

**China's Policies and Actions on  
Climate Change  
(2015)**

**The National Development and Reform Commission**

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# Foreword

Climate change is a common challenge facing human society today. As the largest developing country with a large population, China has complex and diverse terrain conditions, faces unbalanced, uncoordinated and unsustainable problems in the economic development, and is vulnerable to the adverse effects of climate change. An active response to climate change is not only China's responsibility for extensively participating in global governance and building the common destiny of mankind, but also the inherent requirement to achieve sustainable development.

Since 2014, China has actively taken measures in various fields to tackle climate change and achieved remarkable outcomes. China issued the National Climate Change Plan (2014-2020) putting forward China's main objectives and key tasks to address climate change before 2020. China submitted the Intended Nationally Determined Contribution (INDC) to the Secretariat of United Nations Framework Convention on Climate Change (UNFCCC) outlining the objectives including to achieve the peaking of carbon dioxide emissions around 2030 and make best efforts to peak early, and proposing policy measures to ensure their implementation. By

adjusting industrial structure, improving energy conservation and energy efficiency, optimizing energy structure, controlling non-energy GHG emissions and increasing forest carbon sinks and taking other efforts to control GHG emissions, China lowered its carbon dioxide emissions per unit of GDP by 6.1% in 2014, with a cumulative decline of 15.8% over 2010, completing 92.3% of its carbon intensity decline target during the 12<sup>th</sup> Five-Year Plan period. It has reduced the adverse effects of climate change and enhanced the ability to adapt to climate change through positive actions in agriculture, water resources, forestry and ecosystems, coastal areas and relevant waters, human health and other areas. At the same time, China actively promoted international exchanges and cooperation on climate change, issued joint statements on climate change with India, Brazil, UK, EU, US and France and prepared South-South Cooperation Fund for climate change; it actively participated in international negotiations on climate change in a constructive manner for 2015 Paris Agreement and follow-up system construction.

This annual report has been issued to help the comprehensive understanding of China's policies and actions on climate change, and the progress made since 2014.

## **I. Mitigating Climate Change**

Since 2014, the Chinese government has followed the goals and tasks of addressing climate change during the 12<sup>th</sup> Five-Year Plan, and adopted measures including adjusting industrial structure, saving energy, increasing energy efficiency, optimizing energy structure, controlling GHG emissions from non-energy activities, and increasing carbon sinks. Significant headways have been made in mitigating climate change.

### **(I) Adjusting Industrial Structure**

**Promoting the transformation and upgrade of traditional industries.** Since 2014, the National Development and Reform Commission (NDRC), the Ministry of Industry and Information Technology (MIIT) and other relevant departments issued Implementation Plan for Key Environmental Protection Technologies and Equipments and for Product Industrialization Projects, Notice on Capacity Replacement of Constructing Projects in Some Serious-Overcapacity Industries, and 2014 Special Action Plan on Green Industrial Development, in order to promote the transformation and upgrade of traditional industries. In May 2015, the State Council issued “Made in China 2025” and put forward to

build China into a world leading manufacturing power. It proposed 9 key tasks, 10 priority areas and 5 key projects. In 2014, China eliminated 4.86 GW of backward thermal power generation capacity, 31.1 Mtons (million tons) of backward steel production capacity, 87 Mtons of cement (clinker and grinding capacity) and 37.6 million weight boxes of flat glass, successfully completing the target set by the government working report. From 2011 to 2014, the cumulative elimination of backward steel production capacity totaled 77 Mtons, cement (clinker and grinding capacity) 600 Mtons, flat glass 150 million cases, achieving the target of backward production capacity elimination for the 12<sup>th</sup> Five-Year period one year ahead.

**Accelerating the development of strategic emerging industries.**

In April 2015, NDRC issued Guidelines for Issuing Special Bonds in Strategic Emerging Industries to increase the support of corporate bonds in nurturing and developing strategic emerging industries. In August 2015, the State Council approved the establishment of national venture capital funds for emerging industries with a total size of 40 billion Yuan, focusing on early-stage innovative enterprises. MIIT issued Opinions on Further Optimizing the Market Environment for Solar PV Corporate Mergers and Acquisitions as well as Key Outlines of Transformation and Development of Raw Material Industries in 2015, and launched and

implemented the special action of intelligent manufacturing pilots and demonstrations.

**Vigorously developing the service industry.** In August 2014, the State Council issued Guiding Opinions on Accelerating the Development of Productive Service Industries to Promote the Industrial Restructuring and Upgrading, which makes a comprehensive planning for the development of productive service industries for the first time and proposes to accelerate the development of manufacturing service industries such as software and information technology services, industrial design and modern logistics. The Government Working Report in 2015 put forward the “Internet+” action plan for the first time and promoted an in-depth integration of information technology with industrialization. By the end of 2014, the economic scale of national information consumption reached 2.8 trillion Yuan with an annual increase rate of 18%; the economic value of electronic commerce transaction amounted to 12 trillion Yuan with an annual increase rate of 20%; the revenue of telecommunications, software and information technology service, and the internet industries saw a annual growth of 4%, 20% and 50% respectively. Service trade developed rapidly, and the total service (excluding government service) imports and exports reached 432.75 billion US dollars in the first 8 months of 2015, increasing by 15.2% over levels of a year ago.

Thanks to the work of all sides, China's industrial structure keeps optimizing. By the end of 2014, the share of three industries of China was optimized to 9.2%: 42.6%: 48.2% respectively, showing a significant improvement compared with 10%: 43.9%: 46.1% in 2013. The adjustment of industrial structure has played a growing role in achieving the carbon intensity reduction target.

## **(II) Energy Conservation and Improving Energy Efficiency**

**Strengthening the management and appraisal of energy conservation.** In May 2014, the State Council issued 2014-2015 Action Plan on Energy Conservation, Emission Reduction and Low-Carbon Development, which makes a comprehensive arrangement for the work on energy conservation, emission reduction and carbon mitigation in 2014 and 2015. NDRC issued Notice on Further Increasing Energy Conservation Efforts to Ensure the Completion of Energy-Saving Targets of the 12<sup>th</sup> Five-Year Plan Period, and carried out in conjunction with other relevant departments' on-site assessments of the completion of energy conservation and total energy consumption targets in 31 provinces (autonomous regions and municipalities) in 2013. The energy conservation on project level was also assessed and reviewed. In 2014, totally 320 projects were assessed and reviewed and the energy consumption of them amounted to 290 million ton coal

equivalent (Mtce), saving energy consumption by 1.5 Mtce.

**Accelerating the implementation of key energy-saving projects.**

The central government budget continued to be arranged to support energy-saving projects. A total of 1.3 billion Yuan of budget was appropriated in 2014 to support 617 energy-saving technology transformation and industrialization projects and capacity-building projects for energy monitoring institutions, equivalent to an energy saving potential of 2.68 Mtce annually.

**Further improving energy efficiency standard and labeling scheme.**

The “One Hundred Energy Efficiency Standard Promotion Program” is carried out and streamlined by NDRC, Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) and the Standardization Administration. As of September 2015, a total of 105 compulsory energy consumption standards and 70 mandatory energy efficiency standards have been published. AQSIQ organized special actions of law enforcement inspections on energy-efficiency labeling of products in the project of delivering the benefit of energy-saving products to Chinese citizens.

**Promoting energy-saving technologies and products.**

In 2014, NDRC released Interim Measures for the Promotion and Management of Energy-Saving, Low-Carbon Technologies and Catalogue of National Key Low-Carbon Energy Technologies for

Promotion (2014), in order to promote the progress and popularization of energy-saving, low-carbon technologies. The project of delivering the benefit of energy-saving products to Chinese citizens are continued to be implemented. The first and second batch of energy-saving vehicle catalogues and the sixth batch of energy-efficient motor catalogue are released, and 100 million energy-saving bulbs are promoted via financial subsidies. In addition, the Implementation Plan for Energy Efficiency Leader Systems, Catalogue of Energy Efficiency Star Product and Catalogues of Recommended Energy-Saving Electromechanical Equipment (Products) are released.

**Vigorously developing the circular economy.** In order to strengthen the macro guidance, NDRC developed and issued 2015 Circular Economy Promotion Plan and completed the review and acceptance of two batches of national circular-economy pilots. As to continue promoting circular-economy pilots, NDRC organized and carried out the review for industrial park circular transformation demonstration pilots, national “urban minerals” demonstration bases as well as meal and kitchen waste recycling and safe disposal pilot cities in 2015, and identified 25 industrial park circular transformation demonstration pilots, 4 “urban minerals” demonstration bases and 17 meal and kitchen waste recycling and safe disposal pilot cities. NDRC launched “Old for Recycled and

Remanufactured Products” pilot, identified 10 pilots for promotion, and offered subsidies to the consumers returning remanufacturing old pieces and purchasing recycled and remanufactured products listed in the announcement. NRDC certified the remanufactured products and released 4 batches of Catalogue of Remanufactured Products, covering 95 remanufactured products from 27 companies, which further guided the consumption of remanufactured products. In 2014, China recycled a total of 245 Mtons of renewable resources, equivalent to saving 200 Mtons of coal consumption. In order to improve supporting policies and systems, NDRC and other departments issued Opinions on Promoting the Use of Recycled Urban and Industrial Waste in Production, and Scheme for Implementing Key Resource Recycling and Utilizing Projects (Technology Promotion and Equipment Industrialization), so as to promote the safe disposal and utilization of urban and industrial waste and improve China’s technical equipment level in related fields. At present, China is working on drafting Policies on Electric Vehicle Battery Recycling and Utilization Technologies.

**Promoting energy conservation in building area.** China amended its Public Building Energy Efficiency Design Standards, and all the newly-built urban buildings began to adopt the mandatory energy efficiency standards. In 2014, energy-saving building area increased by 1.66 billion square meters, equivalent to an energy-saving

capacity of 15 Mtce; the completed energy-saving building area in China totaled 10.5 billion square meters, accounting for 38% of urban area for civil use and equivalent to an energy-saving capacity of 100 Mtce. China actively developed green buildings, revised Green Building Evaluation Standards, formulated and promulgated Green Store Building Evaluation Standards. Beijing, Chongqing, Jiangsu, Zhejiang and Shenzhen began to enforce new green building standards in urban civil buildings, totaling nearly 400 million square meters accumulatively; by the end of June 2015, a total of 3,241 green projects obtained green building rating labels, with a total construction area of more than 370 million square meters. China further promoted the heating metering and energy conservation renovation of existing residential buildings in northern heating areas, and completed the renovation area of 210 million square meters in 2014 and 830 million square meters during the first four years of the 12<sup>th</sup> Five-Year Plan Period, exceeding the target of 700 million square meters set for the 12<sup>th</sup> Five-Year Plan Period by the State Council. The application of renewable energy buildings was also actively promoted. Along with the construction of renewable energy demonstration counties, the total area of solar thermal application in urban regions of China reached 2.7 billion square meters, the area of shallow geothermal energy application reached 460 million square meters, and the installed capacity of solar PV buildings reached 2,500 MW as of the end of 2014. To

promote the industrialization of construction industry, the Ministry of Housing and Rural-Urban Development (MHRUD) issued Opinions on Promoting the Development and Reform of the Building Industry.

**Driving energy conservation in transportation sector.** In 2014, the Ministry of Transport (MOT) released 2014 Key Outlines of Energy Conservation and Emission Reduction of Transport and issued Accounting Rules for Transportation Energy-Saving and Emission Reductions and Energy Conservation Investment (2014). It designed green, circular, low-carbon transport system frame, released the evaluation index system for green traffic provinces, cities, roads and ports, promoted energy monitoring pilots, carried out transport energy consumption monitoring pilots in Beijing, Handan, JiYuan, Changzhou, Nantong and Huaian, and organized energy consumption statistics and monitoring pilot for highway and waterway transport enterprises, covering a total of 125 highway and waterway companies throughout the whole year. The Ministry adhered strictly to the implementation of fuel consumption standard for road-transport vehicles and released over 30,000 standard-reaching models in 31 batches. It also issued Fuel Consumption Limits for Passenger Vehicles, Fuel Consumption Limits for Heavy Commercial Vehicles, and Opinions on Speeding up the Promotion and Application of New Energy Vehicles in

Transportation Industry and other documents. 83,900 new energy vehicles were manufactured in 2014, a year-on-year increase of nearly 4 times, and 156,200 new energy vehicles were manufactured in the first 9 months of 2015, a year-on-year increase of nearly 3 times. Compared with 2013, the energy consumption per unit transport volume of commercial vehicles decreased by 2.4% in 2014, while that of ships by 2.3% and the port saw a fall of 2.5% in comprehensive unit consumption. In 2014, the Civil Aviation Administration issued Guide for Civil Aviation Energy Conservation Special Fund Project (2013-2014) and appropriated 528 million Yuan to support the implementation of 238 energy-conservation and emission-reduction projects. In 2014, the energy consumption per passenger of airport fell by 8.6% over the same period last year.

**Promoting energy conservation in public institutions.** In 2014, National Government Offices Administration and AQSIQ issued Notice on Strengthening Energy Resources Measurement Work in Public Institutions, revised Regulations on Energy Resources Consumption Statistics System for Public Institutions, promulgated Reference Catalogue of Energy-Saving and Water-Saving Technologies and Products for Public Institutions (2015), and released Notice on Energy Resources Conservation Arrangements for Public Institutions in 2015. These two bodies organized and

carried out the establishment and acceptance inspection of the 2<sup>nd</sup> batch of energy-saving public institutions and energy resources conservation assessment of central state organs, strengthened the reporting of energy conservation information in public sectors, and promoted the project “R&D and Demonstration of Key Energy Efficiency Technologies in Public Institutions” and “R&D and Demonstration of Green Energy Efficiency Technologies in Public Institutions”.

With concerted efforts, China’s energy consumption per unit of GDP fell by 4.8% in 2014, 1.1% higher than that in 2013 and the highest since the 12<sup>th</sup> Five-Year Plan Period. The energy consumption per unit of GDP dropped by 13.4% accumulatively in the first 4 years of the 12<sup>th</sup> Five-Year Plan Period, saving energy consumption by 600 Mtce, equivalent to a reduction of 1.4 billion tons of carbon dioxide emissions.

### **(III) Optimizing Energy Structure**

**Imposing strict control over total energy consumption.** The State Council issued Energy Development Strategy Action Plan (2014-2020) in November 2014, which clearly put forward China’s energy development targets in 2020, adopting coal consumption reduction replacement, reducing the proportion of coal consumption, and

cutting total regional coal consumption in Beijing-Tianjin-Hebei-Shandong, the Yangtze River Delta and Pearl River Delta regions. To put into practice Air Pollution Prevention Action Plan, NDRC and relevant departments issued Interim Measures for Coal Consumption Reduction Replacement Management in Key Areas in December 2014, which proposed coal consumption reduction replacement targets and programs for Beijing, Tianjin, Hebei, Shandong, Shanghai, Jiangsu, Zhejiang and the Pearl River Delta region. In May 2015, NDRC, the Ministry of Environmental Protection (MEP) and National Energy Administration (NEA) issued the Program to Strengthen Total Coal Consumption Control in Key Air Pollution Control Cities, which proposed that the top 10 cities of poor air quality should achieve a negative growth in total coal consumption compared with the previous year.

**Strengthening the clean use of fossil fuels.** To promote the clean and efficient use of coal, NDRC and other five departments jointly issued Interim Measures for Commercial Coal Quality Management in September 2014 to improve coal quality and consumption efficiency. In October 2014, NDRC, AQSIQ and MEP issued the Implementation Plan for Coal-Fired Boiler Comprehensive Energy Conservation and Upgrading Project, so as to ensure the safe and economic operation of coal-fired boilers, improve energy efficiency

and reduce pollutant emissions. To promote the use of natural gas, NEA issued Program for Energy Industries to Strengthen Air Pollution Control in March 2014, which proposed specific objectives and tasks to increase natural gas supply. In April 2014, NDRC issued Several Opinions on Establishing Long-Term Mechanisms to Guarantee Stable Natural Gas Supplies, proposing tasks and measures to safeguard long-term stable supply of natural gas. In July 2014, NEA issued the Notice on Regulating the Scientific and Orderly Development of Coal Oil and Synthetic Natural Gas Industries to regulate coal liquefaction and synthetic natural gas projects and proposed evaluation criteria such as energy conversion efficiency, energy consumption and carbon dioxide emissions. In November 2014, NDRC and other relevant departments jointly issued Regulations for Natural Gas Distributed Energy Demonstration Projects to further promote the development of natural gas distributed energy resources. In 2014, the apparent consumption of natural gas reached 184.5 billion cubic meters, accounting for close to 6% of primary energy consumption. In April 2015, NEA issued Action Plan for Clean and Efficient Use of Coal (2015-2020), which clarified the target and task of laying scientific regulation on coal production volume and layout and speeding up the clean and efficient use of coal.

**Promoting the development of non-fossil energy.** Since 2014,

NDRC and NEA have issued a series of policy documents to support the development of renewable energies, including Notice on Improving Price Formation Mechanisms for Pumped Storage Power Stations, Notice on Further Implementing Distributed PV Power Generation Policies, Notice on Arrangements for Wind Power Grid Connection and Consumption in 2015, and Interim Measures on Management of Special Funds for Renewable Energy Development, etc. By the end of 2014, China's non-fossil fuels accounted for 11.2% of primary energy consumption, with an annual increase of 1.4%. Non-fossil fuels accounted for 32.6% of total installed capacity of power generation, with an increase of 1.7% over the year before, of which the installed capacity of hydropower, wind power, grid solar power and nuclear power increased by 7.9%, 25.9%, 60.7% and 37.0% respectively. Non-fossil fuels accounted for 24.6% of China's total power generation, with an annual increase of 2.3%, of which, the power generation of hydropower, wind power, solar power and nuclear grew by 15.7%, 10.1%, 194.1% and 19.5% respectively.

**Strengthening the transformation and upgrading of thermal power units.** In September 2014, NDRC, MEP and NEA jointly issued Action Plan for Coal Power Energy-Saving Upgrading and Transformation (2014-2020), which proposed to raise the proportion of coal for power generation to over 60% of coal

consumption in 2020 and made clear requirements on the coal consumption per unit of power generation. In 2014, the clean generation of thermal power units was further enhanced. Almost all the new coal power units, except cogeneration ones, are ultra-supercritical units with the capacity equal or above 600 MW, and the proportion of thermal power units with the capacity equal or over 300 MW raised to 75.1%. The average unit energy consumption of thermal power units equal or over 6 MW was 319 gce/kWh, falling by 2 gce/kWh on year-on-year basis and maintaining the world's advanced level.

#### **(IV) Controlling GHG Emissions from Non-energy Activities**

NDRC, together with the Ministry of Foreign Affairs (MOFA), the Ministry of Finance (MOF), MEP and other relevant departments, carried out HFCs control actions, issued Notice on Carrying out Hydro Fluorocarbons Disposal and Related Work, and issued two batches of central budget investment plans for key demonstration projects of hydro fluorocarbons reduction in 2014 to support the enterprise's HFC-23 incinerator installation. MEP developed the management plan under the "Montreal Protocol" to accelerate HCFC phase-out, and actively participated in developing rules and provided the assistance for check of HFC-23 destruction, with a purpose to promote the co-benefits of addressing climate change

and protecting ozone layer. It also actively conducted studies on non-carbon-dioxide GHGs and use the platform of China Council for International Cooperation on Environment and Development to carry out the project “Research on Collaborative Policies for Addressing Climate Change and Controlling Air Pollution”.

### **(V) Increasing Forest Carbon Sinks**

Since 2014, the State Forestry Administration organized the drafting of Working Focuses of the Forestry to Address Climate Change during the 13<sup>th</sup> Five-Year Plan Period, developed and issued the working arrangements and division for the forestry to address climate change in 2014 and 2015. It strengthened ecological forestry construction and arid region afforestation in Beijing-Tianjin-Hebei-Inner Mongolia Region; continued to promote the shelterbelt system construction in the Three-North region and the Yangtze River Basin, issued the guidance on the renovation of degraded shelterbelts, and started degradation shelterbelt renovation pilot; comprehensively strengthened forest management, amended and promulgated forest tending regulations and requirements, inspection and acceptance rules, pushed steadily forward the construction of national forest management model base, and launched a new round of forest sustainable management pilots; officially launched a new round of Reforestation Project to return

1,500 mu of farmland to forests and grassland and afforest 100 mu of barren hills and wasteland during 2014-2015; actively promoted national forest reserve and delimited 1,500 mu of forest as national reserve in 2014. In 2014 alone, China afforested 8,324 mu of land and tended 135 million mu of forest. And in the first half year of 2015, it completed 5,437 mu of afforestation, accounting for 57% of the annual target, and completed 63 million mu of forest tending, accounting for 60% of the annual target.

With the joint efforts, the carbon dioxide emission per unit of GDP fell by 6.1% in 2014 on a year-on-year basis, with a cumulative decline of 15.8% over 2010. It is expected to achieve the carbon intensity reduction target of 17% for the 12<sup>th</sup> Five-Year Plan period ahead of schedule, thus making concrete contributions to addressing global climate change.

## **II. Adapting to Climate Change**

In 2014, the Chinese government conducted climate change adaptation work in accordance with National Climate Change Adaptation Plan in the area of agriculture, water resources, forestry and other ecosystems, coastal areas and related waters, meteorology and human health, etc., and achieved positive progress.

## **(I) Agriculture**

**Accelerating and promoting the transformation and modernization of agricultural production patterns.** The Ministry of Agriculture (MOA) has worked in conjunction with China Meteorological Administration and developed 4 work plans including Plan to Cope with El Nino and Ensure Good Harvests, and issued 18 Notices on disaster prevention since 2014 for early implementation of preventive measures. It also organized work such as “Strengthening Guidance and Services to Win Summer Grain Harvest”, “Fighting Spring Drought and Flood to Ensure Spring Seeding in Northeast” and “Enhancing Services and Fighting Disasters to Win Autumn Grain Harvest”.

**Promoting conservation tillage.** In 2014, MOA invested 30 million Yuan to carry out conservation tillage in many regions, including 84 project-implementing counties and 10 test monitoring bases. By the end of 2014, the area with mechanized straw returning to the field reached 647 million mu, the area of conservation tillage reached 129 million mu, and the weight of wind-eroded farmland was cut by 64.5 Mtons.

**Continuing to carry out farmland infrastructure construction.** China enhanced soil fertility improvement, carried out “Action of

Zero Growth in Pesticide Use in 2020” and “Action of Zero Growth in Fertilizer Use in 2020”, vigorously promoted technologies for water-saving irrigation, dry farming, drought resistance and soil moisture, soil testing and formulated fertilization, green prevention and control, etc., and continued to promote water saving and yield improvement projects in Northeast China, water saving and efficiency improvement projects in Northwest China, limiting water abstraction for saving projects in North China, “Five-Small Water Conservancy” project in Southwest China and water saving and emission reduction projects in the south region.

**Accelerating the construction of farmland irrigation and water conservancy.** In 2014, China appropriated more than 54 billion Yuan for farmland irrigation and water conservancy construction and implemented continued construction and water-saving transformation projects in 188 large-scale irrigation districts in 22 provinces and autonomous regions. It constructed and reconstructed 4,432 km of backbone channels, renovated 16,121 supporting buildings, upgraded and transformed 74 large irrigation and drainage pumping stations, and carried out 120 large-scale demonstration projects for water-saving irrigation and efficiency improvement and 63 demonstration projects for water-saving irrigation in pastoral regions.

## **(II) Water Resources**

### **Promoting ecological civilization construction in water area.**

China continued to implement the most stringent water management system, and all the city and county-level administrative regions in each province (autonomous region and municipality) except Xinjiang have completed the decomposition and confirmation of the “three red lines” controlling targets. It completed 100 water-saving society pilots, undertook 7 water right pilots, developed Measures on National Water Ecological Civilization City Pilots, and launched 105 water ecological civilization pilot cities across the country with Henan and 10 other provinces spearheading this campaign.

### **Strengthening the management of rivers and lakes and protection on water resource.**

China further tightened the control over shoreline space use for rivers and lakes, prepared the shoreline use and management planning for key river reaches (lakes) of 7 great basins, and comprehensively carried out the delineation of management area of rivers and lakes. 46 counties (cities) were selected nationwide as institutional mechanism innovation pilots for river and lake management and protection. It compiled Measures for Supervision and Management of Water Functional Areas, developed the Opinions on Limiting the Total Amount of Sewage in

Water Functional Areas of Key Rivers and Lakes, developed the Technical Guidelines of Standard-Meeting Assessment for Key Drinking Water Source Regions, and carried out water safety and standard-meeting constructions for 175 key drinking water source regions nationwide. MEP issued Water Pollution Prevention Action Plan to guarantee a secure water ecological environment. The three monitoring systems under the national water resource monitoring capability project were basically completed, and positive headways had been made in the development and utilization of unconventional water resources.

**Accelerating the comprehensive treatment of water loss and soil erosion.** In 2014, China completed the comprehensive prevention and treatment of water loss and soil erosion of 74,000 square kilometers, of which comprehensive treatment covered an area of 54,000 square kilometers and ecological restoration covered 20,000 square kilometers. In the first half year of 2015, China continued implementing comprehensive soil erosion control projects for slope farmland in seriously eroded areas, fuel-switch projects for small hydropower generation in ecological protection area, Danjiangkou reservoir and upstream water and soil conservation project, and national key water and soil conservation construction projects, etc.

**Strengthening the construction of key water conservancy**

**projects.** The Ministry of Water Resources (MWR) continued to implement key water saving and supply projects, including water diversion projects, key water source protection projects, key river and lake governance projects, new large-scale irrigation projects and cross-border river development and governance projects, etc. A total of 17 projects were started in 2014. It also promoted the renovation of backbone irrigation and drainage projects in large-scale irrigation areas, renovation and renewal of large irrigation and drainage pumping stations, construction of large-scale and efficient water-saving irrigation projects and so on.

**Enhancing the work on flood control and drought relief.** In 2014, National Headquarter of Flood Control and Drought Relief launched a total of 10 emergency responses to floods, droughts and typhoons, and organized emergency water diversion in urban areas and for ecological purpose to effectively respond to natural disasters. As a result of this, the annual death toll due to floods hit a historical low. China also prepared and put into practice Implementation Program for National Drought Control Planning, carried out the projects of emergency water source construction for drought control, and continued to promote the prevention from and control of mountain flood, mapping of flood risk and construction of national command system for flood control and drought relief.

### **(III) Forestry and Other Ecosystems**

**Strengthening strategic guidance.** The State Forestry Administration organized the compilation of Action Plan for Forestry to Adapt to Climate Change (2015-2020) in 2014, which clarified the targets and measures for the forestry to adapt to climate change before 2020.

**Strengthening the comprehensive management of forests.** In 2014, 3.67 million and 5.57 million mu of afforestation were completed under Beijing and Tianjin sandstorm source control project and stony desertification comprehensive management project respectively. In the first half year of 2015, Beijing and Tianjin sandstorm source control project was implemented by 61%, while stony desertification comprehensive management project was fully completed.

**Strengthening the construction of forest natural reserves and protection of wetlands.** China continued pushing forward wetland protection and restoration projects and wetland protection subsidizing projects, and completed the second national survey of wetland resources. Besides, China strengthened the protection of forest resources, which significantly reduced the frequency and affected areas of national forest fires, and 1.732 billion mu of forest

in natural forest reserves were effectively protected. As of the end of June 2015, the total number of national forestry nature reserves reached 346 while that of wetland parks amounted 569.

**Strengthening grassland ecological protection.** China further deepened the subsidy and incentive mechanism for grassland ecological protection, started and guided the action of promoting southern modern grassland animal husbandry industry, and strengthened the implementation of grassland protection and restoration projects including returning grazing land to grassland. In addition, China strengthened grassland disaster prevention and law enforcement supervision. In 2014, the comprehensive vegetation coverage of grassland on national level reached 53.6%, with the total fresh grass output totaled 1.02 billion tons.

#### **(IV) Coastal Areas and Relevant Sea Waters**

**Strengthening the observation, early warning and emergency management of marine disaster.** All the 11 coastal provinces strengthened the observation, early warning and emergency management of marine disasters, and the State Oceanic Administration promoted the construction of ocean observing and forecasting system, carried out the monitoring and assessment of marine carbon cycle, and strengthened ocean forecasting and early

warning. Besides, it conducted sea level change monitoring, carried out meticulous forecast for key coastal protected objectives, further improved the environment support and service system for marine fishery production safety, and provided wave and wind forecast information for more than 280,000 fishing boats in 53 fishery grounds in China.

**Constantly improving the risk assessment of marine disaster.**

The State Oceanic Administration organized the compilation of China Sea Level Bulletin and Chinese Marine Disasters Bulletin, carried out the state, province, city and county-level marine disaster risk assessment and risk division pilots, and revised Technical Guidelines for Marine Disaster Risk Assessment and Division, and Technical Regulations on Marine Disaster Risk Investigation for Large Coastal Projects.

**Actively promoting the construction of comprehensive demonstration areas for marine disaster mitigation.** Shouguang (Shandong), Wenzhou (Zhejiang), Lianjiang (Fujian) and Daya Bay in Huizhou (Guangdong) which were more prone to marine disasters were selected as comprehensive demonstration areas for marine disaster mitigation to promote the establishment and improvement of an integrated management system for marine disaster mitigation.

**Strengthening the infrastructure construction for disaster prevention and mitigation as well as climate change adaptation in island regions.** The central special funds were allocated to repair more than 30 conservation projects. The wind-preventing, wave-preventing and tide-preventing projects and coastal protection forest projects were constructed on islands under the jurisdiction of Jiangsu, Shanghai, Zhejiang and Hainan, which effectively improved island infrastructure and enhanced its capacity to cope with climate change.

#### **(V) Meteorological Sector**

**Strengthening the monitoring and early warning for extreme weather and climate events and the management of meteorological disaster risks.** China developed Management Measures for National Emergency Early Warning Information Release System to achieve automatic docking with state-level early warning information. It completed the analysis and assessment of flood-inducing factors and vulnerability change, and developed technical guidelines for meteorological disaster risk surveys and risk division. Besides, the national, provincial, municipal and county-level meteorological disaster risk early warning system was improved and meteorological disaster risk quantitative assessment service pilot projects were launched.

**Providing ecological and meteorological services.** China maintained its efforts in building the capacity of 7 atmospheric background station GHG observation station networks. It began the fog-haze value forecasts for North, Northeast, East and South China regions, updated the list of state-level environmental meteorological pollution sources, and initiated nationwide air pollution meteorological conditions forecast. Apart from this, it also conducted daily haze monitoring via the meteorological satellite monitoring platform, carried out atmospheric capacity assessment, and built the underlying database on the impact of air pollution on population health in key cities.

**Carrying out climate change impact assessment for key areas and special industries.** China carried out real-time quantitative assessment of the impact of drought on agriculture and water resources, and conducted targeted assessment of the climate impact of wind power. It compiled and published the report Assessment of Climate Effects of Three Gorges Project, and prepared National Assessment Report on Extreme Weather and Climate Events and Disaster Risk Management and Adaptation in China. It for the first time released the Assessment Report on the Impact of Climate Change on China's Agriculture, and implemented climate change adaptation demonstration projects in 9 provinces in the field of agriculture and food security, disaster risk management, water

resources, energy, urbanization and human health, where substantive progress had been achieved.

## **(VI) Human Health**

**Preventing and controlling diseases closely related to climate change.** China strengthened the surveillance, reporting and disposal of infectious diseases and further improved the direct-reporting network of infectious disease; strengthened the prevention and control of insect-borne infectious diseases such as dengue and intestinal infectious diseases such as hand-foot-and-mouth disease that are closely related climate change; and issued Middle East Respiratory Syndrome Prevention and Control Program (Second Edition), Prevention and Control Program for People Infected with H7N9 Bird Flu as well as other technical programs to guide local in key infectious diseases prevention and control.

**Reinforcing the health emergency security to respond to climate change.** National Health and Family Planning Commission in conjunction with China Meteorological Administration analyzed and forecast the extreme weathers and natural disasters in China; issued Notice on Current Dengue Prevention and Control Matters and Notice on Health Service Matters in Hot Weathers, carried out emergency supervision and inspection of combating flood, drought

and typhoon, and organized medical emergency responses to natural disasters and medical health services in hot weathers.

**Reinforcing the researches on climate change adaptation and related health problems.** National Health and Family Planning Commission actively carried out the research on adaptation policy indicators, and undertook the Global Environmental Facility project “Adapt to Climate Change and Protect Human Health” in cooperation with the World Health Organization (WHO).

### **III. Low-carbon Pilots and Demonstration**

Since 2014, the Chinese government has been deepening national low-carbon province and low-carbon city pilot, and promoting low-carbon industrial park, low-carbon community, low-carbon city (town) and green transportation pilot in order to explore low-carbon development pathways and patterns at different levels and in different fields.

#### **(I) Deepening National Low-carbon Province and Low-carbon City Pilot**

Each low-carbon pilot area further strengthened the peak-target-forced mechanism, improved the GHG emissions

statistics and management system, established the target-oriented responsibility system to achieve GHG emissions control targets, built the low-carbon industrial system, actively promoted low-carbon green lifestyles and consumption patterns, and reinforced low-carbon development capabilities and support. Of 42 pilot provinces and cities in two batches, 13 established low-carbon development funds, and 36 set up developed carbon reduction target decomposition and assessment mechanisms. All the pilot provinces and cities have clearly put forward peak targets or are studying the issue, and the peak year proposed by most pilot provinces and cities is 2025 or before. Each pilot area started from their realities and worked out many well-established low-carbon development patterns, including urban carbon emissions accounting and management platform, carbon emissions impact assessment, carbon emissions trading, corporate carbon emissions accounting reporting, low-carbon product certification, etc. In September 2015, Beijing, Hainan, Shenzhen and other 7 pilot provinces and cities demonstrated China's outstanding achievements in low-carbon urban construction and response to climate change on the First Session of the U.S.-China Climate-Smart/Low-Carbon Cities Summit.

## **(II) Accelerating Carbon Emissions Trading Pilot**

**Fully launching carbon emissions trading pilot.** By the end of 2014, the 7 carbon emissions trading pilot provinces and cities including Beijing, Shanghai, Tianjin, Chongqing, Guangdong, Shenzhen and Hubei issued local carbon emissions trading management measures, covering more than 1,900 emission-control enterprises and units and allocating about 1.2 billion tons of carbon emissions quota. Pilot areas reinforced compliance monitoring and enforcement, with the compliance rate hitting 96% and 98% in 2014 and 2015 respectively. As of the end of August 2015, the 7 pilot provinces and cities saw accumulated transactions of local quota up to about 40.24 Mtons, with a turnover of about 1.2 billion Yuan, and the accumulated auction quota reached about 16.64 Mtons, with a turnover of about 800 million Yuan.

**Constantly pushing forward carbon emissions trading pilot programs.** The pilot regions constantly improved the rules on quota allocation, GHG emissions accounting and verification, etc., and some pilot regions played an exemplary role in exploring regional carbon market. To activate the carbon market, the pilot regions kept expanding the scope of trading players and developed carbon financial products and services focusing on local quota or Chinese

Certified VERs (CCER). All the pilot units provided that the emission-control enterprises and units could offset its quota with CCER which could account for 5-10% of the allocated quota.

**Promoting the development of national carbon market.** NDRC issued Interim Measures on Carbon Emission Permit Trading in December 2014 to regulate the development and operation of the carbon emissions trading market, drafted Regulations on National Carbon Emissions Permit Trading (Draft), built and put into operation the national carbon emission trading registration system.

### **(III) Carrying out Low-carbon Industrial Park, Community and City (Town) Pilot**

**Carrying out national low-carbon industrial park pilot.** In June 2014, MIIT and NDRC reviewed and published the first list of 55 national low-carbon industrial park pilots, and approved implementation program of 39 low-carbon industrial park pilots in 2015. Each pilot witnessed a substantial decline in carbon emissions per unit of industrial added value by promoting renewable energies, accelerating the low-carbon transformation of traditional industries and developing new low-carbon industries. In about three years, China plans to create a number of low-carbon enterprises mastering core low-carbon technologies and advanced low-carbon

management, and to explore the low-carbon management mode suitable for China's industrial parks to lead the low-carbon development of industrial sector.

**Carrying out low-carbon community pilot.** In February 2015, NDRC issued Guidelines for Low-Carbon Community Pilot Construction, which provided a category-based guidance for the selection standards, construction targets, construction contents and construction standards for newly-built urban communities, existing urban communities and rural communities. It also started the studies on Evaluation Indicator System for Low-Carbon Communities Pilot and the carbon emissions accounting methods for low-carbon communities.

**Carrying out national low-carbon city (town) pilot.** In August 2015, NDRC issued the Notice of NDRC on Accelerating National Low-Carbon City (Town) Pilot, which proposed, within about three years, to build a number of national low-carbon model cities (towns) characteristic of integration between industrial development and urban construction, rational space layout, intensive resources utilization, low-carbon and environment-friendly infrastructure, low-carbon and efficient production, and low-carbon and livable life. Shenzhen International Low-Carbon City (Guangdong), Zhuhai Hengqin New District (Guangdong), Qingdao Sino-Germany

Eco-Park (Shandong), Zhenjiang Guantang Low-Carbon New City (Jiangsu), Wuxi Sino-Sweden Low-Carbon Eco-City (Jiangsu), Kunming Chenggong Low-Carbon New District (Yunan), Wuhan Huashan New Eco-City (Hubei) and Sanming New Eco-City (Fujian) were selected as the first national low-carbon city (town) pilots.

#### **(IV) Promoting Low-carbon Pilots and Demonstration in Other Fields**

**Continuing to carry out green transportation pilot and demonstration.** The Chinese government listed Jiangsu, Zhejiang, Shandong and Liaoning as green transportation provinces, and added 17 green transportation cities including Tianjin, Handan, JiYuan, Anshan and Bengbu, 13 green highways including Hegang-Dalian Highway, Nanchang-Zhangshu Highway and Daozhen-Wengan Highway, 7 green ports including Guangzhou Port, Dalian Port and Fuzhou Port, and 69 green transportation equipment projects. LNG pilot in the shipping industry was also launched.

**Promoting Carbon Capture, Utilization and Storage (CCUS) demonstration and pilot.** Since 2014, NDRC and the Global Carbon Capture and Storage Institute co-sponsored “Carbon

Dioxide Capture Technology, Equipment and Industrial Development Seminar” and other activities; held the first senior seminar on CCUS technologies and demonstration projects; and supported China Petroleum Chemical Industry Federation, PetroChina and Shenhua Group to jointly launch the large-scale integrated CCUS project. MEP organized the compilation of Technical Guidelines for Carbon Dioxide Capture, Utilization and Storage Environmental Risk Assessment (Trial), which proposed the methods to assess environmental risks of CCUS demonstration projects. The Ministry of Land Resources initially completed the assessments of carbon dioxide geological storage potentials and adaptability in 417 basins, and managed to implement China’s first CO<sub>2</sub> geological storage demonstration project in Inner Mongolia.

**Carrying out sponge city pilot.** In 2014, MHRUD issued Technical Guidelines for Sponge City Construction (Trial) to guide the shift from traditional “fast rainwater drainage” to the multi-objective whole-process integrated management model featured by “infiltration, stagnation, storage, purification, utilization, discharge”, thereby promoting rainwater collection, purification and utilization. MHRUD, in conjunction with MOF, issued the Notice on Carrying out Sponge City Construction Pilot with Central Financial Support, and financial subsidies were granted to pilot sponge cities. At present, the construction of the identified 16 pilot

sponge cities is progressing steadily.

## **IV. Strengthening Capacity Building**

Since 2014, the Chinese government has actively strengthened top-level design for low-carbon development, promoted the development of legal systems and key policies to deal with climate change, improved management systems and working mechanisms, enhanced the development and application of low-carbon technologies, and improved the statistical accounting system, so as to enhance the capability in addressing climate change.

### **(I) Improving Macro-guidance Systems**

**Strengthening decision-making institution.** NDRC maintained its efforts as the coordination and liaison office of national leading group to address climate change, and strengthened the consultations and exchanges regarding key domestic and international policy issues for addressing climate change. Xinjiang Uygur Autonomous Region Development and Reform Commission set up Climate Change Department in 2015, and there were 10 provincial development and reform commissions in total setting up such a department. National climate change experts committee kept playing an active role in decision-making and consultancy and

providing support for the state's key climate decisions.

**Strengthening laws, regulations and standards.** The Law on Addressing Climate Change (Draft) was drafted and opinions were solicited accordingly, which accelerated the legislative process. The Sixteenth Meeting of the Twelfth NPC Standing Committee adopted the revised “Atmospheric Pollution Prevention Law” on 29 August 2015. China Meteorological Administration led efforts to revise Artificial Weather Modification Regulations.

**Playing a leading and planning role.** In September 2014, NDRC issued National Planning for Addressing Climate Change (2014-2020), and most provinces (autonomous regions and municipalities) issued a special provincial planning for addressing climate change, which pushed the inclusion of climate change contents into national economic development planning. The Ministry of Science and Technology (MOST) launched the inspection and assessment of the implementation of National Special Technology Development Planning for Addressing Climate Change during the 12<sup>th</sup> Five-Year Plan Period. Civil Aviation Administration completed the preliminary study on Planning for Energy Conservation and Emission Reduction and Addressing Climate Change in Aviation Industry during the 13<sup>th</sup> Five-Year Plan Period.

**Undertaking key strategic research.** Since 2014, NDRC further promoted China's Low-carbon Development Strategy Research Program, completed the review of each project under the program, and compiled Overall Planning for China's Low-Carbon Development Strategy, General Report on China's Low-Carbon Development Strategy and the research report of each project task. This provides key support for China to carry out systematic studies on its overall low-carbon development strategies and phased, field-based roadmaps, to put forward the objectives and tasks, pathways, policy systems and supporting measures of low-carbon development, to promote domestic low-carbon development, and to actively participate in international negotiations.

**Implementing low-carbon product standards, labeling and certification system.** Guangdong and Chongqing actively promoted low-carbon product certification, implemented and expanded low-carbon certification systems in representative industries and product categories. As of the end of July 2015, there were 39 enterprises obtaining low-carbon product certification. AQSIQ and the Standardization Administration finalized the national standards for GHG emissions accounting and reporting requirements for electricity producers. The State Railway Administration developed High-Speed Railway Design Standards and Green Railway Station Assessment Criteria to promote the

development of green railway stations. The State Forestry Administration issued two forestry industry standards in 2014: Technical Specifications for Carbon Sink Afforestation, and Guidelines for Carbon Sink Measurement Monitoring in Reforestation Projects.

**Reinforcing carbon intensity examination and assessment.** In June to August 2015, NDRC assessed the carbon dioxide emissions reduction per unit of GDP in 2014 of provincial governments, and urged each province to put their own targets, tasks and work into practice to ensure the realization of carbon intensity reduction target set for the 12<sup>th</sup> Five-Year Plan. Around carbon emissions targets management, it strengthened national carbon intensity accounting and situation analysis, and gave full play to the guiding and supervising role of carbon emissions target assessment for provincial governments.

## **(II) Strengthening Scientific and Technological Support**

**Strengthening basic research.** Since 2014, MOST, China Meteorological Administration and other 14 departments jointly organized the compilation of the third National Assessment Report on Climate Change, a systematic summary of the latest results of research on climate change. Relying on National Technology

Support Program and other resources, MOST continued deploying the task of Special Planning for Carbon Capture, Utilization and Storage Technology Development during the 12<sup>th</sup> Five-Year Plan Period, and jointly issued with MIIT the Action Program for 2014-2015 Energy Conservation and Emission Reduction Technology Special Project, to advance the research and development of key common technologies in this regard, the use of advanced and applicable technologies, and energy conservation and emission reduction technology innovation demonstration projects. It arranged and implemented key national scientific research programs for global change research, and focused the support on the studies of the response of Indian and Pacific Ocean to global warming and their role in regulating climate change, the climate change in global typical arid and semi-arid regions and its impact, the remote sensing and monitoring of polar environments and earth surface processes, etc. China Meteorological Administration released China Greenhouse Gases Bulletin (2013) and China Climate Change Monitoring Bulletin (2014). Chinese Academy of Sciences continued the strategic special technology pilot research projects including “Carbon Budget Certification and Related Issues on Addressing Climate Change”, “Key Technologies and Demonstration of Clean, Efficient and Gradient Use of Low-Rank Coal”, etc. NDRC supported local authorities to conduct policy research and enhance capacity building via Clean Development

Mechanism Funds.

**Conducting studies on climate change adaptation.** MOST organized feasibility assessment for technology support projects including “Impacts of Climate Change in Priority Areas and the Development and Application of Risk Assessment Techniques”, “Development and Application of Climate Change Adaptation Technologies in Coastal Areas”, etc. China Academy of Sciences actively promoted the herdsmen and farmers’ income increasing and ecological environment assessment in the Tibetan Plateau, and advanced the construction of wild stations, Chinese ecosystem research network, alpine surface processes and environmental monitoring network, and other related scientific and technological support platforms. MWR started “Impacts of Climate Change Research on China’s Water Security and Countermeasures” and other key research projects. The State Forestry Administration actively promoted the studies of the response of forest to climate change, and the total number of forestry ecological network positioning stations reached 166, which further improved the network layout. MOA accelerated grassland ecological environment monitoring, and had built 162 state grassland fixed monitoring sites. The State Oceanic Administration established China offshore short-term climate forecast system to strengthen the response of the maritime sector to climate change.

**Releasing the catalogue of low-carbon technologies.** NDRC organized the collection, screening and assessment of low-carbon technologies, and published Catalogue of State Promoted Priority Low-Carbon Technologies. MOST organized the compilation of Inventory of Promoted Energy-Saving and Low-Carbon Technological Achievements (1<sup>st</sup> Batch).

### **(III) Promoting the Construction of Statistics and Accounting Systems**

**Strengthening basic statistics systems and capacity building.** Since 2014, the National Bureau of Statistics (NBS) issued System of Statistical Indicators to Address Climate Change, Rules on Department Statistics Reporting to Address Climate Change (Trial), Table of Statistics Needs of Government Integrated Statistical System to Address Climate Change, etc. It officially established the statistical reporting system to address climate changes, collected and reviewed the statistics on addressing climate change in 2013. A leading statistics group for addressing climate change consisting of 23 departments including NDRC and NBS was established, and the working mechanism with comprehensive government statistics as the core and cooperative division of labor between concerned departments was set up. The Bureau actively organized professional capacity building for statisticians involved in climate change

addressing in statistics departments in all regions, and carried out climate change addressing statistics pilot work in 15 provinces (autonomous regions and municipalities).

**Reinforcing national, local and corporate accounting capability.**

China organized in an order manner and promoted the third national communications on climate change, the first “Two-Year Update Report”, and GHG inventory preparation. Based on the assessment and acceptance of provincial GHG inventories in 2005 and 2010, NDRC organized the joint review of two-year provincial GHG inventories to ensure inventory quality, released GHGs emissions accounting methods and reporting guidelines for 24 industries covering chemical, steel and electricity sector, and advanced the system design and system construction for corporate GHG emissions data direct reporting. The local actively undertook GHGs emissions accounting and reporting capacity building, and organized enterprises to gradually complete GHG emissions reporting.

## **V. Broad Participation**

Climate change has attracted ever-increasing attention since 2014, and the concept of green low-carbon development is gradually accepted in all sectors of society from government to business and

from the media to the public. The degree of social participation in addressing climate change sees a steady rise.

### **(I) Enhanced Guidance by Government**

NDRC together with relevant departments organized National Low Carbon Day and National Energy Conservation Week activities in 2015, held the Third Shenzhen International Forum on Low Carbon City, sub-forum “Global Low-Carbon Transformation and Green Industry Opportunities” of International Forum on Ecological Civilization in Guiyang, the First US-China Climate-Smart/Low-Carbon Cities Summit, Forum on Low-Carbon Energy Cities and other activities, which achieved good publicity effects. MOT organized the Bus Travel Week activity, and announced the first batch of 30 green recycling low-carbon demonstration projects in transportation industry. MHRUD organized the Ninth China Car Free Day in Cities event in 2015 to call on people to reduce car travels, attracting the participation of a total of 188 cities and counties. The Ministry of Education implemented energy-saving renovation in 18 colleges and universities, carried out such theme activities as “Water and Electricity Saving Week”, and organized college students to undertake social practice and science and technology competitions in energy conservation and emission reduction themed “Energy Conservation, Green Energy”. Civil

Aviation Administration took industry institutions as a platform, and held the first training and seminars on quantified management of airline energy conservation and emission reduction. China Meteorological Administration made the multilingual video on climate change “To Address Climate Change - China in Action (2014).” The Ministry of Commerce (MOC), together with NDRC and the Central Propaganda Department, issued Notice on Carrying out Low-Carbon, Energy-Saving and Green Circulation Actions to promote green ideas in circulation field. NBS prepared A Training Textbook for Climate Change Addressing Statistics, and offered training in climate change addressing statistics for professionals in the local statistics departments. National Health and Family Planning Commission promoted the publicity and education on climate change and health through thematic lectures, posters, etc. to improve public response to heat waves and other extreme weather conditions. MIIT offered training courses on climate change addressing capacity building to improve the scientific and technological capacity in addressing climate change, and held publicity and education activities on climate change to encourage the public to take practical actions to address climate change.

## **(II) Proactive Actions of Corporation**

China Ocean Shipping (Group) Corporation practiced the requirements and principles of “the United Nations Global Compact”, fulfilled its social commitment, actively built itself into a sea-protecting, resource-saving and environment-friendly enterprise, reduced fuel consumption and emissions, implemented energy conservation accountability, encouraged full participation, and kept promoting energy conservation. China Power Investment Group focused on investment in new energy sectors, accelerated the construction of new energy bases, and strived to practice low-carbon green growth policies. State Grid Corporation actively built a platform for the development and utilization, efficient distribution and safe operation of clean energies, and supported the construction of large renewable energy bases and the innovation and development of distributed energies. China National Petroleum Corporation vigorously promoted the efficient use of natural gas and the upgrading of gasoline and diesel quality, increased the supply of high quality, high value-added products, practiced low-carbon production and operation, and applied resources saving to every aspect. Always sticking to the principle of low carbon and energy conservation, Haier conducted LED energy conservation renovation, apartment residual heat recovery, green performance

and other activities. In the first 4 years of the 12<sup>th</sup> Five-Year Plan period, SASAC appropriated a total of about 20 billion Yuan of state-owned capital management budget to support corporate energy conservation and emission reduction. The investment of central enterprises in energy conservation and emission reduction totaled over 200 billion Yuan, and saved about 146 Mtce accumulatively, equivalent to reducing carbon dioxide emissions by about 350 Mtons. By the end of 2014, Vanke sponsored “Green Low-Carbon Future of the City” at China Corner on UN climate conference in Peru, announced the donation of 10,000 haloxylon sapling trees to Alxa SEE welfare organizations, and set up “Haloxylon Forest of Lima Chinese Firm Day”. BYD, the world’s largest rechargeable battery maker and electric vehicle leader, actively promoted low-carbon and zero-emission new energy vehicles to the world.

### **(III) Active Participation of Public**

**Extensive publicity by media.** Since 2014, Xinhua News Agency, People’s Daily, China Central Television, China Radio International, China Daily, China News Agency and many other news media paid great attention to the key events to address climate change including UN climate summit, the Sino-US joint statement on climate change, the climate conference in Lima, and China’s intended nationally determined contribution documents, and made full use of pictures,

texts, videos and other forms for comprehensive coverage, which created a good atmosphere for public opinion.

**Vigorous promotion by NGOs.** China Green Carbon Foundation and other institutions jointly organized the “Media Classroom to Address Climate Change” campaign to provide media reporters the training in knowledge on climate change, and selected outstanding works in this campaign in 2014. National Center for Climate Change Strategy and International Cooperation joined hands with Public Weather Service Center of China Meteorological Administration in carrying out the scientific investigation and public science publicity activity themed “Address Climate Change, Record China”. China Association for NGO Cooperation, Guangzhou Association for NGO Development Cooperation, and Shijiazhuang Low-Carbon Society jointly organized climate change training for secondary school teachers in China. China Youth Climate Action Network (CYCAN) hosted the Seventh International Youth Summit on Energy and Climate Change. All-China Environment Federation launched the initiative “To Guard Blue Sky and Clean Water” for the whole country. State Information Center, China Association for NGO Cooperation Green Travel Fund, China Low Carbon Action League, and Shenzhen Municipal Government jointly carried out the “Low-Carbon China Tour 2015” action, and organized news media to report the status

and experience of low-carbon development in China. China Green Carbon Foundation established the “Zero-Carbon Creative Pavilion” to attract public participation through advocacy and experience. During the “Earth Hour” event in 2015, WWF encouraged people to turn off unnecessary lights and other power equipment, and take their own practical actions to address climate change.

**Active participation of the public.** Participating in the various forms of education, training and other activities on climate change, the public enhanced their awareness of addressing climate change, practicing low-carbon development, energy conservation and emission reduction, and improved their consciousness of active participation in addressing climate change. More and more people began to consciously choose low-carbon diet, low-carbon living and low-carbon travel as their daily lifestyle. Energy conservation and emission reduction special events were held extensively into households, communities and schools throughout the country to call on people to cherish the concept of “saving” in their work and life. Moreover, relying on WeChat, microblog and other network platforms, the public acquired the knowledge on climate change and practiced low-carbon development through WeChat public numbers and microblogging discussion.

## **VI. Strengthening International Exchanges and Cooperation**

Since 2014, China, adhering to the “mutual-benefit, pragmatic and effective” principle, strengthened its cooperation with developed countries, actively participated in and promoted the cooperation with international organizations, deepened the cooperation with developing countries, prepared the South-South Cooperation Fund, and worked with all the parties to address climate change.

### **(I) Strengthening Exchanges and Cooperation with Developed Countries**

**Releasing joint statements on climate change with a number of countries.** Since 2014, the Chinese government took high-level visits as the opportunity to strengthen exchanges and cooperation with developed countries in climate change, released joint statements on climate change with US, European Union, Britain and other countries, which won a positive response from the international community, enhanced mutual understanding and expanded consensus with other countries in addressing climate change, and made important contributions to promote the

multilateral climate change negotiations.

**Strengthening bilateral exchanges and dialogue on climate change.** NDRC organized Sino-US and Sino-German working group bilateral meetings on climate change to promote the signing of relevant framework agreements. It held ministerial and working-layer dialogues and consultations on climate change with US, European Union, Australia, New Zealand, Britain, Germany and other countries to promote dialogues and communications on expert levels. It strengthened research exchanges with US on CCUS, hydro fluorocarbons and other issues, and promoted extensive exchanges with Britain and France on the topics of climate conference in Paris to expand consensus.

**Deepening bilateral cooperation on climate change.** Since 2014, the Chinese government signed bilateral memorandums of understanding on climate change with Australia, New Zealand, Sweden, Switzerland and other countries, started the second phase of China's adaption to climate change project in cooperation with Switzerland, and reached an agreement with South Korea on climate change, which promoted bilateral cooperation to a new level. China and US finalized 7 CCUS cooperative demonstration projects. MOST implemented the second phase of "EU-China Near-Zero Emissions Coal-Fired Power" cooperation project.

MOST-UNEP-Africa Water Action Project was further pushed forward. MHRUD started the cooperation with US, Germany and Canada in low-carbon eco-city pilot.

## **(II) Promoting Exchanges and Cooperation with International Organizations**

**Conducting a wide range of practical cooperation with international organizations.** China signed the memorandum of understanding on bilateral cooperation on climate change with the Asian Development Bank, and jointly organized the “International Workshop on Urban Adaptation to Climate Change”. It also signed the memorandum of understanding with UNEP on enhancing South-South cooperation in addressing climate change, and worked with the World Bank to launch the Global Environment Facility project “Promoting the Development of Chinese Clean, Green and Low-Carbon Cities through International Cooperation”.

**Actively participating in relevant international conferences and initiatives.** China attended the related conferences of Green Climate Fund, Adaptation Fund, and Technology Executive Committee under the UNFCCC, and participated in the global methane initiatives and the activities held by R20 international and regional climate action organizations and other multilateral

organizations to fully draw on international experience. It actively put into practice the related cooperation with the Global Carbon Capture and Storage Institute, held seminars and actively carried out international cooperation.

### **(III) Deepening the Cooperation with Developing Countries**

The Chinese government actively promoted South-South cooperation in addressing climate change, presented low-carbon energy-saving products to developing countries, organized training courses on climate change, and doubled the assistance to developing countries. Since 2014, NDRC, working along with MOFA and MOC, actively promoted the signing of the memorandum of understanding with Maldives, Bolivia, Tonga, Samoa, Fiji, Antigua and Barbuda, Ghana, Barbados, Myanmar, Pakistan, and expanded the category of free-offered products according to the needs of developing countries; held 15 sessions of training courses on climate change and green development, which cultivated more than 600 officials, experts and technical personnel for developing countries in the field of climate change. It expanded the category of free-offered products according to the needs of developing countries, and provided Bolivia with much-needed weather monitoring and warning devices. It continued to strengthen the consultation mechanisms of “Basic Countries” and “Like

Minded Developing Countries”, strengthened dialogues and communications with developing countries, and carried out pragmatic cooperation. Since 2014, the Chinese government carried out pragmatic cooperation with nearly 100 developing countries in Asia, Africa and Latin America in the field of emergency relief, satellite weather monitoring and clean energy development, and undertook more than 100 technical cooperation and emergency relief projects to tackle climate change; it held in China more than 130 sessions of training on climate change and green development, which cultivated nearly 3,500 officials, experts and technical personnel for developing countries in the field of climate change.

#### **(IV) Preparing South-South Cooperation Fund for Addressing Climate Change**

In September 2014, Vice Premier Zhang Gaoli, as a special envoy of President Xi Jinping, announced on the UN climate summit in New York that China would vigorously promote South-South cooperation to address climate change, double the existing annual financial support from 2015, and set up South-South Cooperation Fund for addressing climate change. China has provided \$ 6 million to support the UN Secretary General to promote South-South cooperation to address climate change. To put into practice the solemn commitment China made to the international community,

NDRC worked actively with MOFA and MF to set up South-South Cooperation Fund for addressing climate change and increase the support for other developing countries.

## **VII Actively Engaging in International Negotiations**

Since 2014, China has been extensively involved in global climate governance, kept actively participating in international negotiations to address climate change, strengthened multi-level consultations and dialogues with other countries in the field of climate change, and made positive contributions to promoting the Paris Conference to reach agreement and establishing an equitable, justified and win-win post-2020 global climate change arrangement.

### **(I) Proactive Participation in International Negotiations under the UNFCCC**

China firmly upholds the principles and framework of the UNFCCC, adheres to the principles of equity, common but differentiated responsibilities and respective capabilities, and abides by the multilateral rules of openness and transparency, inclusiveness to improve the ability, party-driven and consensus.

In December 2014, the Chinese official delegation attended the UN climate change conference in Lima, participated in the negotiations actively and constructively, promoted the consensus of different parties, and introduced China's policies and actions to address climate change, and made great contributions to the success of the conference. In 2015, the Chinese government fully attended the negotiation meetings under the UNFCCC and strengthened communications and exchange with all parties, with a view to working with all parties to promote the Paris Conference to reach agreement and establishing an equitable, justified and win-win post-2020 global climate arrangement.

On June 30, 2015, the Chinese government submitted to the Secretariat of the UNFCCC its INDC: "Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions". It clearly proposed to achieve the peaking of carbon dioxide emissions around 2030, increase the share of non-fossil fuels in primary energy consumption to around 20% in 2030, to lower carbon dioxide emissions per unit of GDP in 2030 by 60% to 65% from the 2005 level, increase the forest stock volume by around 4.5 billion cubic meters on the 2005 level, and to improve the ability to adapt to climate change in a comprehensive manner. Besides, it explained in a systematic manner the paths and policy measures to achieve these objectives, which fully reflected the

transparency of China's enhanced actions and made positive contributions to raising the confidence of all parties in multilateral processes and promoting the Paris Conference to reach substantial results as scheduled.

## **(II) Extensive Participation in Related International Progress**

**Actively participating in international processes related to climate change negotiations.** Chinese leaders actively participated in multilateral diplomatic activities, delivered many important speeches, and reached consensus with the heads of other states, which promoted the multilateral processes. In September 2014, Vice Premier Zhang Gaoli, as a special envoy of President Xi Jinping, attended the UN Climate Summit in New York, and delivered an important speech, which introduced China's targets of addressing climate change and initiatives to increase financial support for South-South cooperation for tackling climate change, and also made a political statement on the actions to address climate change after 2020. China was actively involved in the preparation of Intergovernmental Panel on Climate Change (IPCC) assessment reports and future planning work, completed the interpretation and publicity of IPCC Fifth Assessment Report, and increased its own science and technology capacity and voice in international governance.

**Strengthening consultations and dialogues with other countries.**

China made efforts to strengthen the communication and coordination with the BASIC countries and the Like-Minded Developing Countries, maintained the unity and common interests of developing countries, organized or attended the ministerial conferences of BASIC countries, hosted the Beijing Conference of “Like-Minded Developing Countries and actively attended each coordination conferences of “Like-Minded Developing Countries”. It continued to strengthen communications and coordination with the small island states, the least developed countries and the African Countries, conducted joint research with developing countries, and actively safeguarded the interests of developing countries. It continued to strengthen the communication with developed countries to enhance understanding and expand consensus, and continued to hold ministerial and working-level dialogues and consultations on climate change with the US, European Union, Australia, New Zealand, UK, Germany and other countries to promote dialogues and communications on expert levels. In addition, it put into practice the consensus reached by the leaders of China and France, establish the China-France consultation mechanism on climate change, strengthened the dialogue and communication with the French presidency of the Paris Conference, so as to prepare and pave the way for the Paris Conference and jointly ensure the success of the conference on the basis of

openness and transparency, inclusiveness, and consensus. It also strengthened the communication with foreign embassies, media and NGOs.

**Proactive participation in climate change conferences and processes outside the UNFCCC.** NDRC and relevant departments participated in the informal consultations on outcomes of Paris Conference, the Petersburg Dialogue, the Key Economies Forum on Climate Change and Energy, the UN General Assembly high-level meeting on climate change; every negotiation meeting and other informal consultations would be taken as an opportunity to reinforce dialogues and consultations with other parties. The Chinese government attended the conferences of Montreal Protocol, International Maritime Organization and International Civil Aviation Organization, offered suggestions, participated in related consultations and negotiations, and participated in the negotiations beyond the UNFCCC. China continued to be actively involved in and payed close attention to East Asia Low Carbon Growth Partnership Program, Global Alliance for Clean Cook stoves, Global Agricultural GHGs Research Alliance, Climate and Clean Air Coalition, and other mechanisms outside of UNFCCC; it also actively participated in the discussions on climate change issues under the framework of G20, APEC, East Asia Summit, UNCTAD Conference and WTO.

### **(III) China's Basic Position on the Paris 2015 UN Climate Change Conference**

Climate change is a common challenge facing humanity, and requires the joint efforts of each country. As a milestone in global climate governance, Paris Conference will adopt the agreement to strengthen actions on climate change after 2020. China is willing to work actively and constructively with all parties to promote negotiating process under the principles of “common but differentiated responsibilities”, equity and respective capabilities so as to ensure to reach agreement on the Paris Conference in 2015 and build an equitable and justified international climate arrangement.

The 2015 agreement should be based on UNFCCC and the its Kyoto Protocol, fully in accordance with the principles, provisions and frameworks of the UNFCCC, respect the differentiation between developed and developing countries in historical responsibilities, national circumstance, stages of development and capabilities, reflect all elements including mitigation, adaptation, finance, technology, capacity building and transparency, and strengthen the full, effective and sustained implementation of the UNFCCC after 2020. The developed countries should earnestly

fulfill their commitments to emissions reduction as well as financial and technical support by 2020, and continue to provide support for developing countries after 2020, thus laying the foundation of mutual trust for the success of the Paris Conference. China will offer its full support to the French presidency in organizing the Paris Conference.

## Conclusions

As the world's largest developing country, China has a per capita GDP equivalent to only 70% of the global average. It has not yet completed industrialization and urbanization process, and is faced with enormous pressures from developing economy, improving people's livelihood, protecting environment and addressing climate change. The problem of uncoordinated, unbalanced and unsustainable development still persists, rendering it imminent to change the traditional extensive mode of development. As General Secretary Xi Jinping said, to address climate change is not only an inherent requirement of sustainable development in China, but also the international obligation of a responsible large country; it is not that someone else forces us to do it, but we should do it voluntarily.

It is long way to go to address climate change and demands the persistent efforts of the whole society. The 13th Five-Year-Plan period is not only a crucial period for building a comprehensive well-off Chinese society, but a period of strategic opportunity to vigorously promote the construction of ecological civilization and promote the green and low-carbon development. Based on a comprehensive summary of the achievements made in addressing climate change during the 12th Five-Year-Plan period, the Chinese

government will study and set up the targets and tasks to address climate change for the 13th Five-Year-Plan period, and ensures the realization of GHG emissions controlling targets in 2020, thereby laying a solid foundation for achieving an emission peak in around 2030. It will accelerate the green low-carbon transformation of the whole society, drive the upgrading of development patterns, actively advance international negotiations on climate change, and continue to promote multilateral and bilateral dialogues and exchanges as well as pragmatic cooperation in climate change, with a goal to make new and significant contributions to addressing global climate change in the future.