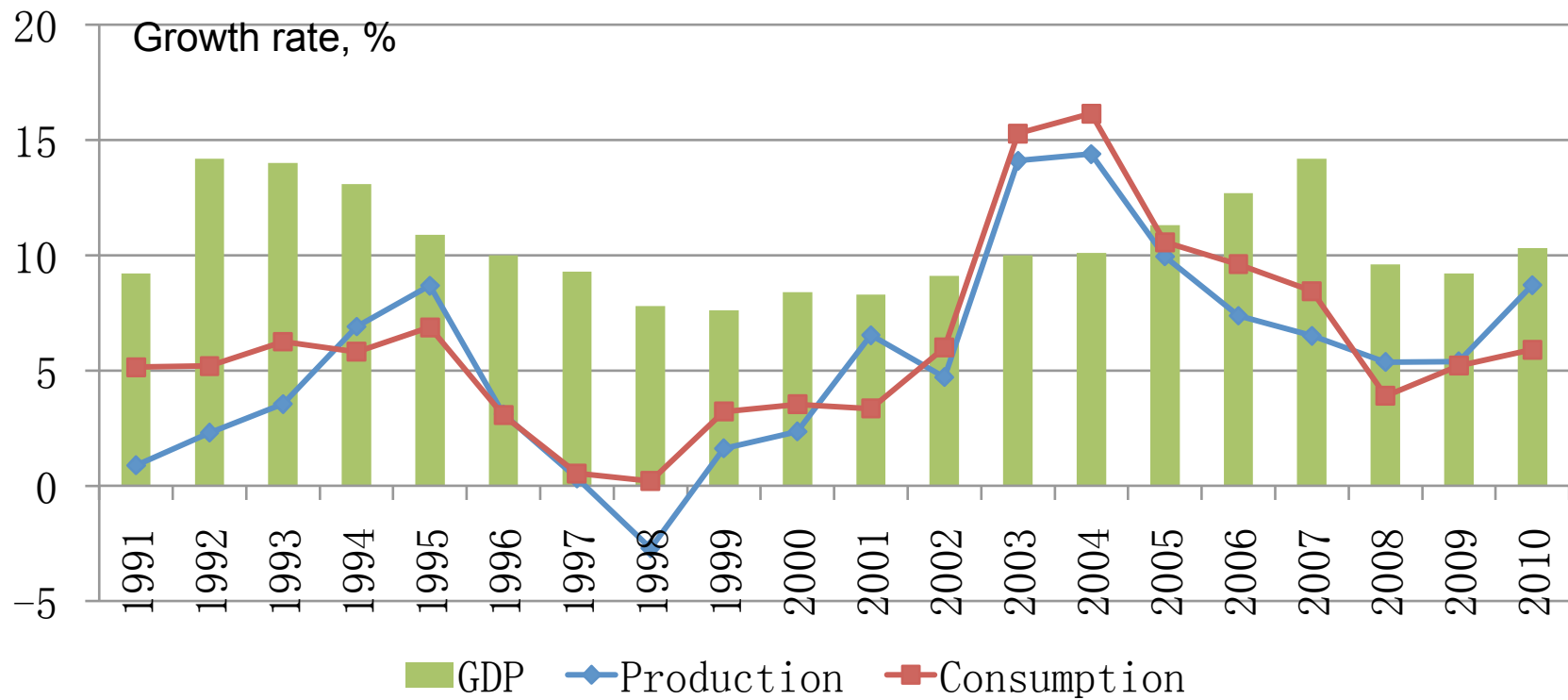


# **China's Efforts to Develop New Energy**

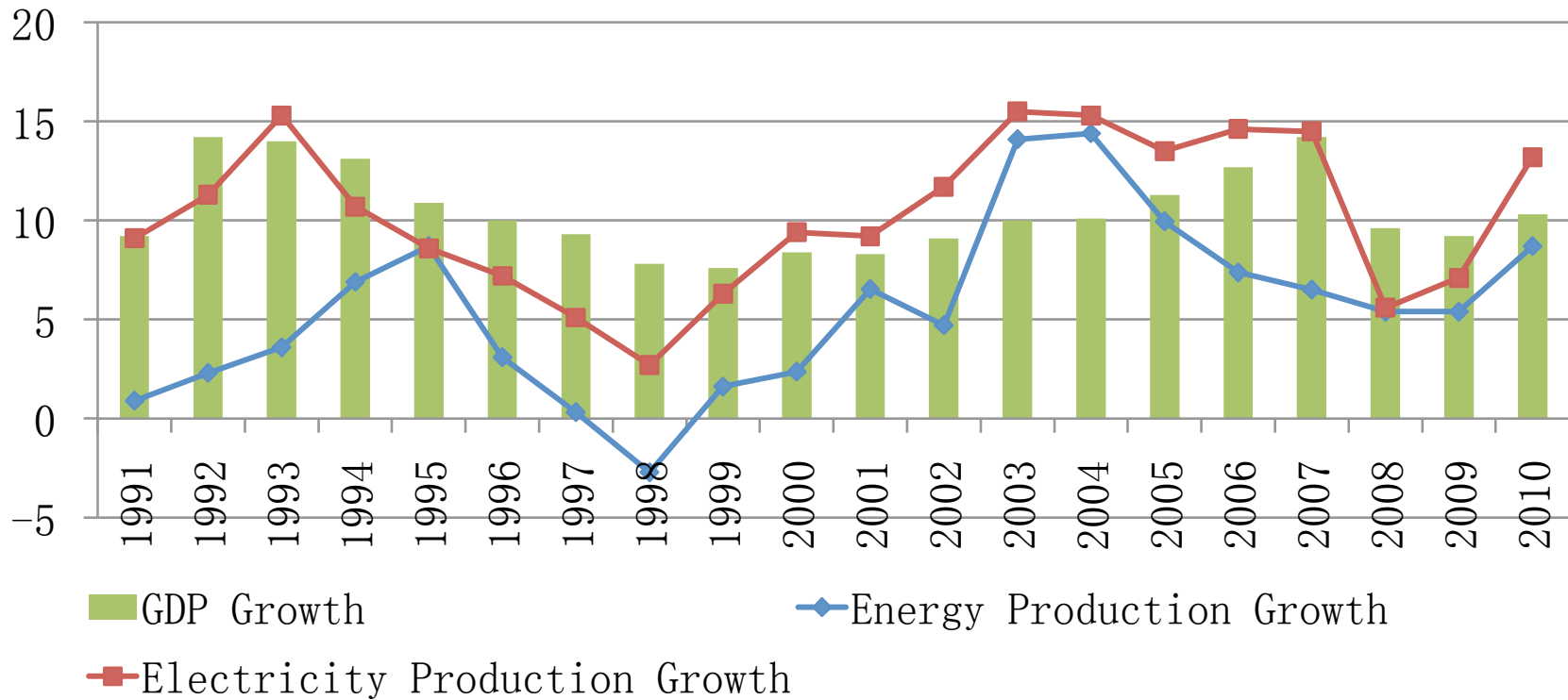
***Jiyao Bi, Ph.D.***

***April 14, 2011***

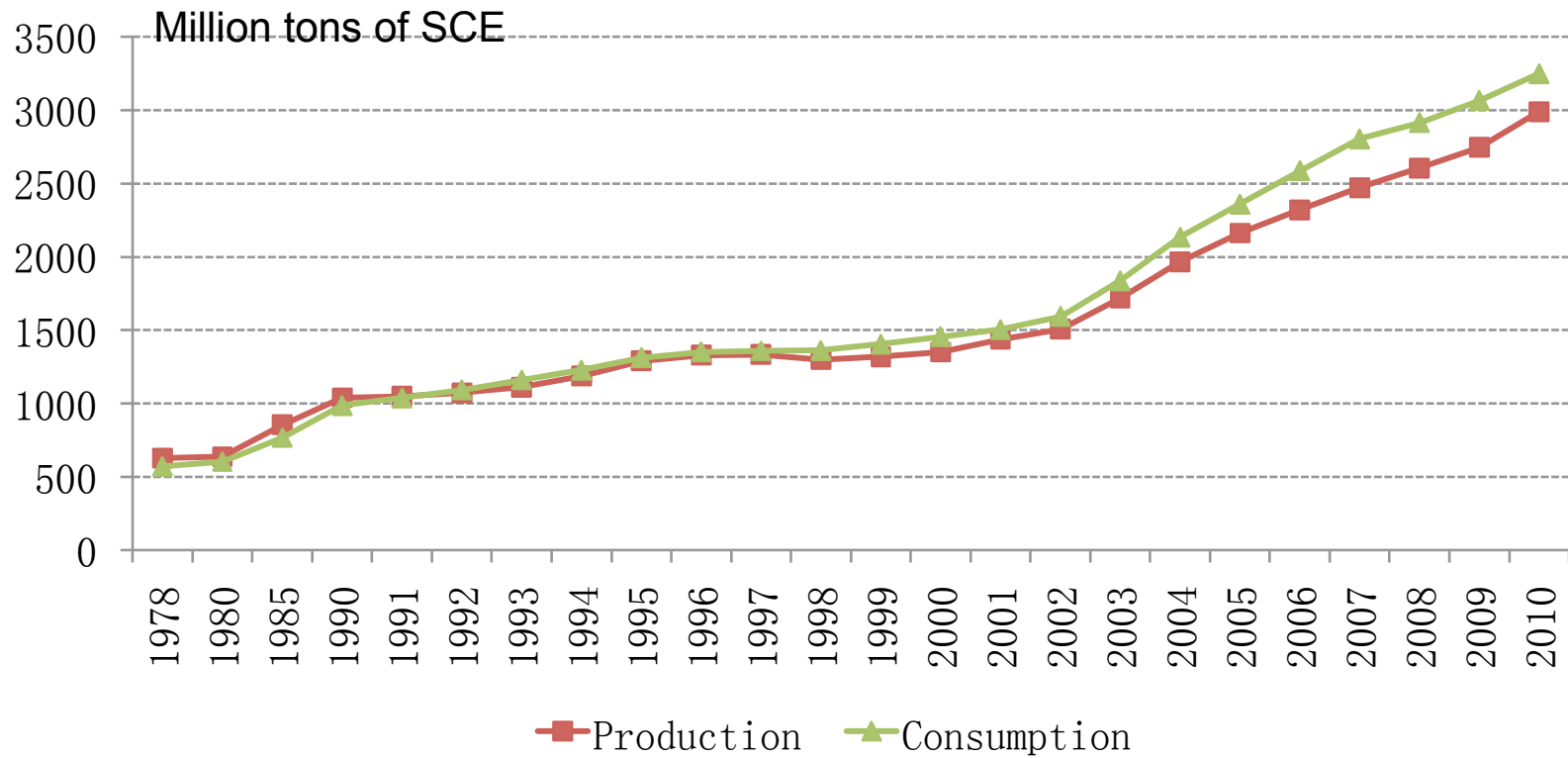
# Growth of Energy Production and GDP



# Growth of Energy Production and GDP



# Total Production and Consumption of Energy



## Energy Production and Consumption in 2010

Primary energy production 2.99 bln tons of sce, up 8.7%

Raw coal 3.24 bln tons, up 8.7%

Crude oil 203 mln tons, up 7.1%

Natural gas 96.8 bln cubic meters, up 13.5%

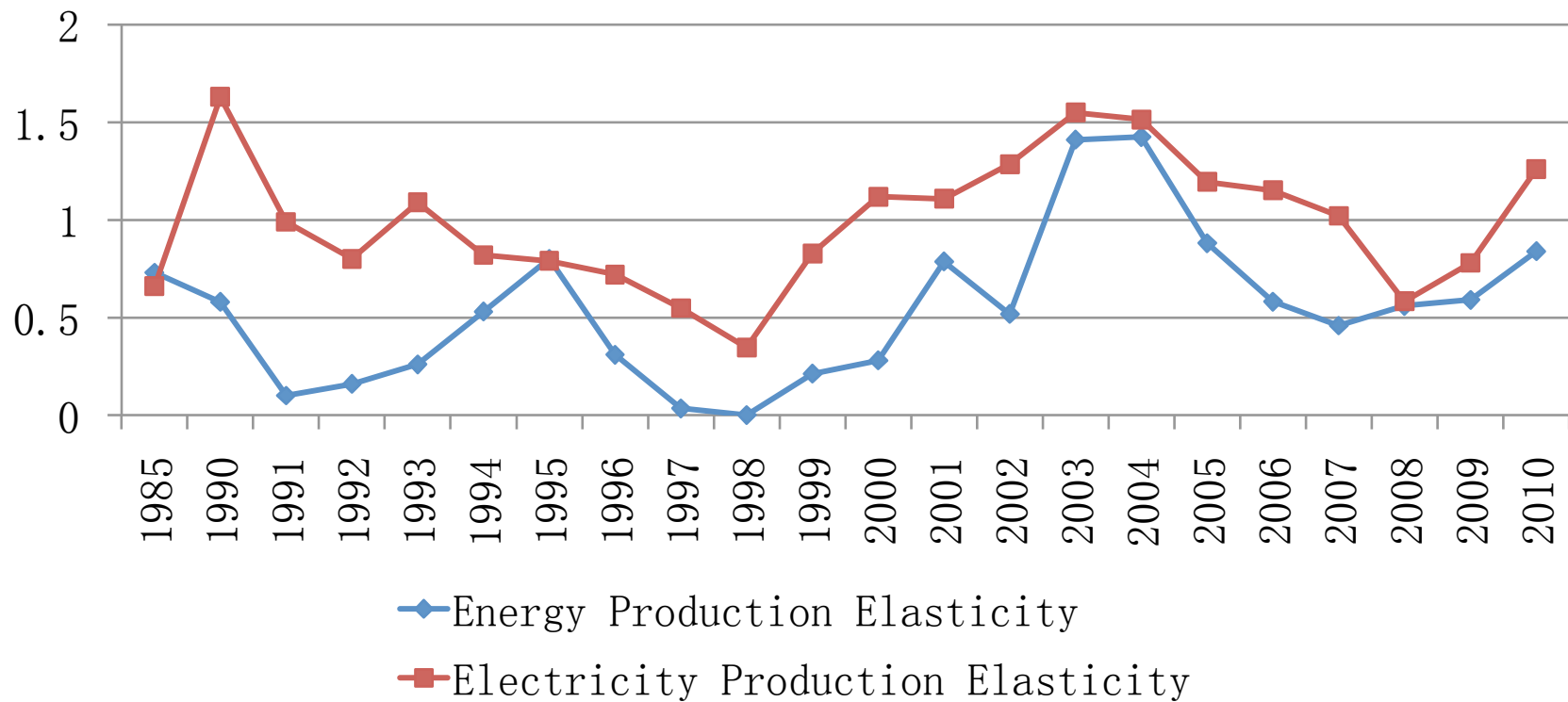
Primary energy consumption 3.25 bln tons of sce, up 5.9%

Raw coal 3.12 bln tons, up 5.3%

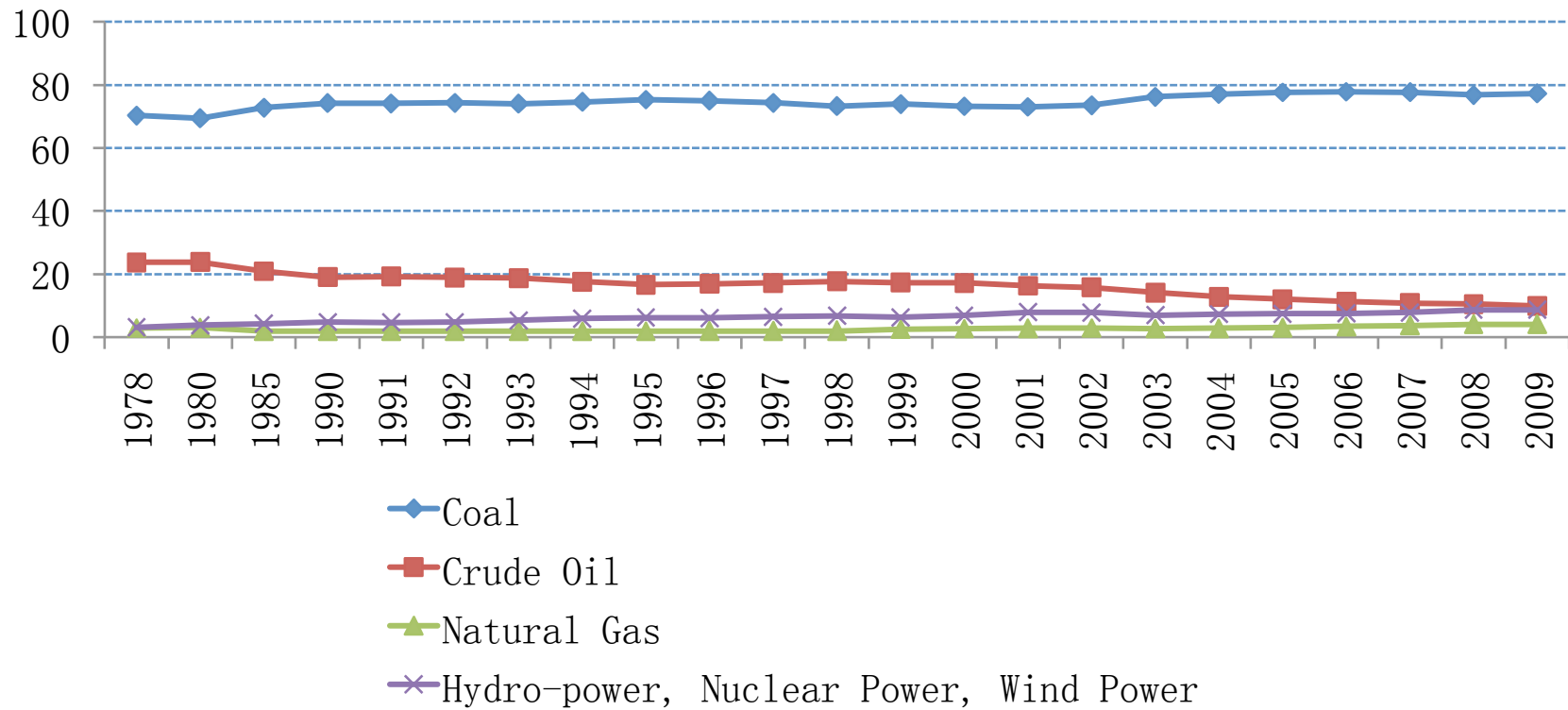
Crude oil 433.4 mln tons, up 12.9%

Natural gas 105.8 bln cubic meters, up 18.2%

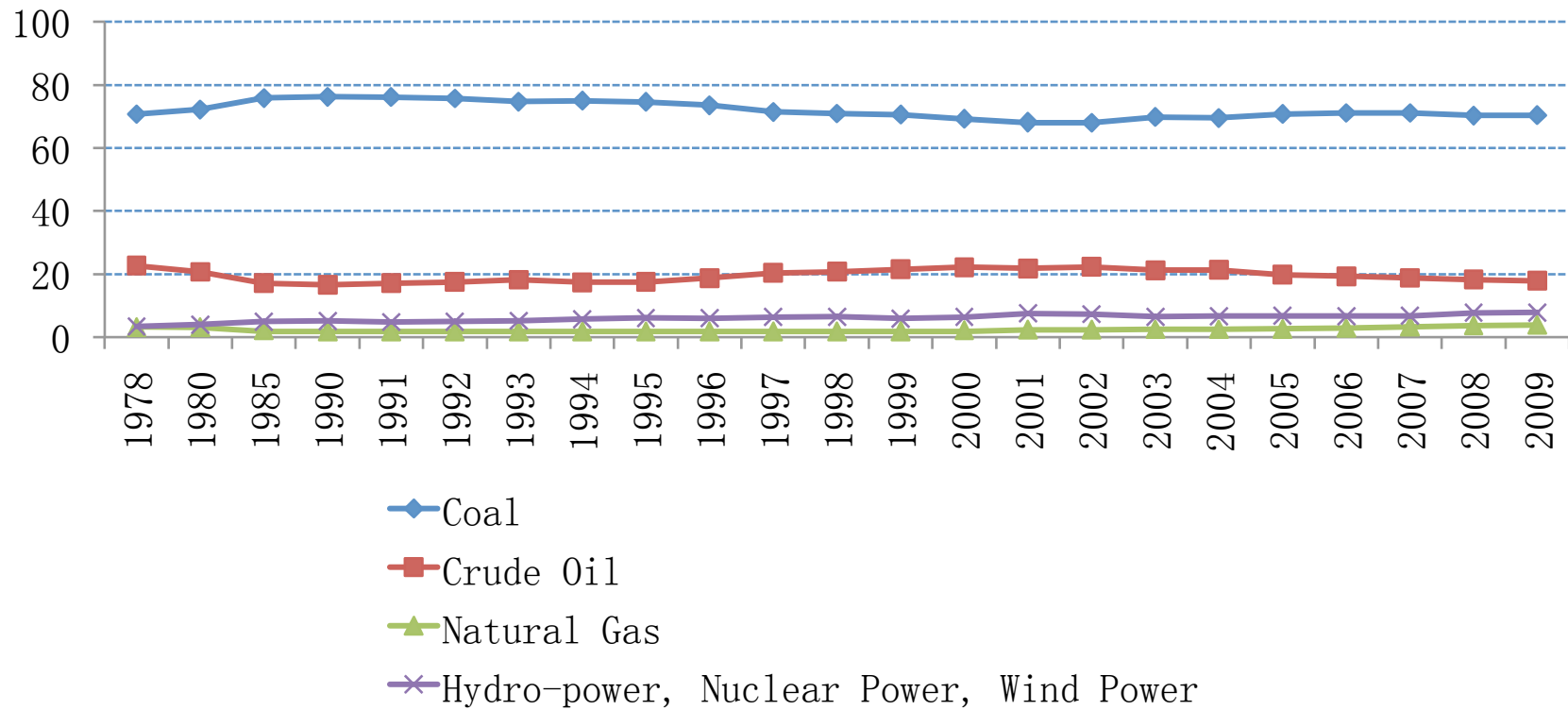
# Elasticity Ratio of Energy Production



# Total Production of Energy and Its Composition

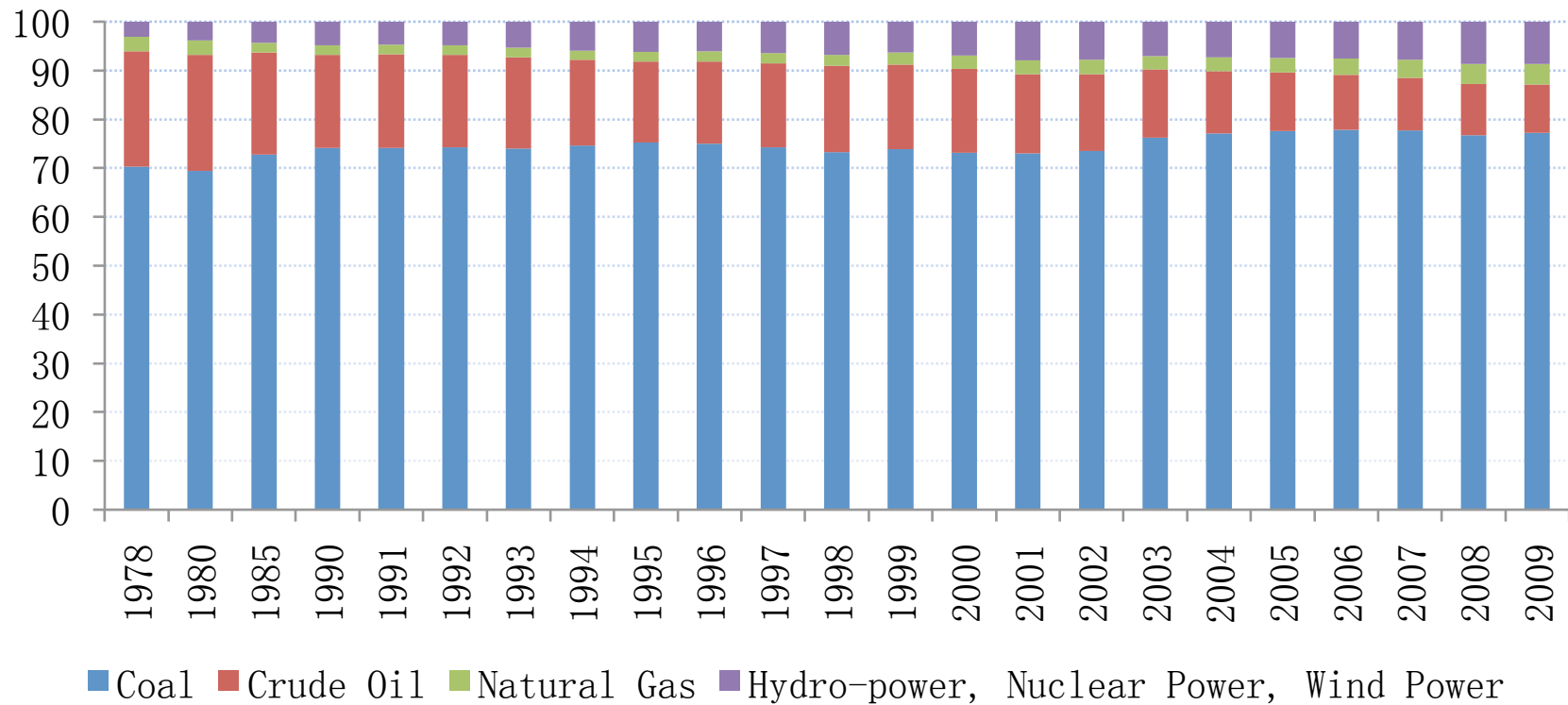


# Total Consumption of Energy and Its Composition

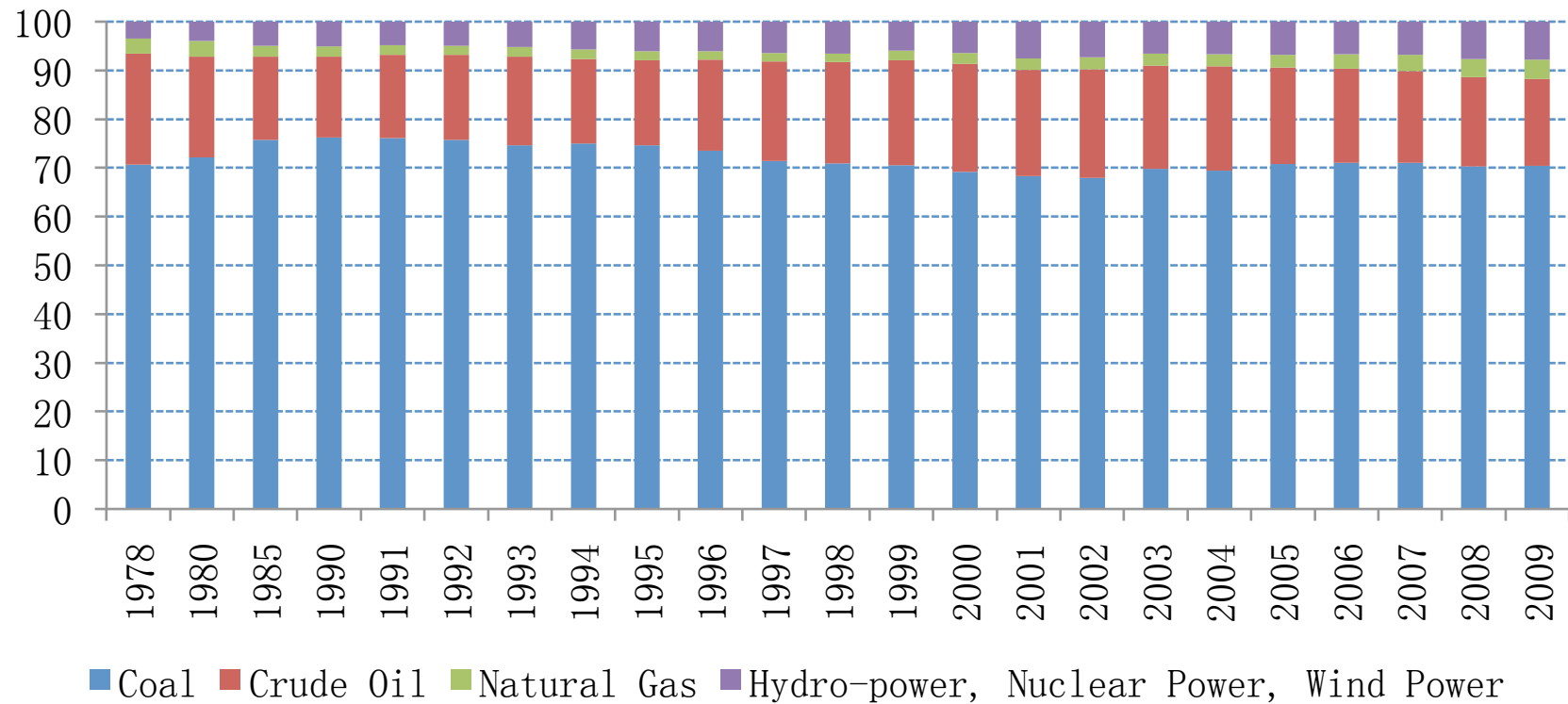




# Total Production of Energy and Its Composition



# Total Consumption of Energy and Its Composition



# China's Installed Capacity

- Total installed capacity reached 950 GW.
- Hydro installed capacity has exceeded 200 GW.
- Nuclear power developed rapidly, with installed capacity of 9.1 GW and over 27.73 GW under construction, accounting for over 40 percent of the world.
- Wind power capacity has surpassed 31.07 GW, ranking the second in the world.
- 72 GW of small coal fired power plans have shut down in 11<sup>th</sup> Plan, saving 81 million tons of coal annually.
- From 2005 to 2009, the share of coal-fired capacity dropped from 72.8% to 68.5% , while green capacity rose from 24.2% to 25.6%.

# Power Generation and Consumption in 2010

Total generation 4.2 tln kwhs, up 13.2%

Coal-fired power 3.3 tln kwhs, up 11.6%, (78.6% of total)

Hydro power 721 bln kwhs, up 17.1%

Nuclear power 73.9 bln kwhs, up 5.3%

Total consumption 4.2 tln kwhs, up 13.2%

Industry 3.1 tln kwhs, up 15% (73.8% of total)

Household 512 mln kwhs, up 5.1%

# China's Commitments

- Objective 1: non-fossil primary energy to account for 15% of total energy consumption by 2020. (*Hu Jintao, at UN Summit on Global Climate Change, September 2009*)
- Objective 2: CO<sub>2</sub> emission per unit of GDP to decrease by 40% to 45% by 2020 on the basis of 2005. (*Wen Jiabao, at Copenhagen Conference, December 2009*)

# Changing Strategy

- In 12<sup>th</sup> Plan focus of energy strategy shifts from guaranteeing supply to controlling consumption.
- Transforming growth model and restructuring economy with more efforts on energy saving and emission reduction.
- Adjusting energy structure with priority given to new and renewable energy.

# Major Tasks in Energy Sector

- Taking effective measures to encourage energy saving.
- Enhancing clean utilization level of traditional energy.
- Developing substitute energy to scale up clean energy such as natural gas.
- Stepping up construction of hydro and nuclear power stations.
- Developing renewable energy such as wind power, solar power and biomass energy.
- Constructing major energy bases and cross-regional transmission routes.

# Specific Objectives by 2015

- Natural gas will scale up to 260 billion cubic meters, with its share in total energy consumption increased from 3.9% to 8.3%.
- Hydro and nuclear power will scale up to 250 GW and 39 GW, with their share increased from 1.5% to 9%.
- Other renewable energy will scale up to 110 million tons of SCE, with its share in primary energy increased from 1.8% to 2.6%.
- Non-fossil energy is expected to account for 11.4% of primary energy, while coal share will drop to 63% from current 70% above.



# Prospects for 2020

- In order to achieve Objective 1, at least 75 GW of nuclear power capacity must be installed by 2020, while hydro power capacity installation will attain 380 GW. And other biomass energy will be above 260 million tons of SCE.
- By 2020, among the 15% of primary energy, hydro power will account for 9%-10%, nuclear power for 4%, renewable for above 2%.

# More Ambitious Projection

- State Grid projection: by 2020 new energy power capacity installed will reach 290 GW, accounting for 17% of total capacity.
- Of which: nuclear power 86 GW, wind power 150 GW, solar power 20 GW, biomass power 30 GW.

# Expected Results

- By 2020 China will significantly reduce its dependency on coal, with emission of sulfur and carbon dioxide decreased by 7.8 million and 1.2 billion tons, respectively.
- From 2011 to 2020, accumulated 5 trillion yuan will be invested directly in energy sector, which will add 1.5 trillion yuan to GDP annually and create 15 million jobs in total.

Thank you for attention!