

# The Clean Tech Market in China

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# The Basics

## Anecdotes

½ World's construction 2000-2030

½ World Buildings Construction, 10 years

More current Floor Space than US/EU

Slowest Fast Place

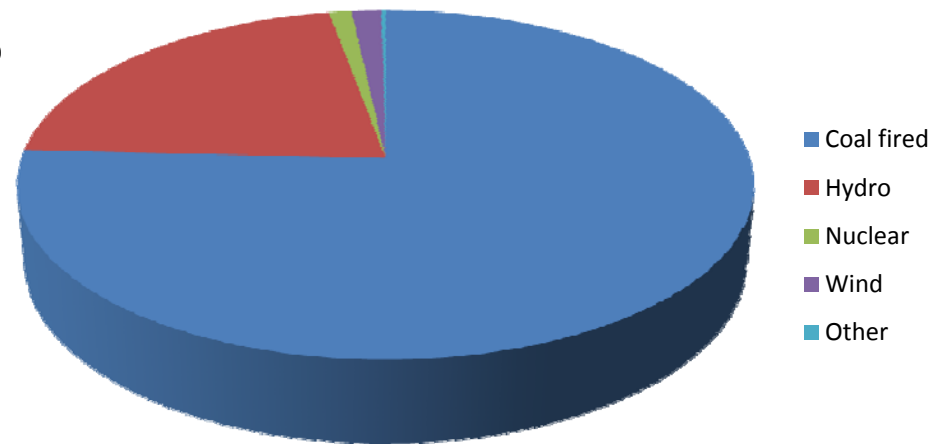
- What is FCS ?
  - DOC, Export Promotion Programs
  - [www.buyusa.gov/china](http://www.buyusa.gov/china)
  - [www.export.gov/cs](http://www.export.gov/cs)



# Primary Energy Mix in China 2008

❖ **Total installation capacity: 792.53 GW  
(73% of U.S.A.'s 1087.79 GW)**

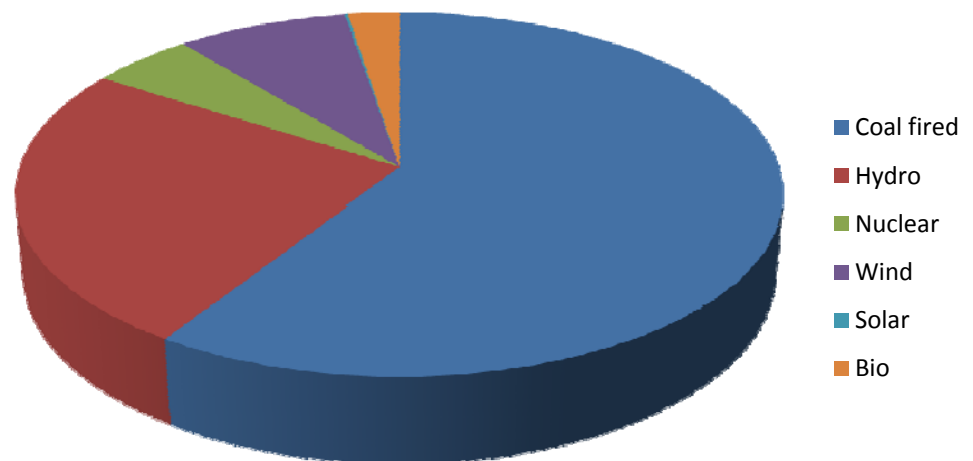
- Coal fired: 601 GW -- 75.8%
- Hydro: 170GW – 21.4%
- Nuclear: 9.1 GW – 1.1%
- Wind : 12 GW – 1.5%
- Other: 1.6 GW -- 0.2%



# Goal of Primary Energy in China 2020

## ❖ Total installation capacity in 2020: 1200 GW\*

- Coal fired: 710 GW- 59.2%
- Hydro: 300 GW – 25%
- Nuclear: 60 GW – 5% \*\*
- Wind: 100 GW -- 8.3%
- Solar: 1.8 GW – 0.15%
- Bio: 30 GW – 2.5%



\*According to USDOE's forecast, it is 1186 GW. <http://www.zikoo.com/news/45bg78hhy.html>

\*\*来源：第一财经日报[http://www.chinasecurities.com.cn/gz/07/200809/t20080904\\_1575362.htm](http://www.chinasecurities.com.cn/gz/07/200809/t20080904_1575362.htm)



# Sustainable Cities

- Urbanization – 20 years, 300 million people to move to cities
- Carbon Neutral / Eco Cities
  - Dongtan, Tianjin, Caofeidian
- Planned, started....
  
- Your Participation



# Green Building

- Growth Market, more use of wood on the margins
- Ties in with energy efficiency
- About 27 projects in Shanghai certified/registered by LEED
- China's Green Building Policy Goals
  - Reduce overall energy intensity 20% during 2006-2010
  - Building sector is expected to contribute 40% of the total energy-saving targets for the period
  - Mandated 50% energy savings over standard buildings from the late '80s
  - Targets 65% energy savings for large municipalities like Beijing, Tianjin, Shanghai and Chongqing



# China Wind Power Market

## ❖ Market Trends

- Total installed capacity has been doubling for the last four years and now tops 12 GW
- The percentage of newly installed wind turbines that were locally made has been increasing rapidly, passing 50% in 2007 and reaching 74% in 2008
- Only 8.9 GW (74%) of the total 12 GW was grid connected
- Manufacturers need key wind turbine components (bearings, and control system) and still rely on imports
- The China government revised upward its future wind power capacity goals:
  - 2010: 30 GW
  - 2015: 50 GW
  - 2020: 100 GW



# Opportunities for U.S. Firms

- Wind Turbine System Design
- Security Policy of Control System Design
- Bearings
- Remote Monitoring of Wind Farms
- Detection Technology of Wind Turbines
- Smart Grid
- Investment in Wind Farms



# China Bio-energy Market

- ❖ The Government has set bioenergy generation targets for 2010 and 2020
  - The government has set short and long term targets to double the 2006 figure of total bioenergy generation by 2010, and increase capacity by up to six times by 2020.
  - However government efforts to stimulate growth of the bioenergy industry have led to SOE domination of the market, as subsidies have been insufficient for private operators to compete.
- ❖ Opportunity for U.S. firms
  - Industry has told us that Enzymatic technology to produce biofuel (e.g. ethanol, butanol) from agricultural/forestry residues



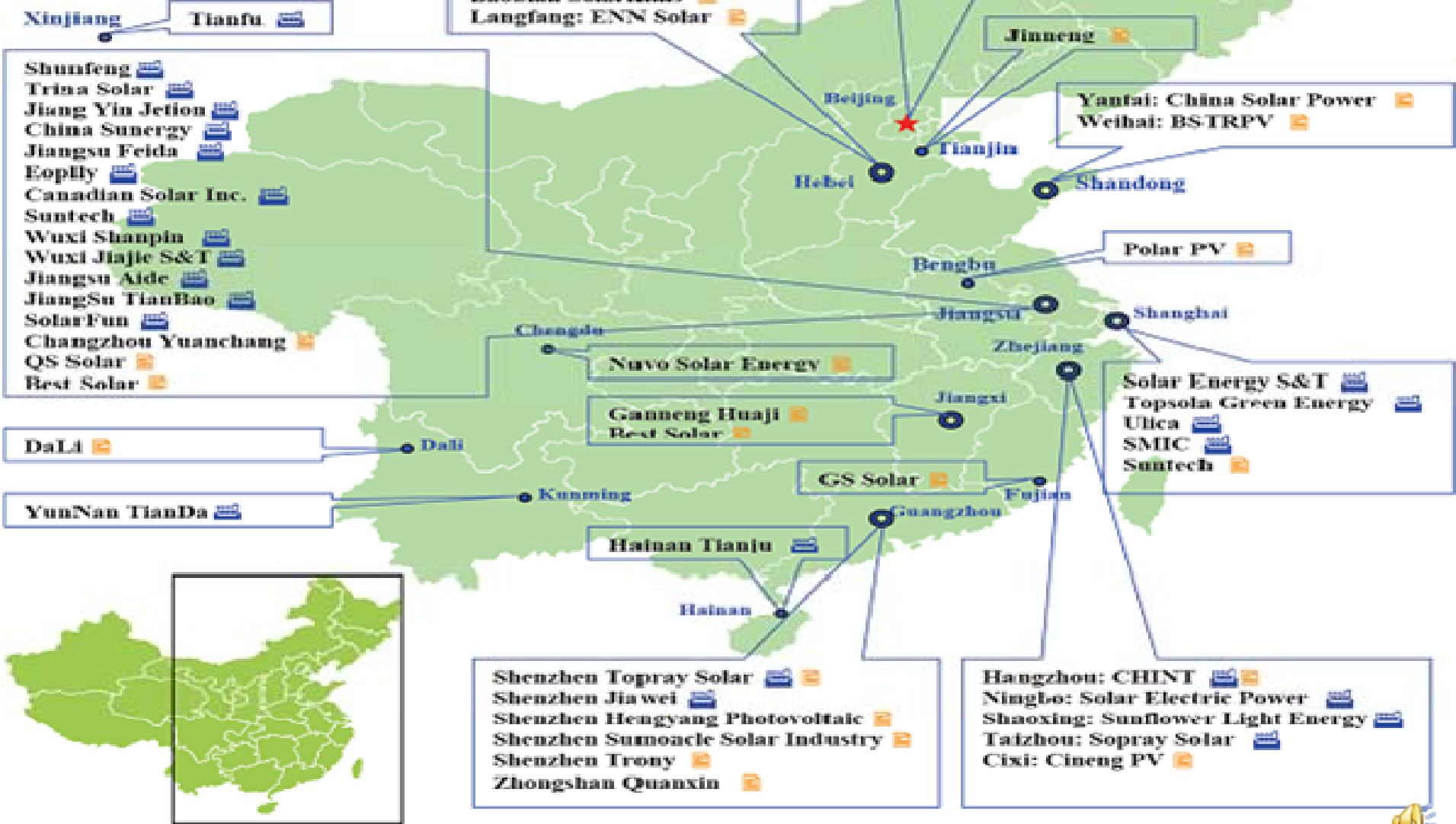
# China Solar Industry

- China is the world's No. 1 manufacturer of solar panels
- Currently over 95% of the solar cells produced in China are exported
- Solar cell manufacturing is distributed across China, with a focus on the Yangtze Delta Region (East China)



**Legend**

- Crystalline-Silicon Solar Cell
- Thin Film Solar Cell
- City of population >7M
- City of population <7M
- Capital



# China Government Incentives

- The financial crisis hit the China PV industry hard starting 4Q 2008
- Export market fell sharply
- China government started an economic stimulus plan in early 2009
- In the solar industry particularly, China government issued two incentive policies in March and July respectively.



# China Government Incentive

- **March Policy**
  - Issued by Ministry of Finance
  - Maximum RMB 20 (about \$2.93) per watt
  - Limited to projects over 50 KW with a preference for Building Integrated Photovoltaic (BIPV) products
  - Conversion rate criteria specified
- **July Policy – “Golden Sun”**
  - Issued by Ministry of Finance and Ministry of Science and Technology
  - Subsidize 50% of the total cost of building a solar power project
  - Subsidy goes up to 70% for remote regions
  - Preference to grid connectivity and projects over 300 KW
  - The “Golden Sun” project will subsidize up to 500 MW of solar capacity over the next 2 – 3 years



# CS Shanghai Support

Please contact us, if

- You are an equipment manufacturer, and want to export to China
- You are a specialty chemical manufacturer, and sell into the PV industry
- You are a solar module supplier that produces higher quality modules than existing Chinese products
- You are a solar project engineering company that would like to take advantage of the subsidy plan



# Key Organizations

## ❖ Government

- National Development and Reform Commission (NDRC)
- National Energy Commission (NEC)
- National Energy Administration (NEA)

## ❖ Non Government

- Chinese Renewable Energy Industry Association (CREIA)  
<http://www.creia.net>
- China New Energy Chamber of Commerce (CNECC)  
<http://www.cnecc.org.cn>
- Chinese Wind Energy Association (CWEA)  
<http://www.cwea.org.cn>
- [www.juccce.org](http://www.juccce.org)



# China Suggestions

- Most Expensive Cheap Place
- Due Diligence
- Professional Market Entry Plans
- Professional Support
- IPR
- The Guanxi Proposition
- Planning to Exit

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# Key Trade Events

- China Windpower Beijing 2009, 10/21-23, 2009  
[http://www.globalwind.org.cn/index\\_en.htm](http://www.globalwind.org.cn/index_en.htm)
- Energy Show, 11/03-07, 2009, Shanghai  
<http://www.energyasia.com.cn/index.php?scriptlet=CMS/Start&id=50>
- GWREF/ RECE 2009, 10/22-24, 2009, Shanghai,  
<http://re.sstec.com.cn/structure/english/eindex>
- CIBE Expo 2010, 3/16-18, 2010, Beijing  
<http://www.cibeexpo.cn/event/2010swzn-en/index.html>
- Solarcon China 2010, 3/16-18, 2010, Shanghai  
<http://www.solarconchina.com>
- SNEC(2010)PV POWER EXPO, 5/5-7, 2010, Shanghai  
<http://www.snec.org.cn/indexe.asp>
- Wind Power Asia, 6/23-25, 2010, Beijing  
[http://www.koelnmesse.cn/fair/New\\_WindPowerAsia\\_E/index.asp](http://www.koelnmesse.cn/fair/New_WindPowerAsia_E/index.asp)



# CS Shanghai Contacts

- Webinar on China Photovoltaic Industry March, 2009

Still available now as a recorded version

[Http://www.buyusa.gov/asianow/chinasolar\\_webinar.html](http://www.buyusa.gov/asianow/chinasolar_webinar.html)

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