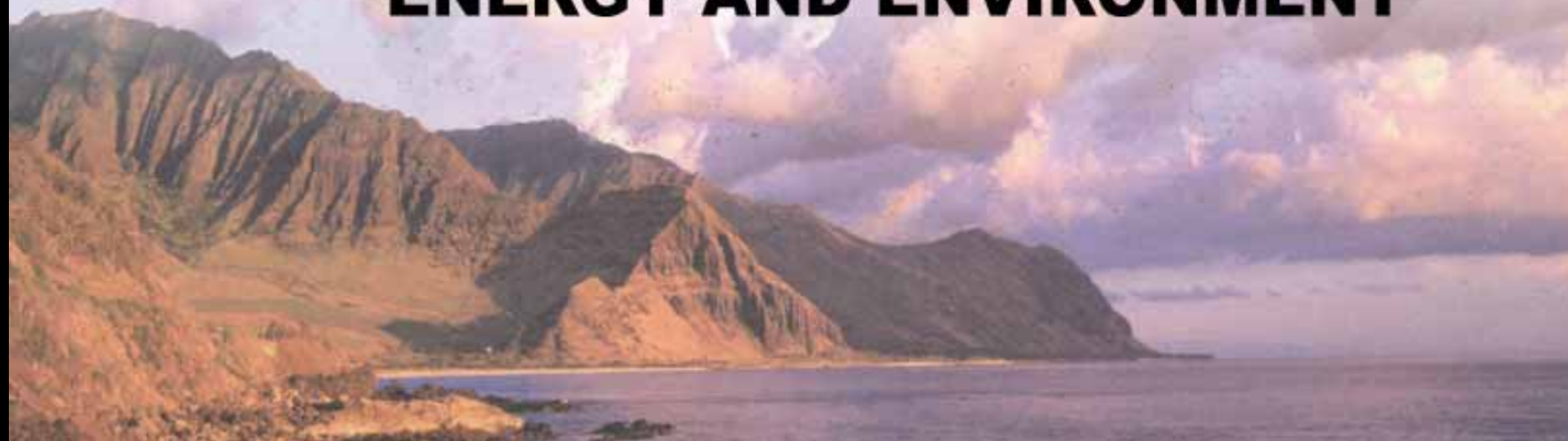




2007 诺贝尔奖获得者北京论坛
Nobel Laureates Beijing Forum 2007

能源与环境

ENERGY AND ENVIRONMENT







I



II



III



IV



V



VI

I. Carlo Rubbia
卡罗·卢比亚

II. Kurt Lambeck
库尔特·兰贝克

III. Richard Zare
理查德·杰尔

IV. Fu Congbin
符淙斌

V. Thomas Schelling
托马斯·谢林

VI. Walter Kohn
沃尔特·科恩

VII. Wu Jisong
吴季松

VIII. Douglas Osheroff
道格拉斯·奥谢罗夫

IX. Martin Green
马丁·格林



X. Robert Mundell
罗伯特·蒙代尔

XI. Chen Yong
陈勇

XII. Gabor Somarjai
盖博·索马杰

XIII. Lothar Reh
洛塔·雷

XIV. Richard Schrock
理查德·施罗克

XV. John Grace
约翰·格雷



XII



XIII



XIV



XV

XVI. Zhang Yi
张懿

XVII. Edmund Phelps
埃德蒙·菲尔普斯

XVIII. Rudolph Marcus
鲁道夫·马库斯

XIX. Harold Kroto
哈罗德·克罗托



XVI



XVII



XVIII



XIX

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September 2007

What does the forum tell us about China?

1. A paradigm shift : Growth \longrightarrow Energy and Environment
 - “Energy” is a requirement for “growth”
 - Current annual growth rate of GDP \approx 13%!
 - Current annual energy-growth rate \approx 10.5%!
(20% smaller)

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2. Coal is principal source of energy
 - Small, inefficient coal-fired plants were closed (*Percentage?*)
 - CO₂ sequestration was *not* emphasized by *Chinese* speakers, *strongly* emphasized by *non-Chinese* with one exception (Shelling)

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3. China just became Number 1 greenhouse gas emitter, displacing USA

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4. Strong emphasis on collaboration with non-Chinese
 - 8 major Chinese speakers, 15 major foreign speakers, including 10 Nobelists

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5. **Strong emphasis on cleaner production methods**

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6. Catastrophic air and water pollution.
Could become a political issue.
Beijing Olympic Games '08.

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7. 40% (!) annual growth rate of solar cell production (for export). Future world leader ? (M. Green)

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8. Projected GDP by 2050 = 6.4 times GDP
in 2005! *(Details on other slides)*

Two speeches by Chinese scientists who are key advisors to the Government in the areas of environment and energy

The first speaker at the workshop organized by the Chinese Academy of Sciences (CAS) was Prof. FU Congbin, a member of CAS, and vice-president of the Chinese Association of Science and Technology. He is one of the main advisors of the Chinese government on environment issues, and he spoke about Science and Technology Policy of Relevant Countries and International Cooperation for Climate Change.

Two speeches by Chinese scientists who are key advisors to the Government in the areas of environment and energy

The second speaker was Prof. YAN Luguang, also a CAS member. He was the Director of the Institute of Electrical Engineering at CAS, and is one of the main advisors on energy policy. He spoke on "Change of the Energy Structure and Establishment of the Sustainable Energy System should Start in China in the First Half of 21st Century."

Two speeches by Chinese scientists who are key advisors to the Government in the areas of environment and energy

Prof. Yan anticipated a fast growth of the economy in 2050 (GDP 6.4 times higher than 2005, at 117.4×10^{12} yuan), while the energy structure would look like: coal from 70 to 40 %, Oil and Hydro remain 20% and 6%, respectively, Gas from 3% to 10 %, Nuclear from 1% to 9%, and 15% will depend on Non-Hydro-Renewable.

Two speeches by Chinese scientists who are key advisors to the Government in the areas of environment and energy

Prof. Yan also anticipated the Total Electric Power Capacity to grow from 508 GW in 2005 to 2400 GW in 2050, with a structure: Fossil-Energy Fired [lowered?] from 76% to 45%, Nuclear and Hydro remain 25%, while the rest (30%) will rely on Non-Hydro- Renewable. He also made some recommendations to materialize changes towards that direction.

Excerpts from speech by Lu Yongxiang, Vice Chairman of the Standing Committee of National People's Congress and President of Chinese Academy of Sciences

Since the implementation of the Knowledge Innovation Program begun in 1998, the Chinese Academy of Sciences has conducted substantial research and development work in the fields of clean and efficient utilization of coal, electricity and electric power system, solar energy and wind energy utilization, bio-mass energy utilization, fusion energy exploration, etc., and has made a lot of achievements. (continued)

Excerpts from speech by Lu Yongxiang, Vice Chairman of the Standing Committee of National People's Congress and President of Chinese Academy of Sciences

We also have devised strategies and plans for the development of coal-to-liquids technology, circulating fluidized bed boiler, large-scale water turbo generator cooling technology, tertiary recovery technology, fuel cell technology, large-scale solar power plant technology, renewable energy and new energies represented by bio-mass energy, as well as development of superconducting non-circular section nuclear fusion experiment device for Experimental Advanced Superconducting Tokamak (EAST), for the purpose of promoting the formation of new industries and restructuring of traditional industries.

Excerpts from speech by Wang Qishan, Mayor of Beijing

By 2010, the energy and water expected to be consumed for every 10,000 RMP in GDP output in Beijing will be down by 20% compared to 2005; sulfur dioxide emission and chemical oxygen consumption will be reduced by about 20% and 15% respectively down from 2005; and the economic development will be based more firmly on sustainable utilization of resources and effective protection of environment.