

**How to Reach Global Accords on Energy,
Climate and Development Policies:
A China Perspective**

**Energy, Climate, and Future Welfare –
Changing Global Dynamics**

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I. Some Basic Facts about China Energy Sector

- (i) Current Energy Demand and Production:** The second largest energy producer and consumer in the world: the largest coal producer and consumer, about 32% of the World total; the second largest electricity producer and consumer; the second largest oil consumer and the third largest oil importer.

- (ii) Energy Dynamics:** In 2000, China consumed 1.3 billion tons of coal and in 2006; the coal consumption is expected to be 2.4 billion tons. In the same period, the electricity installed capacity increases from 320 GW to 580 GW. For the last two years, China added more than 60 GW per year and this will continue at least for the next two years. In 2004 alone, the oil consumption increased by almost 16%. Energy consumption increased by 15.3% in 2003, 16% in 2004 and 9.9% in 2005.

I. Some Basic Facts about China Energy Sector

(iii) Future Perspectives: Because of its large population, China's per-capita energy endowment is below the World average (2004 numbers): oil 7%, natural gas 6%, and coal 94%; a very low level of per capita energy consumption, which is still less than half of the world average, and one tenth of that of the United States. With more than 10% GDP growth in recent years, the expectation for its energy demand is high and will continue until 2020.

(iv) Energy Mix: In 2004, coal accounted for 67.7% of the total energy consumption, oil 27.7%. 75% of electricity capacity was coal fired. SO₂ and CO₂ emissions are the largest and second largest in the World, respectively.

II. Why China Needs So Much Energy

- (i) **Growth pattern and Industrial structure:** recent large investment in heavy industry was fueled by a large-scale infrastructure development for economic growth and urbanization.
- (ii) **Urbanization:** if China becomes a middle-income country by 2020, about 300 million of rural population will need to move and work in cities.
- (iii) **Slow Market Reforms:** the reforms on energy prices, including oil, electricity and coal, have not been completed, and may not be in place in the near future.

III. Energy Situation: Energy Supply and Demand

- (i) If business as usual, China could possibly consume 3.5 billion tons of coal by 2015, and the oil dependency could reach 65%.
- (ii) Even with expectation of a long run energy shortage, short run energy surplus is a reality in China.
- (iii) The recent surge in energy consumption lifted the China's energy demand onto a higher level. Even a low growth rate of energy consumption will result in a large absolute incremental.

III. Energy Situation: Energy Prices

- (i) Not reflecting the energy scarcity and the environmental impact, energy prices in China are artificially kept below market prices, apparently for both social stability and economic growth.
- (ii) The low energy prices lead to inefficient use of energy. The energy intensities of Chinese industries are usually substantial higher than that of developed countries.
- (iii) China economic growth has been investment driven that often led to over capacity in many industries. Low energy prices could be one of the main factors contributing to this.

IV. Environmental Condition

- (i) Some rough assessments on actual state of the pollution in China are shocking.
- (ii) In 2004, the environmental damage led to economic loss of \$64 billion or 3% of GDP. More than 400,000 people died because of air pollution and more than 300 million people without clean drinking water.
- (ii) China adding an immense burden of clean up cost on the future generations. It was estimated that China needs \$36 billion to mitigate all environmental damage caused in 2004, or close to 2% of GDP in 2004.
- (iii) Another aspect of environmental concern is the way China rushing to meet high energy demand.

V. What China Needs to Do

(i) Energy Intensity Target in the 11th Five-Year Plan:

- a. The energy intensity is targeted to be 20% lower than that of 2005.
- b. It is unlikely the target will be met as all measures for reducing energy intensity take time to implement.

(ii) Energy Market Reforms:

- a. China is now facing a very difficult choice of a more efficient energy sector and higher energy prices.
- b. **Without addressing energy market and pricing issues, promoting energy conservation and improving energy efficiency could not be achieved.**

IV. What China Needs to Do

- (iii) Energy Conservation and Energy Mix:**
 - a. **Given certain industrial structure, energy intensity can be addressed through energy conservation, both from supply and demand side.**
 - b. **Given certain level of energy consumption, environmental pollution can be addressed through a cleaner energy mix. .**

- (vi) Building Consensus:**
 - a. **China needs to establish an effective mechanism for energy conservation and environmental protection.**
 - b. **China needs to avoid the development strategy of economy growth first and environmental protection later, which is still popular at local levels.**

VI. What Other Countries Can Help

- (i) **Good Understanding of China Energy Demand:** 9% GDP growth rate; a large population and low level of per capita energy consumption; an emerging high rate of motorization in the transport sector; and a rapid urbanization process to accommodate about 20 million rural emigrants a year. The energy demand is enormous and is coming.
- (ii) **Promoting Energy Efficiency and Clean Technology:** It is difficult to tell China not to burn 5 billion tons of coal by 2020. However, we can persuade China to burn less and in a cleaner way.
- (iii) **Engaging China in Energy Policy Dialogue and Providing Assistance in Addressing Reform Issues:** More assistances are needed by demonstrating successful international experience to convince China that a good and faster market reform is not necessary leading to social instability.

For more information

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