
Country Profile of Renewable Energy: China

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CREIA



renewable
energy
& energy
efficiency
partnership

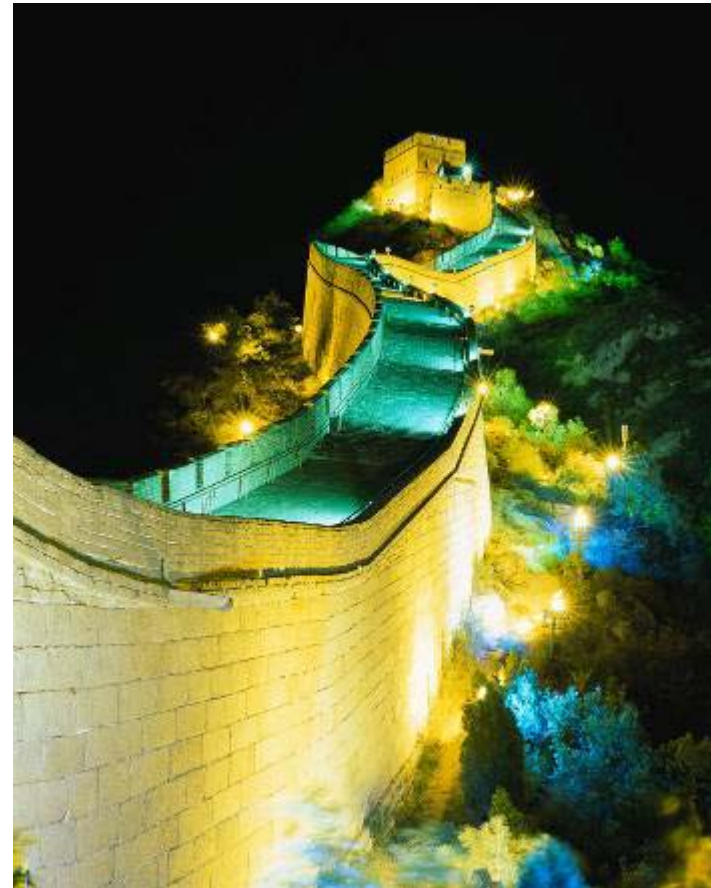
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Agenda

- Country profile
- Strategic position of RE in China
- Status of RETs utilization in various sectors
- Incentive policy for RE development
- Impact of the RE Law
- R&D
- Plan and trends

Country profile

- Population 1.31 billion
- Area 960 million ha
- Total GDP 20,000 billion Yuan or = 2000 billion Euros
- TPS 2460 million tce
- GDP per capita 1500 Euro
- Energy use per capita, 1892 kgce, 2006



Strategic position of RE

- GDP growth over 10% from 2004-2006
- Energy consumption growth near 10% since 2000.
- 2.46 billion tce in 2006
- Facing pressure of energy security and global climate change

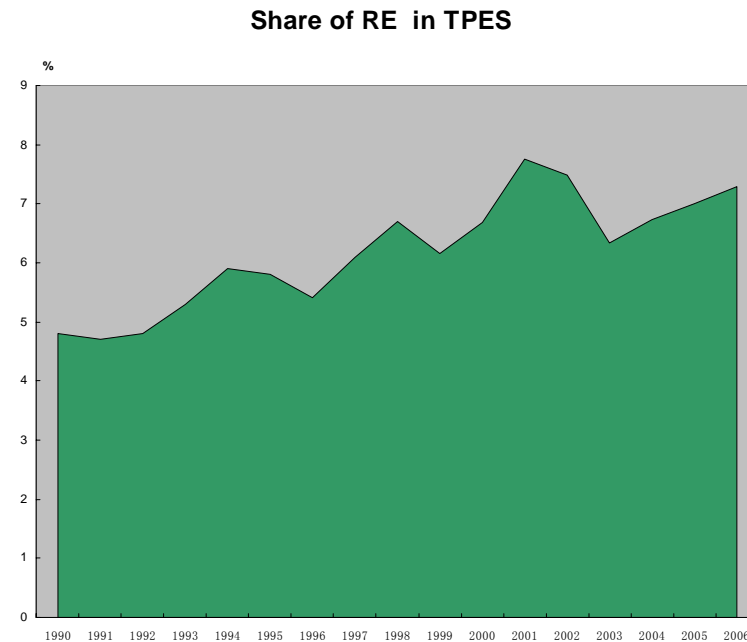
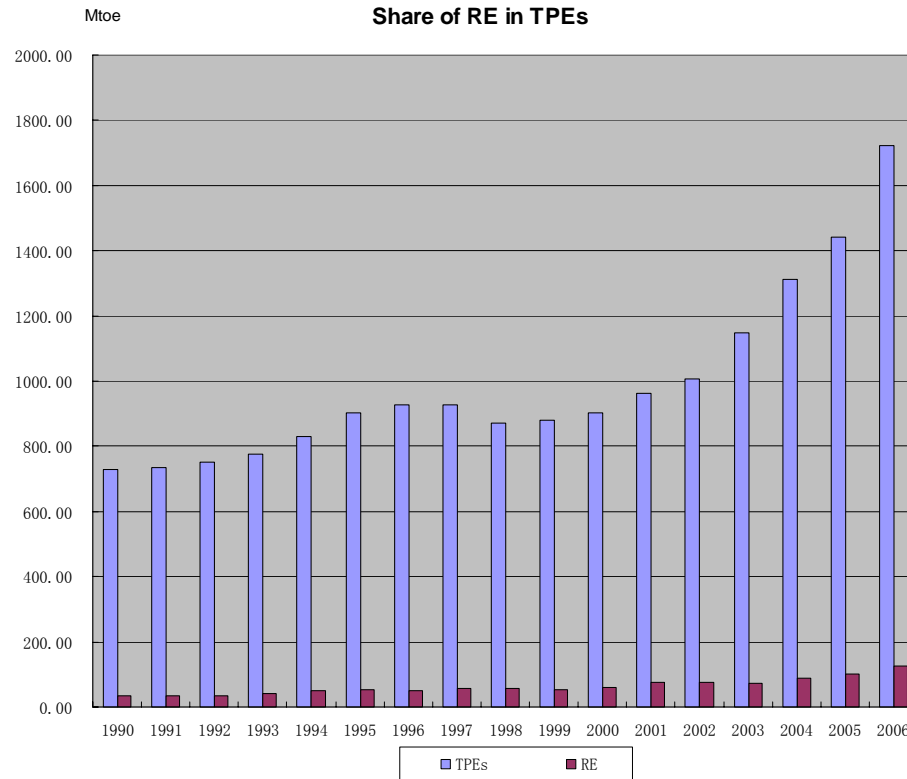
Strategic position of RE

- Triangle support to combat energy security
 - Efficient utilization of convention energy resource
 - International cooperation to improve the energy utilization technology
 - Encourage the development of new and renewable energy
- Two pathways towards sustainable development of energy
 - Renewable energy
 - Energy efficiency

Strategic Position of RE

- Share of RE in 2006
 - 0.93% within total energy consumption (7.4% hydro incl.)
 - Covers electricity, heating, gas, and bio-fuel
- RE portfolio in 2006 (hydro excl.)
 - Electricity 19.8%
 - Heating 73.9%
 - Bio-fuel 6.2%

Historical Share of RE in TPES



RETS Market Against Sectors (2006)

ELECTRICITY SECTOR

Electricity generation: total renewables

Unit: TWh per year	429.63
Hydro (TWh)	416.70
of which: Pumped Storage	na
Wind (GWh)	3868.00
Solar PV(GWh)	105.00
Solar Thermal (GWh)	0.00
Geothermal (GWh)	79.20
Biomass excl. CHP (GWh)	3891.25
Biomass CHP (GWh)	4968.0
Tide, Wave, Ocean (GWh)	18.0

RETS Market Against Sectors

(2006)

Heating Sector

Solar thermal (GWt)

66.50

Geothermal (GWt)

N/a

Biomass heat

N/a



RETS Market Against Sectors (2006)

TRANSPORT SECTOR

Ethanol (million tons) 1.56

Biodiesel (million tons) 0.19

Key RE Policies

1. Renewable Energy Law of the People's Republic of China (Adopted by the 14th meeting of the Standing Committee of the 10th NPC on Feb. 28, 2005)
2. Catalogue for the Guidance of Renewable Energy Industry Development, NDRC Energy No. (2005) 2517
3. Interim Measures for Renewable Energy Power Price and Cost-sharing, NDRC Price No. (2006) 7
4. Management Rules of Renewable Energy Power Generation, NDRC Energy No. (2006)13
5. Interim Measures for Management of Special Fund of Renewable Energy, MoF Construction No. (2006) 237
6. Implementation Notes of Enhancement of Renewable Energy Industry Development, NDRC Energy No. (2006) 2535
7. Interim Measures for Allocation of Additional Benefits from Renewable Energy Tariff, NDRC Price No. (2007) 44
8. NDRC, MoF about Strengthening Bio-fuel Ethanol Project Construction and Management, Enhancing Healthy Development of the Industry, NDRC Industry No. [2006] 2842
9. Measures for Management of Product Oil Market, Ministry of Commerce Mandate No. 23 (2006)

Key RE Policies

10. Transformed Fuel Ethanol GB 18350-2001
11. Vehicle use Ethanol Gasoline GB 18351-2004
12. Interim Measures of of Special Fund for Renewable Energy Use on Buildings , MoF construction No. (2006) 460
13. Review Measures for Demonstration Project of Integrating Renewable Energy with Buildings, MoF construction No. [2006]459
14. NDRC about Requirements of Management of Wind Farm projects , NDRC Energy No.〔2005〕 1204
15. Interim Measures of Management of Land use of Wind Farm Construction Project and Environmental Protection , NDRC Energy No.〔2005〕 1511
16. Technical Regulations of Application of Solar Water Heater Use in Domestic Buildings , GB50364—2005
17. National Grid Company about Regulations of Connecting Wind Farm into the Power, Grid (tentative), National Grid Development No. [2006]779
18. National Grid Company about Further Regulation of Design of System Connecting Wind Farm into Grid (tentative), National Grid Development No. [2006]779

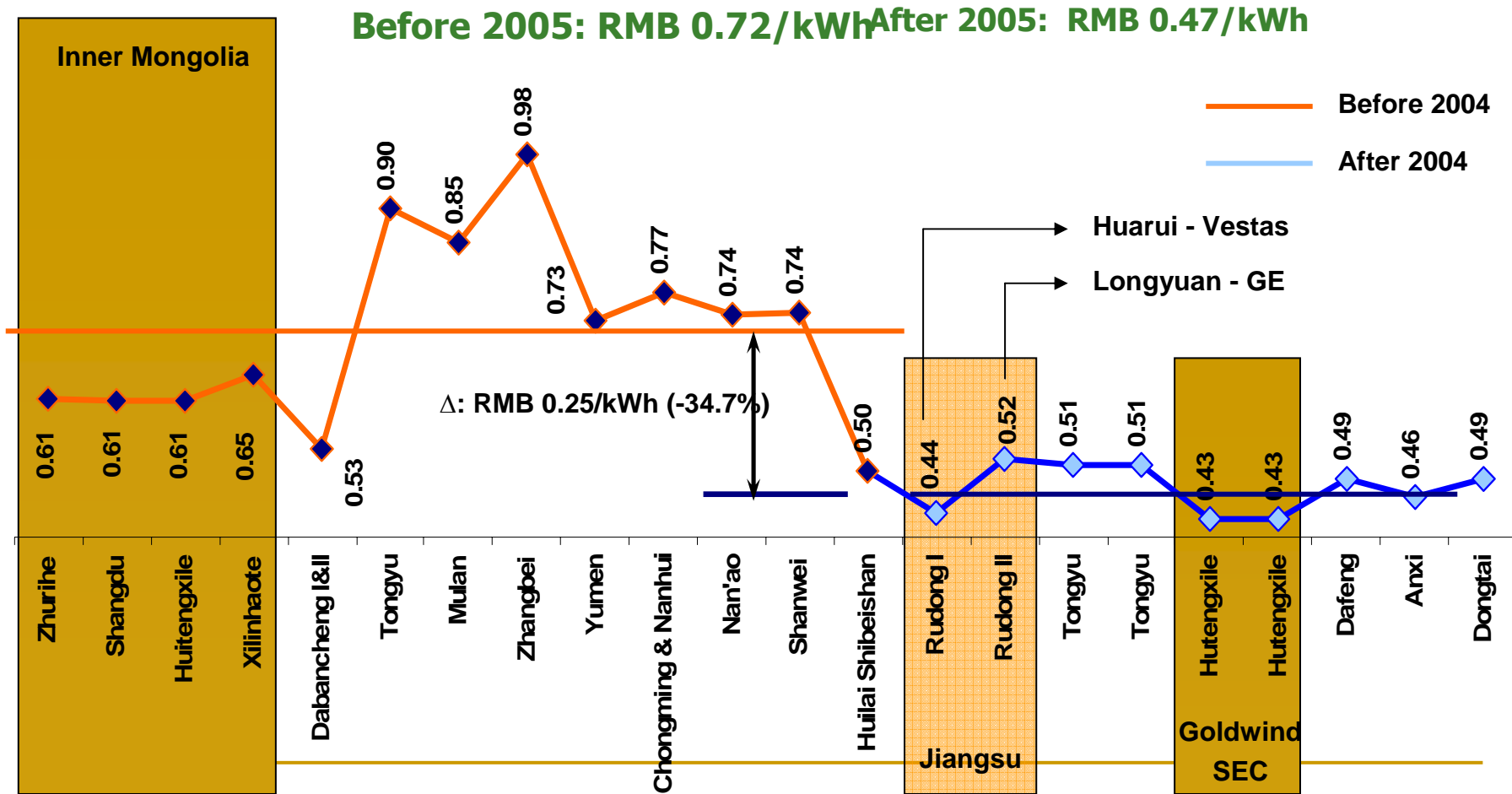
Impacts of renewable energy law

- Current status of the law
- Impacts of the law
 - Market expansion
 - Investment involvement
 - Manufacture's booming
 - International influence

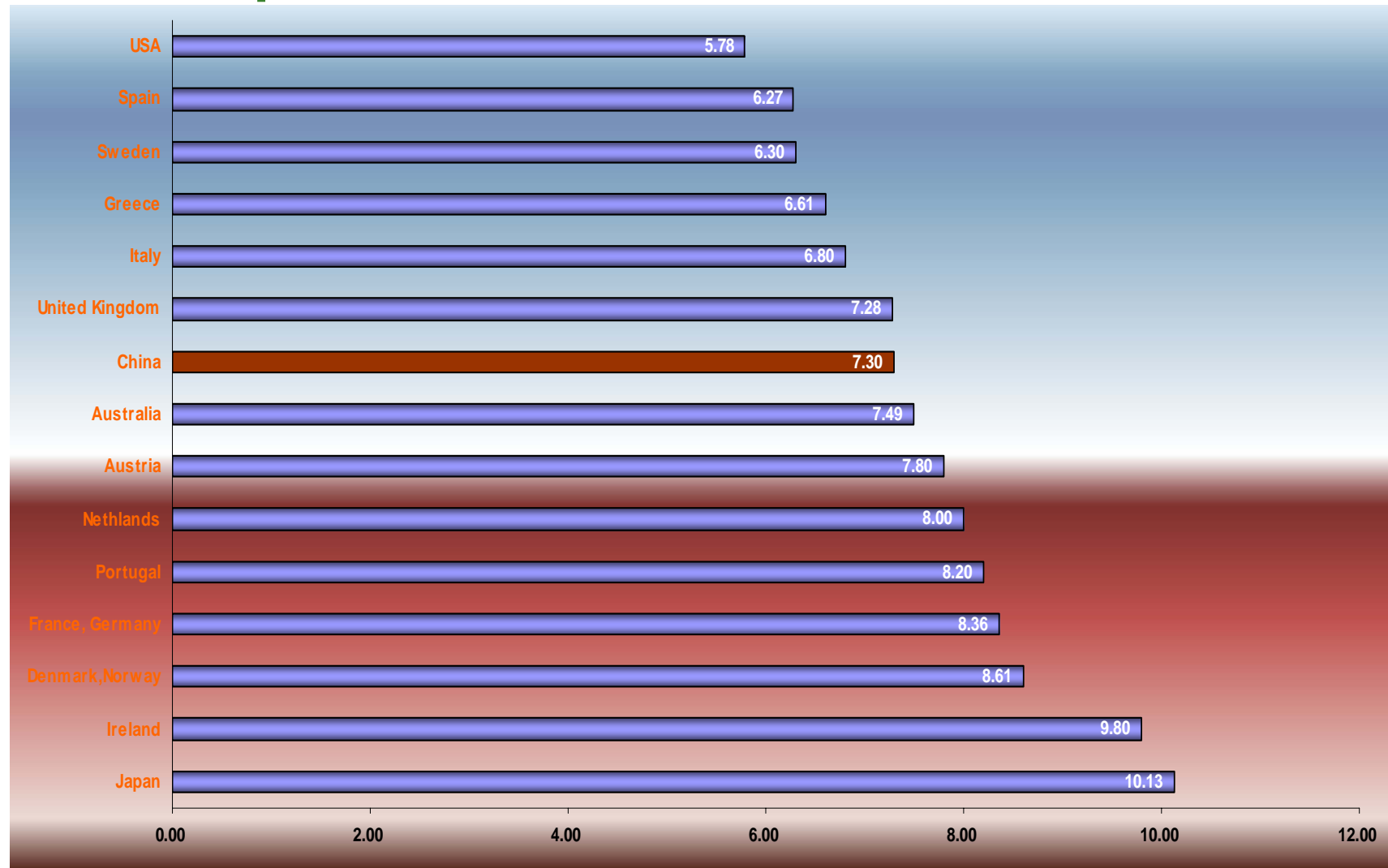
Current status of law

- 12 regulations should be developed
- 10 of them have been issued
- Most important one
 - the price and cost sharing
 - National fund for RETs
- The rest one is taxation and favorite bank loan

Wind price in China



Wind price international



Good news for wind price

- Local is higher than the central government
 - 5 to 10 cents high
- Local approval more than control approval
 - One 25% is approval from central government
- Price bureau is conducting investigation for price system improvement
- The Vice Chair for price indicated that NDRC will gradually make right price system

Renewable market expansion

- Wind
 - 1337 MW to be added in one year
 - 2.6 GW accumulated
 - Ranked 6th in the world
- Solar PV
 - 1000 MW for capacity
 - 360 MW for real production
 - 7 companies listed in stock market
- Solar thermal
 - 100 million square meters have been installed, with annual production 10 million square meters

Investment involvement

- All the state owned large investor start into RETs
- Private sector involved slowly
 - Mainly in the solar and small hydro sectors
- International investment
 - mainly through the venture capital
 - FDI is limited

Manufacture booming

- 30+5 wind turbine manufactures are ready for production
 - Include GE, Vestas, Suzlon, Gamsa and other
 - Most of people believe that by 2010, the annual production of WTG will be over 5 GW
- More than 300 solar PV and more than 3000 solar collector manufactures

International influence

- China is not only for coal
- Renewable energy became playing some role
- International cooperation increased
 - USA discussed for supporting to set up RE lab
 - EU
 - set up a clean energy center
 - Open R&D for China
 - Australia
 - We have a lot in fast
 - What is the new?

Next step for the law improvement

- A national wide comments have been taken
- A annual review will be hold during 20th of April
 - Every ministry will report to NPC for current status and next step
- Most concern by the investor is wind price
 - Continue to argue with the price bureau.
 - No any signal to change yet.

Taxations and bank system

- The new taxation law was just issued
 - Energy efficiency, waste utilization has been put into the favorite taxation system
 - Renewable is not yet, however, the taxation department indicated, renewable will sure be in the listed of low taxation system
- Bank loan
 - Most of the banks put renewable energy as investment priorities
 - National development bank takes majority of the investment

Industrial support

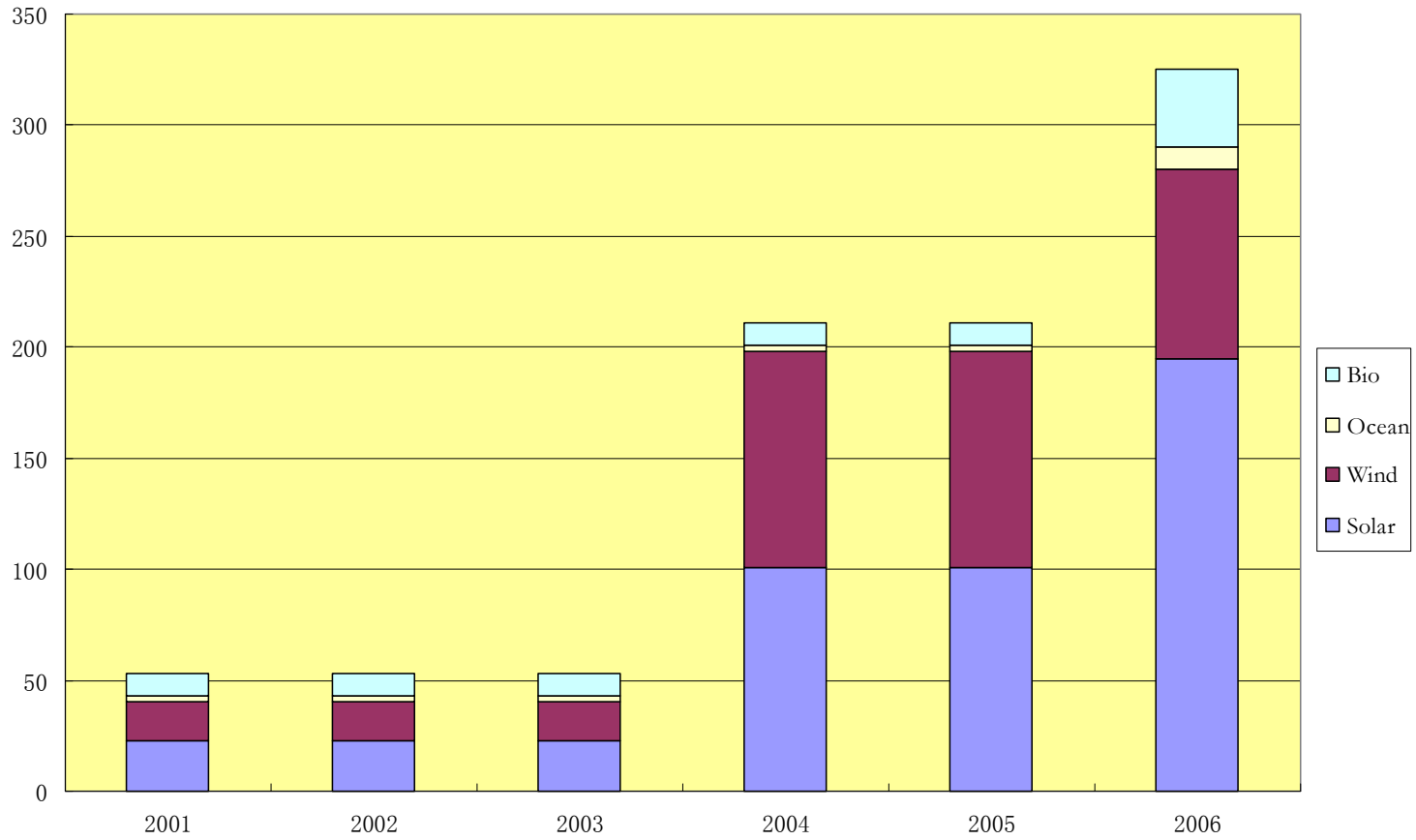
- NDRC and MOF issued a paper
 - Supply subsidized for localization of wind, solar
 - Support set up national test center for wind
 - Set up a national test wind farm for new turbine demonstration
 - Lunched a solar power demonstration in west desert areas and roof top in Beijing, Shanghai and other developed cities

Resources assessment & strategy

- NDRC launched program for national RETs resource assessment
 - Wind map
 - Biomass for power
 - Biomass for liquid fuel
- NDRC and National energy lead group
 - Start a study for energy strategy for 2030 and beyond

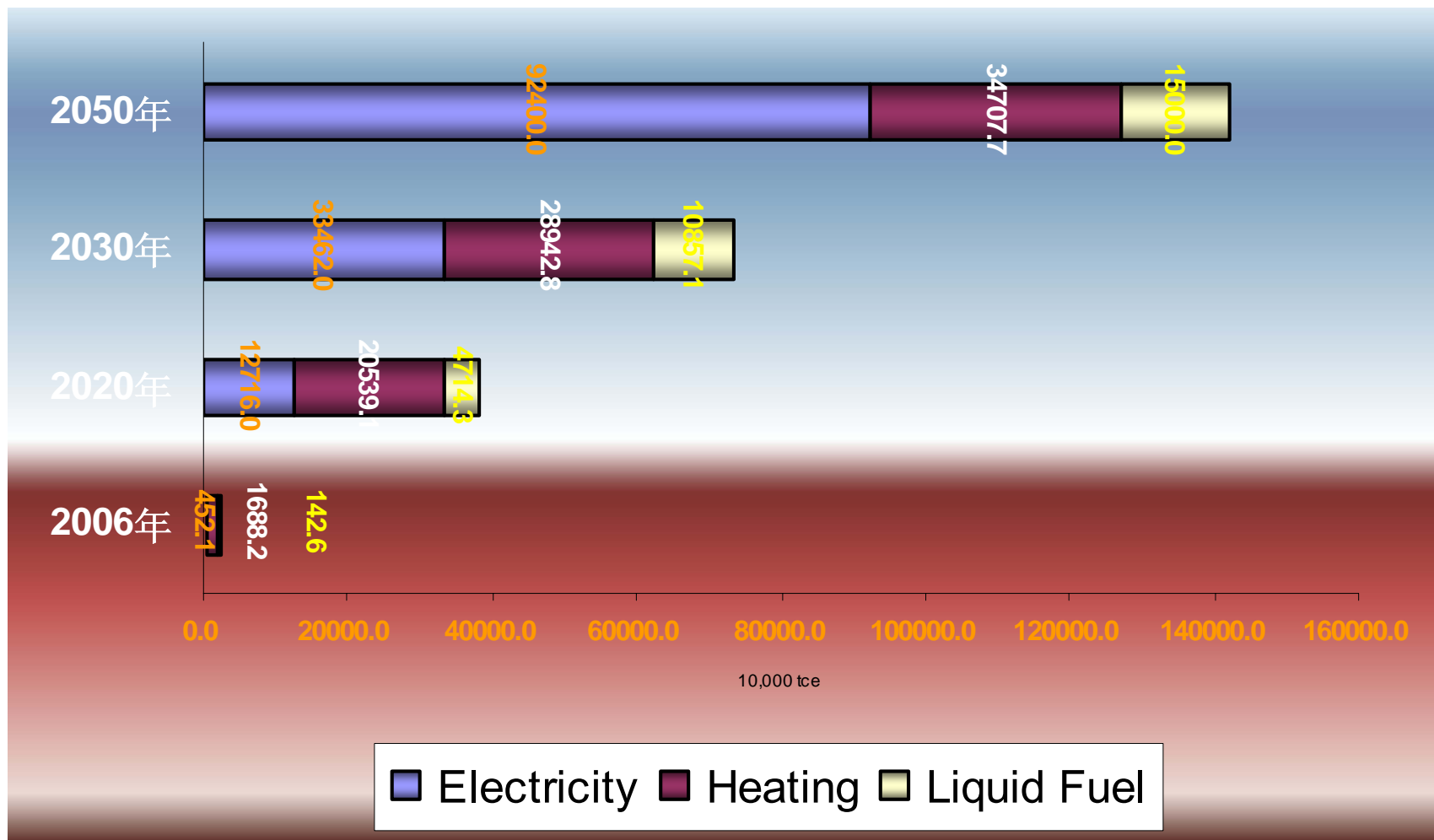
R&D National Budget and Share

Million Yuan



2001	2002	2003	2004	2005	2006
53	53	53	211	211	325

Plan & Trends



Thanks

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