	
基础 Foundations	Offshore wind	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

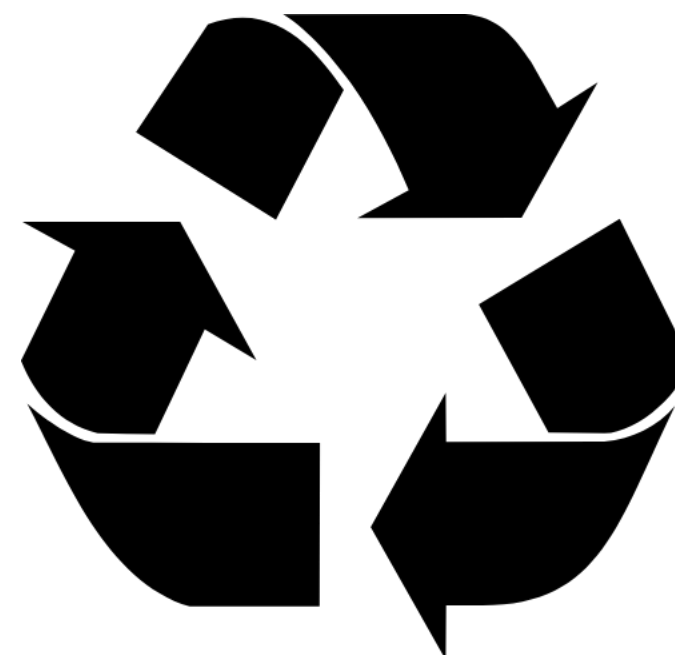
潜在的投资领域

Potential investment areas in Spain



漂浮式风电基础设施及成套设备制造

FLOATING OFFSHORE: Development and manufacturing of structures and parts.



风电设备部件回收，可再利用技术

Recycling technologies of parts and components, and its reutilization.

西班牙投资促进局主要职责

Invest in Spain - Main scopes



- 吸引投资的推广活动和会议

Promotional events and conferences for attracting investment

- 信息和咨询：个性化评估、选址搜索、工程评估、物流评估、人力资源和尽职调查

Information and consultation: Customized Assessment, location search, Engineering evaluation, logistic assesment, human resources, and due diligences

- 对企业投资项目的支持和管理

Support and management of corporate investment projects

- 融资及与投资者的关系

Financing and relationships with investors

- 贸易环境与发展

Trade environment and development

- 2016 亚洲事务部成立

Asian Affairs Desk started since 2016.

**INVESTIN
SPAIN**

感谢您的聆听



MUCHAS GRACIAS POR SU ATENCIÓN