



# 中国华能集团有限公司 CHINA HUANENG



# Company Overview



中国华能集团有限公司创立于1985年，是集电力、煤炭、金融、科技、环保、交通运输产业于一身的综合能源集团。公司拥有57家二级单位、480余家三级企业，5家上市公司。2009年在中国发电企业中率先进入世界企业500强，2024年排名第238位。

China Huaneng Group Co., Ltd. was established in 1985, engaged in the businesses of power & heat generation and trading, coal production, transportation, environmental protection, finance management and high tech development. The Group owns 57 professional subsidiaries, and 5 listed companies.

The Group was the first among Chinese power generation enterprises to join the ranks of Fortune Global 500, with the ranking of No. 425th in 2009, and now ranked 238th in 2024.





# Company Overview

257  
GW

the wholly-owned  
and majority-  
owned installed  
power capacity

120,000

the number of  
employees

54%

of clean energy in  
total installed  
capacity

\$ 62  
Billion

the revenue of  
2023

800  
TWh

the annual power  
generation

\$200  
Billion

the total assets as of  
Dec 31, 2023

中国华能成立以来，大力弘扬改革创新精神，在发电领域创造出数十项“全国第一”和数十项“世界纪录”。

- ❑ Originating from China's system innovation
- ❑ Growing in China's Reform and Openness
- ❑ Leading in power technology and management
- ❑ No. 2 in installed capacity in the world

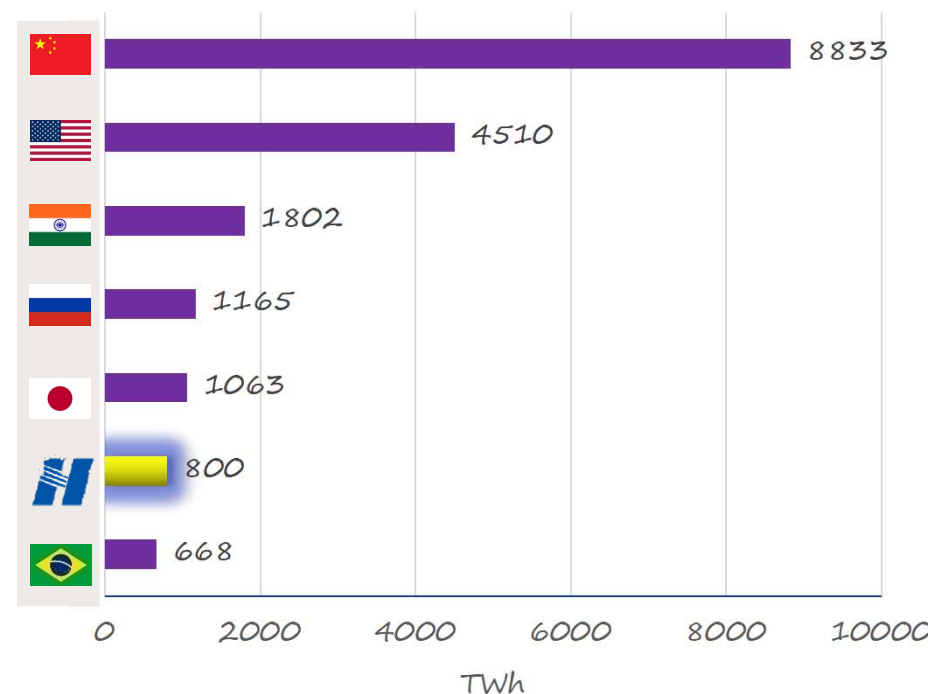


## Power Generation

中国华能以电力产业为核心，坚持绿色发展理念，不断加快结构调整步伐，大力发展水电，积极发展风电、太阳能及其他新能源发电，努力发展核电，优化发展煤电，继续发展天然气发电，持续提高低碳清洁装机比重和传统能源高效清洁利用水平。

CHG committed to the idea of sustainable development, continuously speeding up the pace of structural adjustment, strongly promoting hydropower, actively pursuing wind and solar energy, as well as other green energy, striving to develop nuclear power, optimizing coal-fired power development, and continuing to expand natural gas power generation. Our aim is to steadily increase the proportion of clean, low-carbon energy and enhance the efficient and clean use of traditional energy.

### Global Power Generation



Source: Ener



# Power Generation



Wind Power 44 GW

- ❑ Onshore wind: 39GW
- ❑ Offshore wind: 5GW
- ❑ Annual growth: >5%



PV Power 42 GW

- ❑ Grid-scale and distributed solar farms across the country



3 Plants Nuclear Power



- ❑ Shidao Bay Nuclear Base
- ❑ Changjiang Nuclear Base
- ❑ Xiapu Nuclear Base

28 GW Hydropower



- ❑ Tens of 500MW+ hydropower stations in south-western China



**Wind Power**

**中国华能**  
CHINA HUANENG



Shangdu 1600MW Wind Farm



Rudong 300MW Offshore Wind Farm



Self-Developed 7MW Wind Turbine



World's first 2.7 MW twin-wheel Wind Turbine



# Solar Power



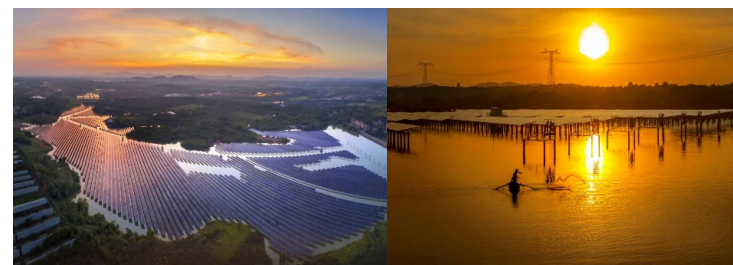
World's Largest 320MW Floating Solar Farm



China's First PV Monitoring System



Solar + Tea Garden



Solar + Aquafarm



Solar +



# Hydro Power



Xiaowan Hydropower  
Station (4200MW) , 2010

Dam Type: Concrete  
double-curvature arch dam



Nuozhadu Hydropower  
Station (5850MW) , 2014

Dam Type: Gravel-Clay  
Core Rock-fill Dam



Manwan Hydropower  
Station (1670MW) , 1995

Dam Type: Concrete  
Gravity Dam



Jinghong Hydropower  
Station (1750MW) , 2009

Dam Type: Roller  
Compacted Concrete  
Gravity Dam



# Battery Storage



Minety Battery Storage  
Station in UK  
(100MW/100MWh), 2021

Largest BESS in Europe



Shangdu Battery Storage Station  
in China  
(300MW/600MWh), 2023

World's Largest Warehouse-  
based BESS

Hainan State Battery Storage Station  
in China  
(150MW/600MWh), 2024

World's Largest 35 kV direct-mounted  
ESS





# Scientific Technology Innovation



建成中国首个具有自主知识产权的IGCC示范电站（250MW）

- Self-developed China's first IGCC power station (250MW) in operation in 2012

国家科技重大专项、世界首座具有自主知识产权的高温气冷堆核电站示范工程（200MW）



- Shidao Bay world's first high temperature gas cooled reactor nuclear power plant demonstration project with independent intellectual property rights.

建成投产中国首台3000吨/年二氧化碳捕集试验示范装置及12万吨/年二氧化碳捕集项目。



- First carbon capture facility (3,000 tons/year)
- Largest carbon capture facility (120,000 tons/year)





# Scientific Technology Innovation



国内接入项目最多，数据量最大的新能源大数据平台。

- ▣ Renewable Energy Smart O&M Center established in 2021
- ▣ Serving 21 companies and managing over 450 renewable power plants



建成我国首个压缩空气储能国家示范项目，成为我国新型储能技术发展的里程碑。

- ▣ China's 1<sup>st</sup> compressed air energy storage demonstration project (60MW/300MWh)



# International Development



UK

## The Minety Battery Energy Storage Project

with installed capacity of 100 MW in the United Kindom, started commercial operation in June 2021, was the largest battery energy storage project in Europe when completed.



Pakistan

## Sahiwal Coal Fired Power Plant in China-Pakistan Economic Corridor

It consists of two 660 MW plants for a combined capacity of 1320 MW and is Pakistan's first supercritical coal power plant.



Myanmar

## Shweli River Hydropower Station Stage I is China's first overseas hydropower BOT project.

It is also the largest hydropower station in Myanmar when completed. It had a total installed capacity of 600 MW .



Cambodia

## Lower Sesan II hydropower plant, Cambodia's largest hydropower project.

Lower Sesan II hydropower plant had a total installed capacity of 400 MW and the power generated accounted for about 20% market share in Cambodia for the year of 2023.



Singapore

## Tuas Power Group is one of the largest power company in Singapore.

Total controlled installed capacity in Singapore amounted 2010 MW. Tuas Power Generation Pte. Ltd. generated 11.3 billion kWh for the year, accounted for 20.4% market share in Singapore.



Australia

## OzGen is an energy company in Australia engaged in investment, construction and operation of power plants.

include 2 base-load coal-fired pithead power plants, namely Millmerran (2 × 425MW), and Callide (2 × 460MW), which were put into operation in 2003 and 2001 respectively



# International Development Strategy



技术创新

以**技术创新**为方向，打造“投建营”一体化全产业链，推动国内优势走向国际市场。

- Technology innovation
- Integration of investment, construction and operation



绿色低碳

以**绿色低碳**为方向，坚持绿地为主的开发模式，全力推动清洁能源项目开发。

- Green energy and low-carbon
- Green-field development



战略新兴

以**战略新兴**为方向，应用集团公司核心技术和研究成果，积极拓展具备优势的新兴产业。

- Strategic Emerging
- Expand new business market with advantage from our advanced mature technology

**谢谢!**

**Thanks!**

