



Chinese Energy Market and Utilization of Low Carbon Renewable Energies

Dr. Jianping ZHANG


**Director, Dept. of International Economic Cooperation
Institute for International Economic research, NDRC**



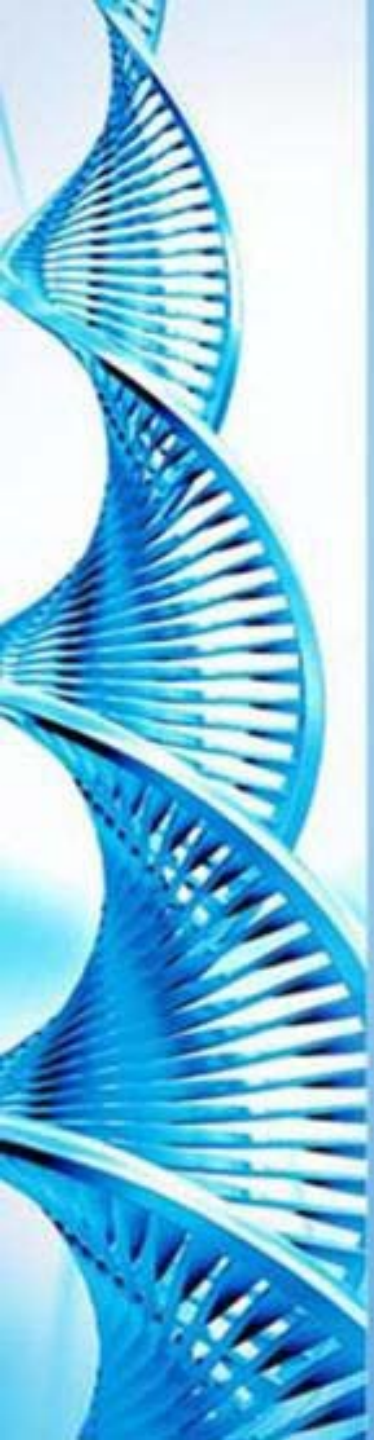


Contents

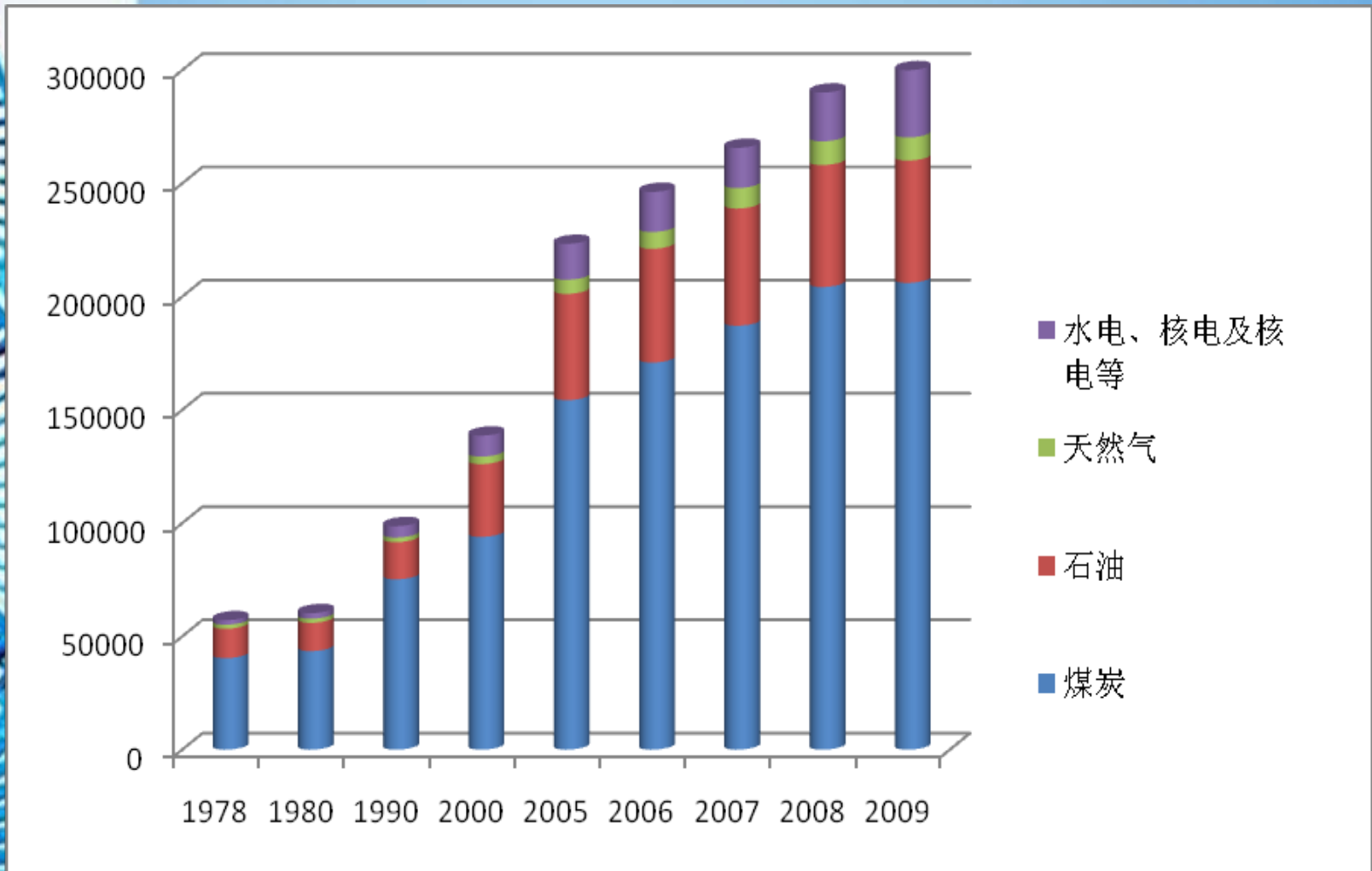
- ◆ **I. Chinese Energy Market and International Dependence of Major Energies**
- ◆ **II. Low Carbon Renewable Energies in China**
- ◆ **III. The Current Conditions and Prospects of Chinese Low Carbon Economy**



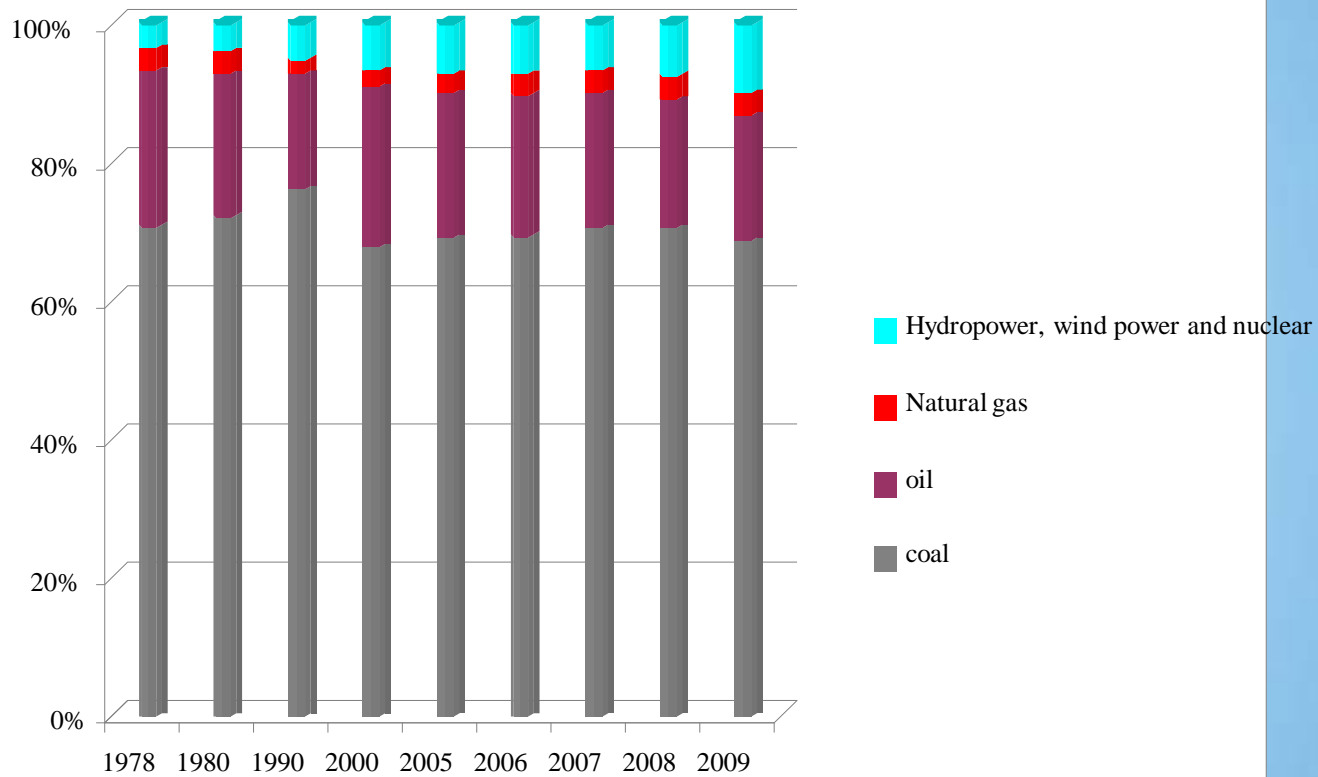
I. China Energy Market and International Dependence of Major Energies



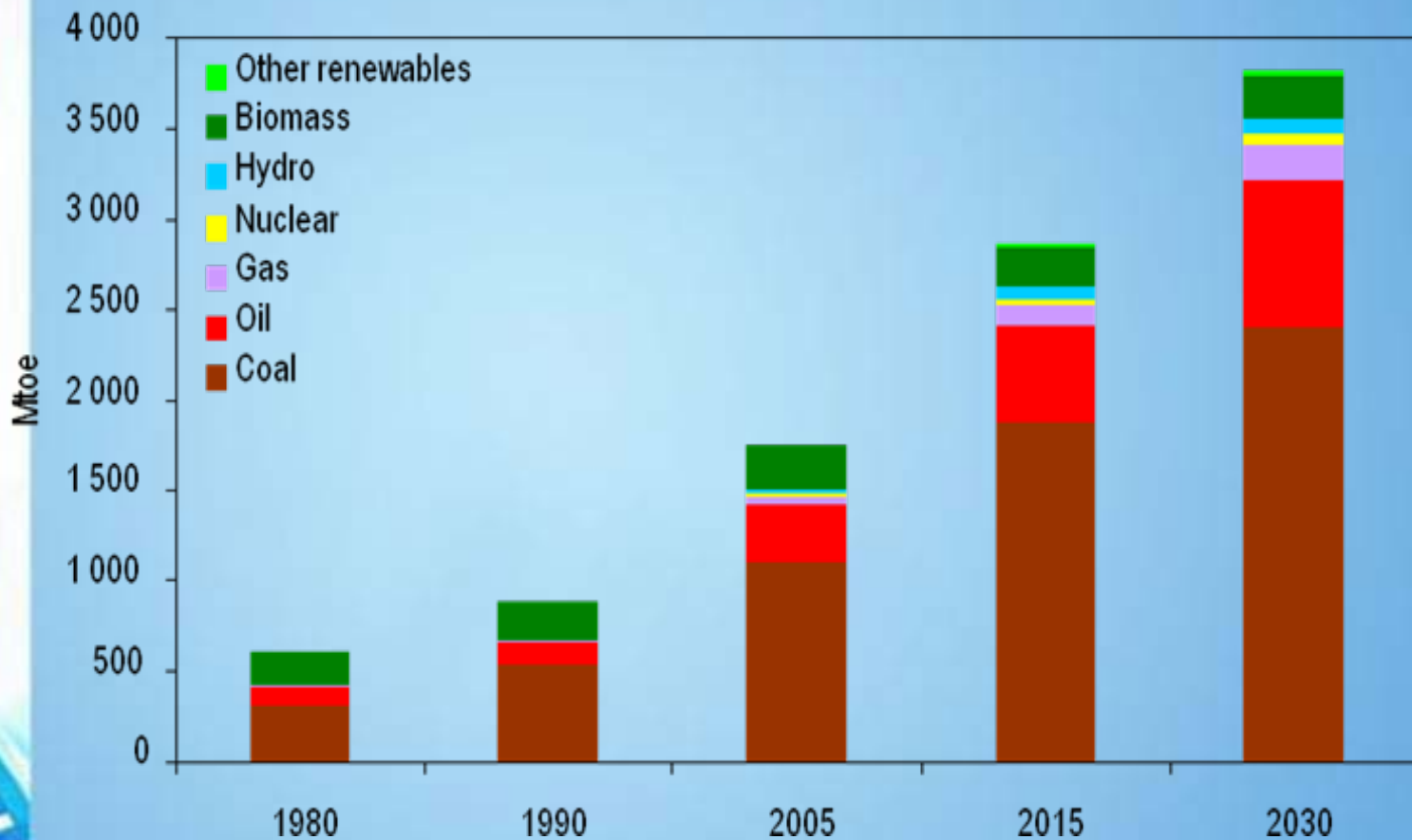
- **China has formed a coal-based and diversified energy consumption composition**
- **High energy self-supply rate of more than 90%, half of China's oil supply depends on the international market.**
- **China has become the engine of world oil consumption**



Graph 1. Dynamic comparison of Chinese energy consumption and composition (unit: ten thousand standard coal)



Graph 2 Dynamic comparison of consumption proportion of major energies in China

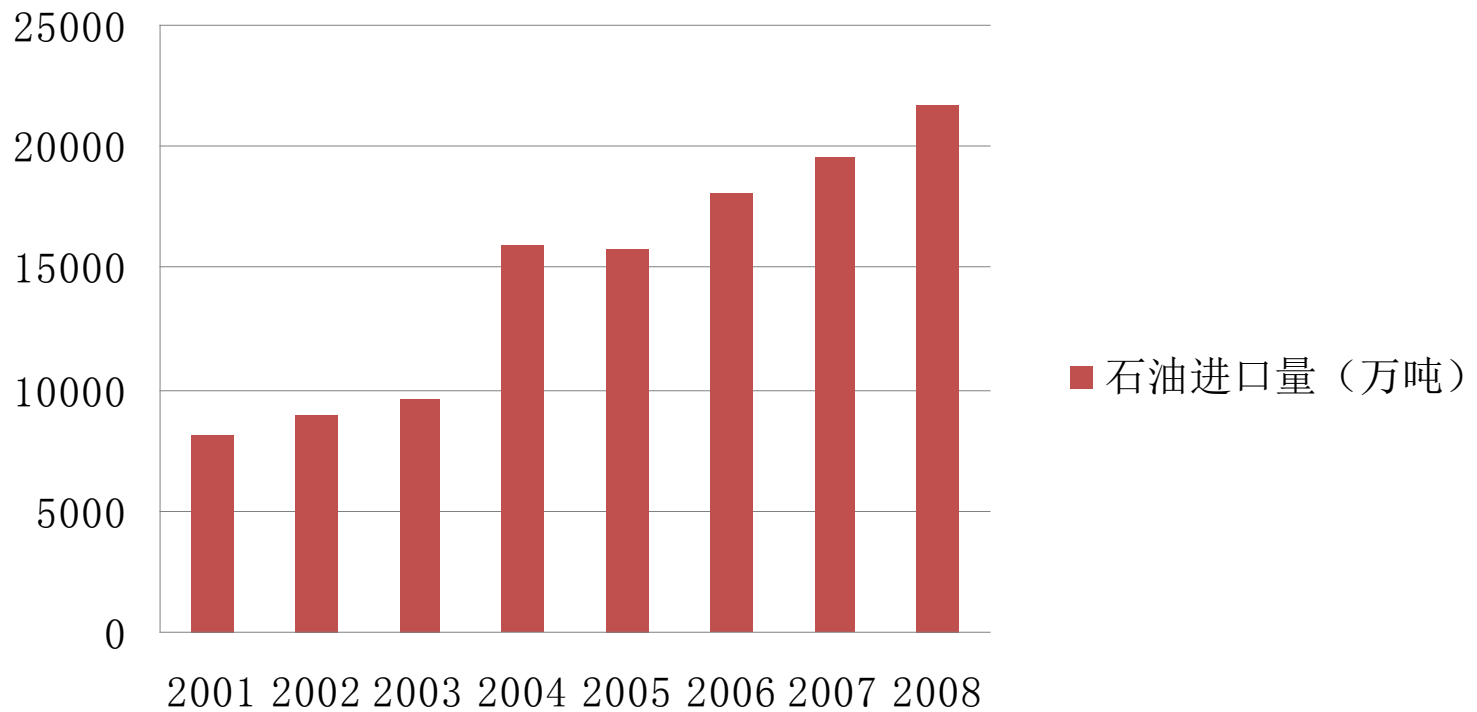


Graph 3 the estimates of IEA on Chinese energy demand

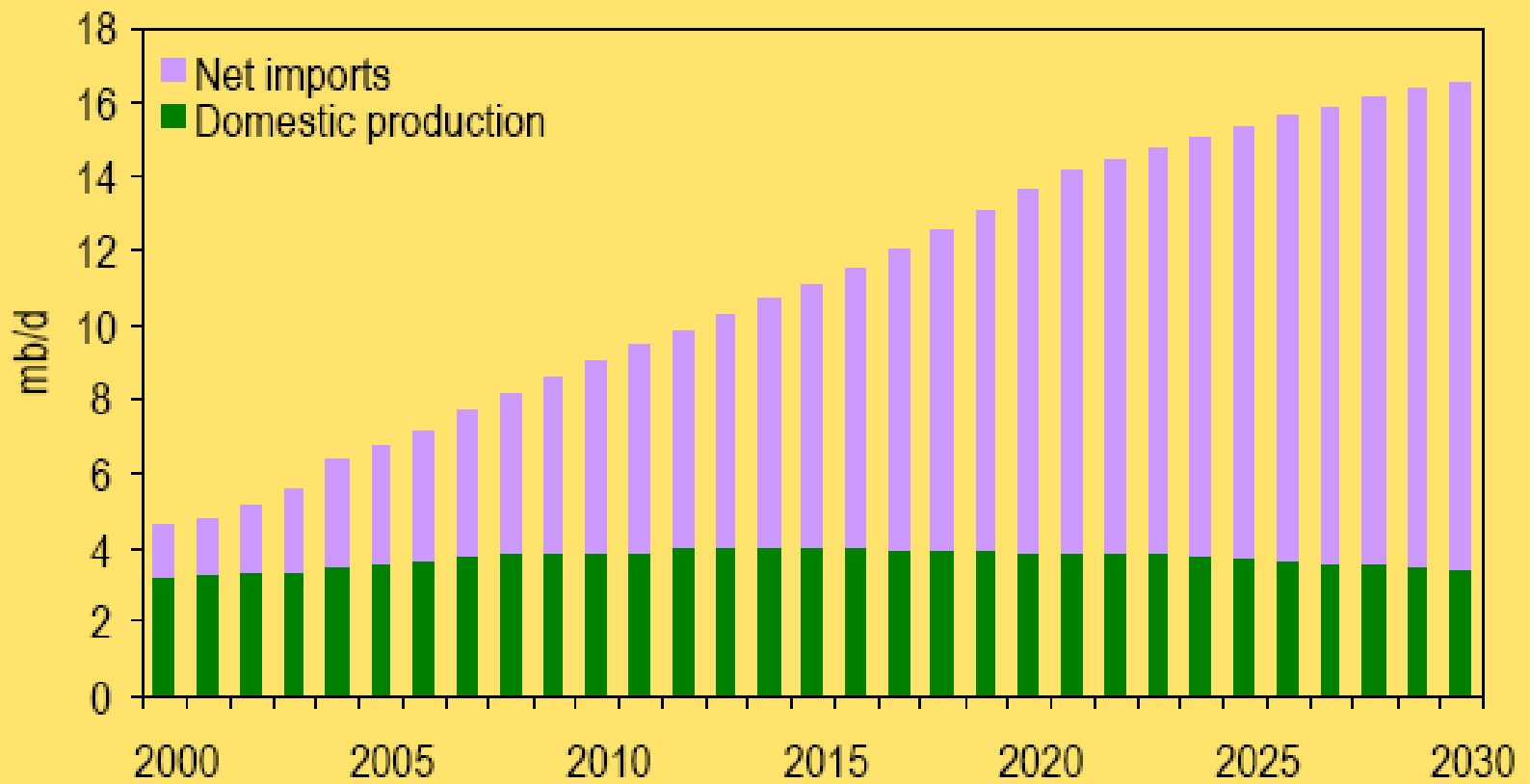
Petroleum

- **China has replaced Japan as the world's second largest petroleum consumption country since 2004.**
- **The oil supply is below the consumption**
- **In 2009, the ratio of China's foreign petroleum dependence reached 51.4%**
- **Saudi Arabia, Angola and Iran are the first three import source places of oil**

01至08年 中国石油进口量



Graph 4.Chinese Oil import from 2001 to 2008

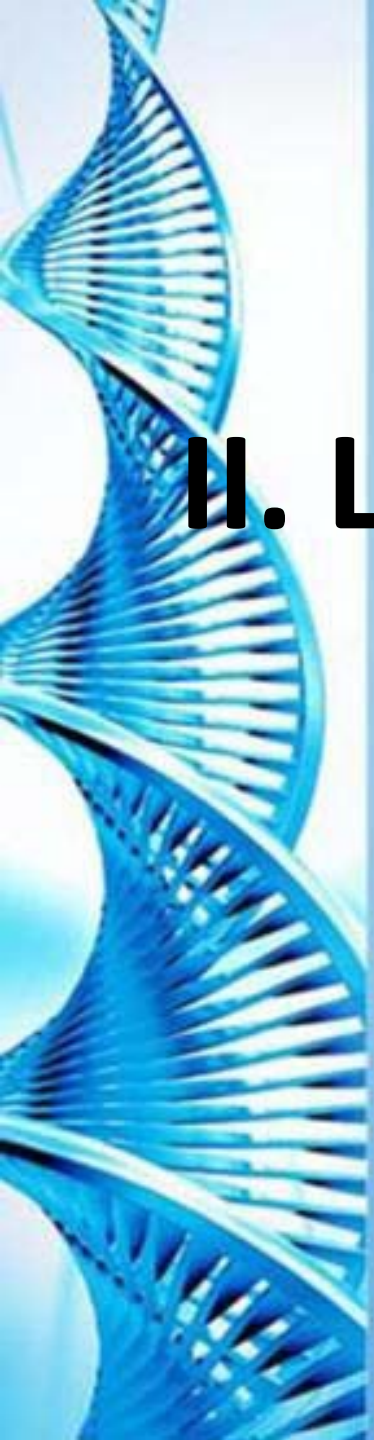


Graph 5. The estimates of IEA on Chinese oil demand and import



natural gas & coal & electricity

- **The supply-demand gap of natural gas will continue to widen, which is predicted to be about 30 billion cubic meters in 2010.**
- **Coal will remain the proportion around 60% in primary energy structure in the following 20 years.**
- **The import of electricity from Russia will arrive at 1 to 1.2 billion KWH in 2010.**



II. Low Carbon Renewable Energies in China

Wind Power



- In recent years, Chinese installed wind power capacity has experienced continuously doubled growth.
- the national installed wind power capacity will reach 5 million KW by 2010, 30 million KW by 2020 .
- In addition to onshore wind power, china will speed up offshore wind power generation.

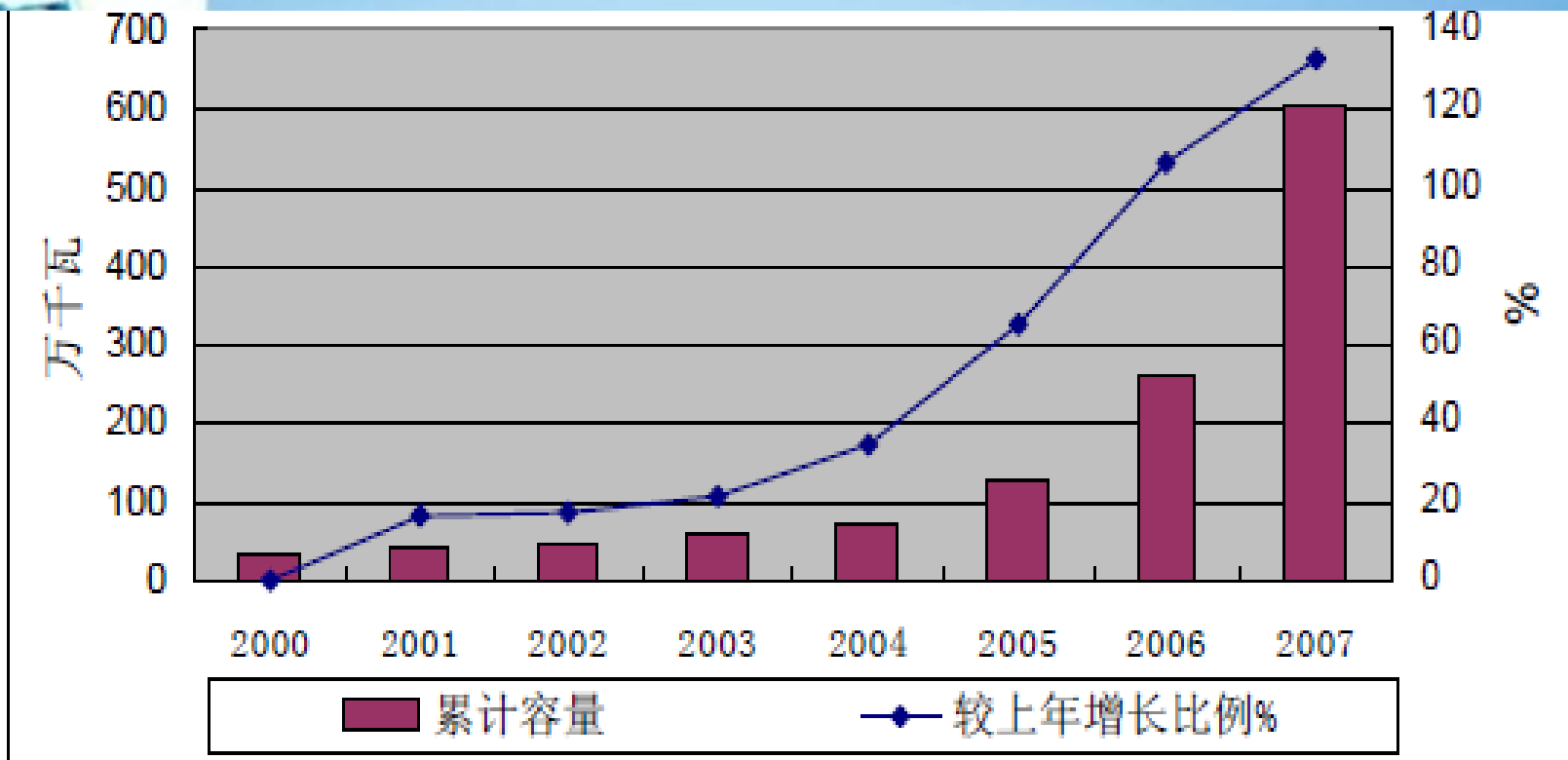


图 5.6 我国 2000 年至 2007 年风电装机规模变化

Graph 6.the changes of installed wind power capacity from 2000 to 2007

Solar Energy



- **China has become the large producer of solar energy and has taken the lead in the world. The output achieved 2800MW in 2009, will reach 300 thousand KW by 2010 and by 2020 1.8 million KW.**
- **In solar power generation, it's estimated that by 2010, the aggregate capacity of solar power will reach 300 thousand KW and by 2020 1.8 million KW.**
- **In solar thermal utilization, by 2010 the national collector area of solar water heater will reach 150 million cubic meter, by 2020 300 million cubic meter.**

Hydropower



- Hydropower reserve in China is abundant and is among the top list in the world.
- Three Gorges has 172 million kilowatts of installed capacity and 563.3 billion kilowatt-hours of annual power generation.



The production of China's renewable energy equipment and its market share

- China has become the fourth largest country of wind turbines installed capacity in the world.
- Now there are more than 80 such manufacturers, while there are only about 10 wind power companies in the world.
- In 2008, more than 70 Chinese manufacturers only produced blowers of about 5 million kilowatts, not even as much as one international counterpart such as GE or Vestas. The top four of Chinese wind power equipment manufacturers now produce 12 million kilowatts per year.
- China accounts for more than 3 quarters in global market in [opto-electrical](#) and light and heat equipment. In 2008 China produced [photovoltaic cells](#) of 2.5 million kilowatts, with only 40 thousand kilowatts (less than 2%) consumed domestically and 98% exported.
- China is both the largest producer and market in the world of solar power water heater. Yet the industry is not mature .



III. The Current Conditions and Prospects of Chinese Low Carbon Economy

- 
- **China has made energy saving and renewable energy development as the basic state policy.**
 - **The renewable energy industry has become the most dynamic and promising emerging industry in China.**
 - **China will vigorously develop green economy , low-carbon economy and circular economy.**
 - **As the largest country of carbon reserves, China has an enormous development potential in carbon trade. China will take up 35% to 45% in the global CDM potentials.**



Thank You