China's Policies and Actions for Addressing Climate Change

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Foreword

Global climate change and its adverse effects are common concern of mankind. Ever since the industrial revolution, human activities, especially the massive consumption of energy and resources by developed countries in their process of industrialization, have increased the atmospheric concentrations of greenhouse gases, caused a significant change of global climate mainly manifested as global warming over past 50 years, resulted in discernible impacts on the natural ecological systems of the Earth, and posed severe challenges to the survival and development of human society.

As a developing country with a large population, a relatively low level of economic development, a complex climate and a fragile ecological environment, China is vulnerable to the adverse effects of climate change, which has posed substantial threats to the natural ecological systems as well as the economic and social development of the country. These threats are particularly pressing in the fields of agriculture and animal husbandry, forestry, natural ecological systems and water resources, and in coastal and ecological fragile zones. Therefore, adaptation is an urgent task for China. In the phase of rapid economic development, and with multiple pressures of developing the economy, eliminating poverty and

mitigating the emissions of greenhouse gases, China is confronted with difficulties in its efforts to address climate change.

As a responsible developing country, China attaches great importance to climate change issues. Fully aware of the importance and urgency of addressing climate change, following the requirements of the Scientific Outlook on Development, and taking into overall consideration of both economic development and ecological construction, domestic situation and international situation, and the present and the future, China has formulated and implemented its national climate change programme, and adopted a series of policies and measures in this regard. China addresses climate change in the context of implementing sustainable development strategy, combined with its accelerated steps to build a resource-conserving and environmental-friendly society and an innovation-oriented country. Taking economic development as the core objective, and placing emphasis on energy conservation, optimization of the energy mix, reinforcement of protection and restoration of ecological system, supported by advancement of science and technology, China strives to control greenhouse gas emissions and continuously enhance its adaptation capability.

China is actively engaged in international efforts to address climate change and committed to the United Nations Framework Convention on Climate Change (hereinafter referred to as the UNFCCC) and the Kyoto Protocol, playing a constructive role in international cooperation.

I. Climate Change and China's National Circumstances

The latest scientific research findings show that the global average surface temperature has increased by 0.74℃ over the past century (1906-2005), and is expected to rise by 1.1-6.4℃ by the end of the 21st century. The increase of global average temperatures since the mid-20th century is very likely due to the increase of atmospheric concentrations of greenhouse gases (mainly CO_2, CH_4 and N_2O) resulting from human activities, such as the combustion of fossil fuels and land use and land-use change.

China's temperature rise has basically kept pace with global warming. The latest observed record released by the China Meteorological Administration shows that the average surface temperature in China has increased by 1.1℃ over the last 100 years (1908-2007), and that China experienced 21 warm winters from 1986 to 2007, with 2007 being the warmest year since the beginning of systematic meteorological observations in 1951. The nationwide distribution of precipitation in the past 50 years has undergone marked changes, with increases in western and southern China and decreases in most parts of northern and northeastern China. Extreme climate events, such as hot extremes, heavy precipitation and severe droughts, have

increased in frequency and intensity. The frequency of heat waves in summer has increased and droughts have worsened in some areas, especially in northern China; heavy precipitation has increased in southern China; and the snow disaster has became more frequent in western China. In China's coastal zones, the sea surface temperature has increased by 0.9℃ and sea-level risen by 90 mm over the past 30 years.

Scientific research projects that the trend of climate warming in China would further intensify; frequency of extreme climate events is likely to increase; uneven distribution of precipitation would be more visible than before and the frequency of heavy precipitation would increase; the arid land would expand in scope; and the sea-level would rise faster than ever.

The national circumstances and conditions pose great challenges for China to address climate change.

— A complex climate and a fragile ecological environment determine that China's task of adapting itself to climate change is arduous. China is characterized by a continental monsoon climate, and most parts of China have a wider range of seasonal temperature variation compared with other continental areas at the same latitude. Many areas in China are cold in winter and hot in summer, and high temperatures generally prevail in the country at large in summer. The spatial and temporal distribution of precipitation is uneven. Most of precipitation occurs in the flood season. Annual precipitation declines from the southeast coast to the northwest interior. China has a fragile ecological environment,

with serious soil erosion and desertification and a forest coverage of 18.21%, only 62% of the world's average. The area of natural wetlands is comparatively small; most grasslands are of alpine and desert type, and the temperate grasslands in northern China are in danger of degradation and desertification due to the impacts of drought and deterioration of the ecological environment. With a coastline over 18,000 km, China is vulnerable to the adverse effects of sea-level rise.

— With a large population and a relatively low level of development, China's development task is a formidable one. The population of China's mainland reached 1.321 billion at the end of 2007, accounting for 20% of the world's total. China has a comparatively low level of urbanization, with an urbanization ratio of 44.9% in 2007, lower than the world's average. The large population also brings huge employment pressure. The government needs to create over 10 million jobs for new urban labor force entrants every year; as the urbanization process moves forward, tens of millions of rural laborers move to the urban areas every year. Statistics from the International Monetary Fund show that the per-capita GDP (gross domestic product) of China in 2007 was US$2,461, ranking 106th among 181 countries and regions, still a low-to-middle income country. China is characterized by unbalanced regional economic development and is still nagged by a large income gap between urban and rural residents. The country is still troubled by poverty, with an impoverished rural population of 14.79 million inadequately fed and clad. There are still 30 million people who can only afford basic food and

clothing with a low and unstable income. Moreover, China has a relatively low level of science and technology and weak capacity of independent innovation. Developing the economy and improving people's lives are imperative tasks currently facing China.

— China's ongoing industrialization process and its coal-dominated energy mix determine that its task of controlling greenhouse gas emissions is a tough one. China's historical greenhouse gas emissions are very low. According to data from relevant international institutions, from 1904 to 2004, cumulative CO_2 emissions from fossil fuel combustion in China made up only 8% of the world's total over the same period, and cumulative emissions per capita ranked 92nd in the world. China's CO_2 emissions from energy consumption in 2004 totaled 5.07 billion tons. As a developing country, China still has a long way to go in its industrialization, urbanization and modernization. To advance further toward its development objectives, China will strive for rational growth of energy demand, which is the basic condition for the development for all developing countries. However, its coal-dominated energy mix cannot be substantially changed in the near future, thus making the task of controlling greenhouse gas emissions greater and more difficult.

II. Impacts of Climate Change on China

China is one of the countries most vulnerable to the adverse effects of climate change, mainly in the fields of agriculture and livestock industry, forestry, natural ecological systems, water resources, and coastal zones.

Impacts on Agriculture and Livestock Industry

Climate change has already had discernible adverse impacts on China's agriculture and livestock industry manifested by increased instability in agricultural production, severe damages to crops and livestock production caused by drought and hot extremes and heat waves in some parts of the country, aggravated spring freeze injury to early-budding crops due to climate warming, decline in the yield and quality of grasslands, and augmented losses caused by meteorological disasters.

The impacts of future climate change on agriculture and livestock industry will still be mainly adverse. It is likely there will be a drop in the yield of the three major crops — wheat, rice and corn; changes in the agricultural production layout and structure; accelerated decomposition of organic carbon in the soil; enlarged scope of crop diseases and insect outbreaks;

accelerated potential desertification trend of grasslands; increasing frequency of natural fire; decreasing livestock productivity and reproductive ability; and growing risk of livestock disease outbreak.

Impacts on Forestry and Other Natural Ecological Systems

The impact of climate change on China's forestry and other natural ecological systems are mainly manifested in the following aspects: the northward shift of the northern boundaries of eastern subtropical and temperate zones and earlier arrival of spring phenophase; upward shift of the lower boundaries of forest belts in some areas; increased elevation of floor level of permafrost in mountain area and decreased area of permafrost; rising frequency of animal and plant diseases and insect outbreak with marked variation in regional distribution; reduced area and overall shrinking trend of glaciers in northwestern China; and threat to the oasis ecological system posed by accelerated melting of glaciers and snow cover.

Future climate change will further increase the vulnerability of ecological systems, diminish the geographical distribution areas of main tree species for afforestation and rare tree species, enlarge the outbreak scope of forest diseases and insect, and increase the frequency of forest fires and burnt-over areas, shrink inland lakes and cause the decrease and functional degradation of wetland resources, speed up the reduction of the area of glaciers and permafrost, and significantly alter the

spatial distribution pattern of permanent permafrost of highland ecological system on the Qinghai-Tibet Plateau, and damage bio-diversity.

Impacts on Water Resources

Climate change has already caused changes in the distribution of water resources all over China. Over the past two decades, the gross amount of water resources of the Yellow, Huaihe, Haihe and Liaohe rivers in northern China has been significantly reduced, whilst that of rivers in southern China has slightly increased. Floods happen more frequently, droughts get worse.

It is projected that future climate change would have great impacts on the temporal and spatial distribution of water resources in the following ways: augmenting annual and inter-annual changes and increasing the frequency of flooding and drought and other extreme natural disasters. In particular, accelerated melting of glaciers in western China due to climate warming will further reduce the area of glaciers and glacier ice reserves, thus having significant impacts on rivers and run-offs with sources in glacier melt water. Climate warming would possibly reinforce the drought trend in northern China, and intensify water scarcity and imbalance between water supply and demand.

Impacts on Coastal Zones

The last 30 years have witnessed in China an accelerating trend of sea-level rise, which has caused seawater intrusion,

soil salinization and coastal erosion, damaged the typical ecological systems of coastal wetlands, mangroves and coral reefs, and diminished the service functions and bio-diversity of ecological system in coastal area. Sea temperature rise and ocean acidification resulting from climate change have given rise to oxygen-impoverished zones in part of maritime areas, the degradation of marine fishery and rare and endangered species resources.

It is predicted that the sea-level in the coastal zones of China will continue to rise. Sea-level rise will undermine the capacity of public drainage facilities in coastal cities, and impair the functions of harbors.

Impacts on Society, Economy and Other Fields

Climate change will also produce far-reaching impacts on society, economy and other fields, and cause huge losses to the national economy. Corresponding economic and social costs will have to be paid for addressing climate change. In addition, there will be increased chances of disease occurrence and spread, endangering human health, rising possibilities of geological and meteorological disasters and consequent threats to the security of major projects. The ecological environment and bio-diversity of nature reserves and national parks will be affected, accompanied by adverse impacts on natural and cultural tourism resources, and augmented threats to the safety of life and property, and to the normal order and stability of social life.

III. Strategies and Objectives for Addressing Climate Change

To address climate change, China adheres to the following guidelines: to give full effect to the Scientific Outlook on Development, adhere to the fundamental national policy of resources conservation and environmental protection, control greenhouse gas emissions and enhance the country's capacity for sustainable development, take economic development as the core objective, place emphasis on energy conservation, optimization of the energy mix, reinforcement of protection and restoration of ecological system, rely on advancement of science and technology, enhance international cooperation, constantly enhance the capability in coping with climate change, and make further contribution to the protection of global climate.

To address climate change, China sticks to the following principles:

— To address climate change in the context of sustainable development. Climate change arises out of development, and should thus be solved along with development. Addressing climate change should promote sustainable development so as to achieve a win-win outcome of pursuing economic development and addressing climate change.

— The principle of "common but differentiated responsibilities." This is the core principle of the UNFCCC. Both developed and developing countries are obliged to adopt measures to mitigate and adapt to climate change. Due to the difference in historical responsibility, level and stage of development, capabilities and ways of contribution, developed countries should be responsible for their historical accumulated emissions and current high per-capita emissions, and take the lead in reducing emissions, in addition to providing financial support and transferring technologies to developing countries. The developing countries, while pursuing economic development and poverty eradication, should actively adopt adaptation and mitigation measures, control greenhouse gas emissions and contribute to the common efforts of addressing climate change.

— To place equal emphasis on both mitigation and adaptation. Mitigation and adaptation are integral components of the strategy for coping with climate change. Mitigation is a long and arduous challenge, while adaptation is a more present and imminent task. The latter is of particular importance to developing countries. The two must be treated with equal importance in a coordinated and balanced way.

— The UNFCCC and its Kyoto Protocol are the main channel for addressing climate change. These two documents lay out the legal foundation for international cooperation in dealing with climate change, and reflect the common understanding of the international community. They are the most authoritative, universal and comprehensive international

framework for coping with climate change. Their status as the kernel mechanism and leading channel should be unswervingly stick up. Other types of bilateral and multilateral cooperation should be supplementary.

— To rely on the advancement, innovation of science and technology and technology transfer. Addressing climate change relies on technology. The technology innovation and transfer are the basis and support for addressing climate change. While promoting their own technological development and deployment, developed countries are obligated to promote international technological cooperation and transfer, and effectively fulfill their commitments to provide financial and technological support to developing countries, so that the latter can have access to and afford climate friendly technologies to enhance their capacity to mitigate and adapt to climate change.

— To rely on public participation and extensive international cooperation. Dealing with climate change requires changes in the traditional ways of production and consumption, and the participation of the whole society. China is working to build a resources-conserving and environmental-friendly society, foster a social atmosphere in which the enterprises and the public participate on a voluntary basis under the guidance of the government, and raise enterprises' awareness of social responsibility and the public's awareness of global environment protection. As a challenge faced by the entire world, climate change can only be solved through international co-operation and concerted efforts. China will, as always, actively promote and participate in all modes

of international cooperation that are conducive to tackling climate change.

China's National Climate Change Programme released in June 2007, set the general objectives of addressing climate change up to 2010: significant results should be achieved in controlling greenhouse gas emissions, the capability of adaptation to climate change should be relentlessly enhanced, climate-change-related research should be promoted to make new progress. In addition, the public awareness of climate change should be enhanced, and the institutions and mechanisms for dealing with climate change should be further strengthened.

Control of Greenhouse Gas Emissions

— Accelerating the transformation of economic development pattern, strengthening policy guidance concerning energy conservation and efficient utilization, intensifying administration of energy conservation in accordance with the law, speeding up R&D, demonstration and deployment of energy conservation technologies, giving full play to the role of new market-based mechanisms for energy conservation, enhancing public and social awareness on energy conservation, accelerating the building-up of a resource-conserving society, and controlling greenhouse gas emissions. Through these measures, the energy consumption per-unit GDP is expected to drop by about 20 % by 2010 compared to that of 2005, and CO_2 emissions will consequently be reduced.

— Optimizing the energy consumption structure through vigorously developing renewable energy, boosting nuclear power plant construction and speeding up the development and utilization of coal-bed methane. The target by 2010 is to raise the proportion of renewable energy (including large-scale hydropower) in the primary energy consumption up to 10 %, and the extraction of coal-bed mine methane up to 10 billion m^3.

— Controlling greenhouse gas emissions generated by industrial process through reinforcing industrial policies concerning the metallurgy, building materials and chemical industry, developing recycling economy, raising resources utilization efficiency and strengthening emissions control of N_2O. By 2010, the emissions of N_2O from industrial process will remain stable as that in 2005.

— Striving to control CH_4 emissions by continuously promoting low-emission and high-yield rice varieties, interminent irrigation and expanding testing soil and balanced fertilization technology, and strengthening R&D on quality ruminant animal breeds and intensive animal production system, strengthening animal manures treatment and expanding the development and utilization of biogas digesters.

— Striving to increase forest coverage to 20% and realize an increase of annual carbon sinks by 50 million tCO_2 over the level of 2005 by 2010 through continuing key projects on afforestation, conversion of cropland on steep slope into forest and grassland, and natural forest protection, and improvement of basic farmland, and other relevant policies.

Enhancing the Capacity of Adaptation to Climate Change

— Through improving the multi-disaster monitoring and early warning systems, the inter-ministerial policy-making and coordination mechanisms, the action mechanism with extensive public participation, the capability of monitoring and forecasting extreme meteorological disasters will be strengthened. By 2010, a number of meteorological disaster prevention projects will be completed and perform a fundamental, overall and vital role in the economy and society, so as to enhance the comprehensive capacity to monitor, warn about and cope with meteorological disasters, and reduce the damage from them.

— Through strengthening farmland infrastructure, adjusting cropping systems, selecting and breeding stress-resistant varieties, developing bio-technologies and other adaptation measures, by 2010 improved grassland will be increased by 24 million hectares, 52 million hectares of grassland suffering from degradation, desertification and salinity will be restored, and the efficiency of irrigation water will be raised to 0.5.

— Through strengthening natural forest conservation and nature reserve management, continuing key ecological restoration projects, establishing important ecological protection area, and stepping up natural ecological restoration, by 2010, 90 % of typical forest ecological systems and national key wildlife species will be under effective protection; nature reserve area will account for 16 % of the national territory; 25

million hectares of land suffering from soil erosion will have been improved; 30 million hectares of land will have been ecologically restored; and 22 million hectares of desertified land will have been put under control.

— Through rational exploitation and optimized allocation of water resources, building-up of new mechanism for infrastructure construction, strengthening measures for water conservation and monitoring of hydrology, by 2010 the vulnerability of China's water resources to climate change will have been alleviated; concrete progress will have been made to build a water-conserving society; an anti-flood engineering system in large rivers will be in place; and the standard for drought relief in farmland will have been raised.

— Through scientific monitoring the trend of sea-level variation, regulating marine and coastal ecological systems, rationally exploiting the coast, protecting coastal wetlands and planting coastal shelterbelts, China aims to protect and restore the mangroves, and promote the capability to resist marine disasters in coastal zones by 2010.

Strengthening R&D

— Through strengthening basic research on climate change, further developing and improving research and analytical methods, and intensifying the training of professionals and decision-makers in relevant fields, China aims to keep up with international advanced level in some fields by 2010, so that it will have solid scientific ground for developing national strategies and policies on climate change,

and scientific guidance for participation in international cooperation on climate change.

— Through building up its independent innovation capacity, and promoting international cooperation and technology transfer, China will work hard to achieve big breakthroughs in R&D on energy development, energy conservation and clean energy technology, to quicken the commercialization of advanced technologies; to enhance the technological capacity of agriculture, water conservancy and forestry sectors to adapt to climate change; and to provide strong scientific and technological support for efforts to address climate change by 2010.

Enhancing Public Awareness and Improving Management

— Through more publicity, education and training based on modern information dissemination technologies to encourage public participation, it is expected that by 2010 broad public awareness of the severity of climate change will be achieved, and a social environment conducive to addressing climate change will be in place.

— Through improvement of the inter-ministerial decision-making coordination mechanism and development of an action mechanism in response to climate change involving a wide range of enterprise and public participation, a suitable and highly-efficient institutional and management framework to address climate change will be gradually established.

IV. Policies and Actions to Mitigate Climate Change

China has adopted proactive policies and taken active actions to mitigate climate change, including a number of policies and measures to adjust the economic structure, change the development patterns, save energy and improve energy efficiency, optimize energy mix and promote afforestation. Remarkable achievements have been made so far.

Adjusting the Economic Structure to Promote the Optimization and Upgrade of the Industrial Structure

The Chinese government attaches great importance to the adjustment of the economic structure and the transformation of the economic development patterns, and has formulated and implemented a series of industrial policies and special programs to integrate resources and energy conservation into its industrial policies. By promoting the optimizing and upgrading China's industrial structure, it aims to form a pattern of economic growth featuring "less input, less consumption, less emission and higher efficiency."

— Accelerating the development of the service industry. The government issued Opinions on Accelerating of the Development of the Service Industry in 2007, in which it sets

the goal of raising the proportion of added value from the service industry in the GDP by three percentage points from 2005 to 2010. It has also made clear policies that provide support to key areas, weak links and new fields of the service industry. As a result, modern services such as tourism, finance and logistics are booming.

— Expanding and strengthening high-tech industry. In 2007, the government issued the 11th Five-year Plan (2006-2010) for industries like high-tech, e-commerce and information technology, indicating that the proportion of added value of high-tech industry in the total industrial added value be raised by five percentage points from 2005 to 2010. The government has formulated and implemented policies and measures conducive to the development of high-tech industries like digital television, software, integrated circuits and bioengineering. It has quickened the fostering of newly emerging industries that conform to the requirements of saving energy and reducing emissions. High-tech industries, including information technology, bioengineering, aeronautics, space shuttle, new energy, new materials and marine industries are developing rapidly. The revitalization of high-tech manufacturing industry has been effective, and construction of infrastructure and basic industries has made great progress.

— Accelerating the pace of phasing out of backward production capacity. In 2007, the government announced a timetable for different areas to phase out of their backward production facilities in 13 industries during the latest Five-year Plan period. Last year saw the shutdown of 14.38 GW installed

capacity of small thermal power generation units, and the elimination of 46.59 million tons of iron-smelting obsolete capacity, 37.47 million tons of steelmaking capacity and 52 million tons of cement production capacity. More than 2,000 heavily polluting papermaking plants, chemical plants, and printing and dyeing mills were ordered to close down, as were 11,200 small coal mines.

— Limiting the excessively rapid expansion of high energy intensive and emission intensive industries. Relevant policies have been promulgated to control new projects. Standards of market entry for high energy intensive industries have been promulgated. By raising the entry standard of energy-saving and environment protection and by adjusting tax rebates for exports and customs duties, the government is working to restrain the export of high energy-intensive, pollution-intensive and resource-intensive products. The expansion of high energy intensive industries is being slowed.

Striving to Save Energy and Improve Energy Efficiency

The Chinese government attaches great importance to energy conservation, and has made it a fundamental national policy. For a long time it has pursued a policy of putting equal emphasis on both development and energy conservation with priority being given to conservation. The Outline of the 11th Five-year Plan for National Economic and Social Development (2006-2010) considers it a major strategic task for China to build an energy-conserving and

environmental-friendly society. It stipulates that the energy consumption per-unit GDP in 2010 should be 20% lower than that in 2005, and that this goal is binding.

— Placing energy conservation and emission reduction in a more prominent position. The State Council has set up a leading group on energy conservation and emission reduction, and issued the Comprehensive Work Plan for Energy Conservation and Emission Reduction to guide work in this field.

—Establishing a responsibility system with goals for energy conservation and emission reduction. The State Council has issued the Plan and Method Regarding the Monitoring of Energy Conservation, Emission Reduction and Evaluation, stating clearly that leading cadres in all provinces (autonomous regions and municipalities directly under the central government) and key enterprises will be appraised by their performance in achieving the goals for energy conservation and reduction of emission of major pollutants. Those who fail in this task will be held responsible.

— Accelerating the construction of major energy conservation projects. In 2006, the country supported 111 key energy-conservation projects by using funds raised from issuing treasury bonds and investment within the central budget, resulting in an energy-conservation capacity of 10.1 million tons of coal equivalent (tce). In 2007, the country supported 681 key energy-conservation projects by using funds raised from issuing treasury bonds, investment within the central budget and central treasury capital, resulting in an

energy-conservation capacity of 25.5 million tce. Technological transformation conducted by enterprises under the direction of local governments resulted in an energy-conservation capacity of 60 million tce. It is expected that an energy-conservation capacity of 240 million tce will be created after ten key energy-conservation projects are implemented from 2006 to 2010. With subsidies from the government, 50 million energy saving lamps are now being distributed to households all over the country, and within the coming three years more than 150 million energy saving lamps will be distributed.

— Promoting energy conservation and emission reduction in key fields. An energy-conserving campaign has been launched among more than 1,000 enterprises to encourage them to conduct energy auditing, formulate energy-saving plans, and make public their energy use situation. A campaign has also been launched in major energy intensive enterprises to check their compliance with the energy efficiency indicators. The government is earnestly promoting "green" and environmental-friendly buildings that save energy and land. New buildings must meet the compulsory energy-saving standards. Energy-saving renovations to existing buildings are carried out, and the task has been assigned to different regions to install measured heating equipment and complete energy-saving renovation to a total of 150 million m^2 of floor space. Pilot work has been launched to set up a monitoring system on energy conservation in office buildings of government agencies and large public buildings in 24

provinces and cities. The government will continue to improve the fuel consumption limitation standard for motor vehicles, and enforce the standard strictly. Government agencies at the central level have checked and retrofitted their air-conditioning, lighting and boiler systems for energy-conservation purposes. They have also installed energy saving lighting in all their office buildings.

— Improving the efficiency of energy development and transformation. More high-efficiency, energy-conservation equipments are used in the power-generation and coal-producing sectors, and the government has quickened its pace to phase out small thermal power stations and coal mines. In 2007, the coal consumption of power generation with capacity 6MW or above dropped from 448 gce/kWh in 1980 to 370 gce/kWh. Energy and electricity consumption per unit production of raw coal in 2007 dropped by 5.9 % and 5.1 %, respectively, as compared with the previous year.

— Implementing economic policies conducive to energy conservation. The resources tax for some mineral products has been readjusted, and prices for refined oil and natural gas have also been readjusted in a timely fashion. Policies aimed at energy saving power dispatch have been adopted. The tariff for electricity generation by small thermal power plants has been lowered, and electricity price differentials have been adopted more broadly. Regulations have been promulgated regarding capital management that supports enterprises in making energy-saving technological transformation, popularizing high-efficiency lighting products, installing monitored heating

systems in buildings and making energy-conservation renovations. Policies have also been introduced to encourage the production and use of energy-saving and environment-friendly compact vehicles and to restrict the use of plastic shopping bags. A compulsory government energy-saving products procurement system has been put into place.

— Strengthening the construction of the legal system. The Energy Conservation Law has been amended. The General Office of the State Council has issued the Circular on Strictly Following the Temperature Control Standards for Air-conditioners in Public Buildings. Since 2007, national compulsory standards have been promulgated to restrict energy consumption for the 22 energy intensive products (including thermal power and caustic soda). Supervision and spot checks are now conducted on 16 categories of end-use equipments, including electric motors and energy-saving lamps. Government departments in charge of energy conservation and supervision enforce the energy-conservation administrative regulations in accordance with the law.

Thanks to all these efforts, energy consumption per unit GDP in 2006 and 2007 in China was lowered by 1.79% and 3.66%, respectively. In 2007, key enterprises in the electric power, iron and steel, building materials and chemical industries which consume 10,000 tce or more annually saw energy consumption dropping of 33 of their 35 major products, with only two rising. The energy thus saved was equivalent to

38.3 million tce. The energy saved in 2006 and 2007 by these enterprises equaled 147 million tce.

Developing Renewable Energy and Optimizing Energy Mix

The Renewable Energy Law was enacted in 2005 to give the obligation for grid companies to purchase all the electricity generated from renewable energies; renewable electricity has a privilege to be fed into the grid with a favorable price; and the incremental feed-in tariff of renewable electricity to the grid is shared by all the society. A dedicated fund was established for developing renewable energy to support the evaluation and investigation of renewable energy resources, related technological research and development, construction of pilot and demonstration projects, and the development and utilization of renewable energy in the countryside. By the end of 2007, the total installed capacity of hydropower in China was 145 GW, and the corresponding annual power generation was 482.9 TWh, ranking first in the world in both installed capacity and power generation. An average of 26 GW of installed capacity was added in 2006 and 2007, with an average increase of 12% each year. The scale of wind power increased several-fold. Currently, with installed capacity of more than 6 GW, China ranks fifth in the world. In 2006 and 2007, some 3.05 GW was added, an average annual increase of 148%. Heat collecting area of existing solar water heaters has reached 110 million m^2, keeping China the world leader in this field for many years. The installed capacity of biomass power

generation is 3 GW, and the annual production capacity of ethanol fuel is more than 1.2 million tons. The installed capacity of nuclear power is 9.06 GW, an increase of 30.5% over 2006. The share of coal in the primary energy consumption dropped from 72.2% in 1980 to 69.4% in 2007. The share of hydropower, wind power and nuclear power combined was raised from 4% to 7.2% in the same period. The total utilization of renewable energy equals to approximately 220 million tce (including large hydropower).

According to the Mid- and Long-term Plan for the Development of Renewable Energy and Mid- and Long-term Plan for the Development of Nuclear Power, China will continue to promote the comprehensive hydropower cascading development of river basin. It will quicken the pace of constructing large hydropower stations on the precondition of environmental protection and proper migrants relocation. Medium and small scale hydropower stations will also be developed where local conditions permit. China is determined to accelerate the development of wind power, to achieve industrialization by scaling up exploitation. It will raise its capacity for R&D and manufacturing wind-power equipment and make every effort to construct several wind-power farms at scale of GW and wind-power bases at scale of 10 GW. China will vigorously promote biomass energy development and utilization by attaching significant importance to bio-energy based power generation, biogas, biomass briquette and biofuel. China will actively develop solar power and solar heating while strengthening the research, development and

utilization of new energy and alternative energy. It will make better use of coal-bed methane and coal-mine methane, and develop small scale distributed power fueled by coal-bed methane. China enthusiastically develops nuclear power. It is working hard to reform the nuclear power system and spur mechanism innovation in an attempt to establish a market-oriented nuclear power development mechanism. It will strengthen its capacity for R&D and manufacturing nuclear power equipment, and raise its ability to absorb imported technology and make innovations on this basis. It will strengthen the related technical services system for nuclear power operation, as well as the training of professionals. It will implement preferential policies on taxation and investment that will promote the development of nuclear power, improve nuclear power safety system and quicken the enactment of laws and regulations in this field. Finally, China will push forward clean coal utilization and develop efficient and clean power generating technology, such as large-scale combined cycle units and poly-generation, and promote R&D on the technology for carbon capture and storage.

Developing Recycling Economy to Reduce Greenhouse Gas Emissions

Attaching great importance to developing recycling economy, the Chinese government is doing its best to resources reduction, reuse and recycle of waste so as to reduce greenhouse gas emissions from their sources and in the process of production. In recent years, recycling economy is turning

from an idea to action, and developing rapidly across the country. The country has enacted laws and regulations such as the Clean Production Promotion Law, Law on the Prevention of Environmental Pollution by Solid Wastes, Law on a Recycling Economy and Methods for the Management of Municipal Domestic Waste. It has promulgated the Several Opinions on Accelerating the Development of recycling Economy, setting forth the general strategy, short-term goals, basic means, and policies and measures for the development of recycling economy. It has also promulgated an evaluation index system for recycling economy. In addition, the Regulations Regarding the Management of the Recycling and Treatment of Discarded Electrical Equipment is to be promulgated soon.

Two batches of demonstration pilot projects have been carried out, primarily for exploring recycling economy development model at three levels, i.e., enterprises, inter-enterprises or industrial parks, and society in general. Pilot projects featuring recycling and disposal of waste and used household electrical appliances and remanufacturing of automobile parts have made satisfactory progress. Preferential policies concerning taxation on the comprehensive utilization of disposables and the recycling and utilization of reusable resource have been improved. More support is being given to key projects in the recycling economy by treasury bonds and investment within the central budget. Through introduction, digestion, absorption of advanced technologies, and independent innovation, some advanced technologies with

proprietary intellectual property rights have emerged, in particular, a group of key technologies which play a leading role in respective sectors have been developed, demonstrated and disseminated. Applicable technologies, such as low-temperature waste heat power generation, coke dry-quenching, top pressure recovery turbine (TRT), clinker production using calcium carbide slag in the dry process, and disposal of waste in blast furnaces and rotary kilns, are now widely used. In 2005, nearly one third of the raw materials for China's steel, nonferrous metals and pulp industries came from reused resources, while 20% of the raw materials for cement and 40% of the raw materials for walls came from industrial solid waste. Marked progress has been made in reducing greenhouse gas emissions during the production of semiconductors, including sealing and packaging. The level of greenhouse gas emissions during the making of electronic information products remains low.

The country has formulated incentive policy for the recovery and utilization of landfill gas, and has promulgated industrial standards such as the Policies on Technologies for the Treatment of Urban Garbage and Pollution Prevention, and Technical Norms on Sanitary Landfill of Domestic Wastes, which promote the recovery and utilization of landfill gas and reduction of emissions of CH_4 and other green-house gases. Meanwhile, China is promoting advanced technologies for waste incineration, recovery and utilization of landfill gas. Relevant technological standards are being promulgated, and the wastes collection and transportation system is being

improved. Municipal wastes classification has begun in some areas; comprehensive utilization of wastes as a resource has been raised to promote the industrialization of the waste disposal. Supervision is being tightened on enterprises engaged in waste disposal. As a result, the detoxification rate of waste was raised from 2.3% in 1990 to 52% in 2006.

Controlling Greenhouse Gas Emissions in Agriculture and the Rural Area

China has witnessed great progress in the mitigation of greenhouse gas emissions in agriculture and the rural area in recent years. In 1,200 counties across the country, testing soil and balanced fertilizations are applied. Guidance is given to farmers for the precise utilization of fertilizers and to reduce N_2O emissions from farmland. Conservation tillage is being popularized. Soil organic carbon is increased by feeding animals with straw and applying manure to the cropland. Grassland degradation is avoided by establishment of compensatory mechanism for grassland ecology, avoidance of over grazing, prohibition and rotation of grazing. Meanwhile, renewable energy technologies are being vigorously developed in rural area, such as the construction of biogas digester, installation of solar energy and firewood saving stoves. By the end of 2007, there were over 26.5 million rural households using household biogas digesters in China, saving 16 million tce annually, equal to 44 million tons of CO_2 emission reduction. China has constructed 26,600 biogas digesters in animal farms, and installed 42.86 million m^2 of solar water

heaters in the rural area, 14.68 million m^2 of solar-heating houses, 1.12 million solar stoves and more than 200,000 small wind power generators. China has established some demonstration projects for the gasification and solidification of straws. It has installed firewood and coal saving stoves in 151 million households and energy-saving stoves in 34.71 million households.

Promoting Tree-planting and Afforestation Campaign and Increasing the Capability of Carbon Sequestration

In the past 20-odd years, four million hectares of trees have been planted annually on average with the continuously increasing investment from the central government. Meanwhile, the country also encourages citizens at the right age to take part in tree planting. By the end of 2007, 10.98 billion person-time in total had joined voluntarily and planted 51.54 billion trees all over China. In recent years, through the measures like collective forest property reform, farmers' enthusiasm for tree planting and forest protection has been aroused. At present, China has 54 million hectares of man-made forest, its stock volume reaching 1.505 billion m^3, with the country's forest coverage increased from 12 % in the early 1980s to 18.21 % now. In 2006, total area of green belt and park in urban area in China reached 1.32 million hectares with a 35.1% green coverage. It is estimated that from 1980 to 2005, a total accumulated net sequestration of 3.06 billion tCO_2 was achieved by afforestation, and 1.62 billion tCO_2 by forest management respectively, and 430 million tCO_2 from

deforestation were avoided. All this has further enhanced the capability of forest as the sinks of greenhouse gas.

Intensifying R&D Efforts to Respond to Climate Change

— Including response to climate change in the plan for scientific development. The Outline of China's Mid- and Long-term Development Plan for Science and Technology issued in 2006 made energy and environment priority fields in the development of science and technology. It listed the monitoring and countermeasures of global environment change as priority themes in the field of environment. China's Science and Technology Program on Climate Change enacted in 2007 set forth phased goals for scientific work as a response to climate change during the 11th Five-year Plan period (2006-2010) and long-term goals up to the year 2020. The following areas were identified as priorities: the science of climate change, R&D of greenhouse gas control technologies, adaptation technologies and measures, and major strategies and policies to cope with climate change.

— Strengthening the cultivation of professionals and research bases. Thanks to efforts made over the past 20 years or so, a contingent of specialists has been formed in the field of climate change who are doing basic and applied researches across fields and disciplines. They have made pioneering research achievements, providing important scientific and technical support for China to cope with climate change. A number of national-level scientific research bases have been

established, and a large observation network system, including the National Climate Monitoring Network, has basically been set up. China has strengthened research, development and demonstration of advanced technologies dealing with climate change. The integration of research, academia and industry has accelerated the commercialization process of advanced technologies.

— Continuously increasing the financial support to climate change related scientific and technological work. While sources of funds from the government remain relatively stable, efforts are being made to raise money from other sources, attracting funds from society at large for scientific and technological research and development concerning climate change. During the 10th Five-year Plan period (2001-2005), the government invested more than 2.5 billion yuan in scientific and technological research on climate change through national science and technology programs such as the National Key Technologies R&D Program, National High-Tech R&D Program(863 program), and National Basic Research Program (973 program). By the end of 2007 from the national science and technology programs for the 11th Five-year Plan period (2006-2010), more than 7 billion yuan had been appropriated for R&D on energy conservation and emission reduction. In addition, the country, through other channels, has invested large amounts of funds for R&D on climate change.

— Key areas of R&D. China has decided to place the emphasis of its research on technologies that can mitigate greenhouse gas emissions, which include energy saving and

energy efficiency technologies; renewable energy and new energy technologies; emission control and utilization technologies for CO_2, CH_4 and other greenhouse gas emissions in key sectors; biological and engineering carbon sequestration technologies; technologies for the clean and efficient exploitation and utilization of coal, petroleum and natural gas; technologies for manufacturing advanced equipment for coal-fired power and nuclear-power; technologies for CO_2 capture, utilization and storage; and greenhouse gas emissions control technologies in agriculture and land use.

V. Policies and Actions to Adapt to Climate Change

China actively applies policies and takes actions to adapt to climate change in agriculture, forest and other natural ecological systems, water resources, as well as ecologically fragile areas like coastal zones and regions, and has achieved positive effects.

Agriculture

The country has made great efforts to establish and improve a law regime for agriculture related to adapt to climate change, including the Agriculture Law, Grassland Law, Fisheries Law, Land Administration Law, Regulations of Emergency Response to Major Animal Epidemics, Regulations on Grassland Fire Prevention and so on. The country has reinforced the construction of agricultural infrastructure , carried out the construction of farmland irrigation and drainage facilities, enlarged irrigation areas, improved irrigation efficiency and farm-land overall drainage capability, promoted dry-land farming and water-saving technologies, and strengthened capability of integrated production and disaster prevention, resistance and reduction. Through the "Seed Project," China is cultivating

stress-resistant varieties of seeds with high yield potential, high quality and specific abilities of resistance to drought, water logging, high temperature, diseases and pests.

China will further strengthen the promotion of quality crop seeds to increase their planting area; enhance the prevention and control of major animal epidemic diseases, establish and improve the animal disease prevention system, improve the monitoring and early-warning system and enhance capability in this regard, protect and improve the grassland ecological system through returning grazing area to grassland and constructing enclosures, artificial grasslands and grassland fire-prevention, and launch activities for aquatic species conservation and protect aquatic species resources and the aquatic ecological environment.

Forest and Other Natural Ecological Systems

For years, China has made great efforts to protect forest and other natural ecological systems by formulating and enforcing relevant laws and regulations, such as the Forest Law, Law on the Protection of Wildlife, Law on Water and Soil Conservation, Law on Prevention and Control of Desertification, Regulations on Conversion of Farmland to Forest, Forest Fire Prevention Regulations, and Regulations on Forest Diseases and Insect Pest Prevention and Control. The country is now working hard to draw up laws and regulations on the protection of nature reserves, wetlands and natural forests, and pushing forward the comprehensive

implementation of a national program on ecological environment development and protection.

China will further strengthen the protection and management of forest land, forests and wildlife resources, and continue to promote the protection of natural forests, conversion of cropland on steep slope to forest and grassland, wildlife nature reserve and wetland protection, so as to push forward the sustainable development and management of forests, and intensify efforts in ecological water and soil conservation. The government has established and continued to improve a comprehensive monitoring system for forest resources and ecological system; improved and enhanced a forest fire, pest and disease evaluating system and an emergency-response system, as well as the training of professionals in this field; carried out a nationwide medium- and long-term program for the prevention of forest fires, pests and diseases; improved, restored and enlarged the species population and their habitats, and enhanced the protection of endangered species and their habitat ecological systems; and restored the functions of ecological fragile areas and ecological systems.

Water Resources

China has formulated and enforced laws and regulations in this regard, including the Water Law, Flood Control Law, and Regulations on River Administration. It has formulated the program of flood control on major rivers and other water-conservancy programs, and has set up an elementary law

regime and a program on water conservancy commensurate with China's circumstance, and established an elementary flood-control and disaster-alleviation system for major rivers and a water-resource allocation and protection system. Meanwhile, great efforts have been made to control soil and water erosion. By the end of 2007, China had made efforts to bring soil and water erosion under control over an area of one million square kilometer, thus effectively protected the soil and water resources and improved its ecological environment.

China will accelerate the pace of formulating nationwide integrated plans for water resources and river basins, drawing up a water allocation plan for major rivers, speeding up the construction of the South-to-North Water-Diversion Project and other water-diversion projects, so as to optimize the water resource allocation pattern, and increase the water supply capability for drought emergencies. Efforts are being made to enhance unified water resources management and allocation, and establish national initial water rights allocation and transfer systems as well as a water resources conservation and protection system. The country will strengthen the construction of projects to control floods on major rivers as well as a system to control floods caused by mountain torrents, thus basically establishing a flood-control and disaster-alleviation system mainly formed by reservoirs, river channels, dikes and flood storage & discharge areas and a mountain flood-control system mainly operated by management measures. Further efforts are being made to improve the national commanding system in control and prevention of floods and droughts, and establish a

flood-risk management system, so as to enhance the country's capability in controlling and resisting floods and droughts. In river basins with serious ecological deterioration, China will set restrictions on extraction of groundwater, strictly control overexploitation of groundwater and adopt active measures to rehabilitate and protect water resources. Research will be strengthened into the impact of climate change on China's water resources and into the mechanisms of water conversion between atmospheric water, surface water, soil water and groundwater as well as related technologies for optimizing water-resource allocation. China is also strengthening research, development and diffusion of technologies relating to wastewater reuse and seawater desalinization.

Coastal Zones and Coastal Regions

In accordance with the Marine Environment Protection Law, Law on the Administration of Sea Areas, General System Development Planning for the Ocean-Atmosphere Interaction, China has worked out the objects and contents of a system to deal with climate change in marine areas, and established a decision-making mechanism and a coordination mechanism of comprehensive management, thereby striving to mitigate and adapt to the adverse impacts of climate change. Work is also done to increase the capability of coastal zones and coastal regions to adapt to climate change. China has carried out investigations and researches on ocean-atmosphere interaction, has deepen the understanding of ocean-atmosphere interaction, and has initially formed a three-dimensional observation

system to the marine environment, thus improving its capability to control and prevent marine disasters.

China will further improve its all-round capability to control and prevent marine disasters in coastal regions through establishing and further improving an emergency response system for marine disasters. It will set up observation and service networks to analyze, evaluate and project climate change in coastal areas, establish a system to monitor, forecast, analyze and evaluate sea-level change and do a better and further work in this regard. The country will improve the capability of the marine ecological system and coastal region ecological system to cope with and adapt to climate change, advance and strengthen R&D of technologies for marine ecological system protection and restoration, reinforce the construction and management of marine reserves, carry out restoration work in coastal wetlands and marine ecological environment, set up demonstration areas with typical marine ecological systems restoration, and build coastal protection forest belts with every effort. China will enhance the management of coastal zones, raise protection standards of coastal cities and major engineering projects, prevent overexploitation of groundwater and take measures against land subsidence in coastal areas. To deter sea water intrusion and salty tide tracing back in estuaries, some measures have been taken, such as transferring water from rivers and reservoirs, and diluting brackish water using fresh water.

Other Fields

China has enhanced its capacity building of monitoring and early warning system over extreme climate events, and basically established emergency mechanisms to deal with related meteorological disasters and their derivative and secondary effects. Great progress has been made in dealing with extreme weather and climate events like typhoons, regional intense rainstorms and floods, and an integrated observation system for climate and climate change has taken initial shape.

To counter the expansion of epidemic-infected area caused by climate change, China will further build up its monitoring and control network, and establish and perfect a health security system. Flood control and water drainage plans have been worked out at city level, and the design standards for city flood control projects have been raised. In the design, construction and operation of major engineering projects, the factor of climate change has been taken into full consideration, and new standards have been established for adaptation to future climate change.

VI. Enhancing Public Awareness of Climate Change

China has all along attached great importance to education and publicity concerning the environment and climate change, as well as public participation in relevant activities. In recent years, the government has constantly guided the public in enhancing its awareness of climate change, and advocated the concept of harmonious development between Human and Nature through publicizing and implementing such advanced ideas as the Scientific Outlook on Development, establishing a harmonious society and sticking to the sustainable development road. The Politburo of the Communist Party of China particularly held a study session on global climate change and enhancement of the capability to cope with it. It stresses on vigorous enhancement of public awareness and capability in participation of addressing climate change, and on the building of a good social atmosphere to this end. The country makes the concept of building a resource-saving and environmental-friendly society an important component of school education and the mass media, and disseminates knowledge about climate change by all ways and means to sharpen the concern of the whole society about global environmental issues.

China has produced large numbers of publications and audio-video products on climate change, and set up dedicated TV weather channel and an information database to disseminate knowledge about climate change through the mass media. It has hosted the "Forum on Climate Change and Science & Technology Innovation", and many large-scale international conferences with topics such as "Climate Change and Ecosystems" and "Bio-diversity and Climate Change." Since 1992, China has staged 18 sessions of National Energy Conservation Week in succession. The Chinese Government issued in 2007 the Public Action Plan on Energy Conservation and Emission Reduction, and carried out relevant activities throughout the country, with the participation of communities, young people, enterprises, schools, servicemen, government agencies, scientific and technological circles, popular science circles, and the mass media. As a result, a mechanism of energy conservation and emission reduction has been formed with the government taking the lead, enterprises as actors and everyone as participant. China fully utilizes the exemplary roles of government agencies and officials through campaigns such as establishing a "conservation-minded government." It carries out publicity and education of energy conservation and emission reduction in enterprises, mobilizes employees to participate in the management of energy conservation and emission reduction in enterprises. It encourages citizens to remold lifestyles and consumption patterns in their families, creates a platform for energy conservation and emission reduction in communities. It actively encourages citizens and social groups to plant trees voluntarily, and launches actions

like restricting free use of plastic bags by charging fees. All these actions are aimed to enhance the public's awareness of energy conservation and emission reduction. It fosters students' awareness of energy conservation and environment protection through dedicated school education and practical activities. In recent years, many social groups and NGOs have participated in the campaign for energy conservation and emission reduction in various ways and played an active role.

Recycling economy represents the future trend of economic development. The Chinese Government regards the development of recycling economy as an important choice, and advocates such economy throughout the country. In recent years, with vigorous development of the recycling economy as focus, the government has launched a series of educational and publicity activities in order to root the idea of a recycling economy deeply in the people's minds and create a sound social atmosphere.

China will further enhance education and training on climate change. Knowledge about climate change will be included in basic education, higher education and adult education, with the focus being place on fostering among youngsters the awareness of climate change and a sense of participation in relevant activities. It will conduct training courses and seminars on climate change for government agencies, enterprises, consultation institutes, scientific research staff and communities, so as to improve their understanding of the importance and urgency of dealing with climate change, and encourage them to undertake their social responsibilities in an active manner.

VII. Enhancing International Cooperation on Climate Change

Based on the "mutually benefit, practical and effective" principle, China actively participates in and promotes international cooperation in the field of climate change, playing a constructive role. In recent years, China's president and premier have both stated China's position on international cooperation on climate change at multilateral and bilateral fora, including the outreach session of the G8 summit, Asia-Pacific Economic Cooperation (APEC) meeting, East Asia Summit (EAS) and Boao Forum for Asia, energetically promoting global action to cope with climate change.

China has always actively participated in and supported activities under the UNFCCC and its Kyoto Protocol, working hard to accelerate their effective implementation. Chinese experts have energetically taken part in the activities of the Intergovernmental Panel on Climate Change (IPCC), making contributions to its relevant reports. China is seriously implementing its commitments in the UNFCCC and its Kyoto Protocol, released China’s Initial National Communications on Climate Change in 2004, and promulgated China’s National Climate Change Programme and China’s Scientific & Technological Actions on Climate Change in June 2007.

As to other multilateral cooperation, China is official members of the Carbon Sequestration Leadership Forum, Methane to Markets Partnership and Asia-Pacific Partnership on Clean Development and Climate. China also participates in the climate change dialogue between the leaders of the G8 and the five major developing countries, and Major Economies Meeting on Energy Security and Climate Change. At the APEC meeting, China initiated the Asia-Pacific Network for Sustainable Forest Management and Rehabilitation, and hosted the Forum on Climate Change and Science & Technology Innovation. China strives for the enhancement of international exchanges and mutual trust in the sphere of climate change, as well as the establishment of an impartial and effective global mechanism to deal with climate change.

As to bilateral cooperation, China has established dialogue and cooperation mechanisms on climate change with the European Union, India, Brazil, South Africa, Japan, the United States, Canada, the United Kingdom and Australia, etc., with climate change as one of the important fields for bilateral cooperation. China has all along, to the best of its ability, helped African countries and small island developing countries to improve their capability to cope with climate change. China's African Policy makes it clear that China will actively promote China-Africa cooperation on climate change. The Chinese Government has hosted two seminars on the Clean Development Mechanism (CDM), aiming to improve the capacity of African and Asian developing countries to develop CDM projects.

China actively cooperates on climate change research with foreign governments, international organizations and foreign research institutes, covering scientific issues, mitigation and adaptation, policies and measures dealing with climate change, including research on trend of climate change in China, impacts of climate change on China, adaptation measures and actions in China's agricultural and forestry sectors, China's water resources management, China's comprehensive management of coastal zone and marine ecological systems, China's greenhouse gas mitigation cost and potential, and China's laws and regulations and policy dealing with climate change, as well as the development and demonstrations of low-carbon energy technologies. China actively participates in relevant international scientific and technological cooperation programs, including the World Climate Research Programme (WCRP) under the framework of the Earth System Science Partnership (ESSP), International Geosphere-Biosphere Programme (IGBP), International Human Dimensions Programme on Global Environmental Change (IHDP), Intergovernmental Group on Earth Observations (GEO), Global Climate Observation System (GCOS), Global Ocean Observation System (GOOS), Array for Real-Time Geostrophic Oceanography (ARGO), and International Polar Year. In addition, China enhances information exchanges and resource sharing with relevant international organizations and institutes.

China actively promotes technology transfer under the UNFCCC framework, works hard to build an enabling

domestic environment for international technology transfer, and has submitted a technology need list. China believes that technology transfer under the UNFCCC framework should not solely rely on the market. The key is that the governments of the developed countries should endeavor to reduce and eliminate barriers to technology transfer, and adopt guiding and incentive policies and measures, thus playing an effective role in promoting technology transfer. For key technologies that are still under research and development, it is necessary to take advantage of the joint efforts of the international community and lose no time in making breakthroughs, and to ensure that such technologies be shared by all countries in the world.

China attaches importance to the CDM's active role in promoting its own sustainable development, and is willing to make contributions to greenhouse gas mitigation through participating in the mechanism. Through international cooperation, China has conducted systematic research on the CDM, providing a scientific basis for formulation of relevant international rules and domestic policies, as well as providing valuable information for all stakeholders. China has carried out many capacity building activities aimed to improve the capabilities of government departments, enterprises, academic institutions, consulting agencies and financial institutions to develop CDM projects. It has improved relevant domestic rules, and formulated and released the Measures for the Operation and Management of Clean Development Mechanism Projects in China. As of July 20, 2008, 244 CDM

projects hosted by China have been registered by the Executive Board, with expected annual certified emission reductions of 113 million tCO_2e. CDM projects have effectively promoted the development of renewable energy in China, accelerated the improvement of energy efficiency, and greatly enhanced the awareness of climate change on the part of relevant government departments, enterprises, organizations and individuals. China is of the view that CDM, as a rather effective and successful cooperation mechanism, should continue after 2012. However, efforts should be made to improve equity, transparency, simplification, certainty and environmental integrity related to the implementation of CDM projects, and to promote the transfer of advanced technology to developing countries. The host country should play a more important role in the process of developing CDM projects.

VIII. Institution and Mechanism Building

The Chinese Government set up a special institution addressing climate change in 1990, and established the National Coordination Committee on Climate Change (NCCCC) in 1998. In order to further enhance the leadership of the work on climate change, the National Leading Group to Address Climate Change, headed by the Chinese premier, was set up in 2007 to formulate important strategies, policies and measures related to climate change, and coordinate major problems in this regard. During the institutional reform in 2008, the number of member agencies of the National Leading Group increased from 18 to 20. The National Development and Reform Commission (NDRC) was vested to undertake the general work, and the general office of the National Leading Group was set up and placed in the NDRC. And a dedicated department was established in the NDRC responsible for organizing and coordinating work on climate change all over the country. The Experts Committee on Climate Change has been set up to improve scientific decision-making on climate change, and this committee has done a great deal of work in supporting government decision-making and promoting international cooperation and nongovernmental activities.

In 2007, the State Council called on all regions and ministries to strictly implement China's National Climate Change Programme in the light of their actual conditions. They were required to build and improve management systems, coordinating mechanisms and special institutions on climate change, establish local experts teams to deal with climate change, formulate corresponding policies and measures in light of the local geographic environment, climate conditions and economic development level, set up statistical and monitoring systems on climate change, and organize and coordinate local actions dealing with climate change.

In order to facilitate the implementation of China's National Climate Change Programme, governments at all levels have further improved industrial, financial, taxation, credit and investment policies, made full use of price leverage, form institutions and mechanisms conducive to mitigating greenhouse gas emissions, increased financial input. China has improved corresponding rules conducive to mitigation of and adaptation to climate change, thus enhancing work on climate change in accordance with the law.

Conclusion

China is now in a crucial period in building up a moderately prosperous society in all respects, and at an important stage for accelerating the country's industrialization and urbanization. It has onerous tasks to develop the economy and improve the people's livelihood, and thus faces more severe challenges in dealing with climate change than developed countries do.

China will continue to follow the guidance of the Scientific Outlook on Development, unswervingly stick to the road of sustainable development, and adopt more powerful policies and measures to strengthen its capability to tackle climate change in an all-round way.

Climate change is a common challenge confronting the whole world, and demands the joint efforts of all countries and the entire international community. China will work unremittingly for global sustainable development with other countries and continuously make new contributions to the protection of the climate system.