

# 浙江省碳管理政策与实践

Carbon Management Policies and Practices in Zhejiang Province

浙江省科学技术厅

Department of Science and Technology of Zhejiang Province

2024年6月5日

June 5th, 2024



□ **浙江是地域面积和能源资源小省，陆域面积约占全国1%，99%的能源依靠省外调入**

Zhejiang is relatively a small province in China both in terms of geographical area and energy resources. Its land accounts for only about **1%** of the country, and **99%** of its energy need to import outside the province.

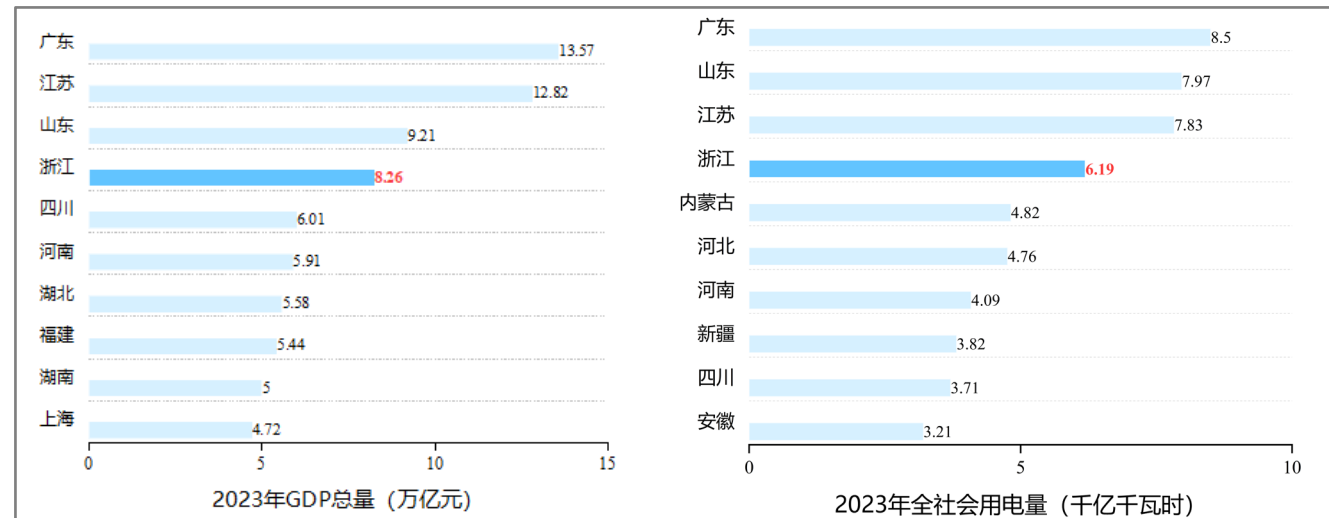
□ **浙江是经济和能源消费大省，2023年GDP总量和全社会用电总量均为全国第四**

Zhejiang is a large province either in terms of economy or energy consumption. In 2023, the total GDP and electricity consumption of Zhejiang both **rank 4th** in China.



### 浙江省地域情况

Geographical overview of Zhejiang province



### 浙江省GDP和全社会用电量情况

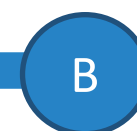
Zhejiang province GDP and total social electricity consumption

### 主要工作内容 Main work content

**构建完善碳中和政策体系**  
Constructing a comprehensive Carbon Neutrality policy system



**推进碳管理领域标准体系建设**  
Promoting the construction of a standard system in the field of carbon management



**扎实推进重点领域绿色低碳转型**  
Steadily advancing green and low-carbon transformation in key areas



**加速绿色技术创新转化**  
Accelerating the innovation and transformation of green technologies

**持续深化低（零）碳试点建设**

Continuously deepening low (zero) carbon pilot projects

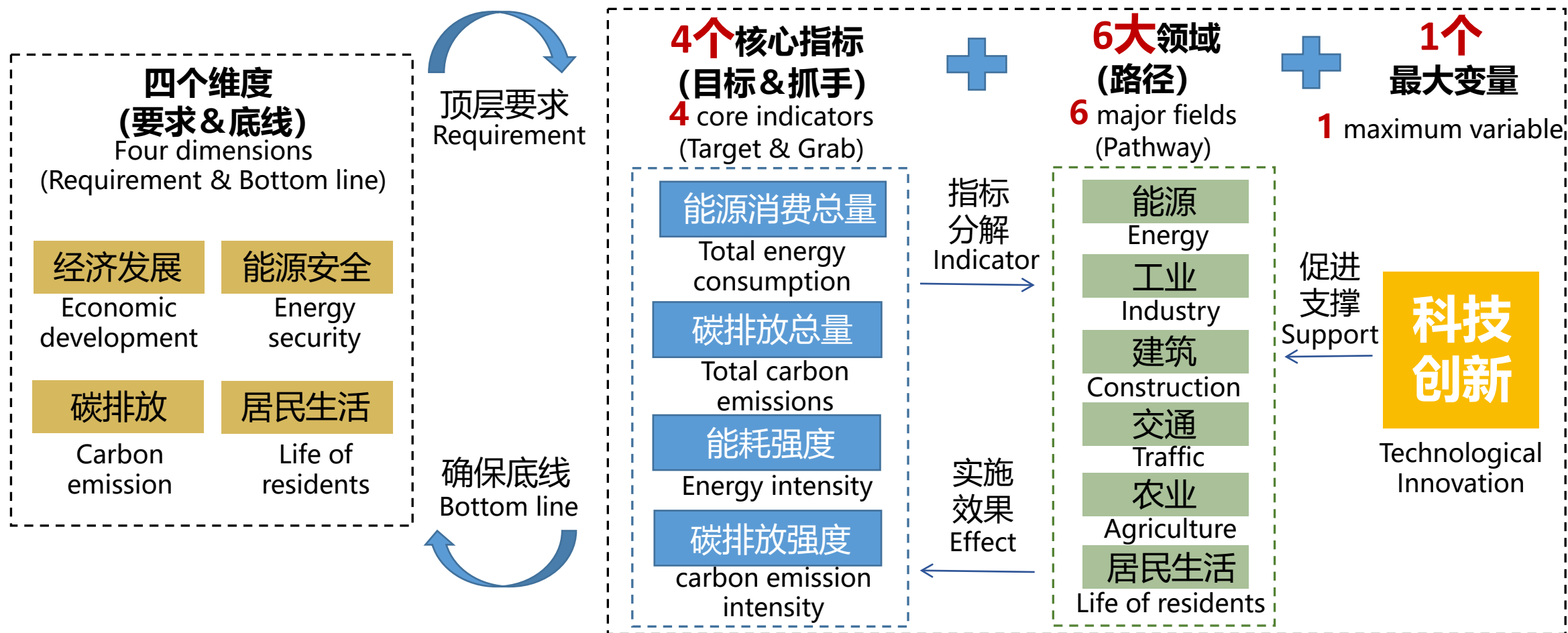


# (一) 构建完善碳中和政策体系

## Constructing a comprehensive Carbon Neutrality policy system

浙江省依据“4+6+1”总体思路，积极稳妥推进碳达峰碳中和工作

Zhejiang Province, based on the “4+6+1” overall approach, is actively and steadily advancing carbon peaking and carbon neutrality work

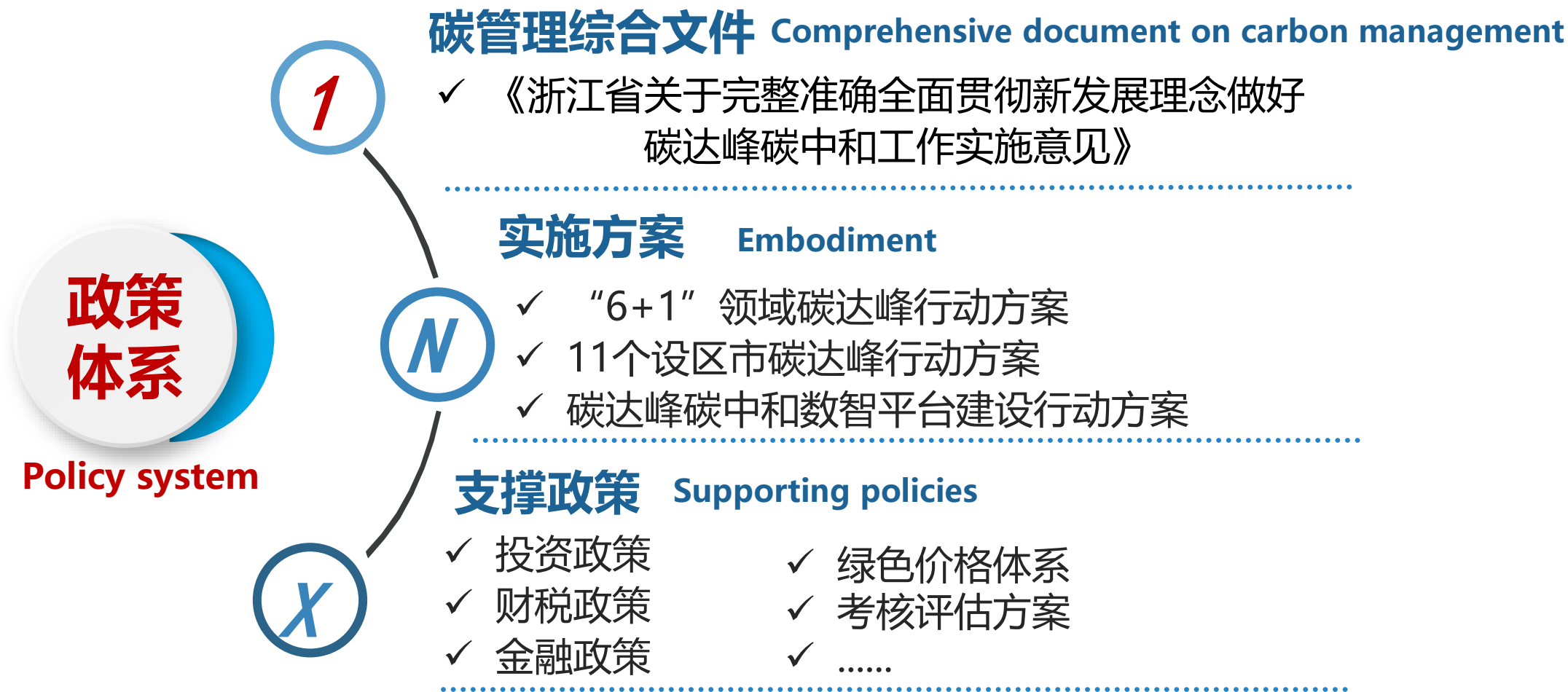


# (一) 构建完善碳中和政策体系

Constructing a comprehensive Carbon Neutrality policy system

□ 浙江省制定了“1+N+X”碳管理政策体系工作

Zhejiang Province has formulated a “1+N+X” carbon management policy system



## (二) 推进碳管理领域标准体系建设

浙江省科学技术厅

Promoting the construction of a standard system in the field of carbon management

浙江省分批推出了**碳达峰碳中和标准体系清单**，已出台**10余个标准规范**

Zhejiang Province has launched **a list of carbon peak and carbon neutrality standard systems** in batches, and has issued more than 10 standard specifications

### 《浙江省碳达峰碳中和工作标准体系实施方案》

Zhejiang Provincial Implementation Plan for the Carbon Neutrality Standard System

时间/Time	标准名称 / Standard specifications
2021	《新能源汽车出行碳减排量评估与核查标准》 Assessment and verification standards for carbon emission reductions from new energy vehicles
2021	《电动汽车出行碳减排核算方法》 Calculation method for carbon emission reduction of electric vehicle travel
2021	《乘用车生命周期碳排放核算技术规范》 Technical Specifications for Passenger Vehicle Life Cycle Carbon Emission Accounting
2022	《电动汽车动力电池碳减排量评估指南》 Guidelines for assessing carbon emission reductions from electric vehicle power batteries
2022	《电动汽车动力电池碳减排量核查指南》 Electric vehicle battery carbon emission reduction verification guide
2022	《动力蓄电池全生命周期碳排放评价规范》 Carbon emission evaluation specification for power batteries throughout their life cycle
2022	《道路车辆产品碳足迹核算及报告指南》 Road Vehicle Product Carbon Footprint Accounting and Reporting Guide
2023	《电动汽车碳足迹评价规范》 Specification for carbon footprint assessment of electric vehicles
2024	《道路车辆 企业碳排放核算及报告 动力蓄电池制造企业》 Road vehicles Corporate carbon emissions accounting and reporting Power battery manufacturing companies
计划中 In plan	《区域二氧化碳排放统计核算技术规范》 Technical Standard for Accounting of Regional Carbon-dioxide Emission
计划中 In plan	《产品碳足迹核算方法》 Accounting Methods for Carbon Footprint of Product,
计划中 In plan	《碳排放基础数据元规范》 Basic Data Standard of Carbon Emission
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# (三) 扎实推进重点领域绿色低碳转型

Steadily advancing green and low-carbon transformation in key areas

## 能源领域/Energy Sector

持续加快推进清洁能源项目建设，2023年新增并网风电光伏超700万千瓦，全省可再生能源装机提升至42.2%。

Accelerate the construction of clean energy projects. In 2023 more than 7 million kilowatts of wind and solar power is connect to grid, and the renewable energy account for 42.2% of total installed capacity in whole province.



光伏  
solar power

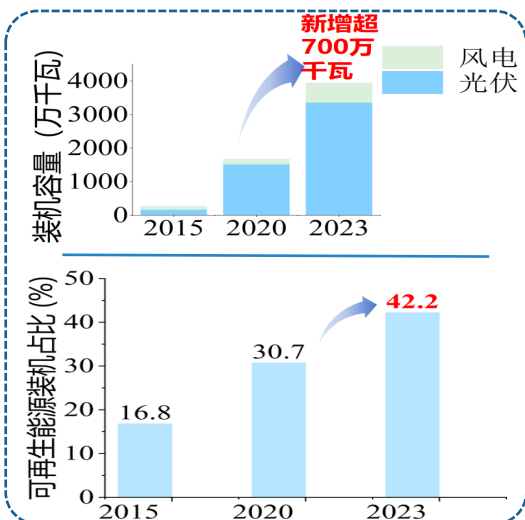
风电  
wind power



抽水蓄能  
pumped storage

清洁外电入省  
Inter-province clean power transmission

清洁能源项目  
Clean energy projects



可再生能源情况  
Renewable energy installation

## 工业领域/Industry Sector

完成高耗能行业重点企业能效诊断，实现重点企业用能预算管理全覆盖；强化资源利用循环化，省级以上制造业类产业园区基本完成循环化改造。

we have conducted the energy efficiency diagnosis for the major enterprises in high energy consumption industries, and all those enterprises are under the energy budget control. The recycling of resources was fortified, and all provincial level manufacturing parks have completed recycling transformation.



高耗能行业重点企业能效诊断  
Energy efficiency diagnosis of high energy consuming industries

- 余杭经济技术开发区
- 乐清经济开发区
- 湖州经济技术开发区
- 杭州湾上虞经济技术开发区
- 义乌经济技术开发区
- 开化工业园区
- 仙居经济开发区
- 普陀经济开发区

通过国家验收的循环化改造试点产业园区  
Pilot industrial parks for circular transformation

# (三) 扎实推进重点领域绿色低碳转型

Steadily advancing green and low-carbon transformation in key areas

## 建筑领域/Construction Sector

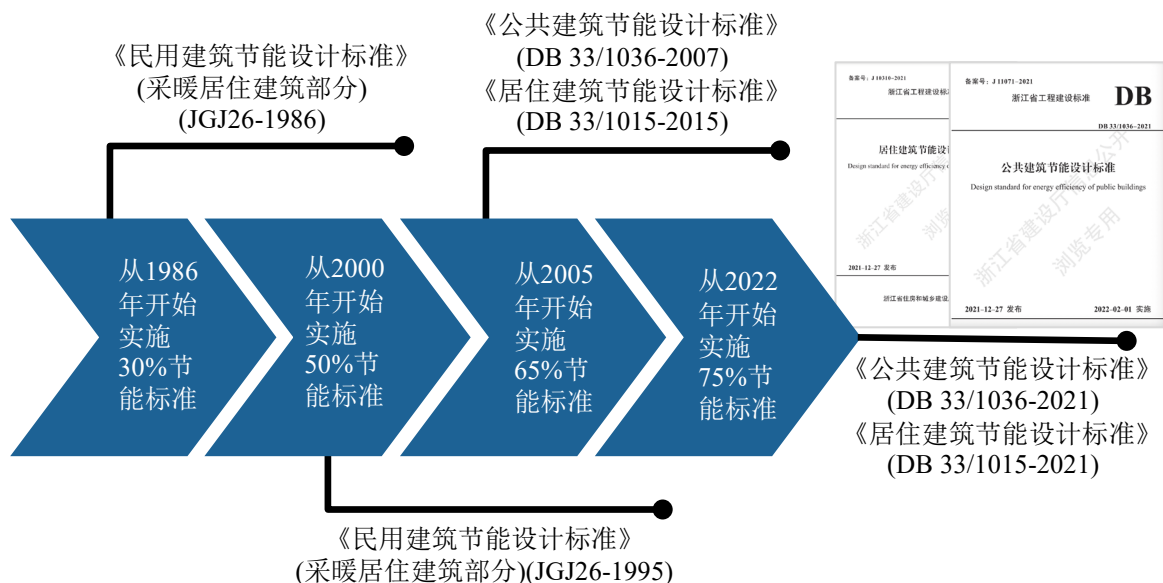
全面执行75%的低能耗建筑设计强制标准，城镇新建民用建筑实现绿色建筑全覆盖。

The new buildings fully implement the mandatory standard of 75% low-energy building design, and the new civil buildings achieve full coverage of green buildings.

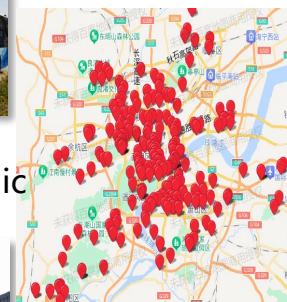
## 交通领域/Industry Sector

加快推进公共领域车辆新能源化，加快公共充(换)电桩成网布局，2023年新增新能源汽车73万辆，占全年汽车总上牌量的39%。

we are accelerating the replacement of new energy vehicles in the public sector, and meanwhile accelerating the layout of public charging piles or battery swapping station. The new energy vehicles is with an increase of 730,000 in 2023, accounting for 39% of the total number of vehicles registered for the year.



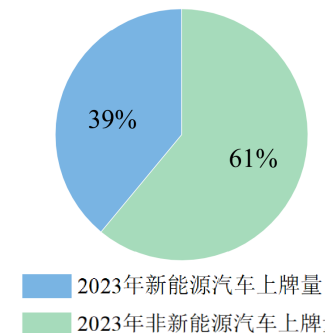
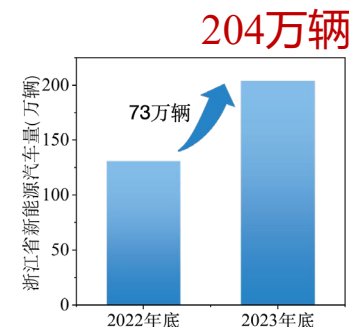
新能源公交  
New energy public transportation



充(换)电桩  
Charging (swapping) pile



新能源出租车  
New energy taxi



### 新能源车发展情况

Development of new energy vehicles





# (四) 加速绿色技术创新转化

## Accelerating the innovation and transformation of green technologies

- 在全国率先出台《浙江省碳达峰碳中和科技创新行动方案》，推进绿色低碳技术创新；  
2021年以来，组织实施碳中和科技攻关项目近**70项**，省财政支持超过**2亿元**

Issued the first Action Plan nationwide pertained to the carbon neutrality; Since 2021, granted **70 projects** for the carbon neutrality technology innovation with provincial financial support over **28 million US dollars**

### 《浙江省碳达峰碳中和科技创新行动方案》

The Scientific and Technological Innovation Action Plan for Carbon Neutrality in Zhejiang



• 基础前沿研究工程 / Basic Frontier Research Project

• 关键核心技术创新工程 / Key Core Technology Innovation Project



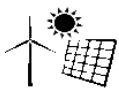
• 先进技术成果转化工程 / Advanced Technology Achievement Transformation Project

• 创新平台能级提升工程 / Innovation Platform Capacity Enhancement Project



• 创业创新主体培育工程 / Cultivation Project for Entrepreneurial and Innovative Entrepreneurs

• 高端人才团队引育工程 / High-end talent team attraction project



• 可持续发展示范引领工程 / Sustainable Development Demonstration and Leadership Project

• 低碳技术开放合作工程 / Low Carbon Technology Open Cooperation Project

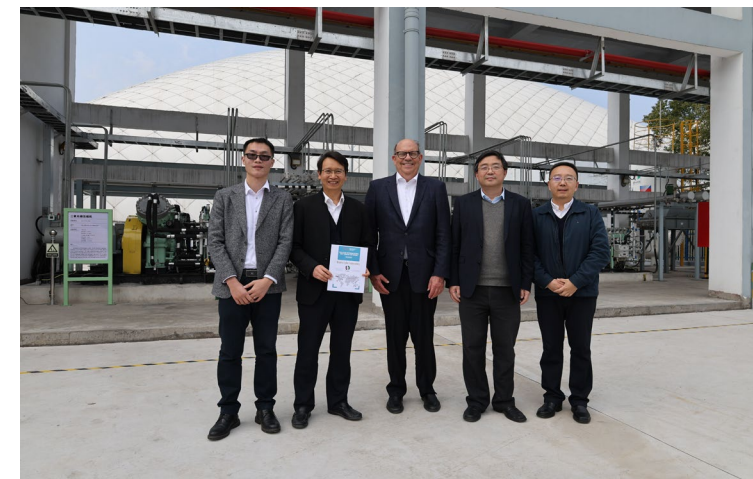
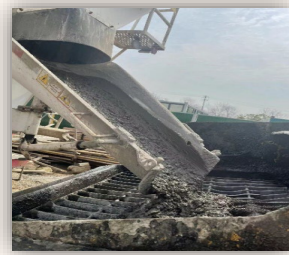
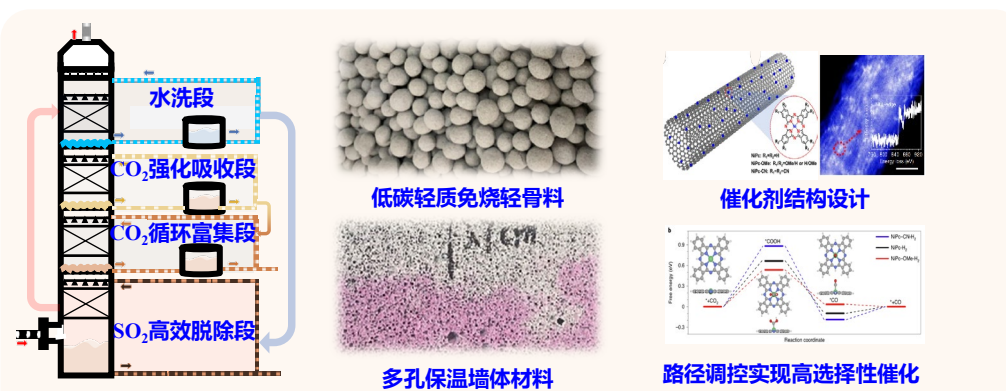
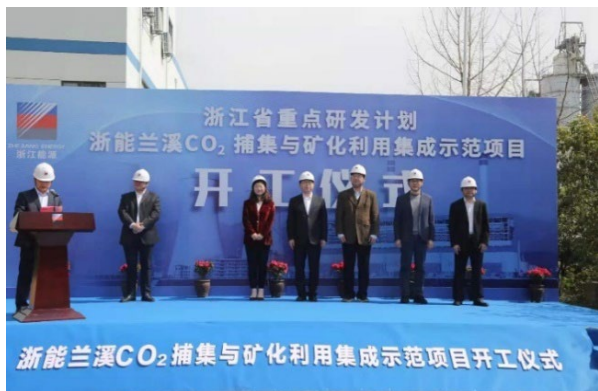


# (四) 加速绿色技术创新转化

Accelerating the innovation and transformation of green technologies

浙江在CCUS技术研发上处于领先水平，白马湖实验室在浙能兰溪电厂建成中国首个煤电碳捕集与矿化利用全流程耦合示范项目，并建有CCUS技术验证平台

Zhejiang is taking the lead of CCUS innovation in China. The Baima Lake Laboratory built the China's first coal-electric carbon capture and mineralization coupling pilot project at lanxi power plant, and established an engineering technology demonstration and verification platform for CCUS



2024年3月7日，白马湖实验室CCUS技术验证平台纳入国际CCUS测试中心网络

The verification platform of Baima Lake Laboratory was incorporated into the international CCUS testing center network

# (四) 加速绿色技术创新转化

## Accelerating the innovation and transformation of green technologies

建有碳中和相关专业实验室**34**家、技术研究中心**7**家，**3**个项目入选**首批**国家绿色低碳先进技术示范工程项目，设立白马湖实验室重点攻关能源碳中和领域技术研发与成果转化

**34** specialized laboratories and **7** technology research centers related to carbon neutrality in Zhejiang, among them, **the Baima Lake Laboratory** focuses on the R&D of Carbon neutrality in energy sector

设在浙江省的国家绿色技术交易中心截至2024年4月底，交易额超过**30**亿元

By the end of April 2024, the national green technology trading center based in Zhejiang has accumulated over 3,600 technologies with a trade volume of over **415 million US dollars**

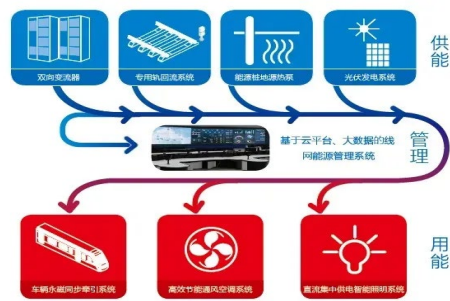


**Baima Lake Laboratory (Laboratory of Clean Energy and Carbon Neutrality of Zhejiang Province)**

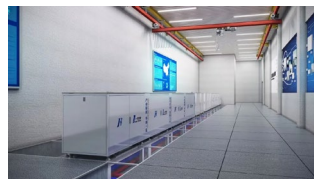
研究 方向 Research Direction	可再生能源转化利用 Renewable Energy Conversion and Utilization
	规模化储能与氢能 Large-scale Energy Storage and Hydrogen Energy
	能源清洁低碳利用 Clean and Low-carbon Utilization of Energy

### 白马湖实验室 (能源与碳中和实验室)

Baima Lake Laboratory (Laboratory of Clean Energy and Carbon Neutrality of Zhejiang Province)



“供—用—管”综合节能低碳示范项目



浸没式液冷数据中心项目



生物定向合成技术产业化示范项目

### 国家绿色低碳先进技术示范工程项目

National Green and Low Carbon Advanced Technology Demonstration Project



国家绿色技术交易中心驾驶舱

全球绿色技术智能检索及分析决策系统

### 国家绿色技术交易中心

National Green Technology Trading Center

# (五) 持续深化低（零）碳试点建设

Continuously deepening low (zero) carbon pilot projects

□ 开展项目碳效评价，从行业和区域两个维度评估碳生产力水平，实现对项目的分类评价

Carry out project carbon efficiency evaluation, evaluate carbon productivity level from both industry and regional dimensions, and achieve classification evaluation of projects

□ 制定《浙江省关于开展低（零）碳试点建设的指导意见》，积极开展绿色低碳工业园区、绿色低碳工厂、低碳试点县、低（零）碳乡镇（街道）等试点建设

Develop the Guiding Opinions of Zhejiang Province on Carrying out Low (Zero) Carbon Pilot Construction, actively carry out pilot construction of green and low-carbon industrial parks, green and low-carbon factories, low-carbon pilot counties, and low (zero) carbon townships (streets), etc

## 《浙江省关于开展低（零）碳试点建设的指导意见》

The Guideline for the Development of Low (zero) Carbon Pilot in Zhejiang



绿色低碳工业园区  
Green and low-carbon industrial park



绿色低碳工厂  
Green and low-carbon factories



低碳试点县  
Low-carbon pilot counties



浙江第一批  
低（零）碳村（社区）  
试点创建单位  
低（零）碳  
乡镇（街道）  
Low (zero) carbon  
towns (streets)



杭州市/Hangzhou



湖州市/Huzhou

首批国家碳达峰试点城市  
First batch of national carbon peak pilot cities

1

## 健全碳管理法规

### Carbon management regulations

建立健全碳管理相关法规，研究出台《浙江省绿色低碳转型促进条例》，推进经济发展绿色转型。

Further improve relevant regulations on carbon management. We are to make a legislation on Promoting Green Low-carbon Transformation to promote the green transformation of economic development in our province.

2

## 创新管理机制

### Management mechanism

利用数字化智慧管理平台，对重点领域、重点企业、重点项目的碳排放数据进行动态核算、智能监测，推动企业低碳转型、引导个人低碳生活。

Innovate the management mechanism. With support of the digital intelligent management platform, we will to conduct dynamic accounting and intelligent monitoring of the carbon emission of key areas, enterprises and projects, so as to promote the low-carbon transformation of enterprises and guide the low-carbon life of individuals.

3

## 加快构建碳足迹标准体系

### Carbon footprint standard system

加快构建碳足迹标准体系，率先选择新能源汽车、锂电池、纺织品等重点行业开展碳足迹核算、认证。

Accelerate the construction of a carbon footprint standard system, and firstly select industries such as new energy vehicles, lithium batteries, and textiles to carry out carbon footprint accounting and certification.

4

## 加强国际交流与合作

### International exchanges and cooperation

进一步加强与美国、欧洲等国在技术创新、能源转型、产业升级、气候政策方面的合作，携手共同应对全球气候变化与实现碳中和目标。

Further strengthen cooperation with countries such as the United States and Europe in technology innovation, energy transformation, industrial upgrading, and climate policies, and work together to cope with global climate change

感谢!  
Thank you!

2024/06

