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ADB-PRC Regional Knowledge Sharing Initiative



# ADB's Supports in PRC Energy Sector

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**ASIA  
CLEAN ENERGY  
FORUM 2025**

Empowering the Future: Clean Energy  
Innovations, Regional Cooperation and  
Integration, and Financing Solutions



**1. WHY- Low carbon energy transition**

**2. WHAT- ADB has been doing on low-carbon energy innovation**

**3. HOW- Way Forward**

# WHY- ADB's Mission

## ADB's Mission

1980-1990: Economy growth driven

2000-2010: Inclusive economy and social development

2010-2020: Inclusive and sustainable development

**2020-2030: Prosperous, inclusive, resilient and sustainable Asia and the Pacific**



## Strategy 2030 Midterm Review

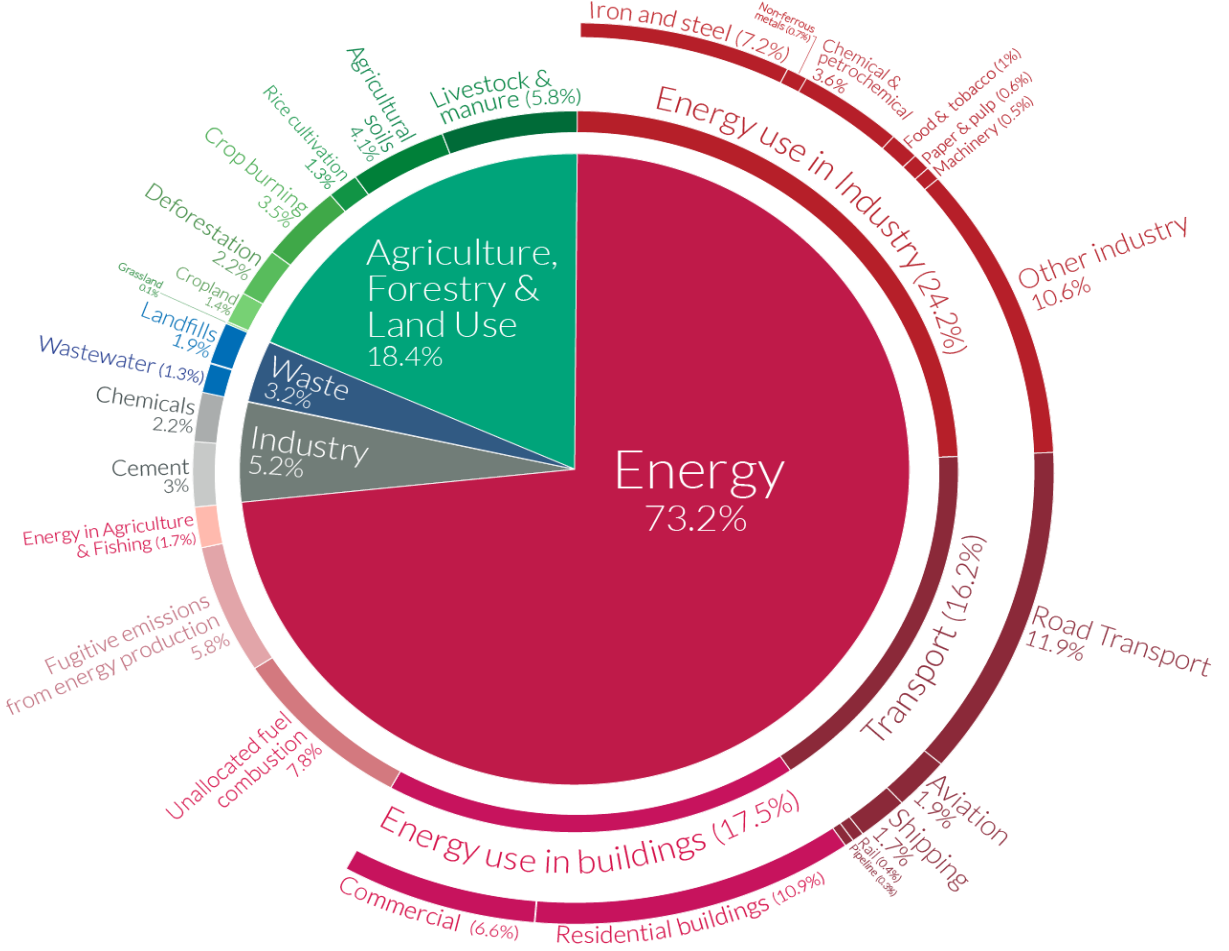
- i) **Climate action**
- ii) **Private sector development**
- iii) **Regional cooperation and public goods**
- iv) **Digitalization transformation**
- v) **Resilience and empowerment**

**Solving Challenges Together, Connecting the Region,  
and Empowering People for Dynamic Economies and a  
Healthy Planet**

# WHY-Energy Sector- Major Contributor of Global and PRC's GHG Emissions

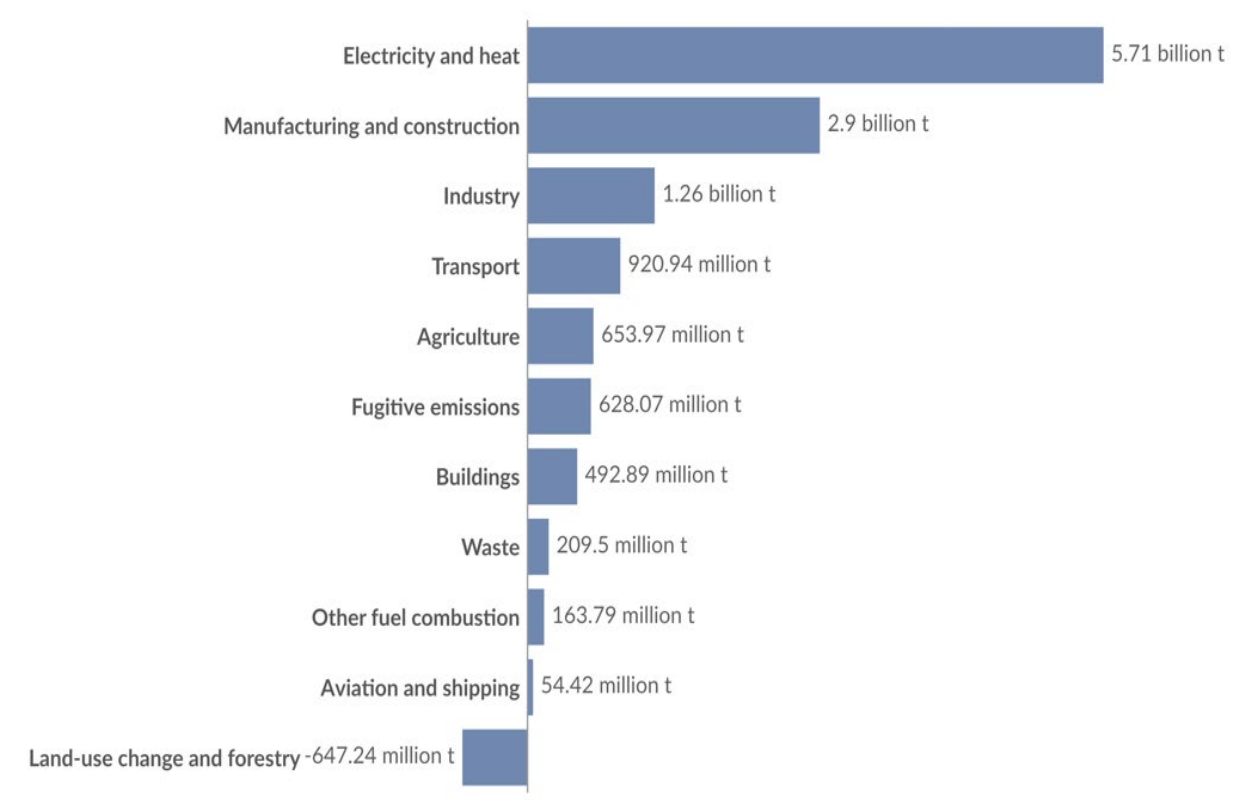
## Global greenhouse gas emissions by sector

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO<sub>2</sub>eq.



## Greenhouse gas emissions by sector, China, 2020

Greenhouse gas emissions<sup>1</sup> are measured in tonnes of carbon dioxide-equivalents<sup>2</sup> over a 100-year timescale.



Data source: Climate Watch (2023) OurWorldinData.org/co2-and-greenhouse-gas-emissions | CC BY



# WHAT: ADB's Low-carbon energy transition innovations

During 1986-2023, ADB has supported **190** energy **loan** and **TA** projects in the PRC, with a total financing amount of **\$7.96 billion**.

- **Qinghai Delingha Concentrated Solar Power Plant**
- **ADB loan (\$150 mil) approved in 2013**, the executing agency is China General Nuclear Power Corporation
- The **first CSP operated in PRC**, the **highest CSP plant in the world** (3,000 asl):
  - 50MW, 9-hour thermal storage, parabolic trough CSP system; Commissioned in 2018, 197GWh/year, to avoid 160,000 tons CO2e annually
- **Henan Cleaner Fuel Switch Investment Program**
- **ADB loan (\$300 mil) approved in 2019**.
- Shangshui Biogas Plant: Applying the internationally advanced dry anaerobic fermentation process, the plant produce biogas and organic fertilizer while treatment of agriculture wastes.
- Adopting integrated business model for corn straw collection, transportation, and storage, which engages farmers, village collectives, and professional harvest teams.





# WHAT- ADB's Flagship Program - Air Quality Improvement Program in the Greater BTH

**Strengthen Policy and Regulatory Framework**

**Leverage investments through innovative approaches**

**Help demonstrate and deploy advance technologies**

**Programmatic approach with flexible loan modalities for sustainability, innovation, and development impact**



# WHAT- Greater BTH program covered sectors

1

## Clean Energy

Energy Storage •  
Coal to Electricity/Gas •  
Wind Energy •  
Solar Energy •



2

## Energy Saving & Emission Reduction

- Cooling System Retrofit
- Central Heating and waste heat utilization
- Desulfurization, denitratio
- Energy efficiency improvement in industry, buildings



Charging/battery switching station •  
L/CNG Filling Station •  
Electric Vehicle •



3

## Green Transportation

4

## Circular economy- waste to energy

- Biomass power
- Agriculture waste/ kitchen waste to green gas or green fuels

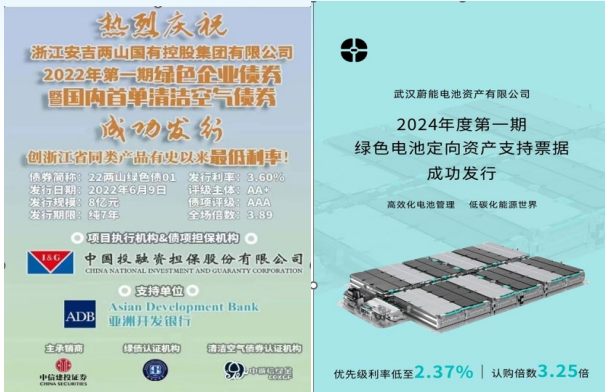


# WHAT- Greater BTH program innovations

1

## Financial products

Sub/entrusted loan  
Guarantee •  
Credit enhance (CAB)  
Equity •



2

## Business model



• Roof-top solar guarantee  
• Shangshui corn stalks to green gas  
• Energy service contract

Virtual power plant •  
Cooling and heating •  
BAAS •  
EGIB •



• ADB sovereign, Non-sovereign collaboration  
• DPs, banks, financial leasing

3

## Advance technology

4

## Partnership



# WHAT Greater BTH program innovations



## Tianjin Dongli Biomass Energy and Comprehensive Waste Treatment Subproject

- Kitchen waste to biogas to power
- Construction waste and slag to recycle and reuse



## Energy Conservation, Emission Reduction and Utilization of Waste Heat and Hydrogen Project in Bohua Chemical Industry Park

# WHAT- Ningbo Urban Green and Low-Carbon Development

ADB loan: **CNY 1.45 billion**

Modality: FIL

Output:

- ❖ Strengthen institutional capacity in climate mitigation and green finance
- ❖ Establish Climate financing platform with ADB loan
- ❖ Green insurance system piloted
- ❖ Establish Digital carbon accounts

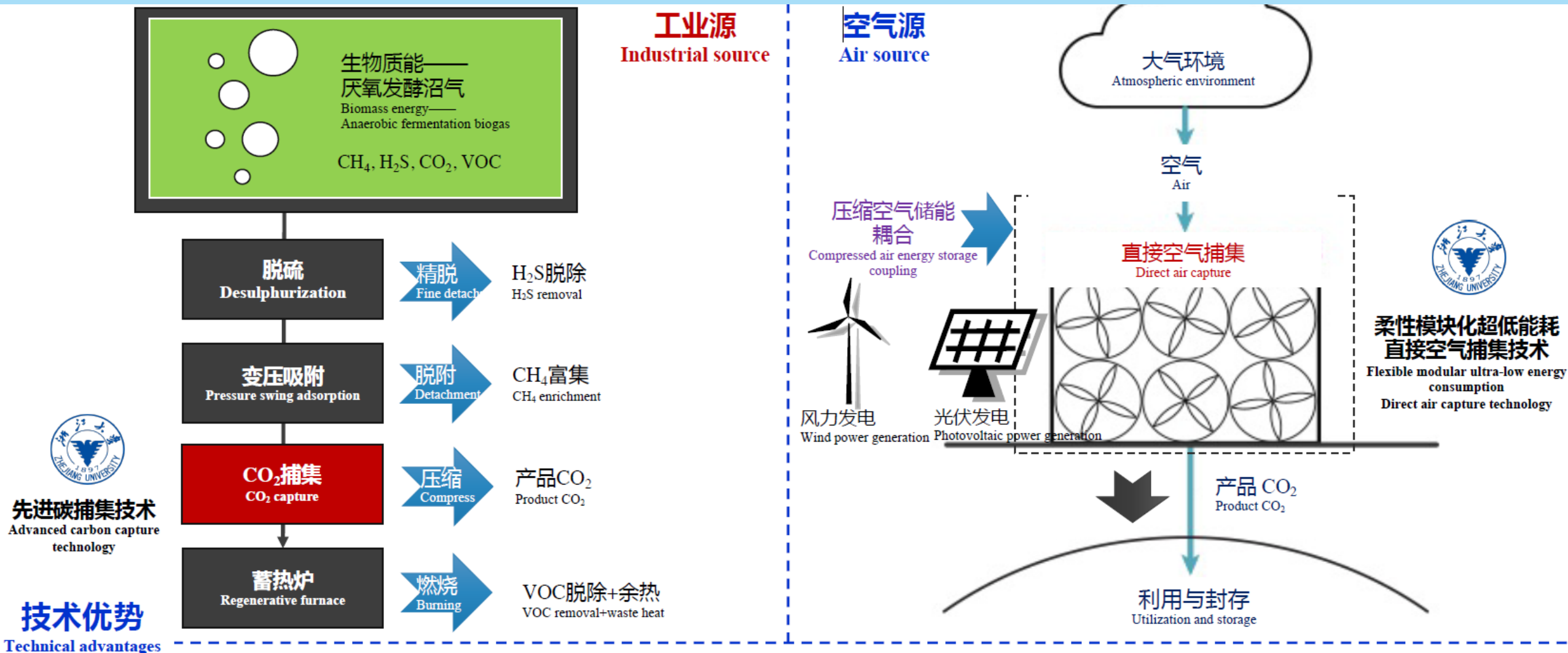
## Innovations

- The preparation and disclosure of **the first fully aligned with ISSB standard ESG report of a city commercial bank** in the PRC
- providing capacity building on ESG reporting, new low-carbon technologies, and climate financing to **MSEs**, with a special focus on **MSEs owned or led by women**;





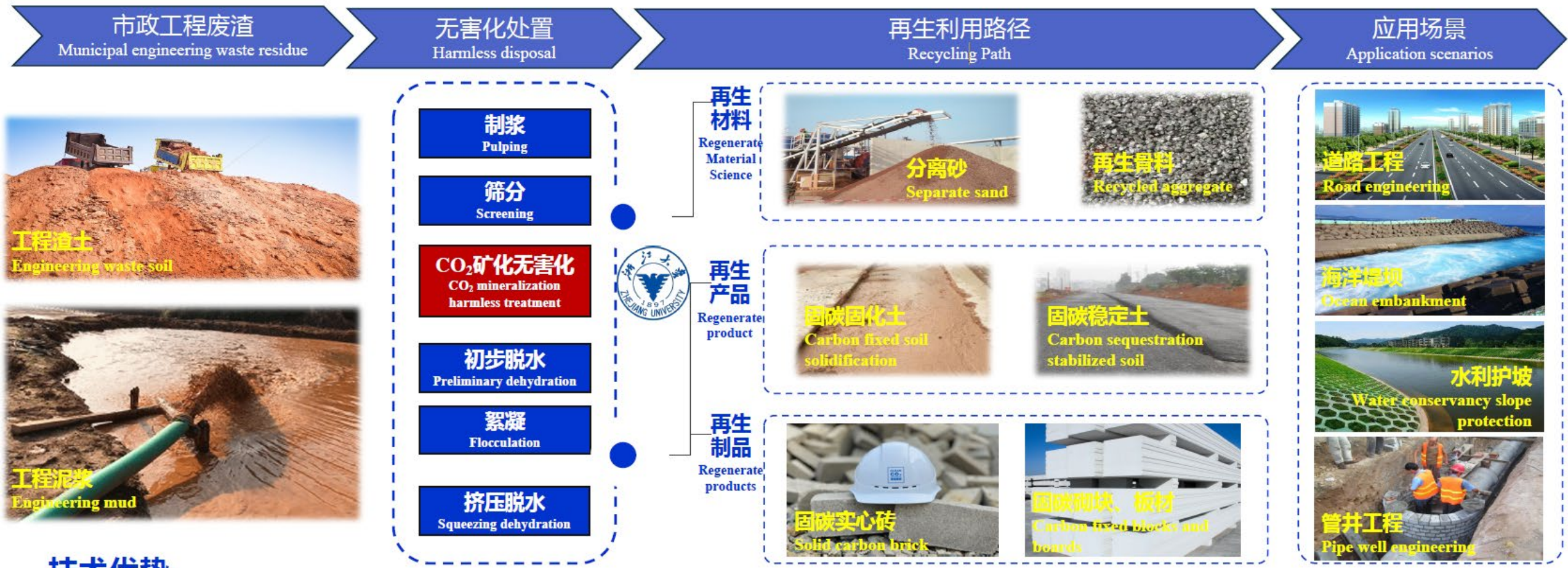
# WHAT- Ningbo Urban Green and Low-Carbon Development



- **脱除园区解析废气:** 消纳园区厨余垃圾厌氧发酵之后解析废气二氧化碳, **无需对外排放同时避免臭气释放;**  
➤ **Removing waste gas from the park:** After anaerobic fermentation of kitchen waste in the park, the carbon dioxide in the waste gas is analyzed **without the need for external emissions and to avoid the release of odors;**
- **深度脱除二氧化碳:** 千吨级空气源二氧化碳捕集**采用模块化耦合储能与可再生能源技术,** 助力形成碳中和园区。  
➤ **Deep removal of carbon dioxide:** The thousand ton level air source carbon dioxide capture **adopts modular coupled energy storage and renewable energy technology** to help form a carbon neutral park.



# WHAT- Ningbo Urban Green and Low-Carbon Development



## 技术优势

### Technical advantages

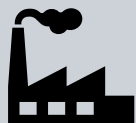
- **泥浆渣土协同处置**：消纳市政工程、地铁盾构等泥浆与渣土，**无需再进行堆放处理**；
- **Collaborative disposal of mud and debris**: the disposal of mud and debris from municipal engineering, subway shield tunneling, and other projects **without the need for further stacking and treatment**;
- **协同二氧化碳利用**：预计利用二氧化碳**0.5万吨/年**，矿化协同利用能**有效降低泥浆中重金属等**有害物质；
- **Collaborative utilization of carbon dioxide**: It is expected to utilize **5000 tons/year** of carbon dioxide. Mineralization collaborative utilization can **effectively reduce harmful substances such as heavy metals in mud**;



# HOW- Way forward to support low-carbon energy transition in urban through electrification and CCUS



New RE technologies: Green hydrogen- green fuels



CCUS: for hard-to-abate sectors



Building to Grid ecosystem: EGIB, virtue power plants, low-carbon construction materials decarbonization of life-cycle buildings



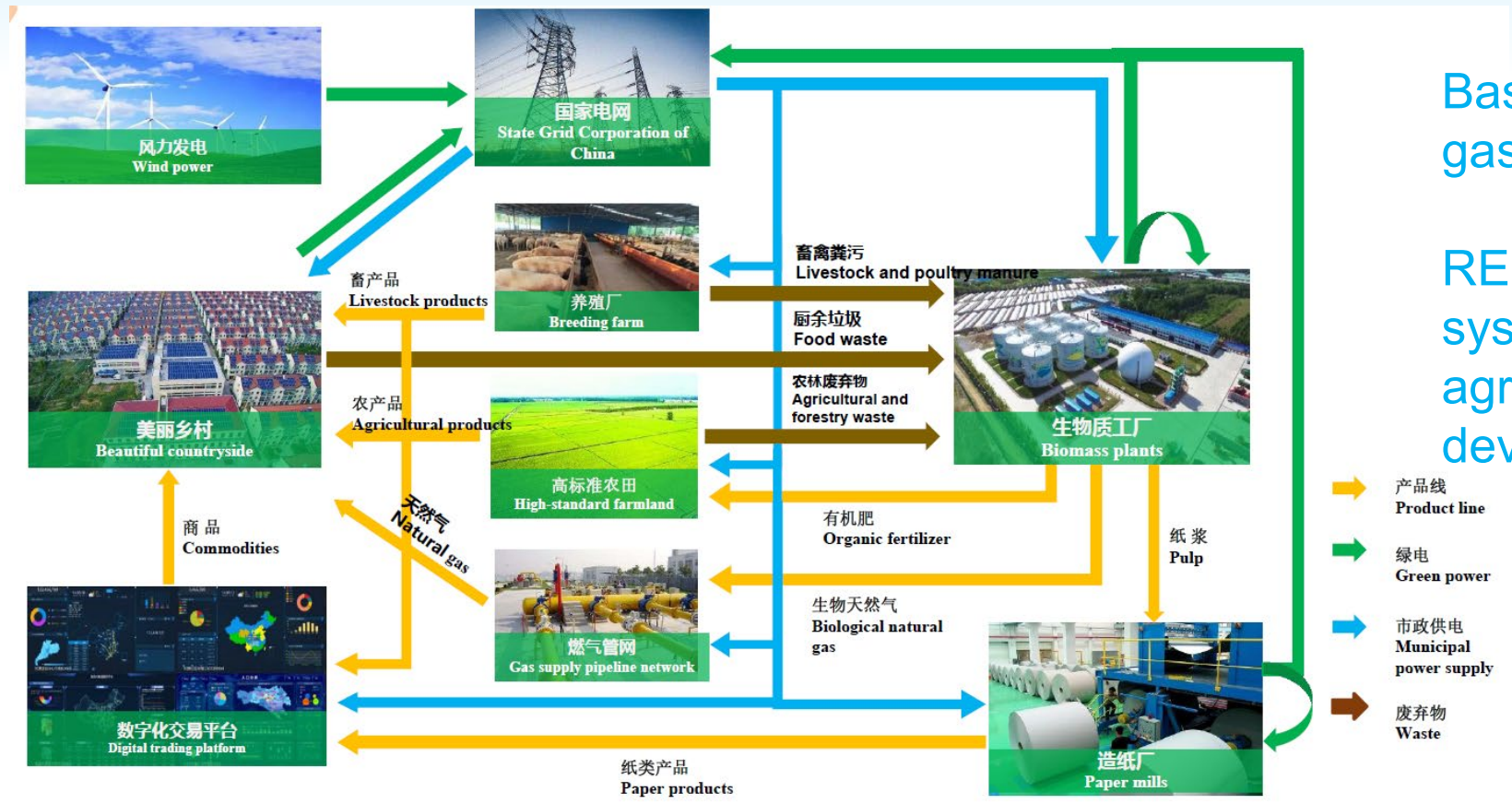
Vehicle to Grid ecosystem: shared energy storages, BAAS, EV battery recycling and circular utilization, green fueled vehicles and ships.

## Integrated solutions: Zero-carbon emissions industrial parks



# HOW- Way forward to support low-carbon energy transition in rural area through RE, Bioenergy, BCCUS on circular economy

## Waste-solar/wind energy-green gas-agriculture-ecology system ecosystem



Based on Shangshui green gas project model

RE integrated ecological system rehabilitation and agriculture synergy development in Hunan





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# Thank you!

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