

National Climate Change Programme of China

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- National Climate Change Programme of China was approved by the State Council on June 3 2007;
- National Climate Change Programme of China includes Five Parts; details are shown in the following slides:

Part I

**Climate Change and
Corresponding Efforts in China**

Observations and Trend of Climate Change in China

- Annual average air temperature has increased by 0.5-0.8°C during the past 100 years, which was slightly higher than the average global temperature rise.

Current GHG emissions in China

- Based on Chinese experts' estimation, China's total GHG emission in 2004 is about 6,100 million tCO_{2e} (5,600 million tons of net emissions), of which 5,050 million tons of CO₂, 720 million tCO_{2e} of CH₄ and 330 million tCO_{2e} of N₂O. From 1994 to 2004, the annual average growth rate of GHG emissions is around 4%.
- The emission intensity defined as the CO₂ emission per unit of GDP declined generally. China's emission intensity falls to 2.76 kgCO₂/US\$ (constant 2000 USD) in 2004, as compared to 5.47 kgCO₂/US\$ in 1990, a 49.5% decrease (IEA). For the same period, emission intensity of the world average dropped only 12.6% and that of the OECD countries dropped 16.1%.

China's Efforts and Achievements in Mitigating Climate Change

- Restructuring the economy, promoting technology advancement and improving energy efficiency. During the period of 1991 ~ 2005, China has achieved an annual GDP growth rate of 10.2% with an annual growth rate of 5.6% in energy consumption, i.e. about 0.55 of the elasticity of energy consumption. Consequently, an accumulated 800 million tce of energy were saved by economy restructuring and energy efficiency improvement, which is equivalent to a reduction of 1.8 billion tons of CO₂ emissions.

China's Efforts and Achievements in Mitigating Climate Change

- Optimizing energy mix by developing low-carbon and renewable energy. By the end of 2005, the installed capacity of hydropower generation has reached 117 GW in China, accounting for 23% of the total power generation capacity, and the corresponding power generation was 401 TWh, accounting for 16.2% of total electricity generation. The utilization of renewable energy in China equaled to 166 million tce (including large hydropower), accounting for 7.5% of China's total energy consumption in that year, equivalent to a saving of 380 million ton CO₂ emissions.

China's Efforts and Achievements in Mitigating Climate Change

- Launching nationwide tree-planting and afforestation campaign and enhancing ecology restoration and protection.
- the acreage of conserved artificial forests in China was 54 million hectares, ranking the top one in the world, and the amount of growing stock was 1,505 million cubic meters. Estimated by relevant experts, from 1980 to 2005, a total of 3.06 billion ton CO₂ absorption was achieved by afforestation.

China's Efforts and Achievements in Mitigating Climate Change

- Effectively controlling the growth rate of population through family planning.
- Since the implementation of the family planning program from 1970s, over 300 million births have been averted nationally by 2005. According to the average per capita emissions from the IEA statistics, the averted births have resulted in an annual reduction of CO₂ emissions by about 1.3 billion tons in 2005.

Part II

China's Basic National Circumstances and Impacts of Climate Change on China

China's Basic National Circumstances of Climate Change

- Inferior climatic conditions and severe natural disasters. China has relatively harsh climatic conditions. Most of China has a continental monsoon climate with more drastic seasonal temperature variations compared with other areas at the same latitude such as North America and West Europe. In most part of China, it is cold in winter and hot in summer with extremely high temperature. Therefore, more energy is necessary to maintain a relatively comfortable room temperature. China frequently suffers from meteorological disasters, which are unusual worldwide in terms of the scope of affected areas, the number of different disasters, the gravity of disaster and the mass of affected population.

China's Basic National Circumstances of Climate Change

- China is a country with a vulnerable ecosystem. China's grassland area , most of which are high-cold prairie and desert steppe while the temperate grasslands in Northern China are on the verge of degradation and desertification because of drought and environmental deterioration. China's total area of desertification for 2005 , accounting for 27.4% of the country's territory. China has a continental coastline extending over 18,000 kilometers and an adjacent sea area of 4.73 million square kilometers, as well as more than 6,500 islands over 500 square meters. As such, China is vulnerable to the impacts of sea level rise.

China's Basic National Circumstances of Climate Change

- Due to the constraints of resource endowment, China's primary energy mix is dominated by coal. In 2005, China's total primary energy consumption, while the shares of coal in the world primary energy consumption were 27.8%, respectively. Because of the coal-dominated energy mix, CO₂ emission intensity of China's energy consumption is relatively high.

China's Basic National Circumstances of Climate Change

- China has the largest population in the world. In 2005, the population of China's mainland was 1.31 billion (not including Hong Kong, Macao and Taiwan), accounting for 20.4% of the world total. In 2005, China's per capita commercial energy consumption was about 1.7 tce, only 2/3 of the world average, let alone the average level of developed countries.

China's Basic National Circumstances of Climate Change

- China is currently at a relatively low level of economic development. In 2005, the per capita Gross Domestic Product (GDP) of China was about US\$ 1,714, only about 1/4 of the world average level.
- By the end of 2005, the poverty-stricken people in China's rural areas numbered 23.65 million, with the per capita annual pure income less than 683 Chinese Yuan.

Impact of Climate Change on China

- Impacts of climate change on China are mainly in the areas of agriculture and livestock industry, forest and other natural ecosystems, water resources, coastal zone, and other sectors.

Part III

Principles and Objectives of China to Address Climate Change

Principles to Address Climate Change

6 principles:

- To address climate change within the framework of sustainable development.
- To follow the principle of “common but differentiated responsibilities” of the UNFCCC.
- To place equal emphasis on both mitigation and adaptation.
- To integrate climate change policy with other interrelated policies.
- To rely on the advancement and innovation of science and technology.
- To participate in international cooperation actively and extensively.

Objectives of China to Address Climate Change

- To control GHG emissions: China will achieve the target of about 20% reduction of energy consumption per unit GDP by 2010, and consequently reduce CO₂ emissions. To raise the proportion of renewable energy (including large-scale hydropower) in primary energy supply up to 10% by 2010, the extraction of coal bed methane up to 10 billion M³. The emissions of nitrous oxide from industrial processes will remain stable as that in 2005. To promote the adoption of new technology; promote biogas utilization to control the growth rate of methane emissions and increase the forest coverage rate to 20%.

Objectives of China to Address Climate Change

- To enhance capacity of adaptation to climate change: increase the improved grassland by 24 million hectares, restore the grassland suffering from degradation, desertification, and salinity by 52 million hectares, and strive to increase the efficient utilization coefficient of agricultural irrigation water to 0.5. 90% of typical forest ecosystems and national key wildlife are effectively protected and nature reserve area accounts for 16% of the total territory; and 22 million hectares of desertified lands are under control.
- The anti-flood engineering systems in large rivers and the high standard for drought relief in farmland will be completed. the capability to resist marine disasters will be raised remarkably, and the social influence and economic losses caused by sea level rise will be reduced in maximum.

Part IV

Policies and Measures to Address Climate Change

Policies and Measures to Address Climate Change

- In accordance with the requirement of carrying out the Scientific Approach of Development, China will combine its efforts to address climate change with the implementation of sustainable development strategy, the acceleration of building-up a resource-conserving and environmentally-friendly society, and an innovative country, which will be integrated into the overall national economic and social development plan and regional plan; and China will mitigate greenhouse gas emissions and in the meantime improve its capacity to adapt to climate change. China will make its efforts to realize the objectives and tasks presented in this program through adopting a series of institutional, legal, economic and technological instruments in order to strengthen energy conservation, optimize energy mix, improve ecological environment, enhance adaptation capacity, intensify research and development and improve research capacity, raise public awareness and improve mechanisms for climate change administration.

Key Areas for GHG Mitigation

- In energy production and transformation sector, it is expected that the GHG emissions can be reduced by about 500 Mt CO₂ by 2010 through the proper development of hydropower;
- Through the active promotion of nuclear power, it is expected that the GHG emissions can be reduced by about 50 Mt CO₂ by 2010;
- Through energy conservation, advanced power transmission, utilization of wind, solar, geothermal, tidal, bio-energy, nuclear power and distributed thermal power generation based on level of coal consumption, it is expected that a total of 90 million tons of coal can be saved per year in 2010, and CO₂ emissions can be reduced by 216 million tons;
- Through the expedition of technology advancement in thermal power generation and phasing out small-scale backward units, it is expected that the GHG emissions can be reduced by about 110 Mt CO₂ by 2010.

Key Areas for GHG Mitigation

- Vigorously develop coal-bed methane (CBM) and coal-mine methane (CMM) industry. encourage the cooperation of CDM (clean development mechanism) projects . It is expected that the GHG emissions can be reduced by about 200 Mt CO₂e by 2010.
- Promote the development of bio-energy. It is expected that the GHG emissions can be reduced by about 30 Mt CO₂e by 2010. Actively support the development and utilization of wind, solar, geothermal and tidal energy. It is expected that the GHG emissions can be reduced by about 60 Mt CO₂ by 2010.
- Realizing the increase of carbon sink by 50 million tons over the level of 2005 by 2010.

Key Areas for GHG Mitigation

- Through the implementation of 10 key energy conservation programmes, it is estimated that 240 Mtce can be conserved during the 11th five-year plan period (2005-2010), equivalent to 550 Mt CO₂ reductions.
- During the 11th five-year plan period (2005-2010), and a series of policies and measures to address climate change should taken in the overall context of national sustainable development strategy, making positive contributions to the mitigation of and adaptation to climate change.

Key Areas for Adaptation to Climate Change

Agriculture:

- Improve agricultural infrastructures, adjust structure and cropping systems;
- Breed stress-resistant varieties & prevent grassland desertification aggregation;
- Study and research on new technologies. In terms of improving its capacity of adapting to climate change and resisting climatic disasters.

Key Areas for Adaptation to Climate Change

Forests and other natural ecosystems:

- Formulate and implement laws and regulations relevant CC adaptation.
- Protect existing forest resources and ecosystems, and develop technology. Strengthen technology development and extension.
- To alleviate the impact of climate change on biodiversity.
- Improve early-warning, and emergency responding capacities.

Key Areas for Adaptation to Climate Change

Water resources:

- Develop investment and financing system and management system for key water conservancy projects consistent with the socialist market economy. Strengthen infrastructure planning and construction. Promote the development and extension of technologies for water allocation, water-saving, and sea water utilization.

Coastal zones and coastal regions:

- Establish and improve relevant laws and regulations. Promote technology development and extension. Improve the capability in marine environmental monitoring and early-warning. Strength adaptation strategies to address sea level rise.

China's Administrative Measures to Address Climate Change

The Government of China decided to establish a National Climate Change Leading Group headed by Premier Wen Jiabao, and a series of policies and measures to address climate change have been taken in areas of climate change science and technology, public awareness, institutions and mechanisms to continuously enhance China's national comprehensive capacity to address climate change.

Thanks!