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Introduction to the Xiamen Low Carbon City Concept

Presentation at the international Conference

Future Megacities in Balance

- New Alliances for Energy- and Climate-Efficient Solutions

October 11, 2010 in Essen



Overview

1. Introduction to Xiamen
2. Low Carbon City goals
 - Construction
 - Transport
 - Production
3. Expected results of the Low Carbon City plan



Introduction to Xiamen

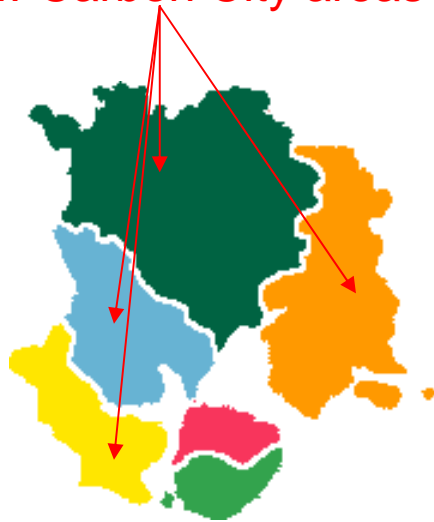


- Coastal city in southeastern China with a population of 2.7 mill. inhabitants.
- Administered as a sub-provincial city under China's Fujian province.
- It looks out to the Taiwan Strait and is one of China's original four special economic zones established in the 1980s.
 - Xiamen port ranks 8th among the top ports in China and 30th among the world's top 100 ports.
 - World's largest supply base for raw tungsten materials and sunglasses manufacturing base, exporting 120 million each year.
 - Important base in Fujian province for making medium and large-sized modern container vessels and yachts.



Administrative division and Low Carbon City area

Low Carbon City areas



Administrative subdivision (qu)	Population (as of 2007)	Land area (km ²)	Low carbon area (km ²)
■ <u>Huli-qu</u> (湖里区)	676,400	63	
■ <u>Siming-qu</u> (思明区)	736,400	73	
■ <u>Haicang-qu</u> (海沧区)	143,000	155	80
■ <u>Jimei-qu</u> (集美区)	340,000	276	60
■ <u>Tong'an-qu</u> (同安区)	548,200	658	50
■ <u>Xiang'an-qu</u> (翔安区)	260,000	352	35
TOTAL	2,704,000	8,818	225

- Huli and Siming form the City of Xiamen, the other four sub-regions Xiamen suburban and rural areas.



Low Carbon urban planning

- Construction of four low-carbon ecological districts
 - **Haicang:** Low-carbon economy industrial area (80 km²)
 - **Xiang'an:** Sea-water source heat pump power generation (35 km²)
 - **Jimei:** Low-carbon agricultural zone (60 km²)
 - **Tongan:** Achievement of zero CO₂-emissions (50 km²)



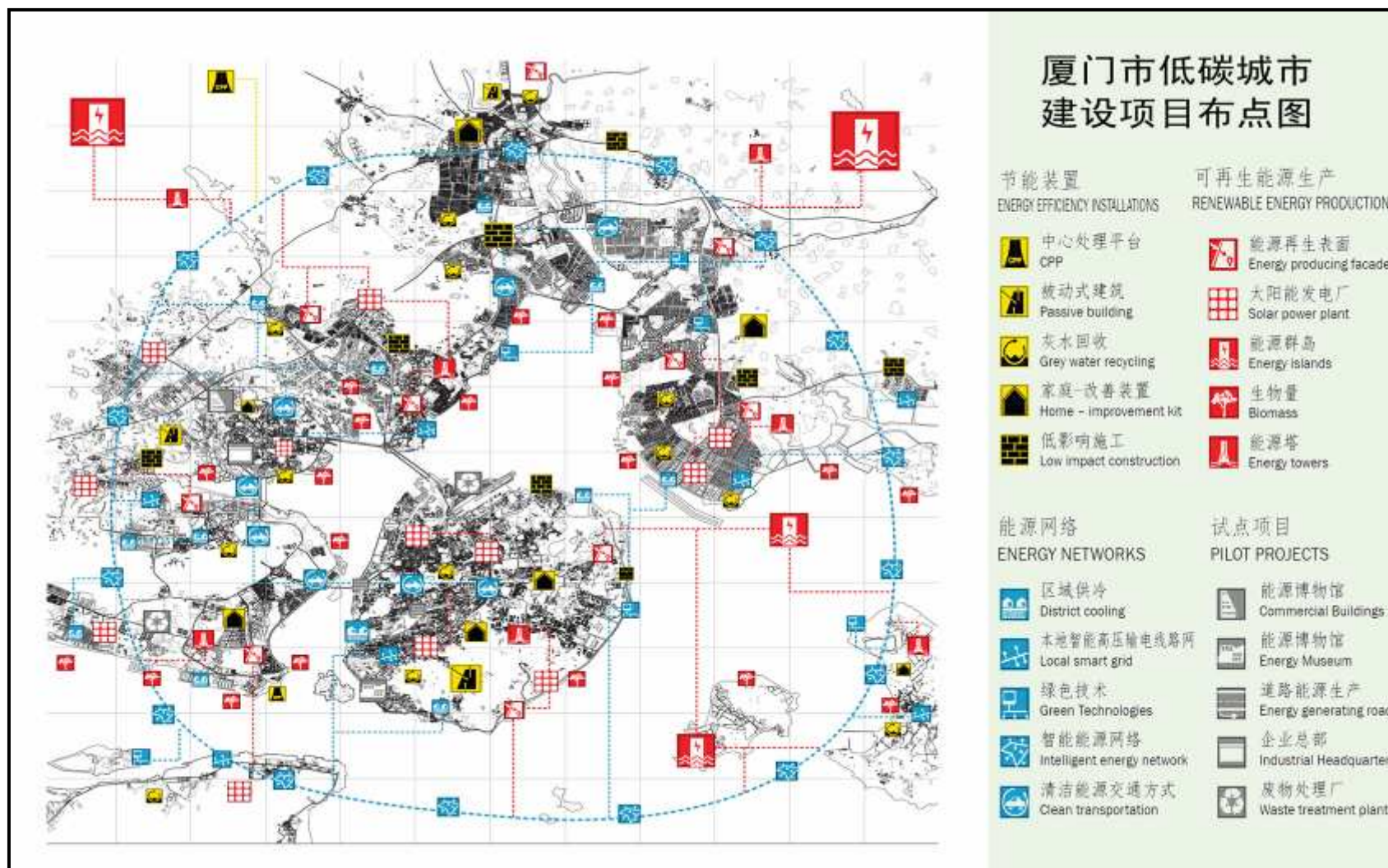


Low Carbon City Sectors

- Construction
- Transport
- Production



Low Carbon construction (overview)



Low Carbon construction (Jimei)



Low Carbon construction (Jimei Center)



Low Carbon construction (Jimei City Hall)



Planning objectives low carbon construction

- Increase of CO₂-emissions from the building sector (residential and public buildings):
 - 2000: 1,852,000 t CO₂
 - 2008: 4,905,000 t CO₂
- CO₂-emissions from the building sector = 28% of the total carbon emissions. Share increasing with growing income.
- Goal building sector 2020: 19.2 million t CO₂
- Targeted CO₂-emission reductions 2020: 12.8 million t.
- Measures:
 - Improvement of energy efficiency in buildings (envelope, roof, windows) beyond the current 50% standard
 - Promotion of renewable energies (solar PV, solar thermal, geothermal)
 - Improvement of planning and construction quality



Planning objectives low carbon transport

- CO₂-emissions from public transport and private cars is continuing to increase with growing rates due to
 - increase in income
 - Increasing travel distances for commuting, and
 - An underdeveloped public rail system.
- 2005: City's total transport emissions (2,886,900 t) account for 18% of total emissions.
- Goal transport sector 2020: 12.4 mill. t.
- Targeted CO₂-emission reduction 2020: 8.2 mill. t.
- Measures:
 - Improvement of public transportation
 - Bus rapid transit system
 - Promotion of electro-mobility



Planning objectives low carbon production

- 2005: CO₂-emissions from the production 7.1 mill. t.
- Goal 2020: CO₂-emissions from production less than 30,2 mill. t.
- Targeted emission reduction 2020: 20.1 mill. t
- Measures:
 - Energy efficiency improvements, especially in energy intensive sectors
 - Fuel switch from coal to natural gas in power generation
 - Promotion of renewable energies (wind energy, sea-water source heat pump power generation etc.)



Expected results of the Low Carbon City plan (2020)

- Energy consumption per GDP - 40% compared to 2005
- Decoupling of GDP and CO₂-emission growth
 - GDP is 7.14 times higher than 2005;
 - CO₂-emissions only 4.28 times higher than 2005;
- Goal: Total CO₂-emissions below 68.6 mill. t
- Total CO₂-emission reductions vs. Business-as-usual:
45.8 mil. t





Thank you very much for your attention!

