

# Green China, Race to the Future

## China's Policies and Actions for Addressing Climate Change

In 2007, headed by Premier Wen Jiabao, the National Leading Group to Address Climate Change was established to take charge of formulating major strategies, guidelines, and measures for addressing climate change and for coordinating the solution of major relevant problems. China has announced its intention to reduce the intensity of carbon dioxide emissions per unit of GDP in 2020 by 40 to 45 percent compared with the level of 2005. It has also finished its 2nd National Assessment Report on Climate Change and has launched its national programme to adapt to climate change through capacity building in vulnerable regions and in disaster alert systems.

### China's Mitigation Policies and Actions

China has adopted proactive policies and taken positive actions to mitigate climate change. It 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. (See appendix 1 for detailed list of actions.)

#### 1. Adjust Economic Structure and Promote the Optimization and Upgrade of Industrial Structure

The Chinese government has formulated and implemented a series of industrial policies and special programs that make conservation of resources and energy an important component, and has 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”.

The central government launched the adjustment and reinvigoration plans for 10 major industries, of which each highlights the phase-out of backward production capacity, the advancement of technological levels, energy conservation, and pollution reduction. 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 has taken other relevant measures including adjustment of tariffs and tax rebates to curtail the export of energy-, pollutants emissions-, and resource-intensive products. As a result, the growth rate of energy intensive industries is showing a downward trend.

#### 2. Actively Develop Circular Economy to Mitigate Greenhouse Gas Emissions

The Chinese government is promoting the reduction, reuse, and recycle of waste in resources utilization so as to reduce greenhouse gas emissions from original sources and in the processes of production. Since China promulgated the Circular Economy Promotion Law in 2008, 26 provinces and municipalities have undertaken pilot projects for said 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 the processing and utilizing of reusable resources.

#### 3. Strive to Save Energy and Raise Energy Efficiency

From 2006 to 2008, China's energy consumption per unit of GDP dropped accumulatively by 10.1%, saving about 290 million tons of carbon equivalent, or effectually reducing CO<sub>2</sub> emission by 670 million tons. 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 CO<sub>2</sub> emission by 50 million tons.

#### 4. Develop Low-carbon Energy, and Optimize Energy Mix

Since 2008, China has issued a number of financial, tax, and price incentive policies, and forcefully pushed forward the development of renewable energy in China. The scale of wind power doubled annually for 3 years in a succession, and 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 m<sup>2</sup>, accounting for over 60% of the world total, and keeping China the world leader in this field for many years.

Till the end of 2008, the annual utilization of renewable energy (including large hydropower) and nuclear power was about 250 million tons of carbon equivalent, 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.

**Table 1: 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 m2	125	110	13.6%
Biomass power	GW	3.15	3.00	5%
Bioethanol fuel	Mt	1.60	1.20	33.3%

## 5. 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, to reduce the methane emission of rice paddy fields, to popularize the straw silage ammoniating technology, and to 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.

## 6. Promote Afforestation to Increase Carbon Sequestration

The country actively promoted voluntary afforestation and the sustainable management of forests, increasing the carbon-sequestering capability of existing forests. 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.

## 7. 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.

## China's 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, and ecologically fragile areas like coastal zones and regions and has achieved positive effects. (See appendix 2 for detailed list of actions.)

### 1. Agriculture

Since 2008, China has formulated the Regulations of the People's Republic of China on Drought 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.

### 2. Forests and Other Natural Ecological Systems

Since 2008, China has modified the Forest Fire Prevention Regulations and 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.

### 3. 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. China promulgated and implemented the Administrative Measures for Water Drawing Licensing. It 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.

#### 4. Water Resources Coastal Zones and Regions

Since 2008, China has established a working mechanism for addressing climate change for the marine sector. It has 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. It also periodically issues 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, 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. It also 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.

#### 5. 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.

#### 6. 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 planning and construction projects and the potential impacts on the local climate. 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 society to forecast and issue early warning on, and response to, climate and weather disasters.

### China's Initial National Communication on Climate Change

In December 2004, China, as a non-Anex I country, sent China's Initial National Communication on Climate Change to the UNFCCC Secretariat, which included a list of three major greenhouse gases, China's vulnerable sides and adaptation assessment, and China's mitigation policies and actions.

China's National Development and Reform Commission started the preparation for the second Communication paper to include more greenhouse gases and emission sources, uncertainty of emission cuts, emissions of Hong Kong and Macau, an establishment of national data, and public awareness promotion. The NDRC will provide this new document to the COP.

#### Appendix 1: China's Mitigation Actions

Year	Government Offices	Policies and Actions
2010	The State Council	Guidelines on the Comprehensive Exploitation and Utilization of Crop Straw
2009	The State Forest Administration	Action Plan of Forestry to Address Climate Change
2009	The Standing Committee of the National People's Congress (NPC)	NPC's Recommendation Paper on Climate Change
2009	The Ministry of Finance, the Ministry of Science and Technology	The Subsidy Plan to Promote Energy-Efficient and New Energy Cars
2009	The State Council	Notice to Address Over Packaging
2009	The State Council	Order of the Recycling and Disposal of Waste Electrical and Electronic Products
2009	The National Development and Reform Commission (NDRC), State Electricity Regulatory Commission (SERC), National Energy Administration	Notice on Electricity Price
2009	The Ministry of Finance	Interim Measures for the Administration of Government Subsidies of Building Uses of Solar Energy Photovoltaic Power
2009	The Ministry of Finance, the State Administration of Taxation	the Enterprise Income Tax Policies for the China Clean Development Mechanism Fund and the Enterprises Implementing the Clean Development Mechanism Projects
2009	The Ministry of Finance, the NDRC	Project Plan on the Popularizing of Energy-Efficient Products
2009	The NDRC	Opinions on Deepening Reform of Economic System, 2009
2008	China Government	China's Policies and Actions for Addressing Climate Change

Year	Government Offices	Policies and Actions
2008		Circular Economy Promotion Law
2008	The State Council	the Recycling and Disposal of Waste Electrical and Electronic Products
2008		Energy Conservation Law
2008	The State Council	Regulation on Energy Conservation for Civil Buildings
2008	The State Council	Energy Conservation Regulation for State-funded Institutions
2008		Regulations on Special Fund for Wind Power Manufacturing Sector in China
2008	The NDRC	Renewable Energy Development Plan for the 11 <sup>th</sup> Five-Year
2008	The National Development and Reform Commission (NDRC), State Electricity Regulatory Commission (SERC), the Ministry of Environmental Protection	Interim Guide on the Coordination of Energy Efficient Power Generation

## Appendix 2: Climate Adaptation Related Policy

	Involved Department	Specific Actions
Scientific Research	The Ministry of Science and Technology China Meteorological Administration Chinese Academy of Science	In 2008-2010, The Second Assessment Report of National Climate Change
	China Meteorological Administration Chinese Academy of Science	Chinese Climate and Environmental Change :2012
	The Ministry of Science and Technology	In 2008, promulgated National Special Action Of Respond to Climate Change; Organizing the compilation of National Strategy of Adaptation to Climate Change; 2010 Technology Item on Addressing Climate Change, such as Climate change and its impacts on grain production ; 2010 Major national science research plan——Global Change Research
	Ministry of Agriculture	In 2010,“Climate Change and Its Impacts on Agricultural Production and the Countermeasure Technology”
Strengthen Legislation	The National People's Congress State Council	In 2000, Meteorology Law of People's Republic of China; In 2007, The Law On response to Emergencies of People's Republic of China; In 2009, The Resolution of Standing Committee of People's Republic of China On Positively Addressing Climate Change; In 2010, The Ordinance of Prevention of Meteorological Disasters
Capacity Building	Ministry of Commerce National Population and Family Planning Commission China International Center For Economic and Technical Exchange	In 2009, “Developing Country Officials Seminar on Addressing Climate Change; In 2009 Hold “Developing Country Global Officials Seminar on Climate and Climate Change” for officials and scholars from African Country; In 2010 “Developing Country Officials Seminar On Population and Climate Change”
Organization Building	Central Government Local Government	Establish a decision-making coordination mechanism of multi-agency participation, a great many of local government have established the Department of Addressing Climate Change. In 2007,Central Government promulgated National Programme of Addressing Climate Change,global government issued provincial level programme of climate change
International Cooperation and Exchanges	Chinese British and Swiss Government	“Chinese Item on Adaptation to Climate Change” ——Take Ningxia Hui Autonomous Region Inner Mongolia Autonomous Region and Guangdong Province as experimental province, pointing at climate change and its impact on specific areas such as Chinese culture water resources grassland animal husbandry extreme weather events disasters and human health, start detailed risk assessment and bring the assessment result into local development and adaptation goals. Import climate simulation technology from British Halley Climate Center, predict Chinese future climate change, discover and research methods as well as policy measures to adapt the climate change, to reduce the Chinese frangibility of responding to climate change, and through accumulating and sharing experience, improve the international knowledge about evaluating climate risk and its impact, develop operable method of adapting climate change.
Negotiating Position	Chinese national negotiation group	Laying equal stress on mitigation and adaptation is one of the basic principles of negotiation that China insists on.