

Brussels, 20 June 2012



Europe-China Clean Energy Centre

中欧清洁能源中心



CHINESE RENEWABLES AND DISTRIBUTED ENERGY

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Prospect of Renewable Energy and Distributed Generation of China

- Overview of Renewable Energy in China
- Renewable Energy Outlook
- Distributed Generation Outlook
- EU-China Collaboration on Clean Energy:

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Overview of China energy

- **Energy & Economy**

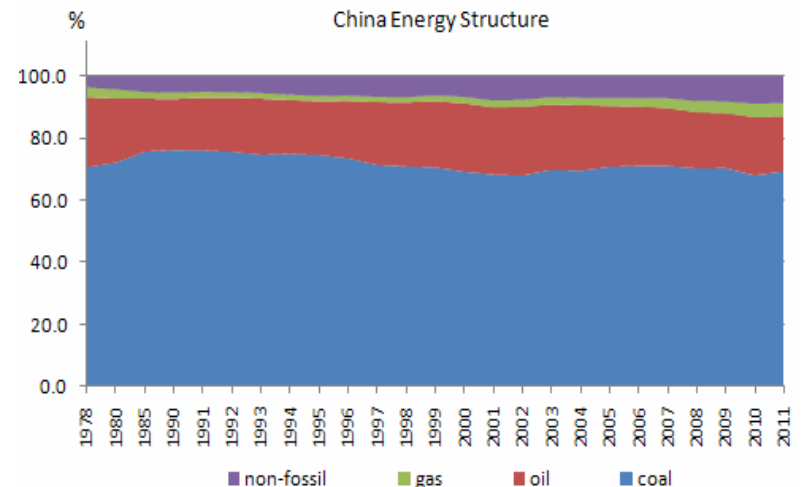
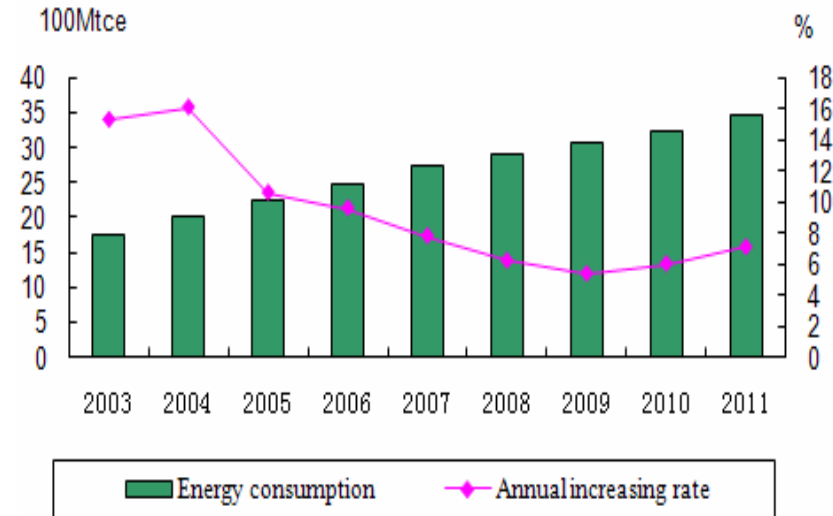
- 2005-2011, energy increasing rate 6.3% vs. economic increasing rate 11.2%

- **Energy Consumption (2011)**

3.48 BTCE

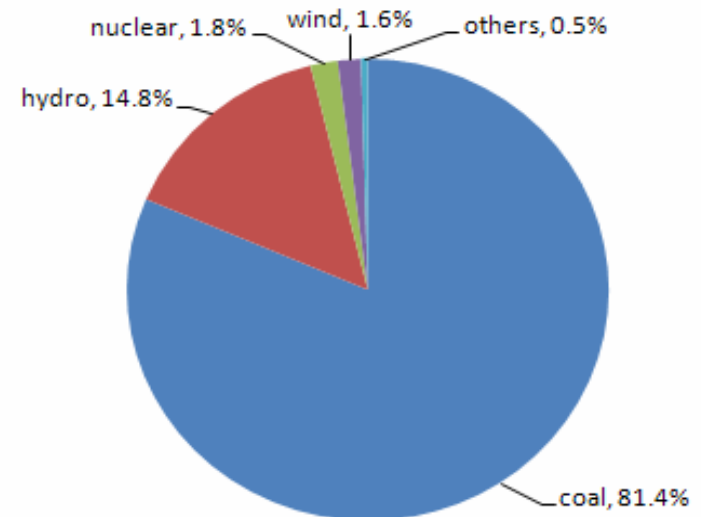
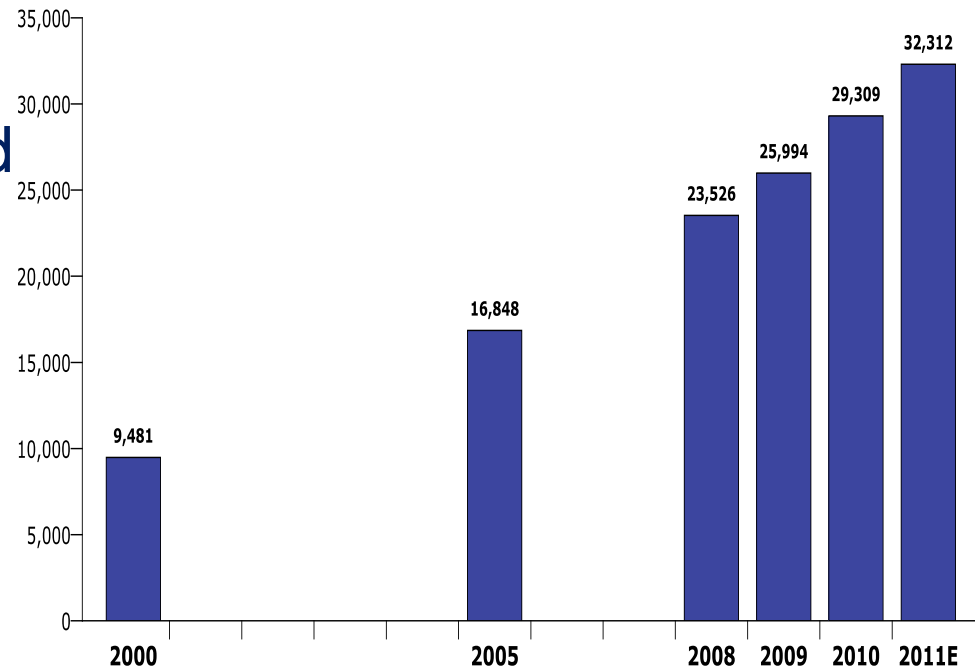
- Coal: 69.3%
- Oil & gas: 22.4%
- Non-fossil fuel (nuclear, RE power and bio-fuel): 8.3%

Energy consumption in China (2003-2011)



Development of non-fossil energy

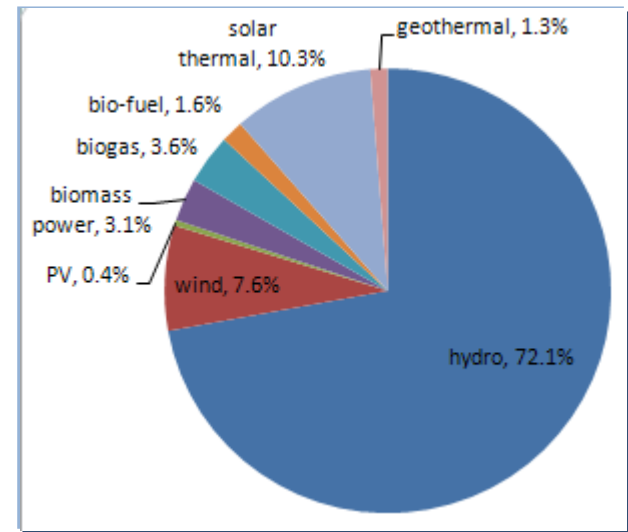
- Non-fossil energy developed rapidly
- Electric power structure in China (2011)
 - Total capacity: 1056GW
 - Total power consumption: 47000TWh
 - Non-fossil energy: 19.6%
 - Renewable energy: 17.8%



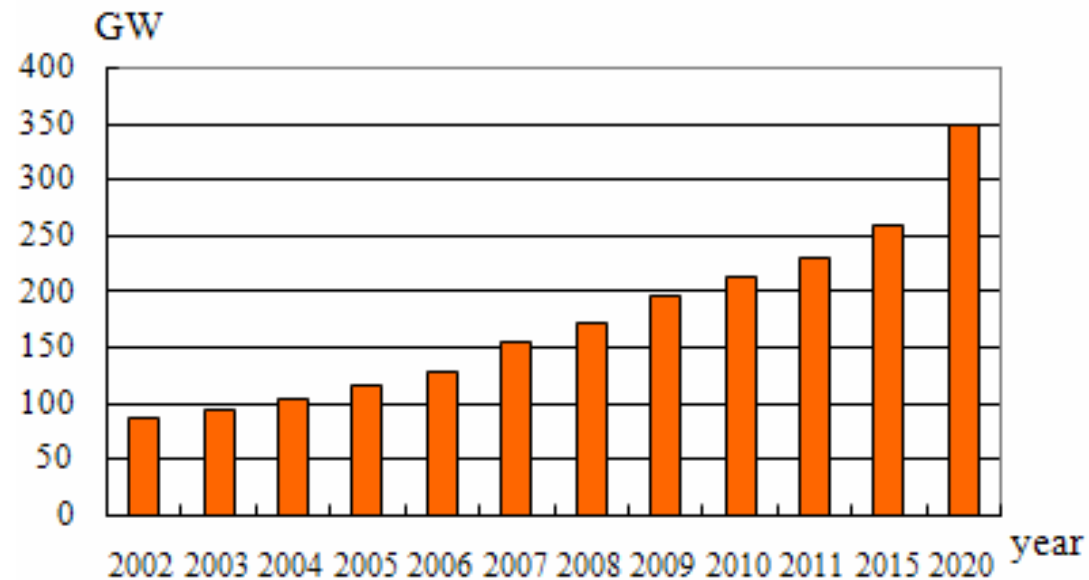
Hydropower

•Hydropower developed steadily:

- 2006-2010, new installed capacity: 96.88GW
- By 2011, installed capacity: 230 GW

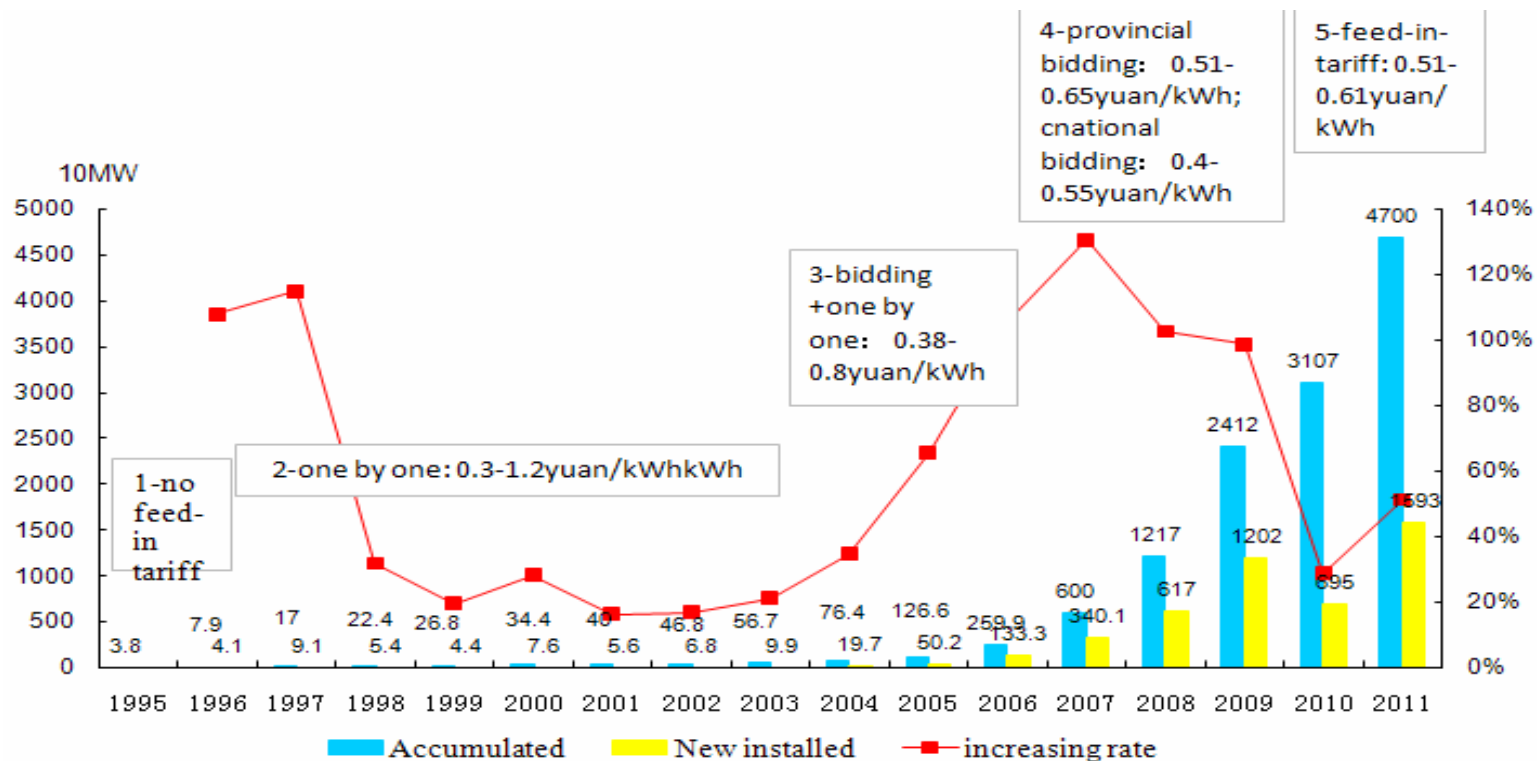


Hydropower Capacity and Target in China



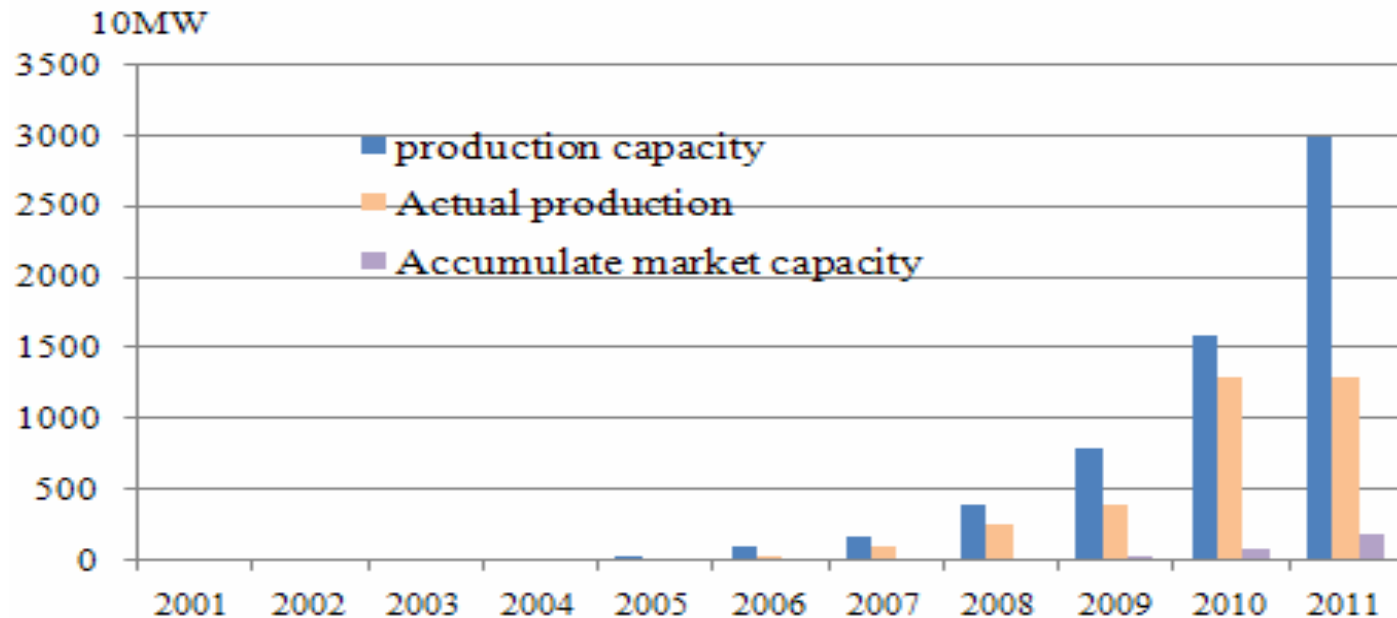
Wind power

- **Wind power developed on a big scale:**
 - New installed capacity doubled in several years
 - By 2011, net installed capacity: 47 GW, power generation: 80 billion kWh



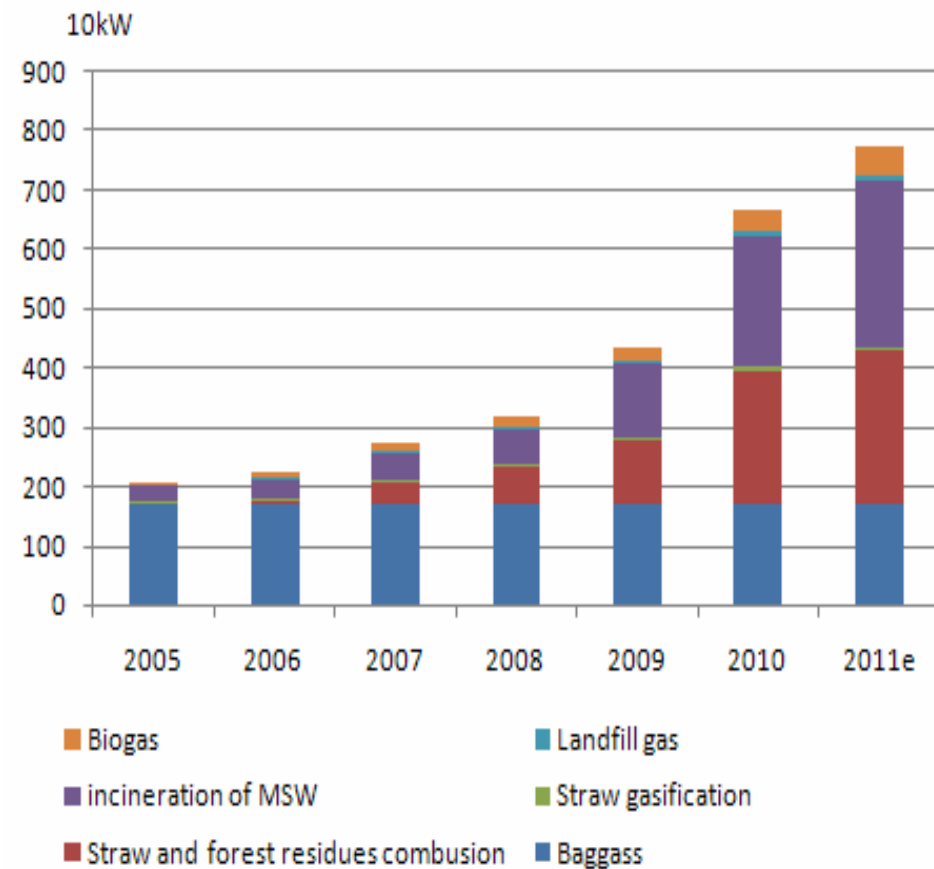
Solar energy

- **Solar energy make progress:**
 - Photovoltaic cell production is 50% of Global output (2011)
 - By 2011, installed capacity: 2.9GW
 - Solar thermal application scope and the domain expands



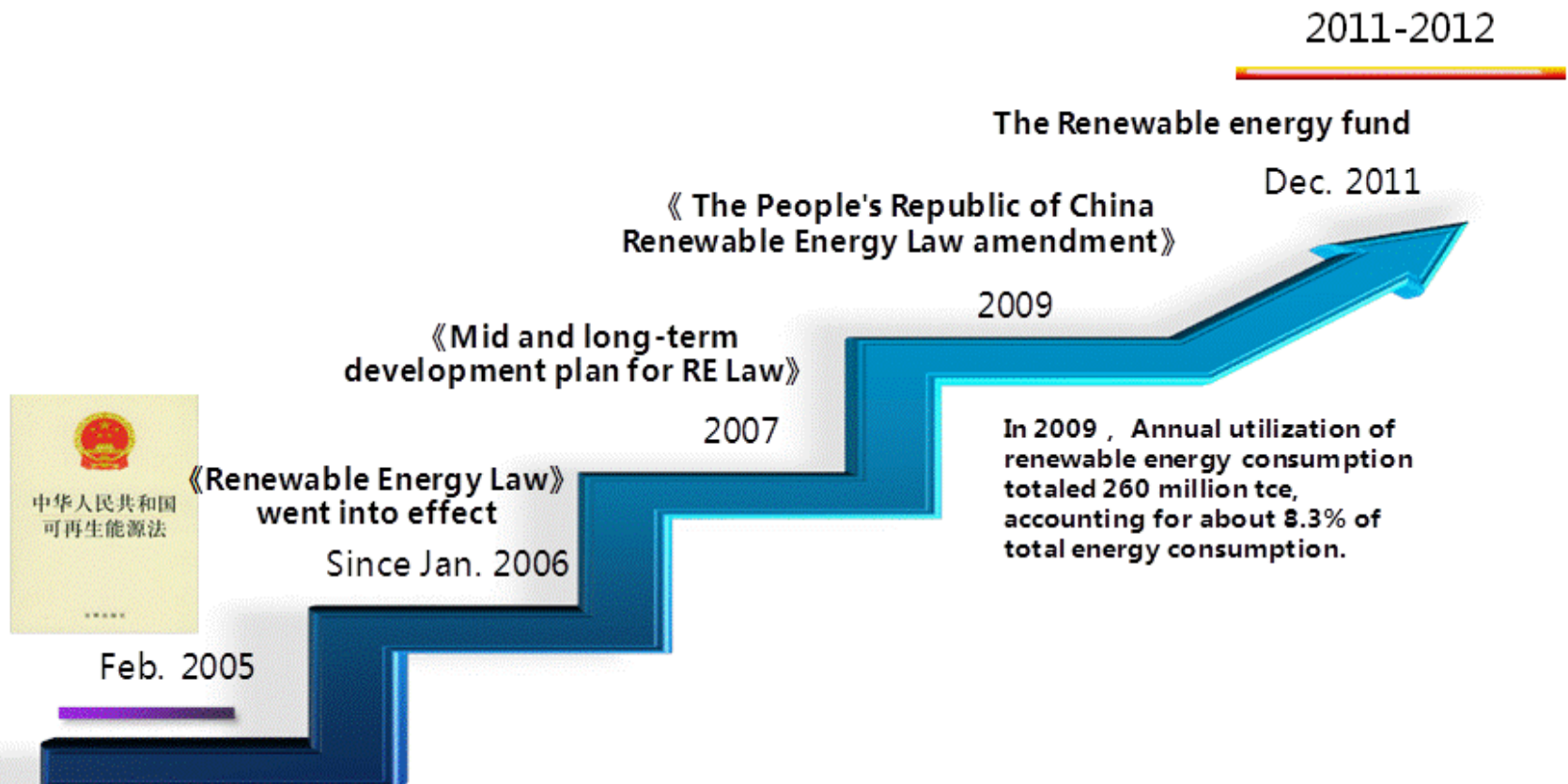
Biomass

- Biomass developed in various domains :
 - Biomass power generation
 - Non-grain biomass liquid fuel production
 - etc.



The development of Clean energy policies

“12th five-year Plan of Economic and social development” ;
Blue Paper of clean energy industry, 2012;
12th five-year Plan of Strategic and new industries
12th five-year Plan of CBM (coal gas) development and utilization

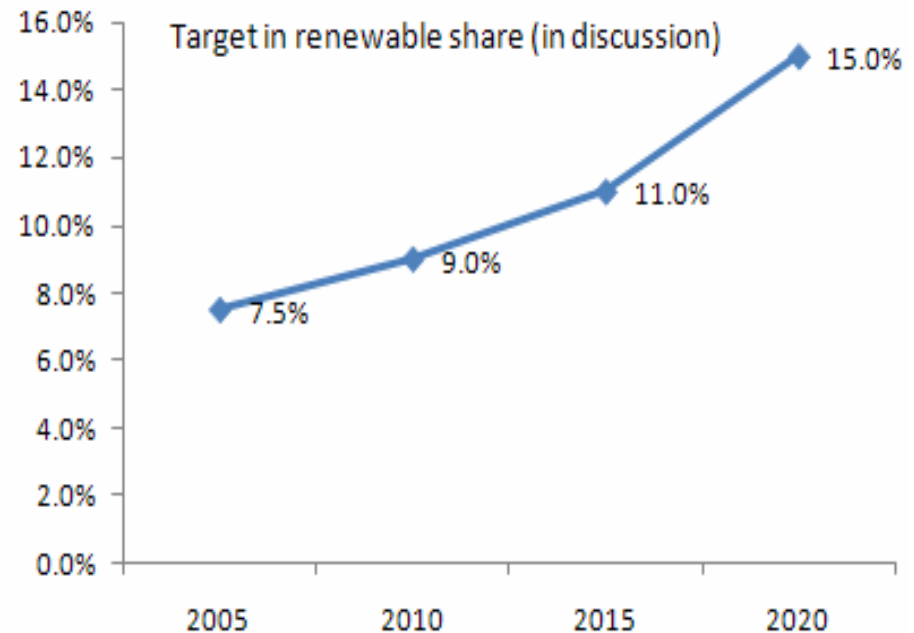


Renewable Energy Outlook

Renewable Energy Outlook

Targets:

- Non-fossil fuel target (2009)
 - By 2020, non-fossil energy meet 15% of energy demand
- Carbon density target (2009)
 - By 2020, 40-45% deduction based on 2005
- 7 Strategic New Industries (2009)
 - New energy listed



Targets for RE

By 2015:

(More since 2011)

- | | | |
|------------------------|----------------------|-------|
| ✓ Hydropower: | 260 GW | 30 GW |
| ✓ Wind power: | 100GW, 190TWh | 51 GW |
| ✓ Solar power: | >15GW by 2015, 20TWh | 12 GW |
| ✓ Biomass power: | 13GW | 7 GW |
| ✓ Solar thermal: | 400M m ² | |
| ✓ Bioenergy: | >50Mtce | |
| ✓ Geothermal and Ocean | | |

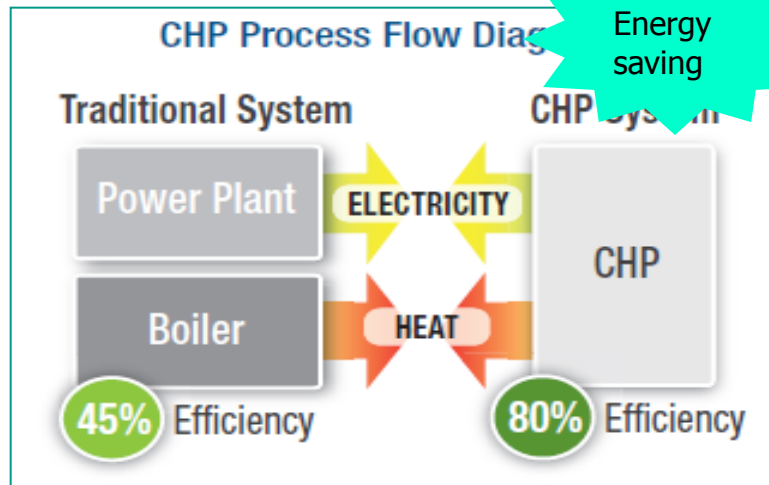
Total non-fossil energy: 480Mtce, 11.4% in Energy Mix

Renewable Energy Feed in to Grid

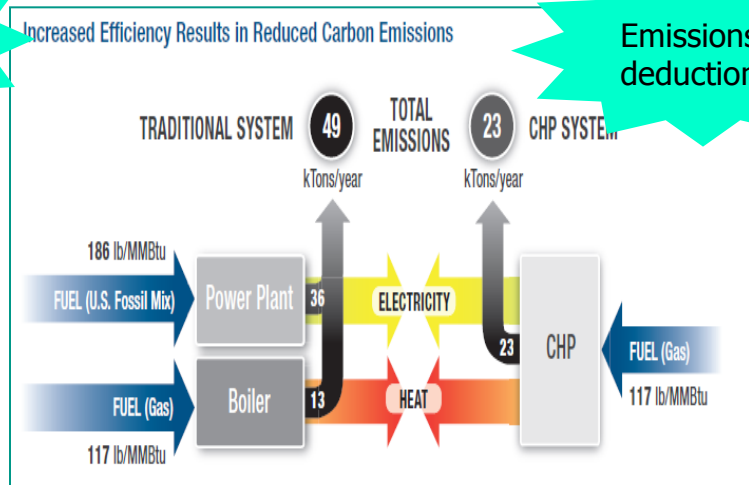
- **Feed-in-tariff**
 - Onshore : 0.51-0.61 RMB /kWh
 - Solar PV: 1.15 RMB/kWh in 2011, 1 RMB/kWh since 2012
 - Biogas, landfill gas, MSW power: 2005 coal power price + 0.25 RMB/kWh subsidy
 - Straw and forest residue power: 0.75yuan/kWh
- **Concession bidding**
 - CSP: 0.94 RMB/kWh
 - Offshore wind: 0.72-0.99 RMB/kWh

Distributed Generation Outlook

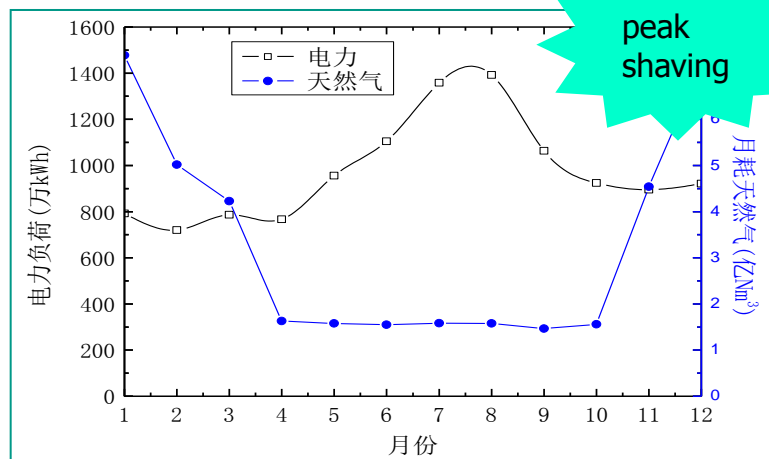
Drivers for Distributed Generation Development



Energy saving



Emissions deduction



peak shaving



Supply security

Development of Natural gas distributed energy

By 2015:

- ✓ About 1000 distributed energy demonstration projects of natural gas will be constructed

By 2020:

- ✓ Distributed energy system can be promoted in cities all over the country, installed capacity reaches 50GW
- ✓ Distributed energy equipment industrialization be reached

Introduction about Europe China Clean Energy Centre

EU-China Cooperation on Clean Energy

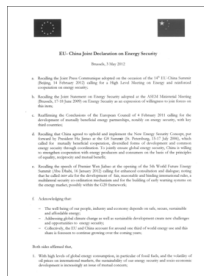


11th EU-China Summit 20th May 2009 *Energy Cooperation Priorities*

1

2

Inauguration of EC2 30th April 2010



2012 EU-China High Level Meeting on Energy 3rd May 2012

3



OBJECTIVES

PROMOTE THE INCREASED USE OF CLEAN ENERGY IN CHINA, THUS CONTRIBUTING TO GLOBAL SUSTAINABLE DEVELOPMENT

**Chinese needs for clean
energy technologies**

and **know-how** in
developing **Policy
regulatory framework**
and **standards**



**European policies and
technologies for clean**

energy as well as the
supply of valuable
**experience and
practices**

**Technological
cooperation**

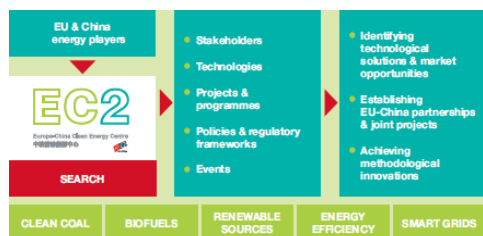
**Policy Advisory
& Capacity Building**

**Awareness
Raising**

Activities and Outcomes

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- Stakeholders
- Technologies
- Projects & programmes
- Policies & regulatory frameworks
- Events

- Identifying technological solutions & market opportunities

- Establishing EU-China partnerships & joint projects
- Achieving methodological innovations

Policy analyses

**Recommendation
Guidelines
Standards**

**Identification
of potential
technologies**

**Capacity building
Awareness raising**

Cooperation



Demo Zone URUMQI, XINJIANG

**Chinese
relevance**

- Identify demonstration areas
- Select projects in demonstration areas

**Methodologies, Technologies and Policies
Replicable Proof-of-Concept**

**Support from
local
government**

- **Build upon policy incentives in order to attract Chinese and European companies to invest in the proposed demonstration actions**



Thank you !

www.ec2.org.cn

