

China's Policies and Actions for Addressing Climate Change

—The Progress Report 2009

National Development and Reform Commission

November, 2009

“In the years ahead, China will further integrate actions on climate change into its economic and social development plan and take the following measures: First, we will intensify effort to conserve energy and improve energy efficiency. We will endeavor to cut carbon dioxide emissions per unit of GDP by a notable margin by 2020 from the 2005 level. Second, we will vigorously develop renewable energy and nuclear energy. We will endeavor to increase the share of non-fossil fuels in primary energy consumption to around 15% by 2020. Third, we will energetically increase forest carbon sink. We will endeavor to increase forest coverage by 40 million hectares and forest stock volume by 1.3 billion cubic meters by 2020 from the 2005 levels. Fourth, we will step up effort to develop green economy, low-carbon economy and circular economy, and enhance research, development and dissemination of climate-friendly technologies.”

-----President Hu Jintao at the UN Climate Change Summit

Foreword

Climate change issues, as a grave challenge to the sustainable development of the human society, have received ever greater attention from the international community. Deeply cognizant of the complexity and extensive influence of these issues and fully aware of the arduousness and urgency of the task of addressing climate change, the Chinese government is determined to address climate change in the process of pursuing sustainable development.

In the past century, temperature rise in China has basically kept pace with global warming, with the average surface temperature increasing by 1.1°C, slightly higher than the global average. For China, the year of 2008 was another warm year with an annual average temperature of 9.6°C, 0.7°C higher than that of a normal year, rendering it the 7th warmest year since 1951 and the 12th warm year in succession. The average precipitation in 2008 was 654.8mm, 1.9%mm above average and the highest in the past 10 years. Along China's coast, the sea level rose to its 10-year high, 60mm above the normal level. In 2008, extreme climate events occurred frequently in China, including a disaster caused by prolonged low temperature, icy rain and heavy snow, which was rarely seen in history, and inflicted heavy losses.

In 2008, China sustained a relatively rapid growth of its national economy while overcoming the adverse impacts of the extraordinary natural disasters and the global financial crisis. Its GDP grew by 9.0% to 30067 billion RMB yuan, with the primary, secondary and tertiary industries accounting for 11.3%, 48.6% and 40.1% respectively. In the

first 3 quarters of 2009, its GDP grew by 7.7% compared to the same period last year. However, with a vast population and a low level of economic development, China still faces a rather arduous task of development. By the end of 2008, the total population in the mainland was 1.328 billion, representing an increase of 6.73 million souls over the end of 2007, and the rate of urbanization was 45.7%. In 2008, with a per capita GDP of 3,268 US dollars (converted with the current price and annual average exchange rate), China still ranked among low to mid-income countries. According to the 2008 poverty line of 1,196 yuan per capita annual income for rural residents, the rural poverty population was 40.07 million at the end of the year. Based on the provisional statistics, total energy consumption of the country in 2008 was 2.85 billion tons of coal equivalent (tce), 4.0% over 2007, with per capita energy consumption being 2.15 tce. The share of coal in primary energy consumption was 68.7%, and CO₂ emission per unit of energy was much higher than the world average level, posing an enormous difficulty for reducing CO₂ emissions.

While fighting against the natural disasters, actively coping with the impact of the global financial crisis, and sustaining the economic growth, the Chinese government attaches great importance to climate change issues as it had always done. The Government has adopted a series of policies and measures, actively implemented *China's National Climate Change Programme*, intensified the effort to build capacities to address climate change, and thus achieved significant progress. The energy consumption per unit of GDP in China dropped by 10.1% in 2008 compared to 2005, further decreased by 3.35% in the first half of 2009 compared to the first half of 2008, thus slowed down the growth in greenhouse gas emissions.

China advocates joint and coordinated efforts of the international community to tackle climate change, and has made positive efforts in this regard. China has participated in the international talks on implementing

the “Bali Road Map” and reinforcing the full, effective and sustained implementation of the UNFCCC and its Kyoto Protocol. In its position paper on the Copenhagen Climate Change Conference, China expresses its willingness to make the most sincere and greatest efforts to make the meeting a success.

In 2008, the Chinese government published the White Paper on China’s Policies and Actions for Addressing Climate Change, stating the policies and actions that the country had adopted for addressing climate change as well as the progresses. To follow up, this report will briefly describe the latest progresses that China has achieved in addressing climate change since 2008.

Table 1: China’s National Circumstances in 2008

Indexes	2008
Population (million, year-end figure)	1328
Rate of urbanization (%)	45.7
GDP (billion RMB yuan)	30,067
Economic structure (Ratios of primary, secondary and tertiary industries)	11.3 : 48.6 : 40.1
Per capita GDP (USD, converted at current price and the annual average exchange rate)	3,268
Rural poverty population (million)	40.07*
Total energy consumption (billion tce)	2.85
Per capita energy consumption (tce)	2.15

Note: * by the updated rural poverty line of 1,196 RMB yuan per capita annual income

Part I: Policies and Actions to Mitigate Climate Change

China has adopted proactive policies and taken positive actions to mitigate climate change, and has made relentless efforts and achieved obvious progress in adjusting the economic structure, transforming the development patterns, conserving energy, improving energy efficiency, optimizing the energy mix, and promoting afforestation.

Adjust Economic Structure and Promote the Optimization and Upgrade of Industrial Structure

The Chinese government attaches importance to the adjustment of economic structure and the transformation of economic development patterns. It has formulated and implemented a series of industrial policies and special programs that take resources and energy conservation as an important component, and promoted the optimization and upgrade of industrial structure, so as to form a pattern of economic growth featuring “less input, less consumption, less emission, and higher efficiency”.

In 2008, the General Office of the State Council issued *The Opinions on Implementing the Policies and Measures for Accelerating the Development of the Service Industry*. The policy system to incentivize the development of the service industry keeps improving. The added value of the service industry in 2008 grew by 9.5% over the previous year, the first time to exceed the growth rate of the secondary industry since 2003.

The central government launched the adjustment and reinvigoration plans for 10 major industries, of which each highlights the phase-out of backward production capacity, advancement of technological levels, and energy conservation and pollution reduction. The plan for the automotive industry emphasizes cars powered with alternative fuels as the breakthrough, and stresses the renovation and improvement of traditional

products in terms of energy conservation, environmental protection and safety. The plans for iron and steel industry and petrochemical industry focus on adopting more rigorous standards and establishing a sound mechanism for phase-out of out-of-date production capacity, and have formulated detailed standards on energy consumption per unit of products and the resource recycling rate. The plan for the shipbuilding industry focuses on reducing energy consumption per unit of industrial added-value, remarkably enhancing steel utilization efficiency in shipbuilding process, and accelerating the retirement and replacement of the old ships.

The Chinese government has issued the market access standards for energy intensive industries, raised the bar for access to energy intensive industries in term of energy conservation and environmental protection, and took other relevant measures including adjustment of tariffs and tax rebate to curtail the export of the energy-, pollutants emissions-, and resource-intensive products. As a result, the growth rate of energy intensive industries is showing a downward trend.

To cope with the impact of the international financial crisis, China formulated in 2008 a 4 trillion yuan stimulus package to boost economy, out of which 210 billion is to be invested in energy conservation, pollution reduction, and ecology restoration, and another 370 billion for technology renovation and adjustment of the energy-intensive industrial structure.

Actively Develop Circular Economy to Mitigate Greenhouse Gas Emissions

Attaching great importance to developing circular economy, the Chinese government is vigorously promoting the reduction, reuse and recycle of waste in resources utilization, so as to reduce greenhouse gas emissions from original source and in the process of production. Since China promulgated the *Circular Economy Promotion Law* in 2008, 26

provinces and municipalities have undertaken pilot projects for circular economy development. Pilot projects of circular economy have also been conducted in industries like iron and steel, nonferrous metals, and power, as well as some key fields such as waste recovery and processing and utilizing of reusable resources. In 2008, China recycled and reused 72 million tons of waste steel, 5.2 million tons of non-ferrous metal, and more than 16 million tons of plastics, ranking first in the world.

Organizing the Implementation of Circular Economy Pilot Projects. Since 2005, two batches of totally 178 pilot projects have been launched to explore the effective modes of circular economy for the key industries, sectors, industrial parks and zones, and provinces and municipalities. 760 million yuan has been arranged through the central government budget to support a group of circular economy pilot projects. The government worked and published a catalogue of the technologies to support the circular economy of important industries. The related departments of the government summarized the experiences of the pilot projects and enhanced their guidance to the experimental work. The circular economic pattern has basically taken shape at enterprises and industries, the industrial parks and zones, and in the whole society.

Carrying out the work of car component remanufacturing. In 2008, the National Development and Reform Commission (NDRC) issued the Notice on Implementing Pilot Projects of Car Component Remanufacturing, and launched this work. The government selected 14 manufacturers of whole cars and car components to undertake the pilot projects of engine and gearbox remanufacturing, and invested 57.10 million yuan out of the central government finance to support them. The country has researched and put forward the technological standards for the remanufacturing of 3 types of 11 car components, and included them in the “11th Five-year Plan” for standardization.

Promoting the comprehensive utilization of resources. The State Council issued *the Administrative Regulations on the Recycling and*

Disposal of Waste and Discarded Electronics and Electric Equipment, NDRC selected Zhejiang Province and Qingdao City as the venues for the national pilot projects of recycling and disposing of such products, and supported the effort of Qingdao, Beijing, Tianjin and Hangzhou to build demonstrative pilot projects of this sort. The government promoted the integral utilization of straws, and the General Office of the State Council issued the *Opinion on Accelerating the Promotion of the Integral Utilization of Crop Straws*. It supported a batch of key projects of integral utilization of resources. In the first 3 years of the 11th Five-year Plan period, the country arranged 1.31 billion yuan within the central government budget to support 179 key projects for integrally utilizing resources, which utilized 35.46 million tons of industrial solid waste, recycled 1.72 millions of reusable resources like scrap metals, made use of 2.33 million tons of the three types of residual materials of forestry, and conserved 3.73 million cubic meters of wood resources.

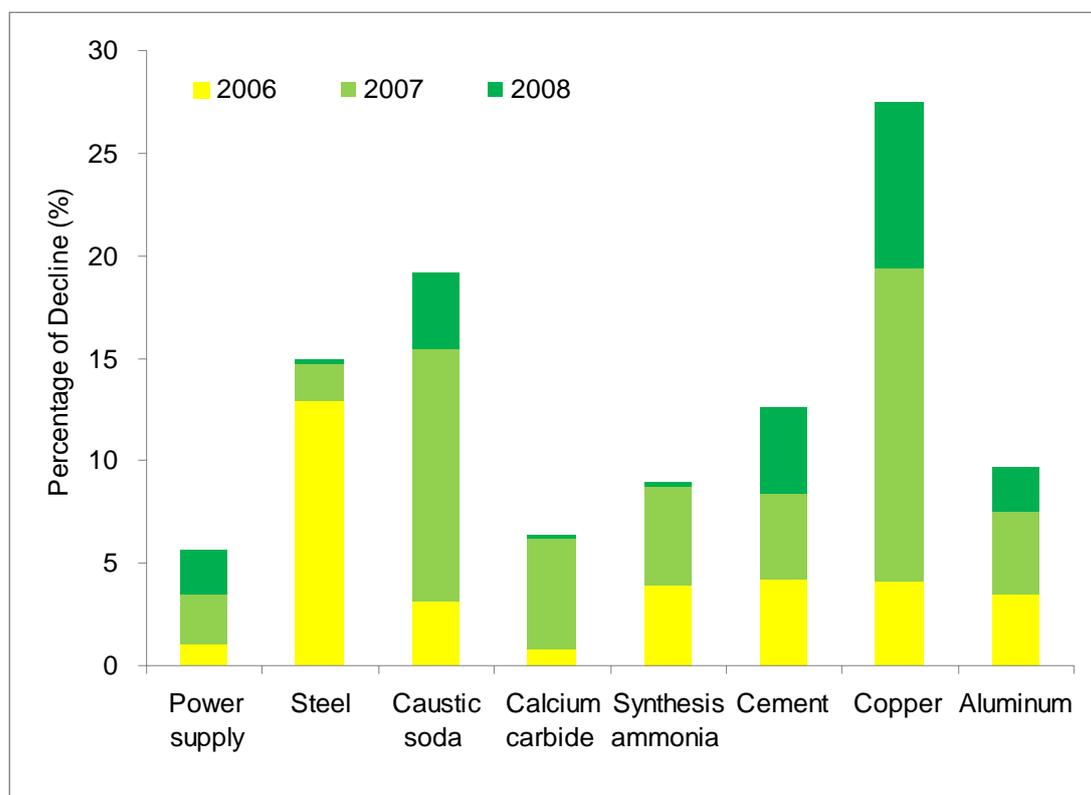
Strive to Save Energy and Raise Energy Efficiency

In accordance with the *Notice on Work Arrangement for Energy Conservation and Pollution Reduction in 2008* issued by the General Office of the State Council, all relevant departments and regions have strengthened accountability systems on energy efficiency performance, reinforced statistical work as well as monitoring and assessment system in these concerns, and further phased out a batch of backward production capacity in key industries and sectors, thus effectively promoted energy conservation and emission reduction.

The energy consumption per unit of GDP continued to fall, and for the first time by a margin higher than the expected annual average for energy conservation in the five-year period. In 2008, the energy consumption per unit of output of the major energy intensive industries declined further, and the energy consumption per unit GDP dropped 4.59% below the 2007 level. This figure further dropped 3.35% in the first half of 2009 compared with the first half of 2008, dropping

faster than in the latter period by 0.47 percentage points. From 2006 to 2008, China's energy consumption per unit of GDP dropped accumulatively by 10.1%, saving about 290 million tce, or effectually reducing CO₂ emission by 670 million tons.

Figure 1: Decline of Energy Consumption Per Unit of output in Major Energy Intensive Industries since 2005



Note:

Power supply refers to the coal consumption per unit of power supply by units with capacity of 6 MW or above;

Steel refers to the total energy consumption per ton of steel production at the large-scale enterprises;

Caustic soda, Calcium carbide, Synthesis ammonia and **Cement** respectively refer to the total energy consumption for producing each unit of caustic soda, calcium carbide, synthesis ammonia and cement;

Copper refers to the total energy consumption for smelting each unit of copper;

Aluminum refers to the total energy consumption for each unit of electrolytic aluminum production.

Fully implemented the amended *Energy Conservation Law*, and further improved related regulations and standards. In 2008, the amended *Energy Conservation Law* became effective. It has expanded its range of regulation, established complete systems and standards for energy conservation administration perfected the economic policies encouraging energy conservation, identified competent parties for energy conservation administration and supervision, and heightened the legal liabilities. The State Council also promulgated the *Regulations on Energy Conservation for Civil buildings* and the *Regulations on Energy Conservation for Public Institutions*. The Standardization Administration approved 22 mandatory national standards on limitation of energy consumption of energy intensive products and 11 mandatory energy efficiency standards of energy end-use products, and issued the catalogs of the 3rd and 4th batches of products for energy efficiency labeling together with the implementation rules, increasing the number of products subject to energy efficiency labeling to 15.

Table 2: Products Subject to Energy Efficiency Labeling in China

Batch Number	Product Name	Time of Implementation
Batch 1	Household refrigerators	March 1, 2005
	Room air-conditioners	
Batch 2	Electric washing machines	March 1, 2007
	Unitary air-conditioners	
Batch 3	Self-ballasted fluorescent lamps	June 1, 2008
	High-pressure sodium lamps	
	Medium and small three-phase asynchronous motors	
	Water chiller	
	Domestic gas instantaneous water heaters and gas-fired heating and hot water combi-boilers	
Batch 4	speed-variable room air-conditioners	March 1, 2009
	Multi-connected air-conditioning (heat pump) units	

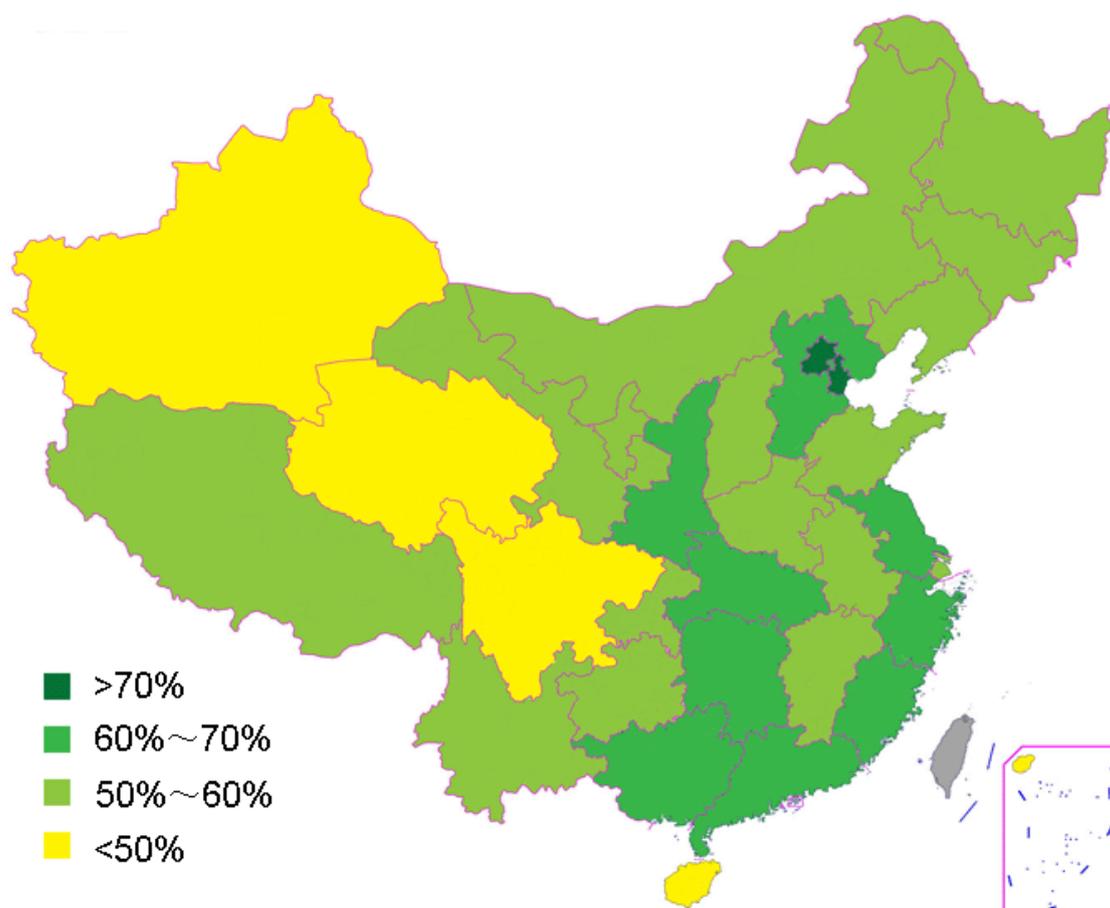
	Electric storage water heaters	
	Household induction cookers	
	Computer monitors	
	Copy machines	

Tightened the assessment of the performance of obtaining the energy conservation objectives, and further implemented a accountability system in this regard. According to the *Circular of the State Council on Approving and Forwarding the Plan and Measures for Implementing the Statistics, Monitoring and Assessment of Energy Conservation and Pollution Reduction*, the National Development and Reform Commission (NDRC) together with other relevant departments of the State Council reviewed and assessed the performance of the 31 provinces, autonomous regions and municipalities directly under the central government in 2008 in fulfilling their energy conservation targets and implementing energy conservation measures, and published the results to the society, thus heightening the primary responsibility of the governments for this work. The National Bureau of Statistics, the NDRC, and the National Bureau of Energy jointly published the relevant performance indexes of all the provinces, autonomous regions and the municipalities directly under the central government for the years of 2007 and 2008, including the energy consumption per unit of GDP. The NDRC also organized the performance assessment of 1,000 enterprises in fulfilling the annual energy conservation targets of 2007 and 2008, and published the results for social supervision. Judging from these results, the 1,000 enterprises have accomplished their energy conservation targets for the 11th Five-year Plan period two years ahead of schedule, and the

NDRC, together with relevant departments also organized special supervision and inspection activities for energy conservation and pollution reduction, so as to supervise the regions that had failed to obtain their annual objectives.

Figure 2: Progress of Regions in Fulfilling the Energy Conservation Targets of the 11th Five-year Period

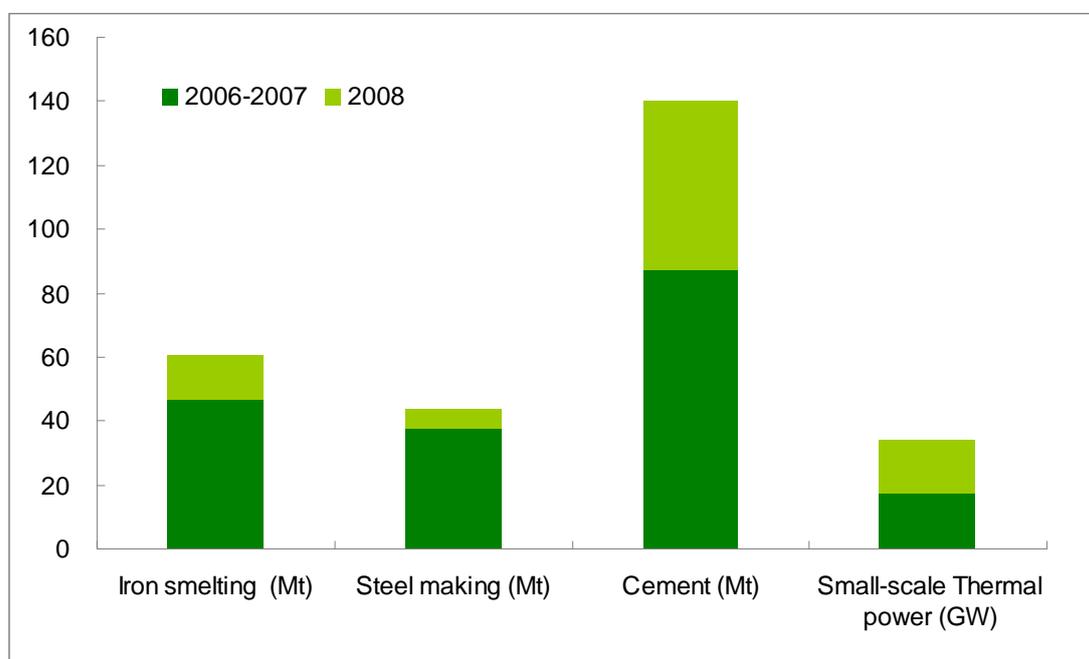
Phased out backward production capacities, and further improved energy efficiency. In 2008, efforts were intensified to phase



out backward production capacities; for the effort of the less developed regions, the central government provided 6.2 billion yuan to help to resettle the employees and change the line of production. In the whole year, a total capacity of 16.29 GW of small thermal power units in 325 power plants were shut down, plus backward production capacities of 53 million tons of cement, 6 million tons of steel, and 14 million tons of iron, 1.04 million tons of calcium carbide, 1.17 million tons of ferroalloy, and 30.54 million tons of coking were phased out. In the first half of 2009, following the guideline of “building big ones and shutting down small

ones”, an installed capacity of 19.89 GW of small generation units was closed down, bringing the total capacity of phased-out small generating units to 54.07 GW, thus the shutdown target for the 11th Five-year Plan period, which is 50 GW, was accomplished one and half a year in advance. Since 2008, merely through “building big ones and shutting down small ones” in the thermal power industry, the country has in effect reduced CO₂ emission by 50 million tons.

Figure 3: Backward Production Capacities Phased- out between 2006 and 2008



Intensified the effort to implement the key projects, and promoted energy conservation in major sectors. In 2008, the central budget arranged 27.0 billion yuan as a special fund for energy conservation and emission reduction to give emphatic support to the efforts in technological innovation for energy conservation, phasing-out of backward production capacity, energy conservation for buildings, popularizing of energy-conserving products, and ability building for energy conservation. As for technological innovation, more than 1,200 projects were launched, which, upon their completion, are expected to

form an energy-conserving capacity of 25 million tons of coal equivalent. Meanwhile, of the 3 batches of investment that the central government has newly added since the 4th quarter of 2008, the investment in energy conservation, pollution reduction, and ecology restoration and improvement reaches 22.4 billion yuan. In 2008, China further clarified its policy incentives for the energy conservation of civil buildings, explicitly required relevant departments of the central government as well as local governments to allocate funds for the energy conservation of civil buildings, which should be used for the energy-conserving renovation of existing buildings, the mass application of renewable energy in buildings, and the supervision over the energy conservation of governmental offices and large public buildings, and to guide the financial institutions to provide the necessary support. In 2009, the public finance enhanced its support to the demonstrative projects of building energy management centers at industrial enterprises to innovate and upgrade the traditional modes of energy management through IT innovation. Relevant departments continued pilot programs of energy saving power dispatch, and promoted energy conservation in the construction and transportation sectors and at public institutions.

**Box 1: Key Projects of Energy Conservation in the
“11th Five-year Plan” period**

In order to implement *The Outline of the Eleventh Five-year Plan for National Economic and Social Development* and attain the mandatory goal of reducing energy consumption per unit of GDP by around 20%, the National Development and Reform Commission together with other departments, on the basis of the Mid- and Long-term Special Plan for Energy Conservation, formulated and issued in July 2006 *the Opinion on Implementing 10 Key Projects of Energy Conservation in the “11th Five-year Plan” Period*, by which the country is expected to conserve 240 million tce, to the effect of reducing CO₂ emission by 550 million tons, in the “11th Five-year Plan” period.

The 10 key projects of energy conservation are as follows:

1. Renovation of coal-burning industrial furnaces (kilns);
2. District combined heat and power generation;
3. Projects to utilize waste heat and residual pressure;

4. Petroleum conservation and substitution projects;
 5. Electrical motor energy conservation;
 6. Projects of energy system optimization (system energy conservation);
 7. Projects of energy conservation for buildings;
 8. Projects of “green” lighting;
 9. Energy conservation projects of government institutions;
 10. Projects to construct the monitoring and technological service systems for energy conservation.
-

Reinforced economic incentives, and popularized energy saving products. In 2008, utilizing the subsidies provided by public finance, China popularized 62 million energy-saving lamps, which is expected to save 3.2 TWh of electricity and reduce 3.2 million tons of CO₂ emission; the country plans to popularize 120 million more such lamps in 2009. In 2009, the Ministry of Finance and the NDRC have organized the implementation of the “*Program of Benefiting the Public through Energy Efficient Products*” to popularize, by means of financial subsidies, the products with energy efficiency rated the 1st or 2nd grade under 10 categories, namely, air-conditioner, refrigerator, washing machine, flat panel television, microwave oven, electric cooker, induction cooker, water heater, computer monitor, and electric motor. Relevant departments also speeded up the creation of incentive mechanism for energy conservation, improved the new mechanism of using the special funds from public finance as “bonus instead of subsidy”, and perfected the preferential tax policy for comprehensive utilization of resources. China lowered the excise tax for small cars to encourage the purchase of energy saving cars; issued the *Provisional Measures for the Administration of the Public Finance Funds for Subsidizing the Demonstration and Promotion of Energy-efficient Vehicles and New Energy Vehicles*, supported 13 cities including Beijing to take the lead in popularizing the use of such vehicles in the public service sectors such as public transport, taxi service, government work, sanitation, and postal service, and provided subsidies to the purchase of such cars and the construction of the matching facilities.

Box 2: Adjustment of Consumption Tax Rate for Passenger Cars

The Ministry of Finance and the State Administration of Taxation announced that the policy on car consumption tax would be adjusted as of September 1, 2008, to raise the rate of this tax for large displacement passenger cars, from 15% to 25% for those with a displacement over 3.0L but not more than 4.0L and from 20% to 40% for those with a displacement over 4.0L, while lower that for small displacement cars, from 3% to 1% for those with a displacement of 1.0L or less.

Promoted nationwide energy-conservation actions. In August 2008, the General Office of the State Council issued the *Circular on Deeply Launching Nationwide Energy Conservation Actions*, requiring that the citizens be extensively motivated for energy conservation so as to make it a conscientious action of all the citizens. The contents of the nationwide energy-conservation actions mainly include the following: Each citizen should gives up driving one day a week, and drive in an energy-conserving and environmentally-friendly way; the temperature of the indoor air-conditioners in public buildings should be set at no lower than 26°C in summer and no higher than 20°C in winter; in principle, elevators should not be used for the first three floors of any government office building; consumers should be encouraged and guided to purchase and use home appliances, including air-conditioners and refrigerators, that carry a label of Grade 2 or higher energy efficiency or a mark of certification for energy-conserving products, energy-conserving lamps, and energy-efficient and environmentally-friendly small cars; energy-conserving and environmentally-friendly shopping bags should be used; the use of one-off goods should be cut down; and government employees should wear casual clothes at work in summer.

Develop Low-carbon Energy, and Optimize Energy Mix

The Chinese government attaches importance to the development of low-carbon energy, such as new and renewable energy, and has actively

promoted the optimization of Chinese energy mix. Since 2008, China has issued a number of financial , tax and price incentive policies, including the *Interim Measures for the Administration of the Special Funds for the Industrialization of Wind Power Generation Equipment*, the *Interim Measures for the Administration of the Subsidy Funds from Public Finance for the “Golden Sun” Demonstrative Projects*, the *Interim Measures for the Administration of the Subsidy Funds from Public Finance for the Application of Photovoltaic Solar Energy in Buildings*, the *Measures for the Administration of the Subsidy Funds for the Utilization of Straws for Energy*, the *Implementation Plan for the Urban Demonstration of the Application of Renewable Energy in Buildings*, the *Implementation Plan for Accelerating the Application of Renewable Energy in Buildings in Rural Areas*, and the *Notice on Perfecting the Policy on the On-grid Prices of Wind-generated Power*, and thus forcefully pushed forward the development of renewable energy in China.

In 2008, with another 27 GW being added in the current year, the total installed capacity of hydropower reached 172 GW, and corresponding annual power generation was 563.3 TWh, accounting for 16.3% of the national total power generation. For many years, China has stably ranked first in the world in both installed capacity and power generation of hydropower. The scale of wind power doubled annually for 3 years in a succession, and in 2008 alone, an installed capacity of 6.14 GW was added, ranking the second in the world; till the end of 2008, the total installed capacity of wind power reached 12.17 GW, rising to the fourth place in the world. The photovoltaic solar industry developed rapidly. Till the end of 2008, China had an accumulative installed capacity of 150 MW for PV solar power, of which 55% belonged to stand-alone PV power generation units; the heat collecting area of solar water heaters had reached 125 million m², accounting for over 60% of the world total, and keeping China the world leader in this field for many years. China made considerable progress in developing biomass energy. Up to 30.5 million households installed biogas digesters, and annually

utilized 12 billion cubic meters of biogas; 2,500 projects had been built to generate biogas from industrial organic wastewater and the waste of large livestock and poultry farms, which produced annually 2 billion cubic meters of biogas. The national installed capacity of biomass power generation was 3.15 GW; and the annual production capacity of bioethanol fuel exceeded 1.6 million tons.

Table 3: Renewable Energy Development in 2008

Item	Unit	2008	2007	Growth
Hydropower	GW	172	145	19.6%
Wind power	GW	12.17	6.04	101.5%
Photovoltaic solar power	MW	150	100	50%
Solar water heaters	million m ²	125	110	13.6%
Biomass power	GW	3.15	3.00	5%
Bioethanol fuel	Mt	1.60	1.20	33.3%

In 2008, China had put in operation 11 nuclear reactors with a total installed capacity of 9.1 GW, accounting for 1.3% of the total installed capacity in the country; 14 gigawatt-level nuclear power units were newly approved, 24 nuclear power units with a total installed capacity of 25.4 GW were under construction, making China a country with the largest scale of under-construction nuclear power capacity in the world.

In 2008, China issued *Emission Standard of Coalbed Methane/Coal Mine Gas*, and called for better utilization of coalbed methane/coal mine gas and development of small-scale coalbed methane/coal mine gas distributed power sources. In 2008, China drained 5.3 billion cubic meters of coal mine gas, 130% more than in 2005, of which 1.6 billion cubic meters was recovered and utilized; had built surface coal-bed methane production capacity of 2 billion cubic meters, achieved an annual output of 500 million cubic meters, with more than 900,000

households being coalmine gas and coal-bed methane customers and the installed capacity fueled by coal-bed methane reaching 920 MW. In 2008, total consumption of natural gas, coalmine gas and coal-bed methane increased by 10.1% over 2007.

Box3: Rapid Development of Wind Power in China

In recent years, especially after the implementation of the Renewable Energy Law, the wind power market and industry have experienced fast development.

Market Scale: The scale of wind power in China increased quickly, and the installed capacity reached 12.17 GW by the end of 2008 after doubling annually for 3 years in a succession, making China the 4th largest country in terms of wind power. Currently, 6 10GW-class wind power bases in Jiuquan of Gansu, eastern Inner Mongolia, western Inner Mongolia, Hebei, Jilin, and Hami of Xinjiang, as well as the 10GW-class marine power base along the Jiangsu coast, are under construction.

Wind Power Equipment Manufacturing: In recent years, besides Jinfeng Technology and Zhenjiang Yunda, many other large domestic manufacturers or investors, including Shanghai Electric, Dongfang Steam Turbine Works, and Huarui Technology, entered this industry one after another, and the number of wind power equipment manufacturers has increased from 6 in 2004 to 70 at present, the country already has the ability to design and manufacture independently internationally advanced the 3MW-class wind power generation units and is now researching and developing the 5MW-class units, and the gap between China and the advanced countries in terms of wind power technology has continuously narrowed.

Wind Power Policy: The Chinese government has implemented a program of wind power concession bidding, and published the benchmark on-grid price of wind power, which has played a positive role in stabilizing the man power market; meanwhile, it has granted tax preferences on import and export duties and value-added tax as well as financial subsidies to the development of wind power.

Till the end of 2008, the annual utilization of renewable energy (including large hydropower) and nuclear power was about 250 million tce, accounting for 8.9% of the primary energy consumption. The total consumption of natural gas reached 78.9 billion cubic meters, amounting to 110 million tons of coal equivalent, taking up 3.8% of the total primary energy consumption.

Box 4: Financial and Tax Policies Promoting Development of Renewable Energy

Since 2008, the Chinese government has introduced a series of financial and tax preferential policies to boost the development of renewable energy power projects, including:

The Interim Measures for the Administration of the Special Funds for the Industrialization of Wind Power Generation Equipment (2008) stipulates that a subsidy be granted to any qualified enterprise for its first 50 wind power units by the standard of 600 yuan/kW.

The Measures for the Administration of the Subsidy Funds for the Utilization of Straws for Energy (2008) stipulates that the types and quantities of straws consumed by a qualified enterprise be calculated according to the types and quantities of straw energy products that it actually sells each year and the a comprehensive subsidy, with funds from the central government finance, be granted to the enterprise by a certain standard.

The Interim Measures for the Administration of the Subsidy Funds from Public Finance for the Application of Photovoltaic Solar Energy in Buildings (2009) stipulates that the standard for the subsidy be in principle 20 yuan/wp in 2009 and should be properly adjusted according to the development situation of the industry in the future.

The Interim Measures for the Administration of the Financial Subsidy Funds to the “Gold Sun” Exemplary Projects (2009) states that a photovoltaic solar power project that is connected to the power grid and falls within the specified scope should receive a subsidy equivalent to 50% of the total investment in its generation units and the accessory systems for power transmission and distribution, and for the independent power units at the remote areas with no access to power, the percentage should be 70%.

The Notice on Perfecting the Policy on the On-grid Prices of Wind-generated Power (2009) stipulates that the benchmark prices of wind-generated power be 0.51, 0.54, 0.58 and 0.61 yuan in the 4 types of resource areas respectively, further standardizes the administration of wind power price, and promotes the healthy development of the wind power industry.

Mitigate Greenhouse Gas Emission in Agriculture

Efforts have been continued to promote low-emission and high-yield rice breeds and the intermittent irrigation of rice, reduce the methane emission of rice paddy field, popularize the straw silage ammoniating technology, and decrease the methane emission by ruminants. Since the practice of soil testing and formulated fertilization was launched nationwide in 2005, till 2008, it had been applied to 60 million hectares of farmland, which amounted to reduction of nitrogenous fertilizer by over 10% and reduction of farmland nitrous oxide emission by 28,000 tons, equivalent to 8.9 million tons of carbon dioxide.

Promote Afforestation to Increase Carbon Sequestration

In the whole year of 2008, a total of 4.77 million hectares was afforested, 22.1% more than in 2007, and 2.31 billion trees were planted voluntarily by citizens. 5.48 million hectares, 14% more than that of 2008, is scheduled to be afforested in 2009. Till the end of June 2009, 5.09 million hectares had already been afforested, with 3.07 billion trees planted. Meanwhile, the country actively promoted the sustainable management of forests, increased the carbon-sequestering capability of existing forests, and launched 128 spots nationwide for the demonstration of sustainable forest management and the trials of middle-aged and young forest fostering, rare tree species breeding, and forest health. The country sped up the construction of the grassland protection mechanisms, including those for the banning, suspension and rotation of grazing, basic

protection of grasslands, and grass-livestock balance. Till the end of 2008, 98.77 million hectares of grassland nationwide had been sealed to prohibit grazing, fallowed, or zoned for rotational grazing, accounting for 25.6% of the national grassland area. In 2008, protective cultivation was applied to more than 2.67 million hectares of farmland, thus increasing the concentration of organic matter in soil by 0.03% and expanding the carbon sequestration of farmland by 1.2 million tons.

Intensify R&DD of New Technologies in Response to Climate Change

China has continuously increased its investment in the scientific and technological effort to address climate change, and, under various national science and technology plans, organized the execution of a series of scientific and technological researches and demonstrative and promotional programs in the key fields for addressing climate change, including the technologies of energy-conserving and new energy cars, mining of coal-bed methane and natural gas hydrate, in-process energy conservation of large-scale coal-fired generation units, distributed generation system, MW-class wind power generation units, fuel cells, nuclear fuel recycling and nuclear safety, development of clean coking processes and equipment, semiconductor lighting, and the integral utilization of waste electromechanical products and plastic resources. The government issued the 2009 version of Catalogue of Technologies and Products Encouraged to Import, which includes such climate-friendly technologies and equipment as the technologies of designing and manufacturing the special critical parts of new energy cars, nuclear power equipment, solar energy power generation equipment, and the critical equipment for the new energy sectors such as renewable energy and hydrogen energy and for the exploration and development of coal-bed methane (coalmine gas), as well as the critical equipment for the combination of blast-furnace gas and fuel gas for circular power generation. In the meantime, the Government facilitated, in multiple

channels, the development of the critical technological support system for addressing climate change, including that for carbon capture and storage (CCS).

Part II: Policies and Actions to Adapt to Climate Change

China has actively implemented policies and actions to adapt to climate change, particularly those to enhance the ability of the agriculture, forestry and other natural ecological systems, water resources, as well as ecologically fragile areas like coastal zones and regions to adapt to climate change, and has achieved positive effects.

Agriculture

Since 2008, China has formulated the *Regulations of the People's Republic of China on Draught Control and the Administrative Measures for the Propagation and Releasing of Aquatic Organisms*, modified the *Regulations on the Fire Prevention of Grasslands*, and promulgated the *Plan for the Construction of the Protective Cultivation Projects (2009-2015)*, thus perfecting continuously the system of laws and policies to help the agricultural sector to adapt to climate change. In 2008, the area of protective cultivation exceeded 2.67 million hectares. As a result, 1.7 to 2.5 billion cubic meters of irrigation water was saved, and the fertility and draught-resisting capacity of soil were enhanced. Till the end of 2008, China had established industrial systems for 50 advantageous agricultural products, and strengthened the scientific and technological innovation and adaptation capability of the agricultural sector .

In 2008, China increased the investment in the construction of agricultural infrastructures. The Chinese government arranged 5.9 billion yuan for the water-conserving renovations of large irrigation areas. Follow-up and accessory facilities were built and water-conservation renovations were executed at 354 irrigation areas, adding an annual grain production capacity of 5 billion kilograms and an annual water conservation capacity of 5.8 billion cubic meters. The national water use efficiency of agricultural irrigation was raised to 0.475., The country

popularized the high-efficient water-saving irrigation technologies and the dry land farming water-saving technologies, increased the subsidy for the water-saving irrigation machinery and equipment, and enhanced the ability of the agricultural sector to prevent, resist and mitigate disasters as well as its general productivity. It increased the subsidy to improved varieties, optimized the structure of breeds, and put in practice a plan for the geographic distribution of advantageous agricultural products. China expanded the scope for implementing the projects of restoring grazing lands to grasslands, and stepped up the construction of artificial grazing meadows and irrigated grasslands. In 2008, enclosure fences were built around 5.228 million hectares of grassland, 27,000 hectares was treated for stony desertification, 1.569 million hectares of severely degraded grassland was reseeded, and 236,000 hectares of degraded grassland was treated.

Box 5: Agricultural Development Projects for Adapting to Climate Change

To increase the ability of the agriculture sector to adapt to climate change, China launched demonstrative and trial agricultural development projects with the 5 million dollars granted by Special Climate Change Fund.

The projects cover the 5 provinces in the basins of the Yellow, Huaihe and Haihe Rivers as well as Ningxia Hui Autonomous Region, and involve agricultural production and water resources management. The adaptation measures adopted in the projects include the following:

Developing alternative water sources;

Adopting water-saving agricultural technologies; and

Facilitating the designing and management of adaptive irrigation and drainage.

If these measures are proved to be successful in practice, they will be integrated into the national plan for agricultural development and be

popularized nationwide.

Forests and Other Natural Ecological Systems

Since 2008, China has modified *the Forest Fire Prevention Regulations, the Action Plan of the Forestry Industry for Addressing Climate Change*, making the work of protecting forest resources, maintaining ecological safety, and improving the utilization and management of forest resources more scientific and legalized. The country has reformed the ownership system of collectively owned forests to arouse the initiatives of the owners to develop and foster forest resources. Till the end of 2008, the ownership of 84.67 million hectares of collectively owned woodland, accounting for 50% of the total, had been assigned to specific households.

Box 6: Action Plan of Forestry Sector for Addressing Climate Change

In December 2009, the Chinese government published the Action Plan of the Forestry Industry for Addressing Climate Change.

This Action Plan stipulates the goals of three stages: Till 2010, more than 4 million hectares of land will be afforested annually, the national forest coverage rate will reach 20%, the forest reserves will reach 13.2 billion cubic meters, and the carbon-sequestering capacity of forests of the country will grow substantially; till 2020, over 5 million hectares of land will be afforested annually, the national forest coverage rate will reach 23%, the forest reserves will reach 14 billion cubic meters, and the carbon-sequestering capacity of forests of the country will achieve further growth; till 2050, the forest area will realized a net growth of 47 million hectares compared with 2020, the forest coverage rate will reach beyond 26%, and the carbon-sequestering ability of forests of the country will reach a stable level.

This Action Plan stipulates 22 major actions of the forestry industry, including 15 actions for mitigating climate change and 7 actions for adapting to it.

The 15 mitigation actions include promoting the national campaign of voluntary tree-planting; implementing the key afforestation projects; speeding up the fostering of the timber forest of rare and precious tree species; carrying out the projects of integrating the fostering, processing and utilization of energy forests; pursue sustainable operation of national forests; expanding the scope for sealing mountains for afforestation; enhancing the management of forest logging; enhancing the management of the occupation and appropriation of woodland; improving the law enforcement abilities of the forestry industry; enhance the ability to prevent and control forest fire; increase the ability to counter the hazards caused by diseases, insects, rats and rabbits; rationally developing and utilizing biomass materials; facilitate the efficient use and recycling of wood materials; rescuing and recover the important wetlands; and launch the demonstration projects for the sustainable utilization of resources in agriculture, husbandry and fishing.

The 7 adaptation actions include heightening the adaptation of the ecological system of artificial forests; establishing nature reserves for the preservation of typical forest species; stepping up the efforts to protect the major species; increasing the ability to monitor and issue early warning about the epidemic focus and diseases of wildlife; better protecting the vegetation of the desertifying areas; consolidating the basic work of wetland protection; and setting up and perfecting the network of wetland reserves

China continued to implement key forestry programs , including *the Natural Forest Protection Program*, the *Sandification Control Program for Areas in Vicinity of Beijing & Tianjin*, the *Conversion of Cropland to Forest Program*, *Key Shelterbelt Development Program in the Three North(north, northeast and northwest China)*, and *the Program of coastal shelter forests*. The country sustained its nationwide afforestation campaign, in which every citizen volunteers to plant trees, every department undertakes certain amount of afforestation, every city creates forests, farmland lies within networks of woods, and grasslands have shelter forests.. It had actively executed about 100 projects of wetland protection and restoration so that the ecological condition at some important wetlands obviously ameliorated. It implemented a responsibility system obligating the local governments to prevent and control desertification, and fully enforced the 3-dimensional banning

system in desertified areas to ban excessive reclamation, grazing and firewood collection. The Chinese government advanced the work of protecting biodiversity. Till the end of 2008, Forestry sector had 2006 nature reserves with a total area of 122.67 million hectares, accounting for 12.8% of the country area.

Water Resources

In 2008, the Chinese government invested 11.7 billion yuan in the major water source projects, and the key projects of water resources distribution, including the eastern line and the first phase of the middle line of the South-North Water Diversion project, proceeded smoothly. Till the end of 2008, the water supply capacity of the water conservancy projects nationwide reached over 700 billion cubic meters, which is enough to ensure water supply for urban and rural needs in a moderately dry year. In 2008, the Chinese government invested 11.5 billion yuan and whereby solved the problems of 48.24 million rural residents concerning drinking water safety. China promulgated and implemented the Administrative Measures for Water Drawing Licensing. It vigorously tightened the administration of water resources, pushed forward the construction of a water-conserving society, and promoted water conservation and emission reduction in an all-round way. At the 2005 comparable prices, the water consumption per 10,000 yuan of Chinese GDP dropped from 304 cubic meters in 2005 to 225 cubic meters in 2008, and that per 10,000 yuan of industrial added value declined from 169 cubic meters to 127 cubic meters during the same period.

In 2008, the Chinese government invested 26.2 billion yuan in flood control projects, and the renovation of the big rivers such as the Changjiang, Yellow, and Huaihe Rivers proceeded smoothly. Till the end of 2008, 86,000 reservoirs of various types had been constructed, with a total conservancy capacity of 69.24 billion cubic meters; and 286,900 kilometers of river dike and more than 130,000 kilometers of coastal protection embankment had been built. At present, the major sections of

the big rivers in China can resist the most severe flood ever seen since the founding of the new China, and the disaster-resisting standard of the major coastal embankments has been raised to ensure that they can withstand the worst disaster ever seen in the past 50 years.

In 2008, the Chinese government invested 2.15 billion yuan in water and soil conservation and ecological construction, and continued to prevent and control the water and soil loss of the key regions, including the middle and upper reaches of the Changjiang River and the Yellow River, the stony desertification areas at the upper reach of the Pearl River, the black soil in the northeast, and the vicinities of the Danjiangkou Reservoir. Till the end of 2008, the country had accumulatively treated 101.6 square kilometers of land suffering water and soil loss, thus annually reducing soil erosion by 1.5 billion tons and increasing water conservancy by over 25 billion cubic meters; had sealed 700,000 square kilometers for forest fostering, of which 390,000 square kilometers had realized ecological recovery.

Coastal Zones and Regions

Since 2008, China has established a working mechanism for addressing climate change for the marine sector, and worked out *the Plan for Coast Protection and Utilization*, *the 2009 Working Plan for Investigating and Assessing the Impacts of the Sea Level Changes*, and the Proposal for the Climate Change Monitoring (Observation) Capacity Building Projects of the Marine Sector and is periodically issued its *Annual Report on the Addressing of Climate Change in the Marine Sector*, thus further improving the plans for addressing climate change in the marine sector.

In 2008, China intensified its efforts in constructing, supervising and administering the marine protected zones, newly built 8 national-level special marine reserves, and established 18 areas in the coastal zones for marine ecology monitoring covering a total area of 52,000 square

kilometers. It actively restored the marine ecology in the areas of typical and rare marine ecology, areas invaded by alien species, ecologically sensitive areas, and special islands, and undertook the projects of restoring the ecology of seaside wetland, researching and demonstrating the critical technologies for oceanic pastures, and planted mangrove woods and protected coral reefs, thus gradually increasing the ability of the marine ecological system to adapt to and mitigate climate change.

Box 7: Development of Marine Climate Observation Network in China

In order to effectively improve the observation of the essential climate variable (ECV) of the marine sector. China engaged in the construction of a network of marine climate observation that covers the adjacent seas and oceans on the basis of integrating the existing networks including the coastal observation stations and posts, inshore buoys, cross section observation of adjacent seas, and volunteer observation vessels. Till October 2009, the following works had been accomplished:

The facility construction and equipment installment for GPS observation at 43 tidal stations;

The maintenance and renovation of the inshore buoys at 1 location, their placement at 3 locations, and the construction of the infrastructure of Weihai ground wave radar station; and

The recent construction of the observation systems on more than 10 volunteer oceangoing vessels.

Sectional survey was conducted of 14 cross sections during 5 voyages to study the oceanic-atmospheric carbon exchange volumes.

In 2008, China enhanced the emergency management of marine hazards, actively engaged in the monitoring, survey and assessment of the rise of sea levels, coastal erosion, seawater intrusion, and soil salinization,

timely issued early warning about storms, sea waves, and sea water hazards, and effectively reduced the casualty and financial loss caused by various marine disasters.

Health

Since 2008, the Chinese government has pushed forward the implementation of the National Action Plan for Environment and Health (2007-2015), and enhanced the ability to adapt to climate through improving the management of environment and health. In 2009, focusing on adapting to climate change and protecting the health of the public, the health departments have carried out the institution building for administering environmental health and addressing climate change at both the national and provincial levels; have organized a leading group for the work of responding to natural disaster health emergencies, strengthened interdepartmental coordination, perfected the contingency plans for natural disaster healthy emergencies, and comprehensively enhanced the ability to respond to the public health problems caused by extreme weather events. These departments have organized a series of researches on the relationship between climate change and human health, and further strengthened the monitoring, prevention and control of the contagious diseases involving the climate factor, such as the unexplained pneumonia and human infectious highly pathologic bird flu.

Other Sectors

Since 2008, China has strengthened the administration of climate feasibility study and regulated this activity, so as to reasonably develop and utilize climate resources and avoid or reduce the potential impacts of meteorological disasters and climate change on the planning and construction projects after their execution or the potential impacts on the local climate.

In 2008, China sped up the development of the scientific and

technological innovation system of the meteorological sector, invested more resources in the research of climate change, and vigorously enhanced its ability to provide scientific and technological support to the risk assessment of climate and weather disasters and emergency response to such disasters. The country basically established a fully functional platform for public meteorological services, improved the climate observation network, heightened the timeliness of the information publication for meteorological early warning service, and enhanced the ability of the society to forecast and issue early warning on and respond to climate and weather disasters.

Box 8: Article 4 of The Administrative Measures for Climate Feasibility Study

Climate feasibility study shall be conducted for the following planning and construction projects, which are closely related to climate conditions:

1. Urban and rural planning, and the development planning of the key sectors or regions;
 2. Major infrastructure facilities and public works, and large-scale engineering projects;
 3. Major projects for regional economic development or the structural adjustment of regional agricultural (husbandry) industry;
 4. Large-scale projects of developing and utilizing climate resources such as solar energy and wind power.
 5. Other planning and construction projects that require climate feasibility study according to law.
-

Part III: Local Actions to Address Climate Change

In order to implement China's National Climate Change Programme, the local governments of China, under the leadership of the central government, have taken active actions to address climate change and made it an important driving force behind their pursuit of a better economic development pattern and local sustainable development. Local governments have mainly taken actions in the following fields:

Establish Cross-sectoral Decision Making and Coordination Mechanism

In order to integrate and coordinate local efforts to address climate change, many local governments in China have established a decision making and coordination mechanism participated by multiple departments to ensure local execution of the climate change work. At present, provincial-level leading groups to address climate change headed by the governor (including chairman of an autonomous region and mayor of a municipality directly under the central government) have been organized in succession, which is playing a significant role in enforcing the major national programmes and policies for addressing climate change, identifying the local priorities and actions, and coordinating to solve the major problems.

Formulate and Promulgate Provincial-level Climate Change Programme

In order to effectively implement the National Climate Change Programme, the provincial-level governments had all accomplished formulating a provincial-level climate change programme. Through analyzing the current conditions, the provinces specified their guidelines, principles, and objectives to address climate change, as well as the

priority areas for mitigation and adaptation. The formulation and implementation of local schemes forcefully advanced the effective enforcement of the national mitigation and adaptation policies, and enabled the full-swing unfolding of the Chinese effort to address climate change.

Box 9: Jiangsu Province Climate Change Programme (Summary)

The Jiangsu Province Climate Change Programme is composed of five parts:

- Provincial circumstances, including natural resource, social-economic situation, greenhouse gas emissions in 2007, and the efforts and achievements on climate change;
- Impacts and challenges from climate change to Jiangsu;
- Guidelines, principles, and objectives to address climate change;
- Priority areas for mitigation and adaptation, including policies and measures;
- Guarantee measures.

Adhering to the scientific outlook on development for guidance, Jiangsu Province will mitigate greenhouse gas emission through the projects and policy measures of major fields, including promoting the optimization and upgrade of the industrial structure, vigorously developing clean energy and renewable energy, intensifying technological innovation and application for raising energy efficiency, promoting energy conservation in major industries, developing recycling economy, promoting energy conservation in cities, and tightening the administration of forestry and the management of rural and urban wastes; emphatically enhance the capacity of agriculture, coastal and marine ecological zones, wetland natural ecological systems, water resources protection and management, and the public health sector to adapt to climate change; strive to realize the general goals for addressing climate change, namely, positive effects in controlling greenhouse gas emission, ever increasing ability to adapt to climate change, further progress in the organizational and mechanism building for the climate change work, and considerably increased public awareness of climate change.

Actively Engage in CDM Cooperation

In order to effectively promote the renewable energy development and energy conservation, lower energy consumption, and to reduce greenhouse gas emission, many enterprises have actively developed clean development mechanism (CDM) projects. Throughout the country, 28 provincial-level CDM technological service centers have been set up, about ten thousand people were trained, and they have contributed to the capacity building and development of CDM activities. Till June 2009, the country had approved a total of 2,174 CDM projects. Yunnan, Sichuan, and Inner Mongolia, abundant with hydro or wind resource but less developed in economy, are the top three in term of the number of approved projects; Sichuan, Jiangsu and Zhejiang are the top three in terms of the estimated annual emission reductions. The development of CDM projects has effectively advanced the enterprises participating in international cooperation on climate change, and encouraged them to act as vital players in mitigation efforts.

Formulate Policies and Measures for Developing Low-carbon Economy

In order to advance energy conservation and emission reduction and foster new areas of economic growth characterized by low carbon emission, many local governments actively explored the development of low-carbon economy. At present, a number of cities have put forward a vision of transforming to low-carbon cities, and some provinces and cities, such as Guangdong, Hubei, Chongqing, Nanchang of Jiangxi, and Baoding of Hebei, have started the preparation of implementation plans for developing low-carbon economy. The addressing of climate change, combined with promoting local sustainable development, has provided a new driving force to facilitate the transformation of the local economic development pattern. The local governments have also held training

programmes on addressing climate change and developing low-carbon economy, in a bid to heighten the relevant government employees' awareness of climate change and low-carbon economy and enhance their relevant abilities.

Box 10: Green Olympics

When Beijing won the bid to host the 2008 Olympic Games, it promised the world a session of "Green Olympics". Specifically, the percentage of greenery coverage of municipal area should exceed 40%, the percentage of afforestation coverage within the administrative boundary should be near 50%, while for mountainous areas should reach 70%, the city should have 3 green protective screens, 12,000 hectares of partitioning greenery strips should be built in downtown, the area of all the nature reserves of the city should be no less than 8% of its land area, and 23,000 hectares of greenery belts should be developed along the "5 rivers and 10 roads". On the occasion of the Olympic Games, Beijing had honored its commitment to "Green Olympics".

The design, construction and operation of the venues of the Beijing Olympics fully reflected the concept of protecting global climate. At these venues, new energy systems were newly built or built through renovation, including the system of solar power generation and connecting it with grid, solar energy water-heating system, ground source and water source heat pumps, and wind power system, and green lighting and building energy-conserving technologies were utilized, including natural ventilation, light pipes, energy-efficient lamps, solar energy street lamps. Beijing took many measures to reduce and offset the greenhouse gas emissions of the Olympic Games, such as constructing a downtown rail transit system in advance, expanding the coverage of rail transit, drastically raising the percentage of buses and taxis using clean energy, adopting advanced and environmentally-friendly automotive technologies at the Olympic Center, and limiting the use of motored vehicles and encouraging residents to travel in other ways, and basically realized a carbon balance. During the Beijing Olympic Games, public awareness on climate protection was also advanced.

Part IV: International Cooperation on Climate Change

No country is immune from climate change and no country alone can fulfill the daunting task of tackling climate change. Global climate change is a major challenge facing all countries and addressing climate change calls for the unremitting efforts of the whole world. To counter this challenge requires the whole-hearted cooperation and coordinated actions of the international community. Based on the principle of mutually benefit, China continues to actively participates in and promotes international cooperation in the field of climate change.

Since 2008, China's president and premier have both further elaborated China's views and positions on the climate change issue and announced China's further policies and actions for addressing climate change at multilateral and bilateral forum, such as the UN Climate Change Summit, the outreach session of the G8 summit, the G20 Summit, the Leaders Meeting of Major Economies Forum on Energy and Climate, Asia-Europe Meetings, attempting to prompt the international community to reach a consensus on addressing climate change.

China strove for the full, effective and sustained implementation of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, and participated in the negotiations under the Convention and its Protocol in an active and constructive manner. The Chinese government published *Implementation of the Bali Roadmap: China's Position on the Copenhagen Climate Change Conference*, which covers 4 aspects, namely, principles, the objectives of the conference, further enhancing the full, effective and sustained implementation of the UNFCCC, and further quantified emission reduction commitments for developed countries for the second commitment period under the Kyoto Protocol, as an effort to make the Copenhagen conference a success.

China actively participated in the discussion on greenhouse gas emission reductions under the International Maritime Organization and the International Civil Aviation Organization. Chinese experts have made active contribution to the early period preparation for the 5th assessment report of the Intergovernmental Panel on Climate Change. With the financial support from the the Global Environmental Facility (GEF), China has started the preparation of *the Second National Communication on Climate Change of the People's Republic of China*.

Box11: Second National Communication on Climate Change of the People's Republic of China

Compared with the Initial National Communication, the Second National Communication on Climate Change of the People's Republic of China has made progresses in the following aspects.

Complication of national inventory of greenhouse gases:

- The report covers the year of 2005. Compared with 1994, the year covered by the Initial National Communication, the levels of various activities in China in 2005, including energy, industrial production, agriculture, forestry, and waste, presented drastic changes, so massive sampling surveys and statistical analysis should be conducted of these activity levels;
- The greenhouse gas coverage of the report has expanded from 3 gases (CO₂, N₂O and CH₄) to 6 gases (CO₂, N₂O, CH₄, HFCs, PFCs and SF₆);
- A national greenhouse gas database management system will be established;
- The ability to predict greenhouse gas emission has been enhanced.

Geographically, the coverage of the communication has been expanded to include Hong Kong and Macao SARs.

China actively implemented the initiative entitled “Asia-Pacific Network for Sustainable Forest Management and Rehabilitation”, which

Chinese President Hu Jintao presented at the Asia-Pacific Economic Cooperation meeting. China undertook the work of the secretariat of the network, convened its kick-off meeting, and published its framework document. The network has entered official operation.

Bilaterally, China continued to strengthen and broaden dialogues and cooperation on climate change with related countries and regions, and signed/initialed a series of joint declarations, memorandums of understanding, and cooperation agreements, including the Joint Statement of China-Australia Ministerial Dialogue on Climate Change, the Memorandum of Understanding on China-Korea Green Economic Cooperation, China-US Memorandum of Understanding to Enhance Cooperation on Climate Change, Energy and the Environment. and the Memorandum of Understanding on the Energy Conservation for Buildings and Communities.

China engaged in active cooperation with the United Nations, international organizations, and foreign research institutions on climate change, having signed a series of cooperative research agreements and implemented a batch of research projects. These cooperative researches have provided useful information to which China can refer in formulating policies to address climate change.

Box 12: China's Active Participation in International Cooperation on Carbon Capture and Storage Technology

As of 2003, China began to participate in the activities of the Carbon Sequestration Leadership Forum.

In 2005, the Ministry of Science and Technology of China signed a memorandum of understanding with the European Commission on demonstrating advanced Near Zero Emissions Coal (NZEC) through carbon capture and storage (CCS) technology. The cooperation consisted of three

phases. The first phase focused on capacity building for CCS technology in China and the pre-feasibility study on demonstration projects; in the second phase, the feasibility study on the demonstration projects will be executed; and in the third, CCS demonstration project would be built and operated in China.

In 2006, 12 organizations of the European Union and 8 institutions of China joined force in Cooperation Action within CCS China-EU, a research program under the Sixth Framework Program of the EU. The contents of this research project mainly include: application of carbon capture technology in coal-fired power plants, carbon geological sequestration potential in China, and related laws, regulations and financing mechanisms. In 2008, China and EU launched the Support to Regulatory Activities for Carbon Capture and Storage (STRACO2) project, in order to support the ongoing development and implementation of a comprehensive regulatory framework in the EU for CCS technologies for zero emissions applications and build a basis for EU-China cooperation on CCS.

In 2007, China Huaneng Group reached an agreement with the Commonwealth Science and Industrial Research Organization of Australia on cooperating in the research of post-combustion capture technology and building an experimental and demonstrative device at Gaobeidian Thermal Power Plant in Beijing to capture 3,000 tons CO₂ per year. This demonstrative device already successfully captured and, through purification, produced carbon dioxide of a purity level of 99.99%.

In September 2008, the Department of Science and Technology of Shanxi Province signed a memorandum of understanding with Wyoming State Geological Survey of the United States on cooperation on geological sequestration of carbon dioxide.

In 2009, China joined the Global Carbon Capture and Storage Institute launched by Australia.

China has increasingly deepened its practical cooperation with other developing countries in various fields, including the field of climate change. In his speech at the China-Africa Forum, Premier Wen Jiabao called for the overall promotion of the new-type China-Africa strategic partnership. First, the two sides should enhance their strategic coordination and safeguard their common interests; second, implement the Millennium Development Goals and improve the living standards of African people; third, promote economic and trade cooperation and achieve win-win results; fourth, facilitate personnel and cultural

exchanges to enhance China-Africa friendship; and fifth, expand the scope of cooperation and step up mechanism building. Following the above-mentioned principles, China has provided the other developing countries with the assistance within its capacity regarding climate change, helping related countries to develop satellite monitoring, improve their infrastructure, develop new energy, raise agricultural output, build medical facilities, train technological personnel, and increase their capacity for climate change adaptation and mitigation. In terms of training, China held a “Training Session on the Clean Development Mechanism and Renewable Energy” in Djibouti in December 2008; the “Seminar for Fighting Climate Change for Developing Countries” for the officials from some developing countries in Beijing in June 2009; and the “Training Seminar on Climate and Climate Change” for the officials and scholars from Africa in Beijing in July 2009.

Box13: China Actively Provided Aid to Other Developing Countries

Since 2006, China has scaled up its aid to Africa. It provided Africa with preferential loans and preferential seller's credit on exports, established the China-Africa Development Fund to support the effort of Chinese enterprises to invest in Africa, waived the interest-free government loans that were owed by all the heavily indebted poor countries and the least developed countries in Africa with diplomatic relations with China and would be due by the end of 2005, increased the number of zero-tariff commodities exported to China by the least developed African countries with diplomatic relations with China from 190 tax items to more than 440 tax items, established economic and trade cooperation zones in African countries, trained various talents from Africa, dispatched experts to Africa, and gave aid to and built hospitals and schools in Africa.

In 2009, the Chinese government once again announced a series of new measures for promoting the cooperation between China and Africa. This country aims to enhance its cooperation with African countries in fields like satellite monitoring of climate, new energy development and utilization, desertification prevention and control, and urban environment protection, and provided aid for the construction of 100 clean energy projects using solar energy, methane, and small-scale hydropower units; enhance the cooperation on science and technology, and carry out 100 demonstrative projects of China-Africa joint research; provide a 10 billion dollars worth of preferential

loans to African countries to strengthen the financing capacity of Africa; waive the outstanding interest-free governmental loans that are owed by the most indebted poor countries and the least developed countries of Africa with diplomatic relations with China and will be due by the end of 2009; gradually exempt the tariffs on 95% of the products imported from the least developed countries of Africa with diplomatic relations with China, and initially do so with 60% of these products within 2010; further increase the agricultural cooperation by providing aid for the construction of agricultural demonstration centers, dispatching agricultural experts and training agricultural technicians, and heighten the ability of Africa to achieve grain security.

China has also provided assistance and help to the small island countries in the South Pacific and Caribbean regions, further expanding the bilateral trade, providing preferential RMB loans for the projects in fields like infrastructure, air transportation, telecommunication and urban renovation, granting the zero-tariff treatment to 278 tax items among the commodities of an origin in Samoa and Vanuatu, and waiving the overdue debts of some countries.

China has been all along promoting technology transfer under the Convention through various means. In November 2008, Beijing High-Level Conference on Climate Change: Technology Development and Technology Transfer was organized by the Government of China and the United Nations, and Beijing High-Level Statement on Technology Development and Technology Transfer for Climate Change was issued. China has also submitted practical and effective proposals on the mechanisms to promote technology transfer to the Conference of the Parties to the Convention and to the Ad Hoc Working Group on Long-term Cooperative Action under the Convention.

China National Expert Panel on Climate Change conducted many technological exchanges and policy dialogues with the think tanks of major advanced countries and developing countries, and advanced the international cooperation on climate change concerning technology research and development, technology transfer, education of the public, and information sharing.

Box 14: Beijing High-level Conference on Climate Change: Technology Development and Technology Transfer

The “Beijing High-level Conference on Climate Change: Technology Development and Technology Transfer” was organized by the Government of China and the United Nations in Beijing, China, on 7-8 November, 2008. More than 700 representatives from governments, related international organizations, business sectors, academia and non-governmental organizations (NGOs) from over 70 countries attended the Conference. The Conference was opened by Premier Wen Jiabao, who delivered a keynote speech. The United Nations Secretary-General Mr. Ban Ki-Moon also sent a message to the Conference.

The ministers and government representatives present at the conference reaffirmed their commitment to the United Nations Framework Convention on Climate Change (UNFCCC) and the Bali Action Plan, and believed that climate change should be addressed within the context of sustainable development and poverty alleviation and in consistence with the principle of common but differentiated responsibilities and respective capabilities.

The conference adopted the Beijing High-level Statement on Technology Development and Technology Transfer for Climate Change, emphasizing the critical role of technology in addressing climate change and the need to accelerate technology research, development and deployment, and also emphasizing the importance of technology transfer and related capacity building, especially for the least developed countries. The conference also emphasizes the need to overcome policy, knowledge, institutional, financial and legal barriers to, and to create incentives for, the effective transfer and diffusion of technologies for both mitigation and adaptation. The scale of the challenge requires more effective use of existing mechanisms as well as potential new and innovative mechanisms of international cooperation in all stages of the development and deployment of technologies

China continued its active participation in the implementation of the CDM. Till September 18, 2009, the number of registered CDM projects hosted by China reached 632, with an expected annual emission reductions of 188 million tons of carbon dioxide equivalent, and about 150 million certified emission reductions (CERs) had been issued to

Chinese CDM projects.

Part V: Institutional Arrangement and Public Awareness Promotion

The establishment of effective institutional system is an important guarantee for climate change tackling. In June 2008, the Political Bureau of CPC Central Committee organized a group study on global climate change and enhancement of capacity building in relevant. CPC General Secretary Hu Jintao underlined that the CPC committees and governments at all levels should attach great importance to this work, strengthen their leadership, perfect the plans, well coordinate with stakeholders, and carry out relevant measures. In August 2009, Premier Wen Jiabao chaired an executive meeting of the State Council, reviewing the report presented by NDRC on climate change, and discussing further work next step. In the same month, the NPC Standing Committee specially reviewed the report presented by State Council on climate change, and adopted the Resolution of the Standing Committee of the National People's Congress on Actively Responding to Climate Change. A working mechanism for climate change tackling was established, characterized by the unified leadership of the National Leading Group to Address Climate Change, the centralized administration by NDRC, explicitly divided responsibilities among various departments, and the extensive participation by different sectors and regions.

To further advance the climate change work, the Chinese government established several new functional agencies, so as to intensify the institution and mechanism building for climate change adaptation and mitigation. During the institutional restructuring in 2008, Department of Climate Change was established under NDRC, and its responsibilities are as follows: analyze comprehensively climate change's impact on economic and social development and organize the formulation of major climate change strategies, plans and policies; take the lead in fulfilling China's commitment to UNFCCC and in organizing, jointly with other relevant departments, participation in international climate

change negotiations; coordinate climate change international cooperation and capacity-building work; organize the implementation of CDM related work; and undertake the routine work of National Leading Group to Address Climate Change.

To strengthen energy statistics and address climate change, the National Bureau of Statistics (NBS) of China enhanced its capability in energy statistics and Department of Energy Statistics under NBS was newly established in September 2008, responsible for organizing the energy data survey, collection, compiling and publication, and organizing the implementation of the statistics and monitoring on the energy conservation of the major energy-consuming industries, the energy utilization, energy conservation and resource recycling of the key energy-consuming enterprises throughout the country. The system of indicator, survey and monitoring for energy statistics was created nationwide, the system for accounting the energy consumption per unit of GDP was improved, and a series of energy statistic, review, and assessment systems were established and improved. The local governments also improved their institutional arrangements and personnel staffing for energy statistics. Besides, the Ministry of Industry and Information Technology has established the Department of Energy Conservation and Integral Utilization to take charge of the work on energy conservation and emission reduction and addressing climate change in industry and the information technology sector.

To support the domestic actions for addressing climate change, the Chinese government approved the establishment of the China Clean Development Mechanism Fund to boost the national capacity building for climate change tackling, promote public awareness, and support the specific actions for climate change adaptation and mitigation. Till now, the Fund has arranged financial grants to support national capacity building and policy study, and made preparations for the compensable use of its funds.

Box 15: NPC Actively Facilitates Climate Change Work

The National People's Congress (NPC) is the highest organ of State power of the People's Republic of China and exercises the legislative power, and its permanent executive agency is the NPC Standing Committee. Consistent with its own duties and functions, the NPC has adopted a variety of measures to facilitate the climate change work, including ratifying relevant international conventions, enacting related laws, approving the outline of the plan for national economic and social development, and issuing resolutions on making active efforts to address climate change.

In August 2009, the NPC Standing Committee specially reviewed the report presented by State Council on the climate change, and passed the Resolution of the NPC Standing Committee on Actively Addressing Climate Change. In order to tackle climate change, the resolution highlights:

- Efforts should be made to save energy, reduce pollution and mitigate green house gas emissions;
- Efforts should be made to enhance the ability of adapting to climate change;
- The supportive and guiding role of science and technology should be given full play;
- Efforts should be made to develop a green economy and low-carbon economy in light of national conditions;
- Efforts to address climate change should be included in China's national plan for economic and social development as a long-term task for achieving sustainable development, and specific goals, tasks and requirements should be clearly indentified.
- The legal framework for addressing climate change must be strengthened.

The Chinese government lays stress on raising public awareness on climate change, popularizing and diffusing the scientific knowledge about it, and cultivating the ability of the public to mitigate and adapt to it.

The Chinese government enhanced the publicity and education of

the climate change issues. A range of brochures and videos was made to disseminate the scientific knowledge on climate change and meteorological disaster prevention through print, internet, and video media. China is now preparing Second National Assessment Report on Climate Change and Climate Change and Environmental Evolution in China: 2012. It also launched a series of public websites, for example “Climate Change and Water Resources”, to improve public awareness.

The Chinese government promoted the environmental awareness of the public in various ways. It organized climate change publicity activities in communities, public transport tools, schools, and villages, carried out a series of large-scale publicity projects such as the projects of “Carbon Emission Investigation and Education at Communities”, “Plant Trees, Participate in Carbon Compensation, and Eliminate Carbon Trace”, “Climate Change and Human Health”, and the “Science Popularization Exhibit: Climate Change and Human Health”, guided the residents to address climate change and lead a low-carbon life, and also investigated the public awareness of climate change. The Agricultural Development Projects for Adapting to Climate Change, launched in May 2008, supported the capacity building of the agricultural sector in 6 provinces for climate change adaptation, and deepened the understanding of climate change in the local governments and the public. In June 2009, the “Energy Conservation Week” activities were held nationwide, spreading the ideas and knowledge on energy conservation in a multitude of ways; and the international cooperation in relevant fields were facilitated and the public’s awareness of climate change and energy conservation were enhanced by organizing the Beijing High-level Conference on Climate Change: Technology Development and Technology Transfer, the 2009 China International Energy Conservation, Pollution Reduction and New Energy Science & Technology Expo (CHIESER S&T Expo), and the forum named “Attention to Climate Change: Challenges, Opportunities and Actions”.

Concluding remarks

China is now at the intermediate stage of industrialization and in a crucial period in building up a moderately prosperous society in all aspects. The active effort to address climate change bears significance on not only human survival and world development but also the overall situation of Chinese economic and social development and the immediate interests of Chinese people. The Standing Committee of the National People's Congress (NPC) of the People's Republic of China has adopted a resolution by which the work of actively addressing climate change shall be integrated into the plan for national economic and social development as a long-term mission for realizing the sustainable development strategy, which fundamentally guarantees that China can carry forward the work of addressing climate change in an all-round way.

At the Summit on Climate Change held by the United Nations, Chinese President Hu Jintao clearly put forward the goal of China in addressing climate change for a period to come: "China will take a further step to include the addressing of climate change into its social and economic development plans, and continue to take forceful measures. First, it will enhance the work of conserving energy and raising energy efficiency in order that the carbon emission per unit of GDP can drop obviously in 2020 compared with 2005. Second, it will vigorously develop renewable energy and nuclear energy in order that non-fossil energy can account for about 15% of the primary energy consumption in 2020. Third, it will energetically increase the forestry carbon sequestration in order that in 2020 the forest area can increase by 40 million hectares and the forest reserve can increase by 1.3 billion cubic meters compared with 2005. Fourth, it will dynamically develop green economy, actively develop low-carbon economy and recycling economy, and develop and

popularize the environmentally-friendly technologies.” China will unwaveringly follow a road of sustainable development, and work with all the countries of the world to actively address climate change, line with its basic national circumstance and its developmental stage,

Annex I

Join Hands to Address Climate Challenge

Statement by H.E. Hu Jintao
President of the People's Republic of China
At the Opening Plenary Session of
The United Nations Summit on Climate Change
New York, 22 September 2009

Secretary-General Ban Ki-moon,

Dear Colleagues,

Today, world leaders are gathered at the United Nations to discuss ways to tackle climate change. This is of great significance for catalyzing strong action by the international community to meet this global challenge.

Global climate change has a profound impact on the existence and development of mankind, and is a major challenge facing all countries. In the last 37 years, from Stockholm to Rio de Janeiro, and from Kyoto to Bali, we have made concerted efforts and achieved notable progress in protecting the global environment and tackling climate change. This is a historic process, through which all countries have deepened their understanding, built consensus and stepped forward to meet the challenge. The *United Nations Framework Convention on Climate Change* (UNFCCC) and its *Kyoto Protocol* have now been universally recognized as the primary channel to address climate change. The principle of common but differentiated responsibilities has been established as the basis for closer international cooperation. And sustainable development and harmony between man and nature has become the common goal of all parties.

Climate change is an issue arising in the course of human development. It is associated with both natural factors and human activities. It is an environmental issue, but also, and more importantly, a development issue, as it is closely connected with the development stage, way of life, size of population and resource endowment of different countries and their places in the international division of labor. In the final analysis, we should and can only advance efforts to address climate change in the course of development and meet the challenge through common development.

At stake in the fight against climate change are the common interests of the entire world, and the development interests and people's well-being of the vast number of developing nations in particular. It is imperative to give full consideration to the development stage and basic needs of developing countries in addressing climate change. Both their historical and per capita emissions are low. Due to their low development level and shortage of capital and technology, developing countries have limited capability and means to deal with climate change. And they have to bear a large amount of transferred emission as they are placed at the lower end of the international industrial chain in the process of economic globalization. For developing countries, the top priority now is to grow economy, eradicate poverty and improve livelihood. The international community should pay close attention to the predicament of developing countries, especially the small island states, the least developed countries, landlocked countries and African countries. It is important to listen to their voice and respect their wishes, and combine our efforts to address climate change with those to promote the growth of developing countries and build up their own dynamism for development and ability for sustainable development.

Dear Colleagues,

To address climate change and achieve sustainable development is an urgent and long-term task for all of us. It bears on the living

environment of mankind and the development prospects of all countries, and calls for the unremitting efforts of the whole world. In this connection, let me highlight a few principles we need to follow in our common endeavor to tackle climate change:

First, fulfilling respective responsibilities should be at the core of our effort. The principle of common but differentiated responsibilities embodies the consensus of the international community. Adherence to this principle is critical to keeping international cooperation on climate change on the right track. Both developed and developing countries should take active steps to tackle climate change. We should act in keeping with the provisions of the *UNFCCC* and its *Kyoto Protocol* and advance negotiations under the Bali Roadmap in real earnest. Developed countries should fulfill the task of emission reduction set in the *Kyoto Protocol*, continue to undertake substantial mid-term quantified emission reduction targets, and support developing countries in countering climate change. Developing countries should, in the light of their national conditions and with the financial and technological support of developed countries, work hard to adapt to climate change and do their best to reduce greenhouse gas emissions.

Second, achieving mutual benefit and win-win outcome should be the goal of our effort. Climate change respects no national borders, and no country is immune from it. To counter this challenge requires the whole-hearted cooperation and coordinated actions of the international community. Developed countries should support developing countries in tackling climate change. This is not only their responsibility, but also serves their long-term interest. We should foster the idea that helping others is helping oneself and make our endeavor on climate change a win-win for both developed and developing countries and a win-win for both the interests of individual countries and the common interests of humanity.

Third, promoting common development should be the basis of our effort. Developing countries need to strike a balance between economic growth, social development and environmental protection, strengthen capacity for sustainable development and avoid the old path of "polluting first and cleaning up later". They should not, however, be asked to take on obligations that go beyond their development stage, responsibility and capabilities. Without common development, particularly the development of developing countries, there cannot be a broad and solid basis in the long run for tackling climate change.

Fourth, ensuring financing and technology holds the key to the success of our effort. Developed countries should take up their responsibility and provide new, additional, adequate and predictable financial support to developing countries. This, in effect, represents a joint investment in the future of mankind. Environment-friendly technologies should better serve the common interests of humanity. In order to enable the developing countries to have access to climate-friendly technologies, it is necessary to set up a sound interactive mechanism with governments playing the leading role, businesses taking part and market principles at play.

Dear Colleagues,

China has made great achievements in development, as shown in the profound changes in the livelihood of the people and the outlook of the society, and China's total economic output is now one of the largest in the world. But on the other hand, China still lags behind more than 100 countries in terms of per capita GDP, and it remains the biggest developing country in the world. With one fifth of the world's population and given the disparity between the urban and rural areas and among different regions and the imbalances in economic and social development, China still faces many difficulties and has a long way to go before it can achieve modernization. Out of a sense of responsibility to its own people and people across the world, China fully appreciates the importance and

urgency of addressing climate change. We have taken and will continue to take determined and practical steps to tackle this challenge and provide assistance to other developing countries as our ability permits. We will continue to support small island states, the least developed countries, landlocked countries and African countries in better adapting to climate change.

China attaches great importance to and has actively promoted scientific development, that is, comprehensive, balanced and sustainable development which puts people's interests first. We have set the building of a conservation culture as a major strategic task. We will adhere to the basic state policy of conserving resources and protecting the environment and follow the path of sustainable development. We will make fresh contributions to tackling climate change as we accelerate transition to a resource-conserving and environment-friendly society and make China a country of innovation.

China has adopted and is implementing the National Climate Change Program, which includes mandatory national targets for reducing energy intensity and the discharge of major pollutants, and increasing forest coverage and the share of renewable energy for the period of 2005 through 2010. By reducing energy intensity alone, China can save 620 million tons of standard coal in the five-year period, equivalent to cutting 1.5 billion tons of carbon dioxide emissions.

In the years ahead, China will further integrate actions on climate change into its economic and social development plan and take the following measures: First, we will intensify effort to conserve energy and improve energy efficiency. We will endeavor to cut carbon dioxide emissions per unit of GDP by a notable margin by 2020 from the 2005 level. Second, we will vigorously develop renewable energy and nuclear energy. We will endeavor to increase the share of non-fossil fuels in primary energy consumption to around 15% by 2020. Third, we will energetically increase forest carbon sink. We will endeavor to increase

forest coverage by 40 million hectares and forest stock volume by 1.3 billion cubic meters by 2020 from the 2005 levels. Fourth, we will step up effort to develop green economy, low-carbon economy and circular economy, and enhance research, development and dissemination of climate-friendly technologies.

Dear Colleagues,

The world expects us to make a decision in the face of climate change, an issue which bears on mankind's survival and development. I am convinced that as long as we adopt a responsible attitude toward our respective countries and mankind as a whole, proceed from the present reality while looking ahead to the future, uphold the *UNFCCC* and its *Kyoto Protocol* as the primary channel, stay committed to the principle of common but differentiated responsibilities and the mandate of the Bali Roadmap, we will make the Copenhagen Conference a new milestone in the international cooperation on climate change. China stands ready to join hands with all countries to build an even better future for the generations to come.

Thank you.

Annex II

The National Leading Group to Address Climate Change, Energy Conservation and Pollution Reduction Deployed the Climate Change Work

On June 5, 2009, the National Leading Group to Address Climate Change and the Leading Group on Energy Conservation and Pollution Reduction under the State Council held a meeting, where they heard and deliberated on the report given by the National Development and Reform Commission (NDRC) on the progresses achieved in 2008 and the arrangements made for 2009 regarding the energy conservation and pollution reduction work as well as the developments of the climate change work. Wen Jiabao, Premier of the State Council and Leader of the National Leading Group to Address Climate Change, Energy Conservation and Pollution Reduction, chaired the meeting and delivered a speech.

The meeting pointed that the country had made important progresses in energy conservation and pollution reduction in the first 3 years of the 11th Five-year Plan period, thanks to the joint efforts by all the departments and local governments. The national energy consumption per unit of GDP had dropped accumulatively by 10.1%, and the total amounts of sulfur dioxide emission and chemical oxygen demand (COD) had dropped accumulatively by 8.95% and 6.61% respectively. In the first quarter of this year, the national energy consumption per unit of GDP dropped by 2.89% compared with the same period of last year, 0.27 percentage point more than the decrease of that period.

The meeting emphasized that the country was still confronted with a grim situation and arduous tasks, despite the important progresses in energy conservation and pollution reduction. The country must adhere to the scientific outlook on development for guidance, further enhance the sense of urgency and responsibility about energy conservation and

pollution reduction, view it as an important device for adjusting the economic structure and transforming the development pattern and as a growth point helping to cope with the international financial crisis and boost the development of Chinese economy, pursue comprehensive and profound reforms, perfect the institutions and mechanisms, and make greater efforts, so as to achieve breakthroughs in this field. (1) Rigorously check the blind expansion of the energy extensive and pollution extensive industries. The government would strictly implement the industrial policies and the regulations on project administration of the country, tighten the land use review, energy conservation evaluation and environmental impact assessment, rigidly control the low-level repeated construction of the energy extensive and pollution extensive industries, and continue to restrict the export of the energy extensive, pollution extensive and resource-based products. In 2009, the country would close down or stop small-scale thermal power generation units of a total capacity of 15GW through “approving the large and discouraging the small”, phase out of backward production capacities of 10 million tons of iron, 6 million tons of steel and 50 million tons of cement, and perfect the mechanism for phasing out of backward production capacities. (2) Concentrate on and succeed in the major projects and key fields. The country would increase its investment into the major projects with the public finance funds from the central government and the local governments, and provide guidance for the social investment. In 2009, it would develop an energy conservation capacity of 75 million tons of coal equivalent through the projects, and have an additional urban wastewater treatment capacity of 10 million cubic meters per day and newly added facilities with a total capacity of more than 50GW for flue gas desulfurization at coal-fired power plants. It would carry on the action of promoting energy conservation at 1,000 enterprises and thus gain an energy conservation capacity of 20 million tons of coal equivalent; improve the work of renovating 60 million square meters of existing buildings for energy conservation in the northern areas with heating provision; and encourage the trade-in of cars and home appliances. (3)

Vigorously develop circular economy. The country would set up a special fund for the development of circular economy, and support the technology development and capacity building for, and the demonstration and popularization of, circular economy. It would speed up the construction of the resource-reclaiming system, continue to push forward the ban on plastic bag use and the integral utilization of straws, and deal with the excessive package of commodities. (4) Accelerate the popularization of high-efficiency and energy-conserving projects. The government would implement the “Program of Benefiting the People through Energy Efficient Products” to promote, by means of financial subsidies, the high-efficiency and energy-conserving products of 10 categories, including air-conditioners and refrigerators; support the launching of the pilot projects of energy-conserving and new energy cars in 13 cities including Beijing, Shanghai and Chongqing; and promote 120 million energy-conserving lamps. (5) Deepen the reform and perfect the policies. The country would implement the scheme for reforming the prices and fees of oil products; perfect the price formation mechanism for natural gas; and revise the catalogue of highly polluting and highly environmental hazardous products. It would further expand the scale of corporate bond issuance, and conduct the trial of SO₂ emission trading in regions with proper conditions. It would take the measures for assessing and reviewing the energy conservation of fixed assets investments and the regulations on the discharging and treatment of urban wastewater; modify the administrative measures for the energy conservation of the major energy-consuming enterprises and the measures for the administration of energy efficiency labeling; and continue to organize the formulation and modification of the mandatory national standards on the energy consumption limits for the high energy consumption products and on the energy efficiency of various products. (6) Tighten the regulating over energy conservation and pollution reduction, and consolidate the target and responsibility system. The central government would publish the results of assessing the performance of the provincial-level governments in fulfilling their responsibilities and attaining their 2008 targets for this

work, deliver the awarding and punitive measures, intensify the supervision and inspection, and further increase the primary responsibility of the government for this effort. (7) Step up the capacity building. The country would perfect the systems for the statistics, monitoring and assessment of energy conservation and pollution reduction; and strengthen the personnel training for and the technological support to this work. (8) Actively participate in international cooperation. The country would substantially boost the bilateral, regional and multilateral cooperation on the research and development of energy conservation, new energy, and low-carbon technologies.

The meeting believed that the United Nations Climate Change Conference to be held in Copenhagen at the end of this year would decide on the matters relevant to the survival and development of the human race and be an important opportunity for the international community to make joint efforts to cope with challenges. China would actively participate in the negotiations, play a constructive role, and spare no effort in prompting the Copenhagen Conference to achieve positive results. This country agreed that the conference should take as its core agenda to implement the Bali Roadmap and further facilitate and intensify the full, effective and sustained implementation of UNFCCC and its Kyoto Protocol; strictly adhere to the authorization by the Bali Roadmap, abide by the basic frameworks of UNFCCC and its Kyoto Protocol, embody the principle of “common but differentiated responsibilities” and the fairness principle, follow the principle of sustainable development, and strike a balance between climate change mitigation and adaptation; and emphatically resolve the problems related to mitigation, adaptation, technology transfer, and financial support. China attached importance to the climate change issue, and for many years had taken active response actions and earnestly implemented the National Climate Change Program. In the current situation shadowed by the international financial crisis, this nation would remain determined in mind and relentless in action while dealing with climate change. This country would integrate the work of

addressing climate change and reducing carbon dioxide emission into its national plans for economic and social development and comprehensively adopt legal, economic and technical measures, so as to advance the efforts to address climate change in an all-round way and make a positive contribution to the international cooperation for solving the climate change problems.

Li Keqiang, Vice Premier of the State Council and Deputy Leader of the Leading Group and Dai Bingguo, State Councilor and Deputy Leader of the National Leading Group attended the meeting. The members of the National Leading Group participated the meeting, and the leaders of relevant departments sat in on the meeting.

The Report of the State Council on Responding to Climate Change

—Delivered at the Tenth Meeting of the Standing Committee of the Eleventh National People's Congress on August 24, 2009

Xie Zhenhua, Vice Chairman of the National Development and Reform Commission

Dear Chairman, Vice Chairpersons, Secretary General, and all the Members:

Delegated by the State Council, I hereby give a report on climate change to the 10th meeting of the Standing Committee of the 11th National People's Congress for your deliberation.

I. Climate Change Presents a Grave Challenge to the Sustainable Development of Human Society

Global warming is already an indisputable fact. Climate change currently concerning the international community mainly refers to the global climate change that is characterized chiefly by warming resulting from the change of air composition, which, in turn, has been caused by anthropogenic greenhouse gas emissions. As indicated in the 4th assessment report of the Intergovernmental Panel on Climate Change, the concentration of carbon dioxide in the atmosphere had risen from 280ppm before the industrial revolution to 379ppm in 2005, exceeding the scope of the natural variation in the past 650,000 years, and the global average surface temperature has increased by 0.74°C in the recent 100 years.

Causes of the global climate change. Both natural and human factors have contributed to climate change. Of the human factors, the

major one has been the human activities since the industrial revolution, especially the economic activities of the developed countries during the course of their industrialization. The greenhouse gas emissions from human activities, such as combustion of fossil fuel, deforestation, and land use change, have caused drastic rise of the greenhouse gas concentration in the atmosphere, which, in turn, has caused a stronger greenhouse effect and, ultimately, global warming. According to the research report of Oak Ridge National Laboratory of the United States, the world has accumulatively emitted more than 1 trillion tons of carbon dioxide since 1750, of which the emissions by the developed countries account for about 80%.

Impact of the global climate change. Climate change has caused the frequent occurrence of disastrous weather and climate events and imbalanced distribution of water resources, accelerated the thawing of glaciers and snow, and threatened biodiversity. Climate change has also caused the sea level rise, and as a consequence, the coastal regions have experienced more severe natural disasters such as floods and storms, and the small island countries and the low-lying coastal areas even face the danger of being submerged. Climate change has adverse impacts on such economic and social activities as agriculture, forestry, husbandry, and fishing, etc., aggravates the infection of diseases, and threatens the economic and social development and the public health. According to the report by the Intergovernmental Panel on Climate Change, should the temperature rise by more than 2.5°C, all the regions of the world may suffer adverse impacts, with the developing countries sustaining the particularly severe losses; should it rise by more than 4°C, irreversible damages may happen to the global ecological system, causing a heavy loss of the global economy.

Impacts of climate change on China. Based on China's National Assessment Report on Climate Change released in 2006, climate change mainly influences China in terms of agriculture, water resources, natural

ecological system, and coast zones, and may cause greater instability of agricultural production, more severe flood disasters in the south, exacerbated demand-supply conflict of water resources in the north, degradation of ecological systems like forests and grasslands, frequent occurrence of biological hazards, dramatic loss of biodiversity, high incidence of typhoons and storms, aggravation of the disasters in the coastal zones, and negative impact on the construction and operational safety of relevant major projects.

Challenges presented by climate change to the sustainable development of China. Our country is now in a crucial period in building up a moderately prosperous society in all aspects and also at an important stage for accelerating its industrialization and urbanization, and faces very arduous tasks of developing the economy and improving the living standards of the citizens. With its vast population, complex climate conditions and fragile ecological environment, China is most vulnerable to the adverse impacts of climate change, faces an extraordinary task of adapting to climate change, and has to meet the new requirements on ecological development. For our country, a developing country with a low economic development level and per capita GDP only slightly higher than 3,000 US dollars, and a lot of poverty-stricken population, development remains the first priority. In our country, at the present stage of development, the energy mix is dominated by coal, the structural conflict of economy remains prominent, the pattern of economic growth is still extensive, the efficiency of energy and resources utilizations is rather low, and the energy demand will keep growing, which all impose great pressure and special difficulties for the control of greenhouse gas emissions, and constitute a major restraint to the sustainable development of our country. Meanwhile, addressing actively climate change and controlling greenhouse gas emissions also presents the country with an important opportunity to promote scientific development and accelerate the transformation of economic development patterns.

II. International Opinions and China's Positions on Addressing Climate Change

The issue of the global climate change has aroused the universal concern of the international community. The first world climate conference in 1979 called for climate protection; the United Nations Framework Convention on Climate Change (hereafter referred to as “the Convention”) adopted in 1992 established the principle of “common but differentiated responsibilities” of the developed and developing countries; the Kyoto Protocol (hereafter referred to as “ the Protocol”) adopted in 1997 quantified the emission reduction targets for the developed countries for the commitment period between 2008 and 2012; the Bali Roadmap adopted in December 2007 dictated separate negotiations on the enhanced implementation of the Convention and the Protocol and called for the fruits of these negotiations at the Conference of the Parties to be held in Copenhagen in December 2009.

The Copenhagen Conference to be held at the end of this year has become the focus of the world. The negotiation on the implementation of the Bali Roadmap has entered a critical stage, and the essential questions for the current negotiations are whether the provisions of the Convention, the Protocol and the Bali Roadmap should be kept, whether the developed countries should continue to take the lead in emission reductions, and how to embody the principle of “common but differentiated responsibilities” and the fairness principle. In general, the interests groups during the negotiations remain the same, i.e. the developed countries group and the developing countries group, and the focus of the disagreements remains the sharing of emission reduction responsibilities, financing, and technology transfer.

The developed countries demand that the global temperature rise be limited by no more than 2°C compared with the pre-industrialization period, the global greenhouse gas emissions be reduced by half by 2050, and all countries take meaningful actions. They play down their own

responsibilities for emission reductions and their obligations to provide the developing countries with financial, technology and capacity building support. Instead, they require large developing countries to reduce emissions, and link the climate change issue with international trade by contemplating carbon tariffs on imports. The developing countries hold that the developed countries should bear the primary responsibility for climate change. The developed countries gave enormous and unrestrained emissions during their industrialization process. Furthermore, their current per capita emissions remain high, and their accumulative historical per capita emissions are several and even dozens of times that of the developing countries. The developing countries emphasize that, the Convention shall be the main channel for addressing climate change by the international community, the principle of “common but differentiated responsibilities” shall be fully respected, and in accordance with the mandate of the Bali Roadmap, the focus should be the full, effective and sustained implementation of the Convention, the developed countries shall continue to take the lead in reducing emissions by taking significant quantified mitigation targets according to the Protocol and faithfully fulfill their financial, technology transfer and capacity building obligations, and the developing countries, in the context of sustainable development and supported and enabled by the financial, technology and capacity building support from the developed countries, will adopt mitigation policies and measures appropriate to their national circumstances.

In face of the grave challenge of climate change and out of a strong sense to its own people and people across the world, China fully appreciates the importance and urgency of addressing climate change and holds that all countries of the world make joint and coordinated efforts through practical and effective international cooperation. We believe that the international cooperation on climate change should stick to the frameworks of the Convention and the Protocol, the principle of “common but differentiated responsibilities”, and sustainable

development. The Copenhagen Conference should strictly follow the mandate of the Bali Roadmap, further enhance the full, effective and sustained implementation of the Convention and the Protocol, and keep a balance among mitigation, adaptation, technology transfer, and financial support. First, the developed countries should continue to make significant quantified emission reduction commitments for the second commitment period under the Protocol, and by 2020, shall aggregately cut their emissions by at least 40% from the 1990 level. The developed countries that have not ratified the Protocol shall take comparable mitigation obligations. Second, the developed countries shall effectively fulfill their obligations to provide the developing countries with financial, technology and capacity building support, and corresponding mechanisms shall be established. Third, the developing countries should, in the context of sustainable development and supported and enabled by the technology, financial and capacity building support from the developed countries, take nationally appropriate mitigation and adaptation actions. On the basis of the Convention and the Protocol, in line with the requirements of the Bali Roadmap and in light of its national conditions, China will undertake international obligations that are consistent with its development stage, responsibility, and actual capabilities, adopt strong domestic policies and measures, and take effective domestic actions, so as to make its fair share to protecting the global climate.

III. China's Efforts to Address Climate Change

Climate change is both an environmental issue and a developmental issue, but is essentially the latter and has to be tackled through sustainable development. China has relentlessly followed the road of sustainable development, formulated its national climate change programme and adopted a series of policies and measures, in light of its plan for national economic and social development, and thus achieved positive effects.

1. Strengthening the legal system. The climate change work has been effectively promoted through the enforcing of a series of laws,

including the Environmental Protection Law, Energy Conservation Law, Renewable Energy Law, Clean Production Promotion Law, Circular Economy Promotion Law, Coal Law, Power Law, Agriculture Law, Forestry Law, Grassland Law, Law on the Protection of Wildlife, and Land Administrative Law, and the formulation and implementation of some special or auxiliary regulations, such as the Regulations on Energy Conservation for Buildings, Regulations on Natural Reserves, Administrative Measures for Electricity Conservation, and Administrative Measures for Petroleum Conservation. In 1992, the Standing Committee of the National People's Congress ratified the Convention; in 2002, the State Council approved the Protocol. China has earnestly fulfilled its commitments under the Convention and the Protocol, timely submitted the Initial National Communication of the People's Republic of China on Climate Change, formulated and implemented China's National Climate Change Programme, and actively participated in cooperation on Clean Development Mechanism projects.

2. Improving Institutional Arrangement. In 1990, the National Coordination Committee on Climate Change was established under the Environmental Protection Commission of the State Council to coordinate China's participation in international negotiations on climate change and domestic measures. In 1998, the National Coordination Committee on Climate Change was established as an inter-departmental agency for deliberation and coordination. In 2007, the National Leading Group to Address Climate Change headed by Premier Wen Jiabao was established to take charge of formulating major strategies, guidelines and measures for addressing climate change and coordinating the solution of major relevant problems. NDRC is undertaking the concrete work of the leading group and has established a special functional organ to take charge of the coordination and centralized administration of the climate change work of the country. A stable interdepartmental and cross-disciplinary team for technical support and professional work has been established. Each related department of the State Council performs its own functions as

required by its duties, and the government of each province, autonomous region, and municipality directly under the central government has also established corresponding leading groups and executive agencies. Thus, China has formed a national mechanism for addressing climate change characterized by the unified leadership of the National Leading Group to Address Climate Change, the centralized management by the NDRC, the respective responsibilities of various departments, and the extensive participation by local governments and all sectors.

3. Formulating National Climate Change Programme. In June 2007, the State Council issued China's National Climate Change Program, which, as the programmatic document for China's endeavor to address climate change during the 11th Five-year Plan period, clarified the guiding ideology and principles for the climate change work and put forward relevant policies and measures. The national programme set an important target for the climate change work of the country, that is, the energy consumption per unit of GDP in 2010 shall be 20% lower than that in 2005, which means that 620 millions tce will be saved in the 11th Five-year Plan period, equivalent to an emission reduction of about 1.5 billion tons of carbon dioxide. All local governments and all departments have earnestly enforced the requirements of the national programme, strengthened the organization and leading of the climate change work, improved the working mechanisms, and put in place various policies and measures. By the end of July 2009, 31 provinces, autonomous regions and municipalities directly under the central government had accomplished the formulation of their provincial-level programme on climate change, and many of them had entered the period of implementation of the programmes. Some departments, including the science and technology, agriculture, forestry, and ocean, have also formulated their sectoral action plans on climate change.

4. Enhancing Scientific Research and Technology Development. Through the national science and technology programs, the country has

continuously increased its investment in the scientific research and technology development for climate change, undertook a number of major research projects, including global environmental monitoring, development of future scenarios of climate change, climate change assessment, analysis of greenhouse gas mitigation policies, intensified the efforts to develop and demonstrate major technologies related to energy-conserving and new energy cars, renewable energy, nuclear energy, and circular economy, and accelerated the application and popularization of the technologies, devices and products needed by the country to build a resource-conserving and environmentally-friendly society.

5. Undertaking Public Awareness and Education Activities.

Public awareness and education has been promoted through various means, such as broadcast, TV, the Internet, and publications, to increase the knowledge and understanding of climate change by all circles of the society. In 2008, the country published its white paper on climate change: *China's Policies and Actions for Addressing Climate Change*, which systematically introduced the achievements of the country's work of addressing climate change and implementation of the national programme. China's policies and actions to actively address climate change and achievements have attracted more and more attention as well as understanding and approval of the international community, thus enhancing the image of the nation as a responsible country.

6. Enhancing Adaptation Capacity.

The government has strengthened the construction of agricultural infrastructure, promoted the adjustment of agricultural structure and farming system, selected and bred variety-resistant varieties and strains, constrain the deterioration of the desertification of grasslands, and stepped up the development of agricultural technologies. It has strengthened the effective protection of forest resources and other nature ecological systems. It has intensified the efforts in managing water resources, planning and building water

conservancy infrastructure, and distributing water resources, and has increased the input in the research and development of comprehensive water conservancy technologies. It has established the mechanism for unified decision making and that for communication and coordination on actions addressing climate change in the coastal zones, enhanced the capability of dealing with the problems arising from coastal protection and development activities and the capability of monitoring and issuing early warning on the marine environment, and consolidated the countermeasures for adapting to the rise of sea levels.

7. Controlling Greenhouse Gas Emissions. The country has tried its best to mitigate greenhouse gas emissions through a series of policies and measures, including adjusting economic and industrial structures, optimizing energy mix, conserving energy, improving energy efficiency, developing renewable energy and nuclear energy, and promoting afforestation.

Adjusting Industrial Structure. The government has vigorously optimized and adjusted the structure of industries, actively developed high technology industries and emerging industries, strictly restricted the construction of energy-intensive and high-pollutant projects, revoked the tax rebate on the export of energy-, pollution- and resource-intensive products, and heightened the efforts to phase out of the backward production capacities in the power, iron and steel, building materials, electrolytic aluminum, ferroalloy, calcium carbide, coke, coal, and flat glass industries. Between 2006 and 2008, the country phased out of backward production capacities of 60.59 million tons of iron, 43.47 million tons of steel, 140 million tons of cement, and 64.45 million tons of coke; till the early half of this year, it had shut down small thermal power generation units of a total capacity of 54.07 GW, accomplishing ahead of schedule the task of shutting down such units of a total capacity of 50 GW. It has sped up the development of the service industry, and issued a number of opinions on accelerating the development of the

service industry as well as the matching measures. Accordingly, the share of the service industry in GDP expanded from 31.8% in 1990 to 40.1% in 2008.

Conserving Energy and Improving Energy Efficiency. The country has issued the Decision of the State Council on Strengthening the Energy Conservation Work and the Comprehensive Work Scheme on Energy Conservation and Pollution Reduction, established the target and responsibility system and the systems for statistics, monitoring and assessment of energy conservation and pollution reduction, implemented 10 key energy-saving projects, launched the activity of promoting energy conservation at 1,000 enterprises, carried out the pilot programs of circular economy, and pursued energy conservation in key fields. It has announced the plan for reforming the price, tax and fees of refined oil products, and carried out the transformation reform of the value-added tax in an all-round way. In the field of construction, the government promulgated the Regulations on Energy Conservation for Civil Buildings, formulated and modified 48 national and industrial standards including the Design Standard for Energy Efficiency of Public Buildings, put down mandatory rules for improving management, reducing energy consumption and raising energy efficiency in construction projects, reinforced the supervision mechanisms, and elevated the standards for the energy conservation of buildings and the comprehensive utilization of resources. In the transportation sector, the government has lent preferential support to the development of urban public transit, intensified the effort to build BRT and rail transit systems in cities, strenuously promoted energy-conserving and environmentally-friendly cars, restrained the development of motored vehicles of high fuel consumption and high levels of pollution, strictly enforced the standards on the fuel consumption limits for passenger cars and light commercial vehicles, and established the system of declaring and publicizing the fuel consumption of automotive products. The government has intensified the application and promotion of energy-conserving technologies. It executed a batch of

projects demonstrating the shared, critical and major technologies and equipment for the key fields for energy conservation, and particularly spread a batch of major technologies for energy conservation and emission reduction with great potentials and extensive application scopes in energy-intensive industries like iron and steel and nonferrous metals. It implemented the “Program of Benefiting the People with Energy-Efficient Products” through providing financial subsidies to the highly energy-efficient products of 10 categories including air-conditioners, televisions, and refrigerators, arranging funds from public finance to encourage the trade-in of cars and home appliances, and promoting energy-efficient lighting products with government subsidies. The country has also implemented the “ban on plastic bag use”, to the effect that 2.4 million to 3 million tons of petroleum has been saved per year, and accordingly, the emission of carbon dioxide has been cut by 7.2 million to 9 million tons a year.

Optimizing Energy Mix. Through policy guidance and financial investment, the government has expanded the development and utilization of water energy, nuclear energy, petroleum, natural gas, and coal-bed methane, and lent support to the development and utilization of new-type renewable energy such as biomass, solar and geothermal energy and wind power at rural areas, remote and isolated areas, and other areas with appropriate conditions. As a result, the high-quality clean energy has developed fast. In 2008, the utilization of renewable energy in China amounted to 250 million tons of coal equivalent and accounted for 9% of the total primary energy consumption. China ranked first in the world in terms of hydropower installed capacity, nuclear power capacity under construction, heat-collecting area of solar water heaters, and accumulative capacity of photovoltaic solar power, and ranked 4th of the world in terms of wind power installed capacity. By the end of 2008, household biogas digestors had been built at 30.5 million rural households in the country, which produced about 12 billion cubic meters of methane a year, to the effect of reducing carbon dioxide emission by more than 49 million tons.

Increasing Carbon Sequestration. Along with the implementation of the major projects of the forestry industry, the country achieved great successes in tree-planting and afforestation. Based on the 6th national survey of forest resources (1999-2003), the surviving area of artificial afforestation reached 54 million hectares, the largest in the world. The national area of forest reached 175 million hectares, and the rate of forest coverage rose to 18.21% from 13.92% in early 1990s. At the same time, the government has actively pursued the policies on ecological protection and development, such as the protection of natural forests, restoring farms to forests and grasslands, grassland construction and management, and nature reserve construction, and thus further enhanced the capacity of forestry to sequester greenhouse gases. The urban greenery work has also progressed fast. Currently, the total greenery area in constructed urban areas reached 1.25 million hectares, with a coverage rate of 35.29% and a per capita public greenery area of 8.98 square meters for urban residents.

IV. Future Arrangements for the Climate Change Work

Addressing climate change in a proper way bears significance on the overall situation of our national economic and social development, the immediate interests of the people, and the fundamental interests of the country. On the one hand, it is the intrinsic need of the sustainable development of our country to address climate change; on the other hand, consideration must be given to the emission space necessary to the realization of our country's goals for economic and social development as well as this country's fair claim to the atmospheric resources commonly owned by all human beings. We will deeply exercise the scientific outlook on development, integrally consider economic development and ecological construction, domestic conditions and international situation, and immediate interests and long-term strategies, fully implement the national climate change programme, engage in extensive and effective international cooperation, and prompt the Copenhagen Conference to

reach a positive outcome. In next stage, our work will focus on the following aspects.

First, integrate the addressing of climate change into the national plan for economic and social development. The addressing of climate change will be included in the national plan for economic and social development as an essential component of the “Three Steps” strategy for realizing Chinese modernization, and the targets concerning the control of greenhouse gas emission and the adaptation to climate change will be important bases for the mid- and long-term strategies and plans formulated by governments at all levels and will be embodied in the local and industrial development plans.

Second, continue to implement the national programme. The government will fully implement the department-level and the provincial-level programs for addressing climate change, continue to set store by the work of energy conservation and emission reduction and the effort to adjust the energy mix as important means to mitigate climate change, adopt further policies and actions to raise energy efficiency, develop new and renewable energy and clean coal, restore farmland to forests and grasslands, and promote afforestation, lift the water use efficiency in agricultural irrigation, push forward grassland improvement, desertification control and natural forest preservation, and expand carbon sequestration, in a bid to realize the target that the energy consumption per unit of GDP will decline by about 20%, the share of renewable energy will rise to about 10%, and the rate of forest coverage will reach 20% in 2010. In the 12th Five-year Plan period, the government will continue to perfect and implement the national climate change programme.

Third, vigorously develop green economy. In close connection with the decision and deployment for expanding domestic consumption and boosting economic growth as well as the plans for reinvigorating relevant industries, the government will step up the efforts to adjust the

economic structure and upgrade the industries, and research and formulate the policies and measures for developing green and low-carbon economy. It will expand green investment, advocate green consumption and facilitate green growth in order to create new growth points characterized by low carbon emission. It will make greater efforts in the R&D and industrialization of low-carbon and zero-carbon technologies, such as the technologies for conserving energy and raising energy efficiency and the technologies about clean coal, renewable energy and nuclear energy, and accelerate the development of industry, construction and transportation systems characterized by low carbon emissions. It will formulate the Guiding Opinions on the Development of Low-carbon Economy, conduct pilot and demonstrative programs of low-carbon economy in light of the national conditions and actual situation of the country, experiment the system of assessing carbon emission intensity, explore the institution and mechanism for controlling greenhouse gas emission, and organize experimental carbon emission transactions in selected regions or industries.

Fourth, enhance the ability to adapt to climate change. The government will formulate the national strategy for climate change adaptation, strengthen the comprehensive appraisal of climate change, intensify the capability building for climate change adaptation in the fields of agriculture, forestry and water resources as well as the coastal zones and the areas with fragile ecological systems, and give full consideration to climate change in economic and social development. It will strengthen the construction of farmland infrastructure, rationally develop and optimally distribute water resources, continue to construct the major projects for ecological protection, accelerate the construction and perfection of the mechanisms for preventing and mitigating disasters and preventing extreme weather events, and increase the ability to comprehensively monitor, forecast, and issue early warning on disasters.

Fifth, intensify the comprehensive capacity building for addressing climate change. The government will formulate the strategy and plans for science and technology development for addressing climate change, organize major R&D and demonstrative science and technology projects, and reinforce the technical support capacity; will advance the understanding of climate change by the whole society, advocate the conscientious behaviors of all citizens, facilitate the formation of resource-conserving and environmentally-friendly patterns of production, living and consumption, and increase the participating awareness and ability of the society; will expand the investment and arrange special funds from public finance to better ensure the implementation of the policies and actions for addressing climate change.

Sixth, strengthen the legal and institutional system. The government will improve the legal system for addressing climate change, draft the laws related to climate change, accelerate building the system of accessory regulations and policies, formulate relevant standards and monitoring and assessing norms, adopt appropriate fiscal, tax, price and financial policies and measures, and improve the necessary administrative systems and supervision mechanisms.

Seventh, actively engage in international exchange and cooperation. The government will engage in dialogues and exchanges with foreign countries on climate change policies, relieve their doubt and gain their trust, and conduct practical cooperation. It will broaden the channels for international cooperation on climate change, quicken the import of funds, technologies and talents, effectively absorb and digest overseas advanced low-carbon and environmentally-sound technologies, and increase this country's ability to control greenhouse gas emissions and develop low-carbon economy. It will deepen the cooperation with the developing countries, strengthen the personnel exchange and experience sharing, and support the effort of the least

developed countries and small and developing island countries to increase their capacity for adapting to climate change. It will also make further progress in external publicity to enable various sides to know and understand more deeply that China attaches importance to climate change and has taken active actions and measures to deal with the issue, so as to erect a good image of China as a responsible country.

Dear Chairman, Vice Chairpersons, Secretary General, and all the Members:

In December of this year, the 15th Conference of the Parties of the Convention and the 5th Meeting of the Parties to the Kyoto Protocol will be held in Copenhagen. In the spirit of being highly responsible for the survival and long-term development the human race, we will continue to promote the international negotiations on climate change in a constructive way. Upholding the Convention, the Protocol, and the Bali Roadmap as the guiding framework and adhering to the principles, we will actively participate in related talks and consultations, through elaborate organization and careful planning, and initiate our suggestions so as to play a constructive role; strengthen the coordination and consultation with the developing countries to safeguard our common interests; make sure to keep holding dialogues and exchanges with the developed countries to expand mutual knowledge and understanding and narrow the disputes, and firmly oppose any form of trade protection on the pretext of climate change. We will try to make the Copenhagen Conference a success with our greatest sincerity and efforts.

Annex IV

Resolution of the Standing Committee of the National People's Congress of China on Actively Responding to Climate Change

----Adopted at the Tenth Meeting of the Standing Committee of the Eleventh National People's Congress on 27 August 2009

The Tenth Meeting of the Standing Committee of the Eleventh National People's Congress (NPC) heard and deliberated on the Report of the State Council on responding to Climate Change. The meeting fully recognized the unremitting efforts and remarkable achievements of the State Council in tackling climate change and agreed to the future work arrangements proposed in the report.

The meeting holds that human activities since the industrial revolution, particularly the economic activities of developed countries in the process of industrialization, are the main human cause for climate change. Climate change is an environmental issue, but ultimately it is a development issue. China is in the middle stage of industrialization and at a crucial juncture of building a moderately prosperous society in all respects. It is imperative to follow the road of sustainable development in line with the requirements of "giving prominence to building a resource-conserving, environment-friendly society in the overall strategy of industrialization and modernization" and "enhancing the capacity to

respond to climate change and making new contributions to protecting the global climate" as put forward at the Seventeenth National Congress of the Communist Party of China. Vigorous policy measures will be taken in light of China's basic national conditions and characteristics of the current development stage to actively respond to climate change. To this end, the meeting adopted the following resolution.

First, addressing climate change is an important opportunity and challenge facing China's national economic and social development.

To actively respond to climate change concerns the overall economic and social development of China and the immediate interests of the Chinese people. It also has a bearing on human existence and the development of all countries in the world. Over the years, China has attached great importance to the work of addressing climate change. In June 1992, the Chinese Government signed the UN Framework Convention on Climate Change (UNFCCC) and the NPC Standing Committee formally ratified the Convention at the end of the same year. The NPC Standing Committee has successively formulated and amended a series of laws relating to climate, change including *Energy Conservation Law, Law on Renewable Sources of Energy, Circular Economy Promotion Law, Law on Promoting Clean Production, Forest Law, and Grassland Law*. The Outline of the Eleventh Five-Year Plan for National Economic and Social Development of the People's Republic of China approved by the NPC in 2006 set the goals and tasks for China in energy conservation and pollution reduction. The Chinese Government has formulated a national climate change program, clearly outlining the basic principles, specific objectives, key areas of action, as well as policy measures and steps to tackle climate change. The working mechanism for addressing climate change has been improved and a series of actions aimed at tackling climate change implemented, contributing positively to the global endeavor to protect the climate. China, as a developing country

with a large population, relatively insufficient resources and a fragile ecological environment, is in the process of industrialization and modernization. It needs to, on one hand, meet the needs of the people through development. On the other hand, it needs to resolve the long-existing problems such as imbalanced economic structure, extensive growth pattern and low efficiency of resources utilization. To actively respond to climate change is in keeping with the trend of development of the world. It also serves China's domestic needs for realizing sustainable development and presents a historical opportunity for development. To be truly responsible for the long-term development of the Chinese nation and that of whole mankind, it is imperative to further increase awareness of the importance to climate change and make proper responses to climate change based on China's own ability, so as to ensure sound and fast economic and social development of China in the context of new internal and external environment and conditions.

Second, response to climate change must be based on thorough implementation of the Scientific Outlook on Development.

The response to climate change is a complicated systematic project that involves many sectors. It is imperative to thoroughly implement the Scientific Outlook on Development and uphold the basic state policy of conserving resources and protecting the environment. Efforts to tackle climate change must be aimed at improving capability for sustainable development, focused on ensuring economic development and supported by scientific and technological advances. It is necessary to speed up Transformation of the development mode, cap green house gas emissions and increase the ability to tackle climate change in order to build a moderately prosperous society in an all-round way at a higher level. It is important to take into consideration both the domestic and the international situation, both the immediate and long-term interests, and both economic and social development and ecological soundness under the framework of sustainable development. Policies on climate change

should be compatible with other related policies to ensure coordinated progress in all undertakings. Equal importance should be attached to mitigation and adaptation and efforts should be made to enhance energy conservation, increase energy efficiency and improve energy structure. It is important to adhere to the approach of building up the capacity of emissions control and adaptation through scientific and technological advances and innovation. It is important to promote energy conservation and emissions reduction through economic restructuring and industrial upgrading and to achieve sustainable development by transforming the development mode.

Third, concrete measures must be taken to actively respond to climate change.

Efforts should be made to save energy, cut emissions and cap green house gas emissions. It is imperative to promote wider use of energy-saving technologies and products, improve energy production and consumption structure, encourage and support the use of clean coal technologies, develop hydropower, wind power, solar power, bio-mass power and other sources of renewable energy in an active and scientific manner, and promote the construction of nuclear power plants. Development of the circular economy should be promoted in real earnest to phase out outdated production capacities and products and raise the overall efficiency of the use of resources. Key ecological projects should be implemented to improve carbon sinks. Continued efforts should be made to promote afforestation and develop carbon sink forestry so as to increase forest carbon sinks. Measures should be taken to promote protected farming and ecological development of pastures to increase the carbon sinks of farm land and pastures.

Efforts should be made to enhance the ability of adapting to climate change. It is important to scale up monitoring, early warning and forecast of extreme weather and climate events and scientifically guard against and respond to the damage of these events and secondary disasters they

cause. Efforts should be made to promote infrastructure building of farm land and agricultural restructuring to raise overall agricultural productivity. It is imperative to step up management of water resources and promote the research, development and application of integrated water-saving technologies. Efforts should be redoubled to monitor and protect the ecological system of the sea and coastal belts and enhance the ability of coastal areas to resist maritime disasters.

The supportive and guiding role of science and technology should be given full play. Macro-management, policy guidance, coordination and input should be stepped up to strengthen basic research on climate change and enhance the ability of scientific judgment. Efforts should be made to accelerate the research, development and application of major technologies concerning climate change, particularly those on energy conservation, energy efficiency, clean coal, renewable energy, nuclear energy and low carbon technologies, and to develop carbon capture, storage and utilization technologies. Emphasis should be given to import, assimilation, application and innovation of advanced technologies in related fields.

Efforts should be made to develop a green economy and low-carbon in light of national conditions. This is required by China's endeavor to promote energy conservation and emissions reduction and solve the problems relating to resources, energy and the environment. It is also an important step aimed at actively responding to climate change and creating new advantageous conditions for China's future development. It is imperative to consider and formulate policy measures to develop a green economy and low-carbon economy, increase green input, encourage green consumption and promote green growth. As the whole world is paying greater attention to the development of a low-carbon economy, it is important to develop low-carbon utilization of carbon-intensive energy and boost the low-carbon industries, construction and transportation systems, vigorously promote clean energy vehicles and rail transport, and

create new economic growth points featuring low carbon emissions. It is important to transform the mode of economic development to one of high efficiency, low energy consumption and low emissions so as to provide a new and inexhaustible source that drives China's sustainable economic and social development.

Efforts to address climate change should be included in China's national plan for economic and social development as a long-term task for achieving sustainable development, and specific goals, tasks and requirements should be clearly identified. A package of economic, scientific, technological, legal and administrative tools should be adopted to enhance the capacity to tackle climate change. Governments at all levels should make corresponding budgetary arrangements to scale up support in this regard. The industry policies, fiscal and taxation policies, financial policies and investment policies should be further improved and an ecological compensation mechanism set up and strengthened in order to put in place a range of policy targets and institutions conducive to tackling climate change.

Fourth, the legal framework for addressing climate change must be strengthened.

Efforts to strengthen climate change-related legislation should be incorporated into the legislative agenda for establishing and improving the socialist legal framework with Chinese features. The relevant laws for tackling climate change and protecting the environment should be revised and improved in due time and supportive regulations should be adopted in a timely fashion, and additional laws and regulations based on actual conditions should be introduced to provide stronger legal guarantee for addressing climate change. *Energy Conservation Law, Law on Renewable Sources of Energy, Circular Economy Promotion Law, Law on Promoting Clean Production, Forest Law, and Grassland Law* and other relevant laws and regulations should be strictly enforced in light of the general requirement of actively tackling climate change to enhance efforts in this

regard in accordance with law. Efforts to tackle climate change must be made a major priority of NPC supervision, and supervision and inspection of the implementation of relevant laws must be strengthened to ensure effective enforcement of laws and regulations related to climate change.

Fifth, the awareness and capability of the general public in coping with climate change must be increased.

More efforts should be made to promote and popularize the scientific knowledge and laws and regulations on preserving resources and the environment and addressing climate change, and to showcase the measures China has taken to cope with climate change and the effects they have produced. It is necessary to better educate the public, the youth in particular, about the importance of coping with climate change in order to raise the scientific knowledge of the general public on the issue of climate change and boost awareness in businesses and the general public of the importance of resource conservation. It is imperative to pursue frugality and conservation. It is imperative to pursue frugality and conservation, to promote a green, low-carbon, healthy and civilized way of life and way of spending, and to encourage all social communities to participate in the campaign on tackling climate change. This will serve to foster a sound social atmosphere for actively addressing climate change and a sound development strategy nationwide to promote production, improve people's lives and better protect the environment.

Sixth, China will continue to actively participate in international cooperation on tackling climate change.

Climate change is one of the most serious challenges facing humanity in the 21st century. It requires a joint response from the international community. The basic framework laid down by the UNFCCC and its Kyoto Protocol, the principle of "common but differentiated responsibilities", and the principle of pursuing sustainable development

should be adhered to in the endeavor to tackle climate change. Developed countries should face up to their historical responsibility and their current high per capita emissions, take the lead to substantially reduce greenhouse gas emissions, and honor their commitment of making technology transfer and providing financial support to developing countries. Developing countries should take active actions under the framework of sustainable development to tackle climate change. It is important to actively carry out international cooperation at various levels and in various forms, including cooperation between governments and parliaments, and strengthen multilateral exchanges and consultation to increase mutual trust and expand common ground. China will firmly uphold the development right it enjoys as a developing country and resolutely oppose all forms of trade protectionism practiced under the excuse of climate change. China will continue to play a constructive part in international conferences and negotiations on climate change. It will continue to promote the comprehensive, effective and sustained implementation of the *UNFCCC* and its *Protocol* and make further contribution to the global endeavor to protect the climate.

Annex V

China's Position on the Copenhagen Climate Change Conference

May 20, 2009

Climate change is one of the most serious challenges to humanity in the 21st century and a matter of human survival and the development of all countries, which requires cooperation and joint efforts by the international community. Fully aware of the seriousness and urgency of climate change and with a deep sense of responsibility for the long-term development of mankind, China is firmly committed to sustainable development and has formulated and implemented its National Climate Change Programme, taking a series of strong policies, measures and actions and making unremitting efforts and commendable contribution to addressing climate change. China will continue such policies, measures and actions. In the face of international financial crisis, China remains determined to take unrelenting efforts to address climate change.

As a Party to the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, China is always committed to have the UNFCCC and its Kyoto Protocol implemented and very serious about honoring commitments on its part. International negotiations are underway to give effect to the Bali Road map to enable the full, effective and sustained implementation of the UNFCCC and its Kyoto Protocol, aiming at reaching a positive outcome at the UN climate change conference in Copenhagen at the end of this year. China will continue to play an active and constructive role in such negotiations and hereby presents its position on the Copenhagen Climate Conference implementing the Bali Roadmap.

I. Principles

1. The UNFCCC and its Kyoto Protocol as the Basis and the Mandate of the Bali Roadmap as the Focus. The UNFCCC and its Kyoto Protocol constitute the basic framework and legal basis for international cooperation to address climate change, which embody the consensus of the international community and serve as the foundation governing the implementation of the Bali Roadmap. The Bali Roadmap affirms the mandate to enhance the implementation of the UNFCCC and its Kyoto Protocol, which is, on the one track, to secure the full, effective and sustained implementation of the UNFCCC by making corresponding arrangements in terms of mitigation, adaption, technology transfer and financial support and, on the other track, to determine further quantified emission reduction targets for developed countries for the second commitment period under the Kyoto Protocol.

2. The Principle of Common but Differentiated Responsibilities. Developed countries shall take responsibility for their historical cumulative emissions and current high per capita emissions to change their unsustainable way of life and to substantially reduce their emissions and, at the same time, to provide financial support and transfer technology to developing countries. Developing countries will, in pursuing economic development and poverty eradication, take proactive measures to adapt to and mitigate climate change.

3. The Principle of Sustainable Development. Sustainable development is both the means and the end of effectively addressing climate change. Within the overall framework of sustainable development, economic development, poverty eradication and climate protection should be considered in a holistic and integrated manner so as to reach a win-win solution and to ensure developing countries to secure their right to development.

4. Mitigation, Adaption, Technology Transfer and Financial Support on the Same Footing and as Equal Priorities. Mitigation and adaption are integral components of combating climate change and

should be given equal treatment. Compared with mitigation that is an arduous task over a longer time horizon, the need for adaptation is more real and urgent to developing countries. Financing and technology are indispensable means to achieve mitigation and adaptation. The fulfillment of commitments by developed countries to provide financing, technology transfer and capacity building support to developing countries is a condition *sine qua non* for developing countries to effectively mitigate and adapt to climate change.

II. Objective

The objective of the Copenhagen Climate Conference is to further enhance the full, effective and sustained implementation of the UNFCCC and its Kyoto Protocol and to reach positive outcome, focusing on making concrete arrangements for mitigation, adaptation, technology transfer and financial support:

1. To set deeper quantified emission reduction targets for developed countries for the second commitment period under the Kyoto Protocol, and to ensure comparability of quantified emission reduction commitments by developed countries that are Parties to the Kyoto Protocol and that are not;

2. To establish effective institutional arrangements to ensure that developed countries are fulfilling their commitments to provide technology, financing and capacity building support to developing countries;

3. To enable developing countries to take nationally appropriate mitigation and adaptation actions, in the context of sustainable development, supported by technology, financing and capacity building from developed countries.

III. Further enhancing the full, effective and sustained implementation of the UNFCCC

1. Shared Vision for Long-term Cooperative Action

A shared vision for long-term cooperative action is to enable the full, effective and sustained implementation of the UNFCCC to achieve its ultimate objective. Such a vision should be guided by the ultimate objective of the UNFCCC and the principle of common but differentiated responsibilities and the principle of equity. Since the UNFCCC has clearly defined the ultimate objective to address climate change, the overriding task for the international community is to implement concrete actions. The goal for long-term cooperative action should be a comprehensive one, consisting of sustainable development, mitigation, adaptation, financing and technology. In terms of mitigation, developed countries as a whole shall, as their mid-term targets, reduce their GHG emissions by at least 40% below their 1990 level by 2020.

2. Mitigation

(a) Mitigation Commitments by Developed Countries

i) Developed countries shall undertake measurable, reportable and verifiable legally-binding deeper quantified emission reduction commitments;

ii) Given their historical responsibility and development level and based on the principle of equality, developed countries shall reduce their GHG emissions in aggregate by at least 40% below their 1990 levels by 2020 and take corresponding policies, measures and actions;

iii) The quantified emission reduction targets and corresponding policies, measures and actions undertaken by developed countries shall be measurable, reportable and verifiable;

iv) The ‘measurable, reportable and verifiable’ requirement shall apply to the progress and results of implementation actions as well as the quantified emission reduction commitments per se, which shall apply,

mutatis mutandis, the provisions and procedures of the Kyoto Protocol regarding compliance, monitoring and verification mechanisms;

v) The comparability of efforts among developed countries shall be judged by the following:

- Comprehensiveness: targets, policies, measures, actions and etc.;
- Same nature of commitments: quantified and legally-binding;
- Proximity of magnitude and intensity;
- Same compliance, monitoring and verification mechanism.

(b) Nationally Appropriate Mitigation Actions by Developing Countries

i) Nationally Appropriate Mitigation Actions (NAMAs) by developing countries shall be taken in the context of sustainable development and in line with the legitimate priority needs of developing countries for development and the eradication of poverty;

ii) NAMAs by developing countries are distinct in nature from quantified emission reduction commitments by developed countries.

- NAMAs by developing countries are initiated by themselves, distinct from international legally-binding commitments of developed countries;

- NAMAs by developing countries are concrete mitigation policies, actions and projects, distinct from the quantified emission reduction commitments and targets by developed countries;

- NAMAs by developing countries are in line with their national circumstances and sustainable development strategies with the priorities identified by themselves;

- NAMAs by developing countries shall be supported and enabled by technology, finance and capacity building provided by developed countries in a measurable, reportable and verifiable way.

iii) The provision of technology, financing and capacity building support to developing countries is the obligation of developed country Parties under the UNFCCC, and the government of the developed country shall play the central role and shall not evade its obligation.

iv) Appropriate mechanism may be established to match NAMAs with technology, financing and capacity building support:

- Developing countries proposing concrete mitigation actions, including projects, and corresponding needs for technology, financing and capacity building support;

- Developed countries providing measurable, reportable and verifiable technology, financing and capacity building support through technology transfer and financial mechanisms of the UNFCCC.

v) The emission reduction achieved by NAMAs shall not be used to offset the quantified emission reduction targets of developed countries;

vi) Only those actions enabled by measurable, reportable and verifiable support are subject to the 'measurable, reportable and verifiable' requirement.

(c) Reducing Emission from Deforestation and Forest Degradation in Developing Countries (REDD)

i) In developing methodology and positive incentives, equal treatment shall be given to reducing emission from deforestation and forest degradation, and enhancing forest carbon stocks through conservation, sustainable management of forests and incremental change of forest cover in developing countries;

ii) Actions to reduce emission from deforestation and forest degradation, and enhancing forest carbon stocks through conservation, sustainable management of forests and incremental change of forest cover in developing countries are important measures to promote sustainable development and poverty eradication to combat climate change in developing countries, and shall neither be used to offset developed countries' emission reduction targets, nor to introduce mitigation commitments for developing countries;

iii) Developed countries shall, in accordance with the provisions of the UNFCCC, provide adequate financing, technology and capacity building supports to enable developing countries to take voluntary actions to reduce emission from deforestation and forest degradation, and enhancing forest carbon stocks through conservation, sustainable management of forests and incremental change of forest cover.

3. Adaptation

(a) **Institutional Framework on Adaptation.** Comprehensive institutional framework should be established to provide support for developing countries, in particular the least developed countries(LDCs) and small island developing states (SIDS) among them, to adapt to climate change.

(b) **Establishment of a Subsidiary Body.** Under the overall guidance of the COP, it is mandated to plan, organize, coordinate, monitor and evaluate international adaptation actions and to support developing countries to take adaption actions. Regional adaptation centers shall also be established.

(c) **Establishment of a Convention Adaptation Fund.** The Fund shall support developing countries to adapt to climate change, which includes, inter alia:

- i) To enhance capacity building, including data collection and vulnerability assessment;
- ii) To cover full cost for preparation of national adaptation action plans;
- iii) To implement adaptation actions, projects and programmes;
- iv) To implement risk management and risk reduction strategies;
- v) To build climate resilience through economic diversification;
- vi) To promote research, development and diffusion of adaptation technologies.
- vii) To promote education, training and public awareness-raising;

(d) **Establishment of a Corresponding Mechanism on Monitoring and Evaluation.** It shall monitor the provision of adequate financing, technology and capacity building support by developed countries and evaluate the adequacy of such support.

4. Technology Development and Technology Transfer

(a) **Institutional Arrangements.** Technology development and technology transfer is critical to combat climate change. The priority is to establish appropriate institutional arrangements to ensure obligations of developed countries under the UNFCCC be implemented.

(b) **Establishment of a Subsidiary Body on Technology Development and Technology Transfer.** Under the overall guidance of the COP, it is mandated to plan, organize, coordinate, monitor and evaluate international technology development and technology transfer activities, which include, inter alia:

- i) Develop and implement programmes for joint R&D on key climate-friendly technologies;
- ii) Assess technology needs;
- iii) Elaborate lists of technologies available for transfer;
- iv) Identify barriers to technology transfer and solutions thereof;
- v) Identify incentives to facilitate technology transfer;
- vi) Administer technology information and manage activities of technology development and transfer;
- vii) Handle IPR-related issues;
- viii) Promote capacity building;
- ix) Monitor progress and assess performance.

(c) **Establishment of a Multilateral Technology Acquisition Fund.** The Fund shall be mainly financed by public funding of developed countries and be used to support technology development and technology transfer to developing countries.

(d) **Performance Assessment and Monitoring.** Progress in technology transfer, including range, scale and effectiveness should be regularly monitored and assessed.

5. Financial Support

(a) **Institutional Arrangements.** To effectively operationalize the financial mechanism under the UNFCCC, an Adaptation Fund, a Mitigation Fund, a Multilateral Technology Acquisition Fund and a Capacity Building Fund shall be established. The governance of these Funds should be under the authority and guidance of the COP with equitable and balanced representation of all Parties in a transparent and

efficient manner. The Funds should be managed with easy accessibility and low administrative cost.

(b) **Sources of Funding.** It is the commitment on the part of the governments of the developed country Parties to provide new, additional, adequate and predictable financial resources. Financial resources from private sectors and the carbon market could be complementary to those provided by the developed country Parties.

(c) **The Scale of Funding.** The developed country Parties shall make assessed contributions with a certain percentage of their annual GDP, e.g. 0.5-1%, to the above-mentioned Funds.

IV. Further quantified emission reduction commitments for developed countries for the second commitment period under the Kyoto Protocol

1. **Strictly Focusing on the Mandate.** The UN Climate Change Conference in Copenhagen at the end of 2009 should, in accordance with decision taken under the Kyoto Protocol (Decision 1/CMP.1), set further quantified emission reduction commitments for developed countries for the second commitment period under the Kyoto Protocol through an amendment to its Annex B.

2. **The Kyoto Protocol as a Long Living Treaty.** The Kyoto Protocol, in giving effect to the principle of common but differentiated responsibilities, established the modality for developed countries Parties to take the lead in reducing their GHG emissions, which is an important legal instrument to implement the UNFCCC. It sets the quantified emission reduction targets for developed countries for the first commitment period from 2008 to 2012, and establishes an in-built mechanism for setting further quantified emissions reduction commitments for developed countries for subsequent periods. The Kyoto Protocol remains valid sine die, which is not terminated by the expiry of

its first commitment period. The mandate of the AWGKP is simple and clear, which is to set further quantified emission reduction commitments for developed countries by the adoption of an amendment to Annex B of the Kyoto Protocol and, by no means, to rewrite the Kyoto Protocol.

3. The AWGKP as one Parallel Track. The AWGKP is one of the two equally important negotiation tracks under the Bali Roadmap. It should complete its work as soon as possible in order to ensure there is no gap between the first and second commitment periods under the Kyoto Protocol. Only the further quantified emission reduction commitments for developed countries that are Parties to the Kyoto Protocol are first determined by the AWGKP, could the comparability under the AWGLCA be established later on. The success of the Copenhagen Climate Conference will depend on the AWGKP's timely completion of its work to establish further quantified emission reduction commitments for developed countries for the second commitment period.