



**PROGRESS ON ENVIRONMENT AND DEVELOPMENT**  
**(2011-2012)**  
**AND CCICED POLICY RECOMMENDATIONS IMPACT**

**CCICED Chief Advisor & Support Team**

**December 12-14, 2012**

## Table of Contents

INTRODUCTION.....	3
Part 1. Major Progress on Chinese Policies on Environment and Development.....	5
I. Environment and development overview .....	5
(i) New progresses on environment and development during 2011 .....	5
(ii) Work priorities in environment and development in 2012 .....	7
II. Environment and development blueprint for the next five years.....	8
(i) 18 <sup>th</sup> CPC National Congress Ranked Ecological Civilization as part of Socialism Modernization Construction.....	8
(ii) “Protection along with development and development accompanied by protection” identified in the 7th National Conference on Environmental Protection .....	10
(iii) New environmental protection blueprint depicted in the <i>12<sup>th</sup> Five-Year Plan for         Environmental Protection</i> .....	12
(iv) New roadmap outlined in the <i>12<sup>th</sup> Five-Year Plan for Energy Saving and Emission         Reduction</i> .....	16
III. Important progress in environmental and developmental policies related to CCICED policy recommendations .....	21
(i) Continue green transformation for economic development .....	22
(ii) Enhanced prevention of heavy metal pollution, especially mercury pollution .....	30
(iii) New progress in the prevention and control of environmental pollution .....	30
(iv) New progress in environmental rule-of-law in China .....	33
(v) Social management innovation under environmental public participation and appeal and information disclosure .....	35
(vi) Actively promoted international environmental cooperation .....	38
IV Review of the major policy recommendations in the 4th phase of CCICED.....	40
V. Conclusion.....	47
Part 2. Appendix: Policy Recommendations to the Government of China in 2011(Abstract).....	51

## INTRODUCTION

As a high-level policy advisory body approved by the Chinese Government, China Council for International Cooperation on Environment and Development (CCICED) is chiefly responsible for proposing policy recommendations and for decision makers' reference and adoption on important issues in the fields of environment and development. At CCICED annual general meetings, Chinese and foreign members engage in discussions on policy issues on the basis of policy researches, leading to policy recommendations submitted to the State Council and central government departments. The CCICED aims to further enhance its unique role, improve working mechanisms, strengthen understanding of the overall progress of policies in China, and assist members to better offer advice and suggestions. Commissioned by CCICED Secretariat, the supporting group of CCICED Chinese and Foreign Chief Consultants has been responsible since 2008 for drafting the report *Progress of Important Policies Pertaining to China's Environment and Development, and Impacts of CCICED Policy Recommendations*. This report reviews China's major progress in environment and development policies during the previous year, tracking the latest development of issues related to crucial CCICED policy recommendations, along with relevant policy recommendations adopted by Chinese government departments.

The report has two main threads. The first is to review China's major environmental and development policies introduced in the past year, and to provide CCICED foreign members with a panorama that shows the latest progress in the fields of environment and development, so as to strengthen their awareness and understanding of policy developments. The second is to compare hot issues in recent years, especially over the past year, as well as major policy recommendations on China's environmental and development policy processes, sorting out the latest concerns and adoption of policy recommendations, in order to help members understand which policy recommendations have been either referred or adopted. Based on such understanding, CCICED members can further discuss the future direction of policy recommendations and make appropriate adjustments in order to put forward specific ones for the next year.

Currently, Chinese policy research institutions that address environment and development spring up with each passing day, with contending policy researches. Coupled with complicated policy-making processes, if a policy that tallies with CCICED policy recommendations in the past year is introduced, it may be somewhat arbitrary to view this as an impact of CCICED. This report does not attempt to assess the extent to which CCICED environmental and development policies have succeeded, but it does aim to sort out and compare China's policy practice with CCICED policy recommendations, thus illustrating the relevance of its selection of policy research topics and its proposed content with policy progress. It is perhaps up to the decision-makers to determine the real impacts of CCICED on Chinese environmental and development policies.

This paper is the fifth report provided by the supporting group of CCICED Chinese and International Chief Advisors since 2008, and is divided into two parts. The first part is a briefing and analysis of Chinese environment and development as well as the progress of relevant CCICED policy proposals made after the CCICED 2011 AGM last November. As 2011 was the last year of CCICED Phase IV, the first part also gives an overview of the influence of CCICED over the past five years. The second part provides a list of main points of the 2011 CCICED policy recommendations.

## Part 1. Major Progress on Chinese Policies on Environment and Development

### I. Environment and development overview

#### (i) New progress on environment and development during 2011

The year 2011 unveiled the curtain of the 12<sup>th</sup> “Five-Year Plan” (FYP). In the face of the complex and volatile international political and economic environment and the arduous task of domestic reform and development, the Chinese Government, centering on the accelerated transformation of economic development mode, has stepped up energy saving and emission reduction and vigorously developed the green industry and circular economy. With enhanced efforts in ecological protection, it has prioritized environmental issues of wide concern and assumed an active role in international environmental cooperation. All in all, 2011 witnessed a good start for environmental protection in the 12<sup>th</sup> FYP period.

**Energy saving and emission reduction moved forward amid difficulties.** In 2011, the total discharge of major pollutants continued to decline. Among them, the chemical oxygen demand (COD), ammonia, and sulfur dioxide emissions reduced to 24.999 million, 2.604 million, and 22.179 million tons respectively — a decrease of 2.04%, 1.52% and 2.21% over the previous year. However, the task remains arduous. Actual energy consumption per unit of GDP fell by only 2.01%, which was below the scheduled target of 3.5%. Total nitrogen oxide emissions rose to 24.043 million tons in 2011, an increase of 5.73% over the 2010 level. In the *2012 Government Work Report*, Premier Wen Jiabao also admitted: “There are some shortcomings and deficiencies in the government work, and we have not accomplished the target [...] in energy saving and emission reduction.” This reflects the deficiencies in the government work and the difficulties in achieving the target. As the task in the 11<sup>th</sup> FYP has been basically fulfilled, the potential for further energy conservation and emission reduction decreases substantially, increasing significantly the difficulties in achieving the target. Nevertheless, with the experience gained in the 11<sup>th</sup> FYP, it is believed that the Chinese Government will take effective measures to ensure that all targets are fully attainable.

**Green development has seen significant achievement.** China continues to eliminate backward production capacity. In 2011, small thermal power units with a total capacity of 3.46 million kW and steel sintering machines for 7000 m<sup>2</sup> were shut down. Moreover, outdated paper production capacity of 7.1 million tons, a printing and dyeing capacity of 2.3 billion meters, and a cement production capacity of 42 million tons were eliminated, and a number of lead-associated heavy metal enterprises were banned. Increased input in pollution control facilities further enhanced the capability in pollution control. Urban sewage treatment capacity was up by 11 million tons, and new coal-fired units with a capacity of over 50 million kW were equipped with desulphurization device. And the installed capacity of clean energy generation units reached 290 million kW — an increase of 33.56 million kW over the previous year.

**Environmental supervision efforts were enhanced.** In line with the unified deployment of the Central Government, MEP in conjunction with relevant departments has launched the supervision and inspection of accelerating economic transformation in 14 provinces (autonomous regions and municipalities directly under the Central Government). Rigorous environmental impact assessment was introduced. Reports were returned or the approval was rejected or suspended for 44 projects that were worth nearly RMB 250 billion and involved high-energy consumption, pollution and resource consumption, low-level redundant construction and overcapacity. Industrial pollution prevention and control upgrading and industrial restructuring were promoted. Strict environmental checks were introduced in key industries, such as the rare earth sector where the new investment in environmental protection added up to RMB 2 billion. Enterprises also face strict verification and post inspection for going public, and applicants have pooled RMB 997 million in environmental protection within the verification period and completed 916 pollution control projects.

**Progress was made in the control of heavy metals and hazardous chemicals.** The State Council approved the *12<sup>th</sup> Five-Year Plan for the Control and Prevention of Heavy Metal Pollution* and the *Implementation Program for Controlling the Heavy Metal Pollution in Xiangjiang River Basin*. A central allocation of RMB 25 billion was disbursed for addressing the heavy metal pollution in 26 provinces, which basically curbed the high momentum of blood lead event in lead battery enterprises. Environmental management standards for chemicals and hazardous waste were improved with the establishment of a sound, persistent statistical reporting system for organic pollutants and a standardized management, inspection and evaluation mechanism for hazardous waste. Capacities in disposing hazardous chemicals and recycling waste were also raised. License holders for hazardous substances and waste operation utilized and disposed over 9 million tons of waste and recycled up to 53 million units of waste household appliances.

Rural environmental remediation and ecological protection have been strengthened. In the aspect of rural environmental remediation, a special fund worth RMB 8 billion was arranged by the end of 2011, benefiting 37.2906 million people. In 2011, a total area of 6.138 million hectares was restored to forests, a year-on-year increase of 3.9%, and wetland protection area was increased by 33,000 hectares. State Forestry Administration specified the woodland red line at 4.68 billion mu, which should be held like the red line for arable land. At the end of 2011, a total of 2640 nature reserves of different types and levels were established nationwide (excluding Hong Kong, Macao Special Administrative Region and Taiwan), covering about 149.71 million hectares, of which the land area amounted to 143.33 million hectares, accounting for 14.9% of the national total.

**Environmental standards system was further improved.** In 2011, MEP issued 73 national standards for environmental protection, including 13 national pollutant discharge standards. Among them, *Standards for Air Pollutant Emissions from Thermal Power Plants* provides important support for achieving energy saving and emission reduction goals in the 12<sup>th</sup> FYP period. *Standards for Rare Earth Industrial Pollutant Emissions* acts as a significant role in restricting the disorder in the rare earth industry and protecting the legitimate trade interests in China. *Guide for Air Quality Assessment for Passenger Vehicles* will effectively drive forward

air pollution prevention and control in vehicles and the technological progress in the automotive industry. *2012 Ambient Air Quality Standards* include such indicators as particulate matters (PM<sub>2.5</sub>) and ozone (O<sub>3</sub>), and 8-hour concentration limit for stage-by-stage monitoring and implementation across the country.

## **(ii) Work priorities in environment and development in 2012**

Environment protection priorities in 2012 were identified at the Central Economic Work Conference in December 2011, and in the Government Work Report delivered by Premier Wen Jiabao on March 5, 2012 during the National People's Congress (NPC) and Chinese People's Political Consultative Conference (CPPCC). More specifically, priority will be given to the transformation of economic development mode and economic restructuring, domestic demand expansion, independent innovation, energy saving and emission reduction.

(1) Adjust the economic structure and promote the optimization and upgrading of industrial structure. Foster and develop strategic emerging industries, emphasize the progress in major technological breakthroughs and the enhancement of core competitiveness. At the same time, prevent the blind expansion of solar energy and wind power equipment manufacturing capacity. Transform and upgrade traditional industries, enforce strict industrial policy orientation, further eliminate backward production capacity, promote mergers and reorganizations, and drive ahead rational industrial layout.

(2) Optimize the energy structure and promote energy saving and emission reduction. Promote the efficient and clean utilization of traditional energy sources and accelerate the construction of major energy production bases and transport channels to facilitate the positive and orderly new energy development. Develop safe and efficient nuclear power, actively develop hydropower, accelerate shale gas exploration and development research, and increase the proportion of new energy and renewable energy. Give prominence to energy saving and emission reduction in key fields such as industry, transportation, construction, public institutions, residential life and in thousands of energy-consuming enterprises, and further eliminate backward production capacity. Strengthen energy management with the work program for energy consumption control, rationalize the energy price system, develop smart grid and distributed energy, implement effective management, such as energy-saving power generation and dispatch, contract energy management and government energy-efficient procurement. Conduct energy efficiency certification and labeling for supervision and inspection, vigorously develop the circular economy, and encourage saving energy, water, land and materials, and the comprehensive utilization of resources. Adopt strict target responsibility and management system, improve the assessment and evaluation mechanism and the reward and punishment system, strengthen the direction of energy conservation policies, and accelerate the establishment of an energy saving and emission reduction market mechanism.

(3) Strengthen environmental protection and highlight efforts to solve prominent livelihood-related environmental problems. Focus on the prevention and control of air, water, heavy metal, and agricultural nonpoint pollution, and address livelihood-related

environmental issues such as heavy metal, drinking water source, air, soil, and marine pollution. Exert efforts to reduce agricultural pollution from nonpoint sources and implement strict supervision of hazardous chemicals. In the Beijing-Tianjin-Hebei region, the Yangtze River Delta, and Pearl River Delta, as well as municipalities directly under the Central Government and the provincial capitals, conduct PM2.5 monitoring, and expand the project to all prefecture-level cities in 2015. Promote ecological construction with the introduction of a sound ecological compensation mechanism so as to promote ecological protection and restoration. Step up grassland ecological construction through enhanced protection of natural forests, restoring forests and grassland from farmland, and restoring grassland from pasture. Drive ahead forestation and the control of decertification, rocky desertification, and sloping farmland, and provide strict protection of important ecological function zones such as rivers, wetlands and lakes. Enhance capacity building for adapting to climate change and particularly response to extreme weather events, to improve the capability of disaster prevention and mitigation. Adhere to the principle of common but differentiated responsibility and the principle of fairness in the constructive effort in international negotiations to address climate change.

## **II. Environment and development blueprint for the next five years and the long term**

### **(i) The CPC 18<sup>th</sup> National Congress gave priority to Ecological Civilization in the construction of Socialist Modernization.**

In the report delivered by Mr. Hu Jintao at the 18<sup>th</sup> CPC National Congress in November 2012, he stressed the problem of resource and environmental constraints facing China in its pursuit of building socialist modernization and achieving an all-around well-off society. He pointed out that, in order to fulfill the goal of an all-around well-off society in 2020, new breakthroughs in five fields should be made: a healthy economy that grows continuously, inclusive democracy that reaches more people, a culture with increasing soft power, an overall rise of living standards, and new progress in constructing a resource-saving and environmentally-friendly society. This means that, together with economic, political, cultural, and social constructions, ecological civilization construction has become part of the concept of socialist modernization. In the report, one separate chapter is devoted to the elaboration of the construction of ecological civilization, which has never been referred to in the history of CPC reports in the past.

Mr. Hu said that promoting ecological civilization is a long-term task, and of vital importance to people's well-being and China's future. China is faced with increasing resource constraints, severe environmental pollution and a deteriorating ecosystem, and it needs to raise the ecological awareness that promotes the need to respect, accommodate and protect nature. Ecological civilization construction should be given a high priority and incorporated into every aspect and the whole process of advancing economic, political, cultural, and social progress, in order to build a beautiful country, and achieve sustainable development.

The reports depicted specific requirement for the construction of an ecological civilization:



*We should remain committed to the basic state policy of conserving resources and protecting the environment as well as to the principle of giving high priority to conserving resources, protecting the environment and promoting its natural restoration; and strive for green, circular and low-carbon development. We should integrate a spatial approach, improve industrial structure, and change production mode and life style in the interest of conserving resources and protecting the environment. We should address the root cause of ecological deterioration and reverse this trend, create a sound working and living environment for people, and contribute to global ecological security.*

*-Improve China's spatial development for land use. Land is the spatial carrier for ecological civilization, and we must cherish every inch of it. Guided by the principle of maintaining balance between population, resources and the environment; and promoting economic, social and ecological benefits; we should keep the pace of development under control and regulate its spatial composition. We should ensure that the space for production is used intensively and efficiently, that the living space is livable and proper in size, and that the ecological space is unspoiled and beautiful. We should leave more space for nature to achieve self-renewal. We should keep more farmland for farming, and leave to our future generations a beautiful homeland with green fields, clean water and a blue sky. We should ensure the speedy implementation of the functional zoning strategy, and require that all regions pursuing development be in strict accordance with this strategy, and advance urbanization, agricultural development and ecological security in a scientific and balanced way. We should enhance our capacity for exploiting marine resources, develop a marine economy, protect the marine ecological environment, resolutely safeguard China's maritime rights and interests, and build China into a strong maritime country.*

*-Promote all-around resource conservation. Resource conservation is a central component in the protection of the ecological environment. We should conserve resources and use them efficiently, and bring about a fundamental change in the way resources are utilized. We should strengthen conservation efforts, drastically reduce energy, water and land consumption per unit of GDP, and use such resources in a better and more efficient way. We should launch a revolution in energy production and consumption, impose a ceiling on total energy consumption, save energy and reduce its consumption. We should support the development of energy-efficient and low-carbon industries, new energy sources and renewable energy sources; and ensure China's energy security. We should better protect water sources, impose a cap on total water consumption, promote water recycling, and build a water-conserving society. We should ensure that the red line for protecting farmland is not crossed and strictly control land uses. We should strengthen exploration, protection and proper exploitation of mineral resources. We should develop a circular economy to reduce waste and resource consumption, reuse resources and recycle waste in the process of production, distribution and consumption.*

*-Intensify the protection of ecosystem and environment. A sound ecological environment is the fundamental basis for sustainable human and social development. We should launch major projects for restoring the ecosystem, increase our capacity for producing ecological products, take integrated steps to control desertification, rocky desertification and soil erosion, increase forests, lakes and wetlands areas; and protect biodiversity. We should accelerate the*

*construction of water conservancy projects, and enhance our capacity for responding to floods, drought and waterlogging in urban and rural areas. We should improve the system for preventing and mitigating natural disasters, and become better able to respond to meteorological, geological and seismic disasters. We should take a holistic approach to intensifying prevention and control of water, air and soil pollution, putting prevention first and placing emphasis on serious environmental problems that pose health hazards to people. We will work with the international community to actively respond to global climate change on the basis of equity and in accordance with the principle of common but differentiated responsibilities and respective capabilities of all countries.*

*-Enhance system building to promote ecological civilization. System building is crucial to protecting the ecological environment. Resource consumption, environmental damage and ecological benefits should be integrated into the system for evaluating economic and social development; and related goals, evaluation methods and reward and punishment mechanisms should be adopted in keeping with the need for promoting ecological civilization. We should establish a system for developing and protecting China's spatial development and improve the system for providing the strictest possible protection for farmland, for managing water resources and for protecting the environment. We should deepen reform of prices, taxes and fees for resource products, and establish a system for resource consumption and compensation for ecological damage - a system that responds to market supply and demand, and resource scarcity; recognizes ecological values and requires compensation in the interests of future generations. We should carry out trials for trading energy savings, carbon emission rights, pollution discharge rights and water rights. We should strengthen environmental monitoring and improve the system of accountability for ecological and environmental protection, and the system of compensation for environmental damage. We should increase publicity of and education in ecological civilization, raise public awareness of the need to conserve resources, protect the environment and promote ecological civilization, and foster a social atmosphere for practicing moderate consumption and cherishing the ecological environment.*

**(ii) “Protection along with development and development accompanied by protection” identified in the 7th National Conference on Environmental Protection**

After the first Conference on the Human Environment in Stockholm, the Chinese Government held the first National Conference on Environmental Protection in 1973, established its environmental protection policy, and developed *Opinions on Environmental Protection and Improvement*. This conference opens up the cause of environmental protection in China and has had a profound impact on the after environmental protection. The second National Conference on Environmental Protection held in 1983 identified environmental protection the basic national policy, and rolled out the major policies of “prevention first and prevention in combination with control”, “polluter responsible for pollution control” and “strengthened environmental management”. In the next 30 years, the National Conference on Environmental Protection was held every four to seven years to sum up national efforts and develop the principles and policies for future work. Each session of the National Conference on

Environmental Protection has been a landmark in the cause of environmental protection in China and a milestone for efforts in different stages.

The 7<sup>th</sup> National Conference on Environmental Protection was held in Beijing on December 20-21, 2011. Vice Premier Li Keqiang attended the conference and delivered an important speech. The conference summed up the achievements in the past five years, which laid a sound foundation for the work in the new era. (1) Significant transition from awareness to practice in environmental protection. Environmental protection plays a more significant role in the comprehensive, coordinated, and sustainable economic and social development, while the market mechanism acts a more apparent role in environmental protection. *Law on the Promotion of Circular Economy*, *Law on the Prevention and Control of Water Pollution*, and *Regulations on the Planning Environmental Impact Assessment* have been formulated or amended, consolidating the legal basis for environmental protection. (2) Obvious increased investment and enhanced capacity-building efforts in environmental protection. Increased central and local financial funds have backed up the advances in environmental infrastructure, scientific research, personnel training and international cooperation. (3) Gradual effects of environmental protection in economic development optimization. Under the guidance of the “three changes”<sup>1</sup>, environmental protection has played an important role in promoting industrial restructuring and economic development transformation. (4) Remarkable results in pollution prevention and control and reduced emissions of major pollutants. Emission reduction targets were fully completed beyond, and environmental quality has improved in some areas. A rural population of 215 million was free from unsafe drinking water problems, the national urban sewage treatment rate was up from 52% to 77%, and the proportion of thermal power desulphurization units up from 14% to 86%. In this sense, the environmental quality task was completed for the Beijing Olympic Games and Shanghai World Expo.

Vice Premier Li Keqiang said in the conference that China is still and will be for a long time in the primary stage of socialism. In light of the prominent underdevelopment problems, development is still the top priority in China. At the same time, China is also facing imbalanced, uncoordinated, and unsustainable development, and the environment has become a prominent hindrance to further development. Therefore, transformation is a must for people-oriented, comprehensive, coordinated and sustainable development, and ecological and environmental protection should be enhanced for scientific development. Transformation is another form of development in which environmental protection will help foster new growth fields and improve the quality and efficiency of development. Vice Premier Li Keqiang called for properly handling the relationship between economic development, innovational transformation, and environmental protection and conservation. In other words, environmental protection should be carried out along with the development, and the development is pursued on the premise of environmental protection. We strive for reform and innovation in the various aspects of environmental protection in the active exploration of a

---

<sup>1</sup> It refers to the change from emphasizing economic growth but ignoring environmental protection to emphasizing both economic growth and environmental protection; the change from environmental protection lagging behind economic development to environmental protection in synchronization with economic development; and the change in environmental solutions from administrative measures to the comprehensive use of legal, economic, technical and necessary administrative measures.

new, cost-effective, low-emission, and sustainable environmental protection path to achieve the multi-win-win in economic, social, resource, and environmental benefits, and to promote stable and rapid long-term economic development and social harmony and progress.

In terms of reform and innovation in future environmental protection efforts, Vice Premier Li Keqiang came up with six requirements. (1) Implemented objectives and responsibilities. Develop an index system for ecological civilization construction objectives and incorporate the objectives in the performance evaluation of local governments. Leadership that fails to accomplish the objectives is investigated for responsibilities. (2) Improved economic policies. Policies for denitration power price and urban sewage treatment charges should be improved. Incentives remain to promote pollution control and serve as subsidies in rural comprehensive environmental control, and environmental taxes will be levied. (3) Promoted reform and innovation. Exploration is made to implement emissions trading, ecological compensation, and the ladder pricing for resources. (4) Strengthened environmental law enforcement. Amendments to the Law of Environmental Protection should be advanced to increase the penalties for violations and enhance deterrent. A sound environmental damage compensation mechanism should be established to encourage environmental public interest litigation and legal aid and strengthen environmental justice safeguard. (5) Enhanced scientific and technological support. Efforts should be expedited for major environmental projects, such as the control and treatment of water pollution, regional comprehensive prevention and control of air pollution, soil pollution remediation and control, and integrated prevention and control of heavy metals. (6) Participation of all citizens. Channels of public participation in environmental protection should be smoothed so that their voices are fully heard in the environmental planning, decision-making and projects involving public interests. It is encouraged to report and expose environmental violations and consciously accept social supervision.

In addition, MEP minister Zhou Shengxian, entrusted by the State Council, signed the target responsibility documents for pollution reduction in the 12<sup>th</sup> FYP period with provinces (autonomous regions and municipalities), Xinjiang Production and Construction Corps, and responsible persons of the central enterprises. It marks that the emission reduction task has been decomposed and allocated to local governments and enterprise groups for implementation.

### ***(iii) New environmental protection blueprint depicted in the 12<sup>th</sup> Five-Year Plan for Environmental Protection***

The *12<sup>th</sup> Five-Year Plan for National Environmental Protection* issued by the State Council on December 20, 2011 (hereinafter referred to in this topic as the Plan), in accordance with the crucial historical stage of building a moderately prosperous society, highlights green transformation to boost the economic development rather than the solo environmental protection. It also emphasizes the management of total volume, quality, security, and service in environmental protection rather than the independent pollution prevention and control. Environmental management shall cover all fields and the whole progress, not limited to dominant production fields. The Plan designs the overall environmental efforts in the next

five years and clarifies the direction of future work in the next five years or an even longer time.

The Plan prioritizes pollutant reduction, risk control, capacity building, and infrastructure, and specifies seven objectives: significantly reduced emissions of major pollutants; effective environmental protection of urban and rural drinking water sources with substantial improvement in water quality; effectively curbed heavy metal pollution, and remarkable results in the prevention and control of persistent organic pollutants, hazardous chemicals, and hazardous waste; impressive enhancement in urban environmental infrastructure construction and operation; reversed momentum in ecological environmental deterioration; significantly increased regulatory capacity and further raised level of nuclear and radiation safety; and establishment of a sound environmental regulatory system.

The Plan also identifies seven indicators for total emissions and environmental quality to control water and air pollution (listed in the box 1). These indicators cover a larger scope and introduce more stringent criteria compared with those in the 11<sup>th</sup> FYP. Ammonia and nitrogen oxides are added in the binding targets, and the number of national monitoring points for surface water environment quality control is increased from 759 to 970, with the evaluation factors up from 9 to 21. The implementation scope of atmospheric environmental quality indicators is also expanded from 113 major environmental protection cities to more than 333 prefecture-level cities, and more strict evaluation criteria is adopted.

**Box 1: Major environmental indicators in the 12<sup>th</sup> FYP period**

No.	Indicators	2010	2015	Growth in 2015 over 2010
1	COD (10,000 tons)	2551.7	2347.6	-8%
2	Ammonia nitrogen (10,000 tons)	264.4	238.0	-10%
3	SO <sub>2</sub> (10,000 tons)	2267.8	2086.4	-8%
4	NO <sub>x</sub> (10,000 tons)	2273.6	2046.2	-10%
5	Proportion of Grade V surface water in state-controlled sections (%)	17.7	<15	-2.7 percentage points
	Proportion of Grade I and II water in the state-controlled sections of seven major river systems (%)	55	>60	5 percentage points
6	Proportion of cities at the prefecture level or above with Grade II or better air quality (%)	72	≥80	8 percentage points

Priorities identified are total emission reduction, quality improvement, risk prevention, and balanced development.

(1) Design differentiated strategies for pollutant control in different fields, industries, products, and regions. Major features of the strategies include: a) expanding the range and field of pollutant control from industrial and domestic sources to industrial, domestic, agriculture and traffic sources; b) emphasize the source control and process control, stepping up the

elimination of backward capacity and reasonable regulation of total energy consumption, and exploring the regulation of the total urban vehicles; and c) highlighting regional characteristics with improved regional control requirements. Total nitrogen or total phosphorus discharge should be controlled in coastal areas prone to red tide, such as eutrophicated lakes and reservoirs, the East China Sea, and the Bohai Sea, while heavy metals are brought under control in key areas for the comprehensive prevention and control of heavy metal pollution.

In the industrial sector, industrial total pollutant control is implemented. Requirements are specified for such major industries as paper making, printing and dyeing, chemical, electric power, iron and steel, and cement, in order to control the total discharge of COD and ammonia in paper making, printing and dyeing, and chemical industries and SO<sub>2</sub> emissions in the iron and steel industry. An evaluation system is introduced to assess the pollutant intensity per unit product. To control emissions resulting from economic development, efforts should be made to strengthen the adjustment of energy structure and develop environmental protection and energy saving strategically emerging industries, and to carry out the pilot to control coal consumption in major areas for joint atmospheric pollution prevention and control. In the aspect of domestic sources, the urban sewage treatment rate should reach 85%. In the aspect of agricultural sources, large-scale livestock production shall be brought under enhanced pollution control. By 2015, more than 50% of national large-scale livestock farms and communities should be equipped with supporting solid waste and sewage storage and treatment facilities. In the field of traffic, vehicle green flag management and fuel quality should be improved. New clean fuel and the nationwide supply of motor vehicle fuels in line with national standards IV are encouraged. In addition, urban public transport should be actively boosted.

(2) Improve environmental quality to earnestly solve outstanding environmental problems, such as unsafe drinking water and air and soil pollution, which bring serious damage to the health of the masses. Strengthen the comprehensive control, ecological protection and supervision to significantly improve the ecological environment quality.

Through water environment protection, drinking water sources are brought under strict protection, with complete protection zone delineation. Comprehensive efforts should be made to prevent and control marine environmental pollution and ecological damage, and the overall water quality of coastal waters shall remain stable in 2015. Groundwater pollution prevention and control are driven ahead, with exploration made in pilot restoration.

Through air pollution control, multiple pollutants are included for comprehensive prevention and control, involving the progressive ozone and PM<sub>2.5</sub> monitoring and strict control of PM, volatile organic compounds, and toxic emissions. A sound joint prevention and control mechanism for atmospheric pollution should be established to improve joint law enforcement and inspection. Acid rain, smog and photochemical smog should also be significantly reduced.

Through soil environmental protection, the soil environmental protection system and

supervision of soil environment are enhanced, and measures and technical specifications for agricultural origin soil environmental protection supervision and management are developed. Efforts should be made to study and set up the soil environmental quality assessment and filing system for construction projects, and the contaminated soil survey, assessment and repair system, and clarify entities' responsibility and requirements for soil environment governance. The pilot and demonstration for contaminated sites and soil pollution control and remediation need to be launched. Site environmental risk assessment will be included in the EIA for construction projects. Contaminated sites without assessment and sound governance are prohibited from land transfer, development, and utilization, and contaminated sites that are assessed to have a serious impact on human health shall be subject to control measures and not be used for residential development.

In ecological protection and regulatory aspects, it is necessary to strengthen the protection and development of national key ecological function zones, as well as natural reserves development and supervision, biodiversity conservation, resource development and ecological environment monitoring. In 2015, the land area of nature reserves shall stably account for 15% of the national area, and 90% of the national key protected species and typical ecosystems shall be under protection. In addition, the mine environmental control and ecological restoration margin system will be implemented.

(3) Enhance the prevention and control of environmental risks in key fields. Environmental risk prevention and control has been proposed for the first time in the Plan. Nuclear radiation, heavy metals, hazardous waste, persistent organic pollutants, and hazardous chemicals are identified as the priorities in the prevention focus of environmental risks. The risk management system should be improved, while the mechanism for handling environmental accidents and damages compensation and recovery should be established.

(4) Improve the basic public service system associated with the environment, and promote regional and urban balanced development. Also for the first time, the Plan puts forward the environment as a public good, and includes the basic environmental public service into the scope of public service equalization, which focuses on the building of environmental infrastructure and environmental regulatory capacity. Specify the appropriate scope and standards of basic environmental public service, strengthen urban, rural and regional coordination, and improve the dedicated basic public service system. By means of general transfer payments and ecological compensation measures, the Central Government plans to increase the support to the western region — areas prohibited and restricted from development — and areas with special difficulties, and raise the supply level of basic public services in environmental protection. Efforts are made to boost the inter-regional coordinated development in environmental protection, raise the level of environmental protection in rural areas, strengthen environmental regulatory capacity, and thereby narrow the gap in sewage treatment, garbage processing, environmental monitoring and assessment capabilities between regions, urban and rural areas, and different groups of people. Effective measures are taken to ensure the safety of drinking water sources in urban and rural areas. In this way, all citizens, regardless of geographic, ethnic, gender, income and status differences, can receive basic public services in environmental protection that are compatible with the level of economic

and social development and roughly equal in final results.

**(iv) New roadmap outlined in the 12<sup>th</sup> Five-Year Plan for Energy Saving and Emission Reduction**

On August 6, 2012, the State Council issued the 12<sup>th</sup> Five-Year Plan for Energy Saving and Emission Reduction (referred to as the Plan under this topic), which sums up the achievements during the 11<sup>th</sup> FYP period, analyzes the basis of efforts and challenges in the 12<sup>th</sup> FYP period, and sets the overall goal and objectives with specific tasks and measures.

In the 11<sup>th</sup> FYP period, remarkable results were achieved in energy saving and emission reduction. Average annual energy consumption increased at a rate of 6.6%, supporting the average growth rate of 11.2% in GDP. And the energy consumption per unit of GDP decreased by 19.1%, which is equivalent to 630 million tons of standard coal, and contributes to a reduction of 1.46 billion tons in CO<sub>2</sub> emissions. The level of energy efficiency also increased significantly. Coal consumption for thermal power plants dropped by 10% from 370 g/kWh in 2005 to 333 g/kWh in 2010. Coal consumption per ton steel produced went down by 12.1% from 688 g/kWh to 605 g/kWh. Comprehensive energy consumption of cement, ethylene, and synthetic ammonia production fell by 12.1%, 28.6%, and 11.3% respectively. However, China also faces a series of problems represented by the slow process in industrial restructuring. In the 11<sup>th</sup> FYP period, the proportion of added value of the tertiary industry in GDP was less than the expected target, while the heavy industrial output value accounted for 70.9%, up from 68.1%, of the total in the industrial sector. Industries with high energy consumption and high emission developed too quickly, undermining the realization of structural energy efficiency targets. In general, energy efficiency was low. China contributed 8.6% to the world's GDP, but used 19.3% of the world's energy, so its energy consumption per unit of GDP was still more than 2 times the world average.

In 2015, it is the aim to reduce the national energy consumption per RMB 10000 of GDP to 0.869 tons of standard coal (at 2005 prices), down by 16% from the 1.034 tons in 2010, (down by 32% from the 1.276 tons in 2005). In the 12<sup>th</sup> FYP period, China plans to achieve energy savings of 670 million tons of standard coal. Specific targets are listed as follows:

**Box 2: Major indicators for energy saving in the 12<sup>th</sup> FYP period**

Indicators	Unit	2010	2015	Change/change rate
<b>Industrial sector</b>				
Energy consumption per unit of industrial added value (of enterprises above the designated size)	%			[-21% or so]
Coal consumption in	gce/kWh	333	325	-8



thermal power plants				
Power consumption rate in thermal power plants	%	6.33	6.2	-0.13
Comprehensive line loss rate of grid	%	6.53	6.3	-0.23
Comprehensive energy consumption per ton of iron production	Kg Ce	605	580	-25
Comprehensive AC power consumption for aluminum ingots production	kWh/t	14013	13300	-713
Copper smelting energy consumption	Kg/t Ce	350	300	-50
Comprehensive energy consumption for crude oil processing	Kg/t Ce	99	86	-13
Comprehensive energy consumption for ethylene production	Kg/t Ce	886	857	-29
Comprehensive energy consumption for synthetic ammonia production	Kg/t Ce	1402	1350	-52
Comprehensive energy consumption for caustic soda (ion-exchange membrane) production	Kg/t Ce	351	330	-21
Comprehensive energy consumption for cement clinker production	Kg/t Ce	115	112	-3
Comprehensive energy consumption for flat glass production	Kg/weight box Ce	17	15	-2
Comprehensive energy consumption for paper and paperboard	Kg/t Ce	680	530	-150

production				
Comprehensive energy consumption for pulp production	Kg/t Ce	450	370	-80
Comprehensive energy consumption for household ceramics production	Kg/t Ce	1190	1110	-80
<b>Building</b>				
Area of renovated existing residential buildings in northern heating regions	100Mil m <sup>3</sup>	1.8	5.8	4
Compliance rate of newly created urban green buildings	%	1	15	14
<b>Transportation</b>				
Comprehensive energy consumption for railway transportation	ton/100Mil ton-km Ce	5.01	4.76	[-5%]
Comprehensive energy consumption for vehicle operation per week	Kg/100 ton-km Ce	7.9	7.5	[-5%]
Comprehensive energy consumption for ship operation per week	Kg/kiloton-km Ce	6.99	6.29	[-10%]
Comprehensive energy consumption for civil aviation operation per week	Kg/ton-km Ce	0.450	0.428	[-5%]
<b>Public institutions</b>				
Energy consumption per unit of construction area	Kg/m <sup>2</sup> Ce	23.9	21	[-12%]
Energy consumption per capita	Kg/person Ce	447.4	380	[15%]
<b>Energy efficiency of</b>				

<b>end-use equipment</b>				
Coal-fired industrial boilers (in operation)	%	65	70-75	5-10
Three-phase asynchronous motors (design)	%	90	92-94	2-4
Input specific power of volumetric air compressors	kW/(m <sup>3</sup> ·min <sup>-1</sup> )	10.7	8.5-9.3	-1.4 – -2.2
Losses of power transformers	kW	Load:43 No-load:170	Load:30-33 No-load:151-153	-10 – -13 -17 – -19
Average fuel consumption for vehicles (passenger cars)	liters/100 km	8	6.9	-1.1
Room air conditioners (energy efficiency rate)	–	3.3	3.5-4.5	0.2 – 1.2
Refrigerators (energy efficient rate)	%	49	40-46	-3 – -9
Domestic gas water heaters (thermal efficiency rate)	%	87-90	93-97	3 – 10

Note: Figures in [] indicate the change rate.

**Box 3: Major indicators for emission reduction in the 12<sup>th</sup> FYP period**

<b>Indicators</b>	<b>Unit</b>	<b>2010</b>	<b>2015</b>	<b>Change/change rate</b>
<b>Industrial sector</b>				
Industrial COD	10000 tons	355	319	[-10%]
Industrial SO <sub>2</sub>	10000 tons	2073	1866	[-10%]
Industrial ammonia nitrogen	10000 tons	28.5	24.2	[-15%]
Industrial NO <sub>x</sub>	10000 tons	1637	1391	[-15%]
SO <sub>2</sub> in the thermal power industry	10000 tons	956	800	[-16%]
NO <sub>x</sub>	10000 tons	1055	750	[-29%]
SO <sub>2</sub> in the iron and steel industry	10000 tons	248	180	[-27%]

NO <sub>x</sub> in the cement industry	10000 tons	170	150	[-12%]
COD in the paper making industry	10000 tons	72	64.8	[-10%]
Ammonia nitrogen in the paper making industry	10000 tons	2.14	1.93	[-10%]
COD in the textile and printing industry	10000 tons	29.9	26.9	[-10%]
Ammonia nitrogen in the textile and printing industry	10000 tons	1.99	1.75	[-12%]
<b>Agriculture</b>				
COD	10000 tons	1204	1108	[-8%]
Ammonia nitrogen	10000 tons	82.9	74.6	[-10%]
<b>Cities</b>				
Urban sewage treatment rate	%	77	85	8

Note: Figures in [] indicate the change rate.

To achieve these goals, the Plan puts forward the major tasks in optimizing the industrial structure, improving energy efficiency and reducing major pollutants.

Optimize the industrial structure. 1) Limit the excessive growth of energy-consuming and emitting industries, raise the access threshold in energy efficiency, environmental protection, land and security for such industries, and restrict the export of resource-based products with high energy consumption and emissions. Optimize the regional spatial distribution of major industries such as electric power, iron and steel, cement, glass, ceramics, and paper making, and prevent their transfer to central and western China. 2) Eliminate the backward production capacity. Strictly implement the *Industrial Restructuring Guidance Catalogue (2011)* and *Catalogue for Backward Production Process, Equipment, and Products to Be Phased Out (2010)*, for some industries; encourage regions to develop more stringent energy consumption and emission standards; and step up efforts to phase out backward production capacity. 3) Promote traditional industrial upgrading. Optimize high technologies and advanced applicable technologies to upgrade traditional industries. Enhance product performance in energy efficiency and environmental protection, and build green low-carbon brands. 4) Adjust the structure of energy consumption. Actively develop hydropower, and orderly develop nuclear power on the basis of safety. Accelerate the commercialization of clean energy such as wind, solar, geothermal, biomass power, and coal bed methane, expedite the development of distributed energy resources, improve the grid capacity in installing fossil energy sources and clean energy generation. In 2015, non-fossil energy consumption will account for 11.4% of the total primary energy consumption. 5) Promote the development of the services sector and strategic emerging industries. In 2015, the share of the added value of the service industry in

GDP will increase by four percentage points over the 2010 level, while that of strategic emerging industries will reach approximately 8%.

Promote energy efficiency. 1) Raise energy efficiency in the industrial sector, especially in power, coal, iron and steel, building materials, petroleum and petrochemicals, chemicals, and non-ferrous metals industries. 2) Improve building energy efficiency comprehensively, covering planning, regulations, technologies, standards, and design. Newly created urban buildings shall meet 100% of the energy efficiency standards in the stage of design. Improve the renovation of existing buildings, especially the large-scale residential and public buildings. 3) Promote transportation energy efficiency. Accelerate the formation of a convenient, safe, and efficient transportation system, constantly optimize the transport structure, and further enhance the energy efficiency of transportation means through technological and management innovation. 4) Promote energy efficiency in agriculture and rural areas. Conduct energy efficient renovation in agricultural machinery, rural housing, irrigation, and stoves, and boost the development and comprehensive utilization of small hydro, wind, solar power and straw. 5) Enhance energy conservation in commercial and civil use. Carry out energy audits, encourage consumers to buy energy-efficient and eco-friendly vehicles and energy-efficient housing, promote energy-efficient household appliances, office equipment and lighting products. 6) Implement energy saving in public institutions. Improve the energy management statistical monitoring evaluation and training system of public institutions.

Escalate the reduction of major pollutants. Strengthen the construction of urban sewage treatment facilities and reduction of pollutants in major industries. Prevent and control the pollution from agricultural sources, control vehicle emissions, and drive ahead PM2.5 control.

### **III. Important progress in environmental and developmental policies related to CCICED policy recommendations**

The 12<sup>th</sup> Five-Year Plan for National Economic and Social Development specifies that the theme in the next five years is scientific development, and the main task is the transformation of economic development mode. In 2011, the first year of the 12<sup>th</sup> FYP period, CCICED identified the theme of its annual conference as the “green transformation of economic development mode”, in affirming the theme and main task of the Chinese Government. It explicitly demonstrates that green transformation is the direction and the important content of the transformation of economic development mode, but also the global trend. Green transformation offers an accurate positioning of China in the worldwide green competition within the next 20 years, and China will create social welfare and wealth by virtue of green transformation. On the 7th National Conference on Environmental Protection, Chinese Vice Premier Li Keqiang elaborated the relationship between development and transformation. “Transformation is a must for people-oriented, comprehensive, coordinated and sustainable development. Ecological and environmental protection should be enhanced to achieve scientific development. Transformation is optimized development with promotion and control, in which environmental protection can help foster new growth areas and improve the quality

and efficiency of development. In nature, environmental problems are associated with development mode, economic structure and consumption patterns. For a fundamental solution to environmental problems, it is necessary to exert efforts on transformational development, economic restructuring, and consumption patterns.” His thought about the significance and direction of transformation is completely consistent with the concept of CCICED’s green transformation.

Centering on the “green transformation”, CCICED set up three task forces responsible for innovative green economic development mechanisms and policies, low-carbon path of industrialization, and investment-and-trade-driven green development. It then made specific policy recommendations to the Chinese Government in 2011 based on the research about green supply chain, mercury pollution and policies for prevention and control. These policy recommendations were either adopted by the Chinese Government, or became important policy and social issues last year.

### **(i) Continue green transformation for economic development**

According to CCICED in the policy recommendations raised in 2011, green economy is an economic development model based on environmental protection and sustainable utilization, and includes low-carbon economy and circular economy. It integrates such core concepts as high resource efficiency, low pollution, low carbon, and balanced social development, plus the many opportunities associated with innovation. For this reason, it should become the most vibrant, promising and inclusive model of economic development. China’s experience shows that the essence is to harmonize the relationship between economic growth and environmental protection, which needs to be balanced, coordinated and mutually supportive. Green economic development is the core driver and important approach through which green transformation can be achieved. To this end, CCICED recommends building a green economic development system to comprehensively drive the green transformation of economic development mode.

#### **1. Industrial restructure enhancing green transform**

CCICED also called for appropriate strategic objectives and framework for green economic development and green transformation. Efforts should be made in industrial, agricultural and service sectors to achieve industrial restructuring and accelerate transformation to labor-intensive and technology-intensive economy. In the industrial sector, the green transformation should also be expanded to traditional industries to advance the sustainable use of energy and resources, build a clean, stable, safe, diversified energy industrial system, direct and regulate surplus energy utilization in energy-consuming industries, and thereby achieve collaborative control in energy saving and emission reduction.

China has introduced a series of new initiatives on strategic emerging industries associated with new energy, energy saving and environmental protection, and circular economic development during the 12<sup>th</sup> FYP period to promote green economic development.

Energy saving and environmental protection industries have developed. In the annual policy recommendations, CCICED put forward increased support for strategic emerging industries and further relaxation of their access conditions, as well as the advance in formation and implementation of the development plans of the seven strategic emerging industries. In June 2012, the State Council issued the *Development Plan for Energy Saving and Environmental Protection Industry in the 12<sup>th</sup> Five-Year Plan Period*, and identified the four objectives. (1) The industrial output value in energy saving and environmental protection rises more than 15% annually on average, and will reach RMB 4.5 trillion in 2015. Such increase accounts for about 2% of the GDP. (2) Great improvement will be made in the quality and performance of energy-efficient and eco-friendly equipment and products in 2015. China will have a group of independent intellectual property rights and international brands, as well as energy-efficient and eco-friendly equipment and products with core competitiveness. Part of the major common technologies will reach the international advanced level. (3) The market share of energy-efficient products will increase from the current 10% to more than 30% in 2015, and that of products for resource recycling and eco-friendly products will also see a substantial rise. (4) Efforts shall be made to develop energy saving and environmental protection services. Sales of energy services using contract energy management mechanism will increase at an annual rate of 30%, and in 2015, specialized contract energy management and environmental services companies with an annual output value of RMB 1 billion each are expected to number 20 and 50 respectively. Urban sewage, garbage, and desulfurization, denitration facilities are put into specialized, market-oriented operation.

Resource recycling and utilization goals are developed. In December 2011, NDRC rolled out the *Guidance for the Comprehensive Utilization of Resources*, and the *Implementation Plan for the Comprehensive Utilization of Bulk Solid Waste*. It plans to raise the recovery rate of mineral resources and the comprehensive utilization rate of common associated minerals to 40% and 45% respectively, the comprehensive utilization rate of bulk solid waste up and industrial solid waste to 50% and 72% respectively, and the recycling utilization rate of major renewable resources to 70%. The total output of recycled copper, aluminum and lead is aimed to account for 40%, 30%, and 40% respectively, and the comprehensive utilization of crop straw is expected to exceed 80%. It also calls for further improvement of the policies and measures for the comprehensive utilization of resource; significantly raise the level of technical equipment; universally enhance the corporate competitiveness in comprehensive utilization; gradually expand the market share of products; and form the long-term mechanism for industrial development. In April 2012, the General Office of the State Council issued the *Labor Program for Priority Work in Establishing a Complete, Advanced Goods and Waste Recycling System*. In June 2012, NDRC, MEP, MOST and MIIT jointly released the *National Catalogue for Encouraged Technologies, Processes and Equipment for Circular Economic Development (First Batch)*.

Investment in new energy development is opened up. In June 2012, NEA issued the *Implementation Opinions on Encouraging and Guiding Private Capital Investment Expansion in the Field of Energy*, which continues to support the comprehensive access of private capital investment to new energy and renewable energy industries; encourages private capital to expand the investment in wind, solar, geothermal biomass sectors; develop energy storage

technologies, materials and equipment; participate in developing energy supply facilities for new energy vehicles; and the building of new energy vehicles demonstration cities, green energy demonstration counties, and solar energy demonstration villages.

New energy demonstration in cities and industrial parks are promoted. In May 2012, NEA issued the *Notice on Applying for New Energy Demonstration Cities and Industrial Parks*. New energy demonstration city construction involves promoting the application of various types of renewable energy sources and technologies, with the focus on solar thermal utilization, distributed solar photovoltaic system, distributed wind power generation, biomass clean fuel, utilization of urban solid waste, geothermal energy, surface water and air heat utilization, and new energy powered transportation. Efforts were made to drive the technological progress in new energy utilization, and establish a management system and policy mechanism adaptive to new energy development.

In addition to national planning, policies and standard measures, some places also introduced the relevant laws and regulations to promote clean energy, renewable energy and circular economic development last year. Gansu and Shanxi developed the *Regulations for Promoting Circular Economic Development*, Zhejiang developed the *Regulations for Promoting the Development and Utilization of Renewable Resources*, and Datong developed the *Regulations for the Recycling and Management of Renewable Resources*.

## **2. Energy saving and emission reduction forcing the transformation of economic development mode**

Experience in the 11<sup>th</sup> FYP shows that energy saving and emission reduction has acted as an important role in promoting green economic transformation in China. Energy conservation and emission reduction become hard grasps and boosters in the transformation of economic development mode. China's targets and policy measures in this regard are consistent with the international concept of "green growth" and "green development".

In 2011, energy saving and emission reduction targets were decomposed to local governments and major polluters, marking the implementation of the target responsibility. As the 12<sup>th</sup> FYP for energy saving and emission reduction was unveiled, a new round of work kicked off. Some local governments have also developed local laws or regulations to add fuel to the efforts. For example, Tianjin, Kunming and the Shantou Special Economic Zone developed the respective *Energy Conservation Regulations*, while Tianjin, Inner Mongolia Autonomous Region, and Xinjiang Uygur Autonomous Region rolled out measures for energy management in public institutions.

CCICED put forward "boosting sustainable consumption" in the policy recommendations raised in 2011, adding that it needs to change people's behavior and lifestyle and government, business, and public participation. Governments should guide and demonstrate green consumption through green procurement, energy saving and emission reduction in itself. And the public shall become aware of sustainable consumption and put it into daily practice, such as saving water and reducing domestic garbage. Enterprises should establish a green supply



chain. Such universal participation for green transformation was initially exposed in 2011, the first year of the 12<sup>th</sup> FYP period.

A nationwide campaign on energy saving and emission reduction was launched. In the 11<sup>th</sup> FYP period, the efforts commenced at the enterprise level. To fully mobilize the enthusiasm of the whole society, the *National Action Program* was rolled out in February 2012 by NDRC, Publicity Department of the CCP Central Committee, MOE, MOST, MOA, Government Offices Administration, All China Federation of Trade Unions, Central Committee of Communist Youth League, All China Women's Federation, China Association for Science and Technology, the PLA General Logistics Department, General Office of the NPC Standing Committee, General Office of the CPPCC Committee, MOF, MEP, SASAC, and Administration of Offices Directly Under the CCP Central Committee. Ten special projects that involve communities, young people, businesses, schools, barracks, rural areas, government agencies, science and technology, science popularization, and the media were launched in the form of typical demonstration, special events, exhibitions, job creation, and rationalization proposals. This has been done to extensively mobilize the whole society in energy saving and emission reduction, and advocate civilized, energy-efficient, green, low-carbon production and consumption patterns and habits. Ministries under the Central Government have also issued notices to step up efforts in respective sectors. For example, MOA released *Opinions on Further Strengthening Energy Saving and Emission Reduction in Agriculture and Rural Areas* and *Guidance for Promoting Energy Saving and Emission Reduction in Fisheries* in November and December 2011 respectively, while MOH released the *Notice on Further Strengthening Energy Saving and Emission Reduction in Medical and Health Institutions* in January 2012.

Building energy efficiency has been comprehensively promoted. Building energy consumption accounts for almost 30% of the total in China, for which its reduction has been an important concern of CCICED over the years. In 2011, CCICED recommended setting up the access threshold of energy efficiency within the industry and conducting special energy consumption assessment for new, large public buildings and commercial housing. Projects incompliant with mandatory standards shall not be submitted for completion. It was also advised to introduce a verification and licensing system for building energy efficiency. MOF and MOHURD announced the building energy efficiency planning and the technologic planning for building energy efficiency last year to initiate the comprehensive efforts in building energy efficiency. In April 2012, the two ministries jointly issued the *Implementation Views on Accelerating the Development of Green Building in China*. It establishes the intention that green building will account for over 30% of new construction in 2020, and that energy consumption levels and use in the construction will be close to or reach the level of developed countries at this stage. In the 12<sup>th</sup> FYP period, efforts shall be made to establish an institutional mechanism conducive to the development of green building and promote the evaluation labeling for new single buildings. And the green building standards will be expanded in 2014 to both government-invested public welfare buildings and the affordable housing in municipalities directly under the Central Government, planned cities and capital cities. According to the *12<sup>th</sup> FYP Plan for Building Energy Efficiency* announced later, MOF and MOHURD plan to reduce 116 million tons of standard coal in the five years by

developing green building, reforming the heating system, and enhancing public building energy regulation. They also strive for the integrated application of renewable energy in buildings to provide alternative 30 million tons of standard coal to replace conventional energy. MOST's *12<sup>th</sup> FYP Plan for the Development of Green Building Technologies* states, with reliance on scientific and technological progress, to promote the large-scale development of green building, significantly enhance the capacity in independent technological innovation and advance the elevation of capacities in planning and design, technological preparation, project implementation, operation and management for green building, so as to consolidate the core competitiveness and change the development mode of the whole industry. At the local level, Tianjin has developed the *Regulations for Building Energy Saving*, while Yinchuan rolled out the *Regulations for Building Energy Conservation*.

Work has been put into practice to save energy and reduce emissions. Implementation is the key to accomplishing the set targets. Experience in the 11<sup>th</sup> FYP period showed that enhanced monitoring, reporting, evaluation, assessment and supervision of law enforcement fill a crucial role in attaining the targets. CCICED proposed in 2011 that efforts should be made to enhance the monitoring, indicator and assessment system, strengthen target responsibility assessment, and establish a sound reward and punishment system. To regulate the audit of major pollutant emissions in the 12<sup>th</sup> FYP period, MEP has in succession formulated the *Rules for Calculating the Reduction of Major Pollutants in the 12<sup>th</sup> Five-Year Plan Period* and *Methods for Coefficient Accounting in Monitoring the Reduction of Major Pollutants in the 12<sup>th</sup> Five-Year Plan Period*. It requires that departments of environmental protection at all levels should supervise and inspect the power enterprises within the scope for specified times. "Inspection should be made at least once a month and supervisory monitoring once every three months" to key enterprises under supervision. At the local level, Zhejiang, Ningxia Hui Autonomous Region, Wuhan, and Nanjing have developed measures to strengthen energy management, regulate energy supervision, and ensure the implementation of energy-saving laws and regulations.

### **3. Steady progress in green economic policy**

In 2011, CCICED recommended continuing to improve the market mechanism; strengthening policy guidance and support to the development of the green economy; and guiding and promoting the greening and upgrading of industrial structure through comprehensive and balanced use of taxation, finance, green procurement and transfer payments.

China has accelerated the development and implementation of a series of environmental and economic policies since 2011, and achieved positive results in environmental protection and industrial restructuring via effective economic instruments.

Green credit policy continues to deepen. *Views of the State Council on Strengthening the Key Work in Environmental Protection* calls for "increased credit support to enterprises and projects in compliance with environmental requirements and credit principles". Green Credit Guidance issued by CBRC in February 2012 provides specific practice regulations for the green credit of banking financial institutions. Banking financial institutions should promote

green credit from a strategic height; increase support for the green economy, low-carbon economy and circular economy; prevent environmental and social risks; and enhance their environmental and social performance. On this basis, the credit structure can be optimized, the service level raised, and the mode of development transformed. The Guideline also requires that the Board or the Council of banking institutions establish and enforce the concept of green credit: conservation, environmental protection, sustainable development, and importance should be attached to the role of banking financial institutions in promoting comprehensive, coordinated and sustainable socio-economic development in order to establish a win-win model of sustainable development.

Positive progress has been made in environmental pollution liability insurance. *Views of the State Council on Strengthening the Key Work in Environmental Protection* calls for “establishing a sound environmental pollution liability insurance system and carrying out the pilot of mandatory liability insurance.” *The 12<sup>th</sup> Five-Year Plan for National Environmental Protection* also demands “setting up a sound environmental pollution liability insurance system and studying to establish a compulsory insurance system for enterprises with high environmental risk, such as with heavy metal emissions.” MEP has also rolled out supporting technical specifications for environmental pollution liability insurance. Following the measures for environmental risk grading of chloral-alkali enterprises, MEP issued the *Environmental Risk Assessment Guide – Measures for Environment Risk Grading of Sulfuric Acid Enterprises (Trial)*, *Opinions on the Identification and Assessment of Environmental Pollution Damages* and *Recommended Methods for Calculating Environmental Pollution Damages (Edition I)*. Local pilots for environmental pollution liability insurance continue to proceed. In 2011, Sichuan, Hebei and Inner Mongolia launched the pilot, making the total number of pilot provinces 13.

A comprehensive directory in line with environmental economic policies is developed and improved. *Views of the State Council on Strengthening the Key Work in Environmental Protection* calls for the “development of a comprehensive directory for environmental protection”, and the adjustment of import and export tariff policy for products causing “Great Pollution And Great Environmental Risk”. To this end, MEP and industry associations developed this directory in accordance with environmental and economic policies (2011), including 514 types of product technologies causing high pollution and environmental risk, 42 kinds of environment-friendly technologies, and 15 kinds of major environment-friendly equipment for pollution reduction. This directory provides environmental basis for the development of policies about export tax rebates, processing and trade, tax incentives, safety supervision and credit supervision. By the end of 2011, export tax rebates had been cancelled for nearly 300 types of such products that are banned for processing and trade. This reflects the important role of environmental protection in optimizing the economic growth.

A pilot emissions trading system kicked off. *Views of the State Council on Strengthening the Key Work in Environmental Protection* calls for “carrying out the pilot paid use and trading of emission rights, establishing the national center and developing the market for emissions trading”. Vice Premier Li Keqiang set forth in the 7th National Conference on Environmental Protection the economic, environmental and technical benefits of emissions trading, and

called for the progressive promotion of emissions trading based on the experience at home and abroad. In 2011 CCICED recommended “the full introduction of the market mechanism for its potential and role in energy saving and emission reduction, the implementation of the emissions trading system, and the formation of market and platform for conventional pollutants and carbon emissions trading.” Last year witnessed significant achievement in emissions trading and conventional pollutants trading. In October 2011, the General Office of NDRC issued the *Notice on Carrying out the Carbon Emissions Trading Pilot*, launching the pilot in Beijing, Tianjin, Shanghai, Chongqing, Hubei, Guangdong and Shenzhen. To regulate the voluntary emissions trading activities, NDRC issued the *Interim Measures for Voluntary Greenhouse Gas Emissions Trading* in June 2012. The *12<sup>th</sup> Five-Year Plan for National Environmental Protection* also states the emissions trading scheme for conventional pollutants and heavy metals and “encourages provinces (autonomous regions, municipalities) to implement the pilot replacement and trading of heavy metal emissions in non-priority areas.” Up to present, a total of 10 provinces (autonomous regions and municipalities directly under the Central Government), namely Jiangsu, Zhejiang, Tianjin, Hubei, Hunan, Shanxi, Inner Mongolia, Chongqing, Shaanxi, and Hebei, have been identified as national emissions trading pilot provinces.

The reform of resource pricing mechanism also moves forward, as the price ladder that CCICED has advocated for years was finally adopted in the field of household power consumption. It has been put into practice in most provinces and cities across the nation since July 1, 2012. A nationwide tax reform for the ad valorem for crude oil and natural gas has been implemented. CCICED suggested in 2011 “the active introduction of a tax system conducive to green development, accelerated reform of resource tax reform [...] an appropriate increase in the tax rate of the current oil and energy-consuming products.” In September 2011, the State Council revised the *Interim Regulations of People's Republic of China on Resource Tax*. Crude oil and natural gas resources tax is charged based on ad valorem rather than amount, with a tax rate of 5%. It marks that China's resource tax reform has taken a significant step, and moreover, it facilitates the differential regulation and inhibits the waste of resources.

Green government procurement has driven green consumption. Government procurement boosts green economic development, but also imposes demonstration effects. CCICED has emphasized the important role of government green procurement in both two pieces of policy recommendations about green consumption raised in 2011. It suggested the introduction of green product procurement indicators, common principles and guidelines for government green procurement on the basis of the government's public procurement platform and the standards of environmental labeling products. It called for the establishment of an environment information network and disclosure system for government green procurement. *The 12<sup>th</sup> Five-Year Plan for Environmental Protection* requires a progressive increase in the proportion of environmentally friendly products in green procurement, and the research and implementation of government procurement of environmental services, with a comprehensive directory for environmental protection. *The 12<sup>th</sup> Five-Year Plan for the Development of National Strategic Emerging Industries* released in July 2012 endorses “vigorously promoting environmental labeling products and the government green procurement system, and actively

promoting green consumption.” MOF announced the adjusted 11<sup>th</sup> and 12<sup>th</sup> lists of energy-saving products for government procurement, and the 9<sup>th</sup> and 10<sup>th</sup> lists of environmental labeling products for government procurement in January and July 2012 respectively. MOF also requested improving the priority procurement and mandatory procurement system for energy saving and environment-friendly products in May 2012.

#### **4. Progress made in green investment and green trade**

CCICED recommended in 2011 that China should adjust and improve its policies to attract investment and facilitate foreign direct investment (FDI) to strategic sectors, such as high-tech and environmental strategic emerging industries. It also advised to revise and update the existing *Catalogue for the Guidance of Foreign Investment Industries*, and revise and improve China’s legal framework to attract foreign investment and encourage green investment based on the advanced experience of FDI contributors, especially those with higher environmental standards.

China amended the *Catalogue for the Guidance of Foreign Investment Industries* in December 2011, the fifth time since the enactment in 1995. In comparison with the 2007 amendment, the new catalogue further encourages foreign investment in the field of energy conservation and environmental protection. Among the fields where the investment is encouraged are the manufacturing of new energy vehicles, including the research and manufacturing of new energy vehicles and major parts and accessories; construction and operation of charging stations; development of energy-saving technologies; recycling of various products (including plastic products, electronic products, automobile mechanical and electrical equipment, rubber, metals and batteries); as well as strategic emerging industries, such as IT, biotechnology, high-end equipment manufacturing, new energy, and new materials. To inhibit the excess capacity and blind duplicate construction, entries like polysilicon and coal chemicals are removed from the category. This new catalogue fully embodies the thought of the Chinese Government to accelerate and promote the transformation of green economic development.

Green trade is an important means of promoting industrial restructuring and developing the green economy in China. To this end, CCICED made the recommendation in 2011 of driving ahead domestic industrial restructuring and upgrading via decreased tariffs, in order to encourage the import of and reduce the domestic production of energy-intensive products. Exports of products with low power consumption and low environmental damages are encouraged and expanded. The export tax rebate is completely abolished and export tariffs are levied for resource-based products with high energy consumption and high pollution.

With adherence to the green trade policy, China continues to encourage the import of energy-intensive products and limit the export of resource-based products with high energy consumption and high pollution in 2012, in order to relieve the pressure on environmental resources. Moreover, to push ahead economic restructuring and the transformation of economic development mode, China has set lower provisional import tax rates on more than 730 kinds of commodities since January 1, 2012 to encourage the import. The import tax rate

averages to 4.4%, over 50% lower than the most favored nation (MFN) rates. Among the five categories of these products are energy resources (including coal, coke, refined oil, marble, granite, natural rubber, rare earth, copper, aluminum and nickel) and key equipment and spare parts required for strategic emerging industries such high-end equipment manufacturing, next-generation IT, and new energy vehicles (including jet looms, turboshaft aircraft engines, high-voltage power lines, phone camera components, high-definition camera, and major moulds for coupe body stamping). Meanwhile, MOF has announced that export tariffs are levied in 2012 at the provisional tax rates for resources-based products with high energy consumption and pollution, such as coal, crude oil, fertilizer, and ferroalloy. In the first half of 2012, the exports of such products decreased by 3.8%.

### **(ii) Enhanced prevention of heavy metal pollution, especially mercury pollution**

In view that frequent heavy metal pollution incidents in recent years, especially mercury pollution incidents, have posed a serious threat to the ecological environment and the health of the people, CCICED recommended in 2011 that attention should be attached to the problem of mercury contamination and heavy metal pollution, which is a serious danger to public health and should be brought under comprehensive prevention and control. On December 4, 2011, MIIT released the *12<sup>th</sup> Five-Year Plan for the Nonferrous Metal Industry*. In accordance with the requirements of the *12<sup>th</sup> Five-Year Plan for the Comprehensive Prevention and Control of Heavy Metal Pollution* (released in February 2011) and the *12<sup>th</sup> Five-Year Plan for the Joint Prevention and Control of Regional Air Pollution in Major Areas*, future work should follow the principles of prevention in the source: block in the process, cleaner production and end treatment, to enhance the integrated prevention and control of heavy metal pollution in major areas. The *12<sup>th</sup> Five-Year Plan for the Nonferrous Metal Industry* calls for strict access conditions, optimized industrial layout, and prohibits the addition, renovation, and expansion of heavy metal pollution projects in areas under special protection. This includes nature reserves, drinking water source reserves, and areas for high environmental conditions, such as large- and medium-sized cities, the suburbs, and residents-concentrated areas. In terms of mercury pollution prevention and control, the plan proposes only retaining the native mercury smelting enterprise Shaanxi Mercury and Antimony Technology Co., Ltd. at the end of the 12<sup>th</sup> FYP period, and outlawing others. Mercury catalyst recycling enterprises should have mercury vapor recovery units, and the establishment of new mercury catalyst recycling business should be under strict control across the country, except in Wanshan of Guizhou.

### **(iii) New progress in the prevention and control of environmental pollution**

#### **1. Implementation of the new *Ambient Air Quality Standards***

China has suffered serious air pollution for a long time, but the *Ambient Air Quality Standards* are too lenient, leading to a huge gap in the officially announced air quality results and the feelings of the masses. The original *Ambient Air Quality Standards* has been unable to meet the actual needs of the public for clean air.

A new *Ambient Air Quality Standards* (GB3095-2012) was promulgated by MEP in February 2012 on the basis of the revision to the original one (GB3095-1996): addition of PM<sub>2.5</sub> limit and 8-hour ozone concentration limit, adjustment to PM<sub>10</sub>, NO<sub>2</sub>, lead, and benzo(a)pyrene concentration limits.

In view of the characteristics of air pollution, the level of economic development and environmental management requirements in different regions, the newly revised standards will be implemented in phases and the specific deadlines are as follows: 2012 for the Beijing-Tianjin-Hebei region, the Yangtze River Delta, the Pearl River Delta among major regions, municipalities directly under the Central Government and the provincial capitals; 2013 for 113 key environmental protection cities and the National Environmental Protection Model Cities; 2015 for cities at the prefecture level or above; and January 1, 2016 for the remaining parts of the country. MEP encourages provinces, autonomous regions, and municipalities directly under the Central Government to implement the new standards before the specified deadline in accordance with the actual situation and local environmental needs.

Implementing the new standards is on the premise of appropriate monitoring capacities at localities. MEP has released the *Opinions on Strengthening the Capacity Building of the Ambient Air Quality Monitoring*, specifying the overall objective in the 12<sup>th</sup> FYP period as building a state-of-the-art ambient air quality monitoring and early warning system; integrating such information resources as the atmospheric background monitoring network, rural monitoring network, acid deposition monitoring network, monitoring network for dust weather impact on the atmospheric environment, and GHG test monitoring; increasing monitoring indicators; establishing a sound and unified quality management system and point management system; and improving the technical methods and information release mechanism for air quality assessment. By 2015 it aims to build an efficient national ambient air quality monitoring network featuring reasonable layout, comprehensive coverage, complete functions and indicators. In May 2012, MEP reviewed and approved in principle the *Plan for Air Pollution Prevention and Control in Key Areas (2011-2015)* which explicitly clarifies the guiding thought, basic principles, planning scope, objectives, tasks, and priority projects and safeguards.

## **2. Implementation of the most stringent water conservation measures**

Water pollution prevention and control and water conservation continue to deepen. Last year, four important documents related to water pollution control and water conservation were introduced: *National Plan for Groundwater Pollution Prevention and Control (2011-2020)*, *Plan for Water Pollution Prevention and Control in Major River Basins (2011-2015)*, *Views on the Implementation of the Most Stringent Water Management System*, and *National Plan for Water Function Zoning of Major Rivers and Lakes (2011-2030)*.

In October 2011, the State Council approved the *National Plan for Groundwater Pollution Prevention and Control (2011-2020)*. It plans to gain a general picture of groundwater pollution in 2015 and launch a comprehensive pilot for groundwater pollution remediation to gradually remedy soil affecting groundwater environment safety and preliminarily control

groundwater pollution sources. A comprehensive groundwater environmental regulatory system shall be established and urban centralized groundwater drinking water sources shall be improved, curbing the trend of groundwater quality deterioration. In 2020, the comprehensive monitoring will cover typical groundwater pollution sources and the soil affecting groundwater environment safety will be brought under effective control. Scientific groundwater remediation will be made to basically ensure the safety of important groundwater drinking water sources; groundwater environment regulatory capacity will be enhanced; groundwater quality in major areas significantly improved; groundwater pollution risks effectively prevented; and groundwater pollution prevention and control system completed.

In January 2012, the State Council issued the *Views on the Implementation of the Most Stringent Water Management System*, calling for a red line for the development and utilization of water resources. In 2030, national water consumption will be controlled below 700 billion m<sup>3</sup>, and with a specified red line, water efficiency will reach or be close to the world advanced level. In 2015, national total water consumption shall not exceed 635 billion m<sup>3</sup>, and the water quality compliance rate of such important function zones as rivers and lakes will exceed 60%. In 2020, national water consumption will be limited within 670 billion m<sup>3</sup> and the water quality compliance rate for major water function zones exceed 80%, and the water quality of urban water supply sources will fully meet the standards.

In February 2012, the State Council approved the *National Plan for Water Function Zoning of Major Rivers and Lakes (2011-2030)* designed by Ministry of Water Resources, NDRC, and MEP. A two-tier system is introduced for water function zoning. In Tier I, there are protection zones, reserved zones, development and utilization zones, and buffer zones; and it mainly coordinates regional water use, taking into account the demand of regional sustainable development for water resources. In the protection zones, development and utilization activities that could affect water protection, natural ecosystems and rare and endangered species are banned. Reserved zones are watersheds reserved for future sustainable use of water resources, and in principle the water quality should be maintained. Development and utilization activities in the buffer zones, in principle, should affect the function of adjacent water function zones. As to Tier II, development and utilization zones are further divided into seven categories: drinking water source zones, industrial water zones, agricultural water zones, fishery water zones, scenery and recreation water zones, transitional zones, and sewage control zones. Tier II is used to coordinate the relationship between different water-use industries. Nationwide, water function zones have numbered to 4493, and the water quality objective is identified as Grade III or better for 81% of them.

In May 2012, MEP issued the *Plan for Water Pollution Prevention and Control in Major River Basins (2011-2015)* with the approval of the State Council, specifying the water quality objectives for the year 2015. In accordance with the *Standards for Surface Water Environmental Quality (GB3838-2002)*, the overall water quality in major river basins will be improved from the moderately polluted to the slightly polluted, the proportion of Grade I-III water sections increased by 5 percentage points while the proportion of Grade V water sections down by 8 percentage points. The overall water quality of the Songhua River Basin



will turn better from the slightly polluted, and water quality improvement will also be seen in the mildly polluted Huaihe River Basin and severely polluted Haihe River Basin. In Liaohe River Basin and the upper and middle reaches of Yellow River Basin, the moderately polluted water will be improved to the slightly polluted. In Taihu Lake and Chaohu Lake, the mild eutrophication will be maintained with light improvement. Dianch water will undergo a shift from severe eutrophication to moderate eutrophication, or if possible, mild eutrophication. Overall water quality in the Three Gorges Reservoir and its upstream basins will remain good, while that of Danjiangkou Reservoir and the upper basins will remain excellent.

To further strengthen the environmental protection for centralized drinking water sources, direct and promote the implementation of *National Protection Plan for Urban Centralized Drinking Water Sources (2008-2020)*, and enhance the level of drinking water safety, MEP issued the *Environmental Protection Guide for Centralized Drinking Water Sources (Trial)* in March 2012.

Local governments have also exerted more efforts in water conservation. Fujian, Nanjing, Hefei, Changsha, Xiamen and Zibo have rolled out regulations for protecting (managing) the water environment (water resources), while Zhejiang, Qinghai, Sichuan, and Baotou have formulated regulations on the protection of drinking water sources.

#### **(iv) New progress in environmental rule-of-law in China**

##### **1. Resources, energy and environmental laws and regulations**

China continued to move forward in environmental and resource protection laws and regulations in the past year. Revised *Cleaner Production Promotion Law* and the *Amendment to the Law of Environmental Protection* further strengthen corporate environmental responsibility. Despite that the Amendment does not mention environmental public interest litigation, which wins a loud voice, the newly revised *Civil Procedure Law* includes written provisions about public interest litigation, which is also a breakthrough for environmental public interest litigation. A sound legal system provides safeguard for green economic development. CCICED has recommended to the Chinese Government that we shall, taking the opportunity of law amendment, strengthen government responsibility and environmental civil liability and clarify corporate environmental responsibility. All of the three laws that have or are being revised follow this principle.

*Cleaner Production Promotion Law*, which was revised and adopted by NPC in February 2012, expands the scope of mandatory cleaner production audit. High energy-consuming enterprises that exceed the criteria of energy consumption per unit product fall within the scope. It also clearly states that enterprises within the scope should report the audit results to government departments at the county level or above and publicize the results in the local media for social supervision. In addition, the newly adopted law highlights the supervision, evaluation and acceptance of the Government. It ensures that relevant departments of local people's governments at or above the county level shall supervise the mandatory cleaner production audit in enterprises, and when necessary, conduct assessment and acceptance for

the implementation results. Expenses incurred are included in the government budget at the same level, and enterprises shall not be charged for the assessment and acceptance.

The amendment to *Civil Procedure Law* was adopted in August 2012 and adds the provisions about public interest litigation, namely: “Authorities and organizations designated by law can initiate legal proceedings against behaviors harmful to the environment and public interests including the legitimate rights and interests of consumers.” It marks the formal establishment of the environmental public interest litigation system in China.

In September 2012, the amendment to the *Law of Environmental Protection* was discussed in the NPC Standing Committee, the first in 33 years since the *Law of Environmental Protection (Trial)* was promulgated in 1979. China has experienced tremendous economic and social change in the past years and is confronted with unprecedented challenges in environmental protection. *Law of Environmental Protection* has lagged behind in protecting the environment and safeguarding citizens’ health and environmental interests. Voice for law modification has never been interrupted over the years, so the long-awaited revision finally put on the agenda bears very high expectations of social communities. NPC Revision Notes state the expected breakthrough in four aspects: clarify the guiding thought for environmental protection in the new century, strengthen government accountability and supervision, converge and standardize the legal system, and promote the implementation of the *Law of Environmental Protection* and related laws. To address the nonfeasance of local governments, environmental departments, government staff and repeated environmental violations, the Law improves the legislation for environmental law enforcement supervision, highlighting government supervision of the public, legislative branch supervision of government departments, and a top-down manner of governmental supervision. The amendment also provides a solid legal basis for major policy measures in promoting energy efficiency and emission reduction, including total emission control and regional restrictions. In addition, the law makes the legal convergence for fundamental environmental management systems, such as environmental monitoring, environmental impact assessment, environmental planning, and regional pollution prevention and control. Enhanced corporate responsibility for environmental protection is also a highlight of the amendment.

Apart from the amendments to important laws, the relevant departments of the State Council, in accordance with the division of labor, have formulated environmental regulations that perform an important role in green economic development, energy conservation, emission reduction, and protecting the lives and property safety of the people. Regulations, rules and normative documents rolled out by the State Council and relevant administrative department in the past year include: *Regulations on the Safety Management of Radioactive Waste*, *Implementing Rules for the Provisional Regulations of the People's Republic of China on Resource Tax (2011)*, *Interim Measures for Reviewing River Hydropower Planning Reports and EIA Reports* jointly promulgated by NDRC and MEP, *Regulations of the People's Republic of China on the Investigation and Handling of Marine Pollution Accidents from Ships* and *Measures for Managing Soil and Water Conservation Monitoring Qualification for Production and Construction Projects* promulgated by Ministry of Transportation, *Regulations on the Pipeline Safety for Hazardous Chemicals*, *Measures for the Safety*

*Supervision and Management of Hazardous Chemicals Project, Regulations on the Registration of Hazardous Chemicals (2012)* issued by State Administration of Work Safety, *Green Credit Guideline* issued by CBRC, *Measures for On-site Supervision and Inspection of Automatic Monitoring Facilities for Pollution Sources*, and *Measures for Managing the Operation Qualification License for Environmental Pollution Control Facilities (2012)* issued by MEP, *Interim Measures for Voluntary Greenhouse Gas Emission Reduction and Trading* issued by NDRC, as well as *Measures for Fund Collection and Use for Disposing Waste Electrical and Electronic Products* jointly promulgated by MOF, MEP, NDRC, MIIT, General Administration of Customs, and State Administration of Taxation

## **2. Justice promotes environmental protection**

The judiciary is also active in promoting environmental protection. In 2011, the Supreme People's Court launched the special work for the judicial protection of water resources, in which *Provisions on Issues Related with the Hearing of Ship Oil Pollution Compensation Disputes* was implemented to provide the sound, unified hearing rules. Mediation and trial guidance were strengthened in oil pollution cases, and a number of oil spill damage compensation cases were processed, involving NOBEL from Jes Shipping Co.Ltd, Paulo Silva, and Tasman Sea. The Supreme People's Court, in collaboration with environmental and marine departments, has explored the establishment of a judicial mechanism for protecting water resources across administrative regions.

Environmental protection tribunals are established to drive ahead the environmental public interest litigation system. By December 16, 2011, a total of 42 environmental protection tribunals had been set up in 12 provinces (municipalities) in China. In the perspective of the level of the court, 32 grassroots courts, nine intermediate courts and one high court set up the tribunals. These tribunals play an effective role in the settlement of environmental cases, promoting environmental public interest litigation across the country. In October 2011, Qujing Intermediate People's Court accepted the public interest litigation that the Institute for Environmental Studies of the Friends of Nature in Beijing, Green Volunteer League of Chongqing and Qujing Municipal Bureau of Environmental Protection filed against Yunnan Luliang Chemical Industrial Co., Ltd for chromium slag pollution. This is China's first case of environmental public interest litigation filed by grassroots NGOs.

### **(v) Social management innovation under environmental public participation and appeal and information disclosure**

Several important events occurred later in the year that demonstrated the enormous power of environmental protection in the private sector, and also indicated the rise of citizens' environmental awareness. Citizen participation in China has climbed to a new level. The increased level of citizen participation and the rise of the civil power will change the pattern of the entire environmental governance.

One of the most prominent events is that all the citizens have been involved in the discussion on whether the PM2.5 indicator should be included in the *Ambient Air Quality Standards*.

Beijing suffered haze for days in October 2011, but the official monitoring data indicated that the air was “slightly polluted”, stirring strong dissatisfaction of the people. Haze is primarily triggered by the PM2.5, which was not specified in the then *Ambient Air Quality Standards*. It therefore leads to a gap between the official data and people’s impressions. The voice of citizens caused the attention of the decision makers. On November 15, 2012, when meeting the members of CCICED who participated in the Annual General Meeting, Premier Wen said the monitoring standards of environmental quality should be improved and gradually reach the same level with international standards to make the result of monitoring consistent with people’s perceptions. Vice Premier Li Zheqiang also demanded at the 7<sup>th</sup> National Environmental Protection Conference that the air quality standards should be revised and published as soon as possible and the evaluation methods of air quality should be also improved and be taken into practice based on the air pollutants features, economic development and air quality status. He reiterated the efforts to align the standards of China with developed countries and make the people’s feeling concurrent with the evaluation result of environmental quality. Finally PM2.5 was included in the indicators in the new *Ambient Air Quality Standards* (GB3095-2012) for implementation in phases across China.

Two other cases are group incidents instigated by construction projects. For fear of the environmental pollution caused by Hongda’s molybdenum copper project of polymetallic deep processing and comprehensive utilization, the local people gathered outside the government offices in Shifang of Sichuan Province on July 2, 2012, which then evolved into a group incident. On the afternoon of July 3, the Shifang government announced the decision to stop the construction project. Also in July, citizens took to the streets for protest and rushed into the government offices in Qidong of Jiangsu, a developed province in eastern China out of the worry that the Japanese Oji Paper Group’s pollution sewage facilities would impact their lives and health of the public. Subsequently, Qidong government announced it would permanently cancel the sewage discharge project.

Prior to this, group incidents have occurred in a number of places due to the environmental problems. However, the unique difference is that the above-mentioned projects have neither been put into production nor resulted in a de facto environmental and health damage. It is the opaque government decision-making that the public is dissatisfied with, and causes the distrust in these issues. Environmental issues have sparked conflicts between the public and government regulators, rather than the public and polluters in the past. Similar events occurred in eastern and western China within a month and showed that the Chinese public’s environmental consciousness and awareness of rights are generally improved. In this context, the conflict between the environment and development is bound to be more intense. As the *People’s Daily* commented, “China enters a special environmentally sensitive period for social development. On the one hand, in light of the actual conditions, China cannot skip the gradient industrial transfer and ‘zero pollution’ is unachievable for some industrial projects. On the other hand, people’s environmental awareness and awareness of their rights are rapidly enhanced. Environmental interests-related conflicts are a manifestation of social progress and a reflection of transformational development.”

A look into these three incidents, which differ in the form of public participation and causes,

reveals that a number of problems hinder the formation of sound government governance in China with rapid economic development and dramatic change in social structure.

First, people are more inclined to protecting the environment as their rights and environmental awareness increase, while the attention of the government remains on the economic aspect.

Second, the public has an increasing demand for better environmental quality. In some local governmental decision-making, environmental laws and regulations are sacrificed for economic development. The endowed right of public participation is in name only for the government, while it is regarded as a substantive power by the public who calls for the solid compliance with the law to defend the rights.

Third, there is a huge divide between the cognitive level required for public decision-making and the information held by the government. When the general public does not grasp the comprehensive information for scientific decisions, and when their information demand is not met due to the lack of communication between the governments—except for some fragmented information decisions—it is inevitable for them to make irrational moves. What is worse, the declining government integrity impedes the flow of decision-making information. As a result, the public takes a negative attitude to the original scientific content.

Fourth, an undesirable interactive mode for the public and the government is taking shape.

Although the result of the three incidents was that the public's demands were met, the facts have not yet been sorted out nor the causes clarified, including the decision-making process, decision-making content, lack of pre-communication and information disclosure, and the pollution itself. If the incidents are rooted in only procedural problems, the concessions of local governments will allow the public to equate all similar projects, making it difficult to develop such projects in the future. Local governments, not limited to the associated government, will also face extensive decision-making pressure.

Local governments have not changed their thought about development, which coupled with the lack of the rule of law and crude management style leads to the decline in trust in the government. It can be predicted that such intense conflicts will frequently occur unless adjustments are advanced in the government's handling of environmental issues.

Information disclosure is fundamental to public participation. Environmental protection is one of the eight key areas that the Chinese government designates for the implementation of information disclosure. Environmental information disclosure leads information disclosure work in China. In 2007, following the issuance of the Information Disclosure Regulation of the State Council, the Ministry of Environmental Protection promulgated the Method of Environmental Information Disclosure, which made it the first ministry to specify how to implement the Regulation. In August of 2012, the Ministry of Environmental Protection held the National Conference on Environmental Information Disclosure, at which Minister Zhou Shengxian delivered a speech and summarized the achievements made in information

disclosure: promulgations of a series of complementary documents regarding information disclosure, increasing the amount and scope of compulsory information, timely disclosure of environmental incidents, facilitation for application of information disclosure, and diversification of opening channels. Minister Zhou also indicated that major efforts will be invested in the future with respect to the disclosure of information on verification and permits, ambient air quality and significant, and severe incidents; strengthening of team building in handling information disclosure applications, and strengthening the process related to application-triggered information disclosure.

#### **(vi) Actively promoted international environmental cooperation**

As a responsible power, China has been active in promoting international environmental cooperation to cope with global environmental challenges. It has played a constructive role in the major international environmental conferences convened since October 2011, namely the Durban Conference, the Nuclear Security Summit in Seoul, and the ‘Rio +20’ Summit. “China is a responsible big developing nation willing to live up to its responsibilities,” said Premier Wen Jiabao in the ‘Rio +20’ Summit, “and the better China develops, the more opportunities China will present and the greater contributions China will make to the world.”

China is an active promoter of the global climate negotiations. Prior to the United Nations climate conference in Durban, China proposed a set of fair and balanced solutions for the success of the conference in accordance with the principle of “common but differentiated responsibilities”. It insists on a second commitment period of the *Kyoto Protocol* in accordance with the requirements of the Bali Action Plan, and calls for the inclusion of developed nations not committed in the *Kyoto Protocol* to make comparable emission reduction commitments. Under the United Nations Framework Convention on Climate Change, the developing countries carry out voluntary emission reduction actions included in the final overall program.

In the Seoul Nuclear Security Summit held in March 2012, China submitted the National Progress Report on Nuclear Safety. Chinese President Hu Jintao delivered an important speech, and put forward a four-point proposal on improving nuclear safety in the new situation: 1) adhere to the scientific and rational thought of nuclear safety, enhance confidence in the development of nuclear energy, and promote the safe and sustainable development of nuclear energy; 2) strengthen the capacity building in nuclear safety and bear the national responsibility; 3) deepen international exchanges and cooperation and enhance global nuclear security; and 4) eliminate the root causes of nuclear proliferation and nuclear terrorism. With adherence to the purposes and principles of the UN Charter and mutual trust, mutual benefit, equality and cooperation in nuclear safety, insist on the peaceful settlement of hotspot issues and international disputes, and create a favorable international environment for enhanced nuclear safety.

In the ‘Rio +20’ Summit (United Nations Sustainable Development Conference) held in June 2012, Premier Wen Jiabao delivered an important speech and comprehensively expounded China’s principled stance on the sustainable development of international cooperation. He

made three suggestions on promoting the continued development. 1) Stick to the concept of fair and equitable development with openness and tolerance. Carry forward the spirit of partnership, and adhere to the Rio principles, especially the principle of “common but differentiated responsibilities”, to ensure the realization of global sustainable development and the rights of countries for fair development. 2) Actively explore an effective mode of green economic development. Encourage countries to independently determine the path and process of the green economic transformation. 3) Improve the global governance mechanism. Give full play to the leading role of the United Nations and form an effective framework for sustainable development mechanism to enhance the capacities in guidance, coordination, and execution, so as to achieve better coordination of economic development, social progress and environmental protection. Improve the voice and decision-making powers of developing countries, and address the practical difficulties of developing countries in capital, technology and capacity building. Establish a new partnership for sustainable development, including relevant international bodies, governments and the public. Premier Wen Jiabao announced that China would donate \$6 million to the United Nations Environment Programme Trust Fund to promote sustainable development in developing countries, such as projects and activities to improve the capacity in environmental protection. China would like to assist in the training of management and technical personnel for ecological protection and desertification control, and provide facilities for automatic weather stations and high-altitude observation radar stations and forest protection equipment. Based on pilot experience in various countries, China will build the global S&T cooperation network for the best practices in local sustainable development. China would also allocate RMB 200 million for a three-year international cooperation program to help the small island countries, the least developed countries, and African countries cope with climate change.

The international community generally believes that Premier Wen Jiabao’s speech at the opening ceremony sent a clear, positive message about China’s commitment to the sustainable development and set the tone for the summit. Against of the background of the bleak world economic outlook and the simmering European debt crisis, the initiatives announced by Premier Wen Jiabao received widespread positive response, boosted the confidence of the international community and maintained the momentum of international cooperation in sustainable development. Thus, the speech played an important role in the positive results of the event. According to Brazilian mainstream media, Premier Wen Jiabao’s speech demonstrates the courage to take the shared responsibilities for protecting the Earth’s environment. It shows China faces up to the objective reality of different development conditions in countries and safeguards the interests of vast developing nations with firm adherence to the principle of “common but differentiated responsibilities”. It points out the direction for the realization of sustainable development. In particular, Premier Wen Jiabao announced a series of practical measures to help small island states, least developed countries and African countries deal with climate change, and thus won high appreciation and warm applause from present representatives, in sharp contrast to developed countries who negatively “have said more than done”. Premier Wen Jiabao’s speech not only showcased the good image of a responsible nation, but also boosted the morale of the developing countries as a whole camp, and thereby played an important and active role in the success of the

Summit.

#### **IV Review of the major policy recommendations in the 4th phase of CCICED**

Centering on the relationship between the environment and the economy, CCICED has been active in promoting environmental improvement and economic development, and contributed suggestions and ideas in the 4<sup>th</sup> phase (2007-2011) for green economic development, green growth, green transformation, and building an environment-friendly society in China. It looked into China's environmental protection from a more macro perspective, with the focus shifted from the traditional pollution prevention to ecosystem management and mechanism innovation. The successful conclusion of the 5<sup>th</sup> Joint Meeting of the 4<sup>th</sup> CCICED Council in 2011 marks an end to the five-year work in the 4<sup>th</sup> phase.

In the recent five years, CCICED has brought together experts and scholars at home and abroad under its unique operation mechanism for advice and suggestions, with a close link to the pulse of the development and the focus on major issues in environment and development in China. These recommendations have influenced environmental policy practice via various channels. Among them, some were adopted directly, while others stirred domestic discussion on particular policy issues, advancing or changing the policy process in an indirect manner. Some recommendations attracted the attention of decision-makers immediately, while some became real policies a few years later. In view of this, a look at a longer time span will help comprehensively understand the relevance of CCICED's policy recommendations with the trend of environment and development in China, and the role of CCICED in development and impact assessment.

*CCICED at 20: Environment, Impacts and Future Opportunities* released in 2011 offers a comprehensive picture of the possible difficulties in assessing the impact of the CCICED policy recommendations. It states that CCICED as an advisory body faces such difficulties as the ownership recognition of outputs, the time difference, and the gap between expectation and reality. For this consideration, this report includes the consistency of the development direction of environment and policies in China and the work content of CCICED as an important criterion to assess the impact of CCICED's policy recommendations, plus a systematic review and cases.

*CCICED at 20: Environment, Impacts and Future Opportunities* reviews the research background of the last two decades and its relevance to the most pressing environment and development issues. It also performs an in-depth analysis of the possible significant impact of the core recommendations on the environment and development in China, based on the background of the five-year research and proposals of the 4<sup>th</sup> CCICED Council. The efforts here focus on the acceptance and adoption of recommendations over the years, and their relevance to Chinese policies, echoing the purpose of *CCICED at 20: Environment, Impacts and Future Opportunities*, with the exception of a different timeline for analysis. For this reason, the background of research in the 4<sup>th</sup> CCICED Council covered in *CCICED at 20: Environment, Impacts and Future Opportunities* is not elaborated and instead, the



recommendations adopted in the recent five years are reviewed.

Five themes were identified in the 4th phase: innovation and environment-friendly society (2007), mechanism innovation and harmonious society (2008), energy, environment and development (2009), ecosystem management and green development (2010), and green transformation of economic development mode (2011). A total of 13 task forces were set up for seven thematic research projects, based on which CCICED has submitted five reports on policy recommendations. All policy recommendations are stated in detail in the annual *Major Policy Progress in Environment and Development in China and Impact of CCICED's Policy Recommendations*. From a long-run perspective, the impact is lasting. Some proposals, though not adopted in the year, have been quietly put on the policy agenda or were reflected in the relevant policies and legislation in subsequent years. For example, CCICED recommended the market-based implementation in 2007, covering environmental taxes, energy resource taxes, green credit, environmental insurance, ecological compensation, and emissions trading. In the next few years, the Chinese Government launched in succession the pilots for green credit, environmental liability insurance, and carbon trading, and started drafting the *Regulations on Ecological Compensation*.

During the period of 'Rio+20' Summit in 2012, CCICED held a side event with the theme of "Rio 20, CCICED 20". Premier Wen Jiabao chaired the event and had a long discussion with CCICED members and ministers from the State Council on the sustainable development path choice for China and the world. Premier Wen Jiabao acknowledged CCICED's contributions and roles and said that the vigor of CCICED derived from its focus on sustainable development, which was a persistent topic. CCICED was an important platform not only in terms of enhancing environmental cooperation between China and other countries, but also in terms of its influence on the development and environment in the world. Those annual themes CCICED selected were well fitted into Chinese demand priorities. Members of CCICED had devoted amounts of efforts to conduct research and raise recommendations, which provided important reference for policy making. Premier Wen Jiabao remembered his experiences of 15 years participating in CCICED activities and said he believed CCICED would continue its glory and have a wonderful tomorrow. Over the past 20 years, the mission of CCICED has been to introduce international experiences into China and put them into practice. 'Rio+20' Summit marks the beginning of a new epoch of CCICED, in which CCICED dedicates to sharing with the world its success, and together with the world develop solutions for common environmental challenges.

#### **Box 4: Adoption of CCICED's policy recommendations in the 4<sup>th</sup> phase**

##### **2007**

- Strengthen national capacity in environmental management and set up a larger ministry of environment department under the Central Government. (In March 2008, the 11<sup>th</sup> NPC meeting decided to set up MEP.)
- Reform the performance evaluation system for local government officials, and incorporate the responsibilities of various environmental goals and policy objectives in the evaluation system. (In November 2007, the State Council forwarded the Methods for

Assessing the Reduction of Major Pollutants, developed by State Administration of Environment Protection and countersigned by the Organization Department of the Central Committee and the relevant ministries, adopting the accountability system and vote veto system for responsible persons of local governments that fail to fulfill the tasks.)

- Raise public awareness and enhance public participation, so that various circles of society play their roles in the strategic transformation, including the production, consumption, environmental health, oversight of local development, as well as direct participation in environmental improvement. (China exerted great efforts into publicity in the 11<sup>th</sup> FYP period to enhance public environmental awareness, increased public participation in amending the relevant laws, and stimulated the public to purchase energy-efficient and eco-friendly products by means of subsidies to green and energy-efficient products. *Views on Strengthening the Law-based Government Development* issued by the State Council in November 2010 states in Chapter IV “adherence to law-based, scientific and democratic decision making” that “incorporate public participation, expert evaluation, risk assessment, legality review and collective discussion as the necessary procedure in major policy decision making. Before major decisions are made, fully solicit for and absorb the opinions, and disclose the information or feedback about the views adopted and the rationale in an appropriate form. Improve the public hearing system for major decision-making, with expanded scope and standardized procedure of hearings. Hearing participants should be representative and the hearing views shall serve as an important reference for decision-making.”)
- Accelerate the improvement of the existing environmental legal framework, management tools and technologies in China, including amendments to major legislation like the *Law of Environmental Protection*; introduction of appropriately stringent standards; and ensuring the strict implementation and compliance. (The NPC Standing Committee carried out the assessment of the *Law of Environmental Protection* and its related laws during 2008-2010, and the NPC Environmental and Resources Protection Committee started to amend the *Law of Environmental Protection* in January 2011. Public opinions were solicited for the amendment in September 2012.)
- Take full advantage of the economic policies based on the market mechanism to promote the strategic transformation of environment and development, including environmental taxes, energy taxes, green credit, environmental insurance, ecological compensation, and emissions trading. (SAEP and CBRC jointly announced the *Opinions on Implementing Environmental Policies and Regulations and Preventing the Credit Risk* in July 2007, since when green credit policies began to take shape. Both jointly issued the *Guidance on Work Related to Environment Pollution Liability Insurance* in December 2007, launching the establishment of the environmental insurance system. In May 2010, the State Council approved and forwarded *Opinions of NDRC on Priorities in Deepening the Economic Reform in 2010* to deepen the reform of the fiscal and taxation systems, and rolled out the resource tax reform program and studied the introduction of environmental tax scheme. NDRC officially began to draft the *Regulations on Ecological Compensation* in August 2010, and the NDRC General Office issued the *Notice on Carrying out the Pilot Emission Trading Scheme* in October 2011, deciding to carry out the ETS pilot in

Beijing, Tianjin, Shanghai, Chongqing, Hubei, Guangdong and Shenzhen.)

- Take full advantage of China's trade surplus to import energy-intensive and resource-intensive products and technologies and reduce the export of similar products. (MOF issued a notice in June 2010 to cancel the export tax rebates for 406 kinds of commodities, including steel, chemical products, and non-ferrous metal processing materials as of July 15, 2010. China remains to impose export tariffs on resource-based, energy-intensive products with high pollution, such as coal, crude oil, fertilizers, and non-ferrous metals, at the provisional tax rates in 2011 and 2012, and offer preferential tax rates for imported energy and resource products.)
- Become constructively involved in bilateral or multilateral environmental cooperation; adhere to the principle of common but differentiated responsibilities; maintain the development right of developing countries including China; and establish the responsible national image on environmental issues. (For example, in the field of climate change, China is active in each UN Climate Change Conference and takes concrete actions to show the image of a responsible big nation on environmental issues.)

## 2008

- Develop low-carbon economy to help tackle domestic resource constraints and to enhance international competitiveness while building a response capacity for climate change. (On September 22, 2009, in delivering his opening speech to the UN Climate Summit, President Hu Jintao announced China's commitment to a green, low-carbon and circular economy and to researching and using climate-friendly technologies.)
- Take the opportunity of major industrial restructuring caused by the financial crisis, accelerate the transformation of economic growth mode, step up efforts in clean energy production and technological innovation, nurture and boost the clean industry and low-carbon economic development, and enhance the capacity for addressing environmental pollution and climate change. (The NPC Standing Committee formulated the *Law of Circular Economy Promotion* in August 2008, passed the *Resolution on Active Response to Climate Change* in August 2009, and modified the *Law of Renewable Energy* in December 2009 and the *Law of Cleaner Production Promotion* in February 2012.)
- Consider the introduction of low-carbon economic development goals in the 12<sup>th</sup> Five-Year Plan, and incorporate low-carbon economic development into the current strategies and actions. (According to the 12<sup>th</sup> Five-Year Plan, the energy consumption per unit of GDP should be reduced by 16% and CO<sub>2</sub> emissions per unit of GDP by 17% during the 12<sup>th</sup> FYP period.)
- Strengthen environmental management in rural areas and drive the overall advancement of the cause of environmental protection in China. (The State Council made the significant decision to use awards for promoting governance in the national television and telephone conference on rural environmental protection in July 2008. The General Office of the State Council forwarded on February 27, 2009 the *Implementation Program for Implementing Award for Promoting Governance and Advancing the Solution to Prominent Environmental Problems in Rural Areas* developed by MEP, MOF and

NDRC, clarifying the work objectives: by 2015, the prominent environmental issues that seriously endanger the health of the masses, towns and villages will be brought under control; environmental regulatory capacity significantly strengthened; and environmental awareness significantly enhanced.)

- Establish a prevention system based health risk assessment, including a sound environmental standards system, the directory of pollutants for priority control, and a strict environmental access system for implementation. (MEP issued the *12<sup>th</sup> Five-Year Plan for Environment and Health in National Environmental Protection* in September 2011.)
- Government shall disclose environment and health information of public concern timely in government websites and news media in the form easily accessible and understandable to the public. (China has achieved significant progress in the field of environmental information disclosure since the promulgation of *Government Information Disclosure Regulations* and *Measures for Environmental Protection Information Disclosure (Trial)* in 2007.)

## 2009

- Carbon emission shall be significantly reduced until 2020 than 2005, try to guarantee the carbon emission per GDP is reduced by 4-5% per year and break down the objective according to different regions and industry features. (Before Copenhagen conference in December of 2009, China released its objective of emission reduction of China – until 2020, ratio of carbon dioxide per GDP in China shall be reduced by 40-45% than 2005, which shall be included in middle and long term plan of national economy and social development as a constraint index and accordingly prepare domestic statistic, monitoring and criteria for evaluation.)
- China is going through a major transformation towards human-centred and sustainable development strategies based on scientific development and harmonious approaches. China will continue to promote its strategic transformation of environment and development in order to achieve and sustain green prosperity as the basis for China's future development. (In Premier Wen's speech to United Nations Conference on Sustainable Development on June 20, 2012, he expanded on green prosperity and said: we expect a world characterized by green prosperity in the future, where there is no poverty or ignorance, no discrimination or oppression, no over extraction from nature or human-induced destruction; where we will see economic development, social equality, environmental friendliness and balanced harmony; and where the fruits of civilization will be shared by all and benefit our future generations. )
- Take green economic development as an important approach to drive ahead the transformation of economic development pattern, and advance the formulation of the national strategy for green economic development. Step up efforts to boost circular economic development and improve the efficiency of resources and environment in economic development. (The 12<sup>th</sup> Five-Year Plan, for the first time, introduces the concept of "green development" and elaborates on it in a separate chapter.)
- Pay close attention to the research and formulation of low-carbon economic development

planning, covering national strategic objectives, tasks, and specific measures, and launch the pilot and demonstration in major industries, some cities and rural areas to advocate the low-carbon lifestyle. Actively explore the new road to urbanization and the development of low-carbon cities. (NDRC issued the *Notice on Conducting the Low-carbon Pilot in Provinces and Cities* in July 2010.)

- Promote building energy-efficient technologies and measures based on the energy-efficiency assessment, and develop energy-efficient, low-carbon building. (MOF and MOHURD jointly issued the *Implementation Views on Accelerating the Development of Green Building in China* in April 2012, and promulgated the *12<sup>th</sup> Five-Year Plan for Building Energy Efficiency*.)
- Identify the public transport and non-motorized transport system as one of the national priority strategic fields. (It is discussed in Section III “give priority to the development of public transport” of Chapter 12 “build a comprehensive transportation system” in the *Outline of the 12<sup>th</sup> Five-Year Plan*.)
- Implement the environmental tax reform with the appropriate environmental taxes as the core. (*Opinions on Strengthening the Work Priorities in Environmental Protection* issued by the State Council calls for “actively promoting environmental tax reform and studying the introduction of environmental taxes.”)
- Improve and strengthen the green credit policy, and give full play to the important role of financial institutions in energy conservation and environmental protection. (CBRC developed the *Green Credit Guideline* in February 2012, specifying the practices of banking institutions in green credit.)
- Establish and improve laws, regulations and policies about environmental pollution liability insurance. (*Opinions on Strengthening the Work Priorities in Environmental Protection* issued by the State Council calls for “improving the environmental pollution liability insurance system and carrying out the pilot of mandatory environmental liability insurance.” *The 12<sup>th</sup> Five-Year Plan for National Environmental Protection* proposes “establishing a sound environmental pollution liability insurance system and studying the compulsory insurance system for high environmental risk enterprises, such as enterprises with heavy metal emissions.” MEP has also rolled out supporting technical specifications for environmental pollution liability insurance. Following the measures for environmental risk grading of chlor-alkali enterprises, MEP issued the *Environmental Risk Assessment Guide – Measures for Environment Risk Grading of Sulfuric Acid Enterprises (Trial)*, *Opinions on the Identification and Assessment of Environmental Pollution Damages* and *Recommended Methods for Calculating Environmental Pollution Damages (Edition I)*.)
- Develop the *12<sup>th</sup> Five-Year Plan for National Green Economic and Social Development*. (*The Outline of the 12<sup>th</sup> Five-Year Plan* adopted by NPC in March 2011 identifies seven binding targets for resources and environment. It is known as the most “green” five-year plan since the founding of the new China.)

## 2010

- Vigorously strengthen ecological protection and restoration, and respite important

terrestrial ecosystems and aquatic ecosystems. (In September 2010, MEP released *China's Biodiversity Conservation Strategy and Action Plan (2011-2030)*. In December 2010, the State Council issued the National Planning for Main Function Zones dividing the national space into areas for optimized development, priority development, restricted development and prohibited development. Among the restricted development zones are key ecological function zones. Prohibited development areas refer to different natural and cultural resource reserves established at all levels by law, and key ecological function zones prohibited from development for industrialization and urbanization and in need of special protection. *The Outline of the 12<sup>th</sup> Five-Year Plan of the People's Republic of China for National Economic and Social Development* adopted by the NPC in March 2011 states in Chapter 25 “promote ecological protection and restoration”, that we shall insist on the protection first and the priority of natural repair, enhance efforts in ecological protection and construction, and reverse the trend of ecological deterioration from the source.)

- Comprehensively promote soil environmental protection for public health and ecological environment safety. (“Strengthening the soil environmental protection” is discussed in Part IV “effectively solve outstanding environmental issues” of the *12<sup>th</sup> Five-Year Plan for National Environmental Protection*.)
- Speed up the legislative process for ecological compensation, and improve relevant policies and mechanisms. (China is currently developing the *Regulations for Ecological Compensation*.)

## 2011

- Establish a performance evaluation system favorable to the green transformation of development mode for leading cadres. (*The 12<sup>th</sup> Five-Year Plan for Energy Saving and Emission Reduction* issued by the State Council in August 2012 clearly states that each year the State Council will conduct the evaluation and examination of energy saving and emission reduction targets to provincial people’s governments, and the evaluation results will be an important component in the comprehensive assessment of the leading bodies and leading cadres, and be included in government performance management for the accountability system.)
- Drive the ecological adjustment of the fiscal and financial policies on all fronts, advance the carbon tax pilot, and set up an ETS platform. (NDRC General Office issued the *Notice on Carrying out the Pilot Emission Trading Scheme* in October 2011, deciding to carry out the ETS pilot in Beijing, Tianjin, Shanghai, Chongqing, Hubei, Guangdong and Shenzhen. To regulate project-based voluntary emission trading activities, NDRC issued the *Interim Measures for Voluntary Greenhouse Gas Emissions Trading* in June 2012.)
- Develop the low-carbon industrialized development planning, and set carbon intensity reduction targets for heavy and chemical industries. (*The 12<sup>th</sup> Five-Year Plan for Energy Saving and Emission Reduction* issued by the State Council in August 2012 sets energy-saving targets in various sectors, including the industrial sector during the 12<sup>th</sup> FYP period.)
- Promote the eco-friendly FDI strategy for green transformation. (Revised *Catalogue for*

*the Guidance of Foreign Investment Industries* in December 2011 further encourages foreign investment in the field of energy conservation and environmental protection.)

- Establish and improve the green supply chain system, and drive the green transformation of the entire production system through green consumption and green market. (In government procurement, the *12<sup>th</sup> Five-Year Plan for Environmental Protection* calls for a progressive increase in the proportion of environmentally friendly products in green procurement, and the research and implementation of government procurement of environmental services, with a comprehensive directory for environmental protection. And the *12<sup>th</sup> Five-Year Plan for the Development of National Strategic Emerging Industries* released in July 2012 puts forward “vigorously promoting environmental labeling products and the government green procurement system, and actively promoting green consumption.” MOF announced the adjusted 11<sup>th</sup> and 12<sup>th</sup> lists of energy-saving products for government procurement, and the 9<sup>th</sup> and 10<sup>th</sup> lists of environmental labeling products for government procurement in January and July 2012 respectively. MOF also requested improving the priority procurement and mandatory procurement system for energy-efficient and environment-friendly products in May 2012. In private consumption, the Chinese Government continues to allocate subsidies in an effort to promote the consumption of energy-efficient products.)
- Enhance technical support and environmental risk control and supervision, and strengthen pollution reduction in mercury-related industries. (*The 12<sup>th</sup> Five-Year Plan for the Nonferrous Metal Industry* released by MIIT in December 2011 proposes only retaining the native mercury smelting enterprise Shaanxi Mercury and Antimony Technology Co., Ltd. at the end of the 12<sup>th</sup> Five-Year Plan period, and outlawing others. Mercury catalyst recycling enterprises should have mercury vapor recovery units, and the establishment of new mercury catalyst recycling business should be under strict control across the country, except in Wanshan of Guizhou.)

## V. Conclusion

Looking back over the past five years, China has made tremendous economic achievements, with an increase rate of 11.2%, in spite of various natural disasters, the financial crisis and the debt crisis. Signs have shown that the economic growth slows down in the 12<sup>th</sup> FYP period. Looking forward to the next five years, or even the next one or two decades, China will face challenges in the transformation of economic development pattern and the economic growth rate, but will also be confronted with resources and environmental constraints.

Ranking as the second largest country in terms of total GDP, China has become an import power in the world economy. As well, China is among the largest emitters of pollutants and especially is the largest CO<sub>2</sub> emitter, which implies that China is playing a critical role in solving the key global environmental problems. The unveiled 12<sup>th</sup> FYP stirs great international concern over China’s development prospects in the next 5 to 10 ten years, or even longer.

According to an Asian Development Bank (ADB) report<sup>2</sup> in 2012, notwithstanding the economic achievements in the 11<sup>th</sup> FYP period, China continues to face significant challenges under four large-scale drivers: 1) rapid economic growth, 2) irrational economic structure, 3) quick urbanization, and 4) high energy consumption and low energy efficiency. A World Bank report released in 2012 analyzes the opportunities and challenges for the green development in China and makes appropriate recommendations.<sup>3</sup> It reads that China shall seize the opportunity to “go green” given China's many advantages — its large market size that will allow rapid scaling up of successful technologies to achieve economies of scale and reduced unit costs; a high investment rate that will permit rapid replacement of old, inefficient, and environmentally damaging capital stock; its growing and dynamic private sector that will respond to new signals from government, provided it gets access to adequate levels of finance; and a relatively well-developed research and development infrastructure that can be harnessed to reach and then expand the “green” technology frontier. In the implementation of a green development strategy, many obstacles and difficulties also need to be overcome. Most important among these is the price of energy, water, raw materials, and natural resources, which remain distorted to different degrees and do not reflect either the negative externalities associated with their use or their true scarcity value. The result is high resource intensity in production and associated wastage and pollution. A second and related obstacle is excessive dependence on administrative mechanisms to deal with environmental and natural resource management issues. At the same time, other fiscal and regulatory incentives for environmental protection are either weak or weakly enforced. A green development strategy will also face implementation and incentive constraints within government, and may face opposition from workers and enterprises that benefit from the current pattern of growth, exports, and investment. The observations from the international agencies indicate that an unprecedented human experiment is expanding in China with unique opportunities and various constraints. China has entered into deep waters of reform, which means a substantial step is needed in the support of courage of institutional innovations. The success of China will be a new miracle in human history and serve as a demonstration for other countries to race to a green and prosperous economy.

CCICED has made magnificent contributions with its suggestions and recommendations in the field of environment and development in the last 20 years. As a top advisory body for the Chinese Government, CCICED clearly understands that the greater the difficulties and challenges faced by China's development, the more considerable the responsibility it bears in terms of contributions and achievements. Constant efforts and continued innovation are necessary for the new CCICED Council to maintain its vitality and make new contributions to the environment and development in China.

2012 is the second year of the 12<sup>th</sup> FYP period. In order to achieve the objective of “accelerated transformation of economic development mode”, the Chinese Government issued a series of policies in 2012 to raise the level of ecological civilization; earnestly solve prominent environmental issues that affect the scientific development and harm public health;

---

<sup>2</sup> Toward an Environmentally Sustainable Future: Country Environmental Analysis of the People's Republic of China

<sup>3</sup> China 2030: Building a Modern, Harmonious, and Creative High-Income Society



strengthen institutional innovation and capacity construction; and reduce the total emissions of major pollutants in an effort to improve the environmental quality, prevent environmental risks, and comprehensively promote the historic transformation in environmental protection. China began to attach more attention to the balance between economic development and environmental protection, between urban environmental protection and rural environmental protection, and between pollution prevention and ecological protection. It is also concerned about the prevention and resolution of environmental problems at the macro level and from the source, and is focusing on green economic policies for solutions to environmental problems. China strives to play a constructive role in international environmental cooperation.

In the review of the environment and development policies of the Chinese Government last year, special attention should be attached to the following important signs of policy development.

First, it was put forward that the basic environment quality, being at a level not harmful to public health, belongs to public goods, and is therefore a basic public service provided by the Government. In Chapter VI of the *12<sup>th</sup> Five-Year Plan* it calls for an improved basic public service system for environmental protection to safeguard regional urban and rural balanced development. It clarifies that environmental goods are public property and fall into the government responsibilities for provision, so that all citizens, regardless of geographic, ethnic, gender, income and status differences, can receive basic environmental public services that are compatible in the level of economic and social development and roughly equal in the final results. Vice Premier Li Keqiang emphasized this point again at the 7<sup>th</sup> National Conference on Environmental Protection. This indicates that the Chinese Government has linked the quality of the environment with the fundamental rights of the citizens, further upgrading the importance and legitimacy of environmental protection.

Second, for the first time the prevention of environmental risks is included in the *12<sup>th</sup> Five-Year Plan* as an important task. Efforts shall be made to set up a basic risk assessment and warning and management systems to facilitate the whole-process technical management, and to introduce technological policies, standards, and engineering specifications for more relevant and targeted environmental risk prevention. Identify high incidence areas and industries sensitive to environmental risks in China; attach more attention to the impact of trace toxic and hazardous substances; and extend environmental management to production and domestic life for all-round prevention and control. With full consideration of human health factors, bring nuclear and radiation, heavy metals, persistent organic pollutants, soil pollution, and hazardous waste and chemicals under priority prevention and control, in order to lay the foundation for the full control in the 13<sup>th</sup> FYP period or longer. This suggests that China's environmental protection work in these five years will be increasingly dependent on source control to avoid more severe harm to the environment and the public from end treatment, through comprehensive and effective protection against environmental risks.

Third, public participation in environmental protection has reached a new level. Last year, events such as the public promotion in the PM<sub>2.5</sub> control, universal energy efficiency program, and environmental groups exposing the pollution problems of famous multinational

suppliers reflected how the public is playing an increasingly important role in the Government environmental decision-making, practicing the eco-friendly lifestyle, and supervising the corporate performance in environmental protection. As mentioned in CCICED's policy recommendations in 2011, the green transformation of development mode is related not just to policy, institutional and technical issues, but also to social and cultural values. Environmental protection takes up the mission to improve people's livelihood and optimize economic development, but also shoulders the significant historical responsibility of reconstructing social and environmental ethics. We should vigorously promote ecological civilization, advocate the environmental culture, respect the natural and objective laws of social development, inherit and carry forward the excellent traditional Chinese culture, and build a favorable social morality, responsibility, integrity and environmental ethics system in order to shape powerful ideological and spiritual support for the green transformation of development mode. Public practice in environmental protection in China last year proves that more and more of the public has recognized the concept of ecological civilization and come forward to safeguard the public interest.

Fourth, ecological civilization construction calls for a further revision of *Law of Environmental Protection*. Although the amendment has made huge progress, such 'limited modifications' still lag behind the expectations of the people. In the 30 years of economic development, the conflicts between the environment and the economic development have been open, and the complex competing interests involved in the revision between the central and local governments; between relevant departments; between enterprises and regulators and administrators; and between the public, Government and businesses causes both difficulties to the amendment and constraints to breakthroughs. It is due to such conflicts that this amendment is aimed at limited modifications that do not touch the expected environmental interests, public interest litigation, more severe penalties for violations, as well as the planning and policy EIA. It strengthened the corporate environmental responsibility, but no breakthroughs were made in the information disclosure and reporting system, which is of certain binding force to enterprises. In order to construct a higher level of ecological civilization and a beautiful China as required by 18<sup>th</sup> CPC National Congress, the revision of Environmental Protection law shoulders a historic mission to make institutional innovation to ensure the achievements of those goals. It is foreseeable that the revision of Environmental Protection Law, in response to the requirement of 18<sup>th</sup> CPC National Congress, will emancipate the mind, innovate institutions and break through institutional obstacles, making a real basic law to guide environmental protection.

2012 is an important nexus year for the implementation of the 12<sup>th</sup> Five-Year Plan when the CCP will hold the remarkable 18th National Congress. As the tasks have not been completed in 2011, China will face even greater pressure in the work to save energy and reduce emissions in 2012. However, we believe that, with the introduction of favorable policies, the green transformation of economic development mode will be accelerated and achieved step by step. As Premier Wen Jiabao highlighted in the *Government Work Report 2012*: "We must use actions to announce to the world that China will never seek for economic growth at the expense of the ecological environment and the health of its people. We will be able to embark on the green development for production growth, affluent life, and ecological civilization."

## **Part 2. Appendix: Policy Recommendations to the Government of China in**

### **2011(Abstract)**

The Annual General Meeting (AGM) of the China Council for International Cooperation on Environment and Development (CCICED) was held November 14-17, 2011 in Beijing. The theme of the AGM was “Green Transformation of Economic Development Pattern.”

CCICED members have noted that China’s commitment to all-round transformation of development pattern and a green development road were once again demonstrated during the recently concluded 6th Plenary Session of the 17th Party Congress, as well as in the *Opinions on Strengthening Key Environmental Protection Work* just issued by the State Council. The Opinions document stressed that “reform and innovation shall be the new driving force for exploring the new path of environmental protection featuring low cost, good returns, low emission and sustainability”. The Session and the Opinions are important demonstrations of China’s continued national will to strengthen environmental protection. Cultural development should also be part of the green transformation efforts. Promoting an environmental culture and ecological civilization in this process will help to build environmental ethics in China. To be fully successful, this effort must be linked to a strategy for sustainable livelihoods, and new, more environmentally friendly strategies for economic growth.

CCICED established three task forces linked to the green transformation theme: research on the development mechanism and policy innovation of China’s green economy; low carbon industrialization strategy in China; and trade, investment and environment, focusing on FDI entering China and ODI on the part of China. The Council also carried out special policy studies on greening China’s supply chains, and on mercury management in China. The goal for all of these studies is to contribute to the roadmap for transformative green development in China.

Based upon the research results of these studies and discussions during the AGM, CCICED proposes five policy recommendations to the Government of China.

#### **RECOMMENDATION 1. Rebuild social values, adjust government roles, and cultivate human resources to reinforce and serve an unswerving national will on green transformation of development mode.**

##### **1. Establish a long-term and unswerving national will on the green transformation of development mode.**

Although under the severe challenges of the current international economic slowdown,

financial market instability, debt crisis, and slow growth, the Government of China should not weaken environmental controls, or lower environmental targets and standards to yield to the economic pressures. It is crucial for the national government to step up its guidance and supervision of local governments, especially those that may be inclined to ignore green transformation in favor of strong economic growth. Reversals of this sort may be common. Therefore green transformation will require unswerving national commitment and determination.

**2. Incorporate the concept of Ecological Civilization into overall social and cultural development and reward sound social values and environmental ethics.**

Greater efforts should be made to promote ecological civilization and environmental culture, abide by rules of ecology and of social development, and, as appropriate, draw upon traditional Chinese values and ethics. Environmental values need to become part of an overall ethical system. Such a system will help provide strong moral and spiritual support to the green transformation of China's economic development pattern.

**3. Reform government functions, strengthen its management of public goods and social service functions for green development.**

China's economic system has been progressing, but the government has been relatively slow in adjusting itself to societal needs in a market-based economy. What's more, the global financial crisis to some extent has provided more room for governmental interventions in the economy. During the post crisis period, it is a pressing concern for the Chinese economy to shift from overdependence on policy incentives towards a more spontaneous growth pattern. The boundaries of government's role should be identified more clearly, and its public service role strengthened.

**4. Build a better performance evaluation system and mechanisms that strengthen accountability of government officials for green transformation of development mode.**

The performance evaluation system from the Central Government down to the local levels therefore should undergo comprehensive reform. The system should focus not only on achieving economic growth targets, but also on the manner, pattern and quality of development. This requires assessment of the relationship between economic growth and social progress, with better indicators for the quality of economic growth, environmental protection, resource efficiency and green employment. In cases where economic growth is so rapid that the environment is not being properly protected, there should be a negative assessment of performance. Monitoring, reporting and verification (MRV) for domestic environmental regulation is still not adequate enough, especially at regional and local levels. An evaluation and indicator system for green economy development should be established, backstopped by an improved system of national accounts modified to consider environmental statistics. Green GDP is a fundamental reform of the national economic accounting system for which the Central Government should continuously support relevant research and expedite its

application.

**5. Recognize and strengthen the critical role of enterprises in green transformation, and encourage self-motivated action.**

In response to the importance of civil society in green transformation, implement environmental information disclosure practices, environmental auditing and reward mechanisms as part of the effort to put into practice Corporate Social Responsibility (CSR) and to enhance transparency towards environmental improvement efforts. Government should provide a favorable regulatory framework to facilitate enterprises' green transformation and encourage active participation in international cooperation, through which their CSR, green image and sustainable competitiveness can be enhanced.

**6. Establish a human resources development system that supports green development.**

Knowledgeable and motivated people are the most important factor, and a basic prerequisite for green transformation of the development pattern. A wide range of scientific outlook and green-minded talents should be incorporated into the priorities of national middle- to long-term plans for China's human resources development.

**RECOMMENDATION 2. Establish China's green economy system and advance green transformation of the existing economic development mode.**

**1. Set strategic targets and create an overall framework for green economy in China.**

A preliminary green economic system that includes green manufacturing, green consumption, green trade and investment could be well established in China within the next 10-15 years.

The overall framework for this green economic system should give full play to the role of environmental protection in optimizing economic growth. The framework should highlight two main strategies, transformation and innovation, and six main sectors. The strategy of transformation is two-fold: economic development mode and governance structure need to be transformed; and innovation emphasizes institutional, structural, and technological shifts. The six sectors include: emerging new strategic industries, green transformation of industry, agriculture and the service sector, low-carbon and ecological restoration, green consumption pattern, and a more balanced approach to regional development.

**2. Implement "customized" and balanced green development strategies in different regions of the country.**

Since the regions of China vary in phase and mode of development, this regional disparity means that there is no general shortcut to a sustainable development path, and therefore a single set of standards should not be applied to all regions. To give full play to the characteristics and potentials of each region in developing its green economy, it is first

necessary to have a good understanding of the context of green economy within a region, the particular challenges and opportunities, and the region's capacity to coordinate national and local policies, as well as a sense of optimal integration of regulations with market mechanisms.

(1) Based on each region's comparative advantages and key characteristics, promote specific regional green development and prevent pollution migration and unsustainable resource and environmental uses. Prevent the transfer of outdated technology, equipment and pollution from developed to undeveloped regions.

“Customized” green development strategies for different regions should be formulated to take advantage of their respective potentials. For the eastern region, the development of industrial clustering, research and innovation, and environmental and financial services should be encouraged. The mid-western region, considering its advantages in infrastructure and human resources, should become a new manufacturing centre, as industry relocates from the eastern region. For the western region, which boasts a large workforce, vast land and rich natural resources, the development of sustainable mining, equipment manufacturing and new energy is appropriate, but needs to take into account significant but often fragile ecological systems and functions.

(2) Stick to green and balanced development between urban and surrounding rural areas; promote green, efficient and centralized urbanization in line with regional development needs. Land allocation should be given to those projects with the highest added-value and ecological service capacity and with land resource value taken into account. Promote the green transformation of resource-depleting cities by establishing a new mechanism to subsidize their green transformation, and by providing direct and sufficient compensation for resources exploitation. Much of the emphasis should be on conservation planning and practices—for land, water and other natural resources and ecosystem services.

### **3. Prioritize strategic emerging industry sectors and focus on the greening of all three traditional industries to promote green economy.**

(1) Adopt a coordinated and integrated approach to push forward green transformation of conventional industries. Green transformation of conventional industries requires multiple solutions for multiple challenges. The exit mechanism for heavily polluting enterprises needs to be improved. Compliant enterprises should be encouraged to take the initiative of green transformation and spontaneously phase out outdated and polluting equipment and technology. Relevant special funds should be set in place, such as a central incentive fund for phasing out backward, low productivity enterprises; a special subsidy for smaller enterprises that must be shut down; and possibly, a special fund to assist with major pollutants reduction. Financial support should be provided to dirty enterprises that take action to meet relevant environmental standards. Technological upgrading can be encouraged by preferential tax, land and credit policies. Punitive measures should be imposed for non-compliant, to-be-phased-out dirty enterprises; such measures might include higher power and water prices, suspension of new

loans or withdrawal of already granted loans.

There should be further strengthening of mandatory measures of energy saving and pollution reduction, improvement of laws and regulations concerning energy technology and standards, and new combinations of pollution treatment and resource efficiency measures to realize synergies between energy saving and pollution reduction.

(2) Promote green restructuring in the agricultural sector and link this action to food and agro-products security and rural sustainability. There is an urgent need to strengthen non-point pollution prevention and treatment and to promote comprehensive environmental improvement programs, including waste treatment in rural areas.

The government should cancel its subsidies for chemical fertilizer production and guide their rational production and use. At the same time, large-scale production of organic fertilizers should be supported, and subsidies for the substitution of chemical fertilizers with organic ones, where feasible, should be increased.

The surge in animal husbandry deserves particular attention. Some segments of the market require consolidation into holdings of a size where proper waste treatment can take place. Current subsidy patterns require examination to determine how they may be improved or removed in order to create sustainable animal husbandry, including aquaculture. Biomass waste from agricultural crops is not being properly utilized and more effort is needed to turn a greater portion of the waste into new products, such as second generation biofuels. It is also recommended that forest management and other land and water uses be developed as ecological enterprises for services like carbon sinks.

(3) Develop green service sectors and improve green employment opportunities. China should accelerate the development of green financing, green logistics and the environmental service sector. In addition, China should strengthen regulation and guidance on the greening of traditional service sector activities, promote the reallocation of capital and investment, and create more jobs in the service sector.

(4) Promote sustainable consumption and champion green economic development. Sustainable consumption is a driving force for green economy. As people's income increases in China, the end link of sustainable consumption will be a key factor for the success of green transition. It is also an important and useful approach to advocate that good quality of life does not require the consumption of large amounts of commodities. The establishment of a new sustainable consumption pattern entails lifestyle changes and a social attitude of sustainability. In this process, the government needs to be the first to take action. Green government procurement can be a good reference point for safe, rational and frugal consumption. At the social level, a product life cycle approach that conserves resources and reduces pollution should be established. Such a system will help foster green consumption behavior across the whole society. At the corporate level, green supply chains need to be introduced widely. Market mechanisms such as sustainability certification should be utilized

to promote sustainable production and consumption.

#### **4. Establish the legal, regulatory and policy system for green economy development.**

(1) Establish a supportive legal framework for green economic development. Many changes in the legal system are needed to better promote the development of green economy and to help harmonize environmental laws, regulations and institutional arrangements with other elements of the legal systems, which will strengthen overall legal protection of environmental resources. This includes: civil and commercial law, administrative law, economic law, social law, litigation law and criminal law.

The revision of the Environmental Protection Law provides a good opportunity to strengthen the responsibility of the government, with an emphasis on drafting relevant laws that clarify responsibilities concerning the regulation of environment matters at each level of the government. The civil liability of environmental damage should be strengthened, and research should be carried out on drafting laws regarding compensation for environmental pollution and damage, in order to better protect public environmental rights and interests, especially with regard to health, safety and a clean environment.

The environmental liability of enterprises also requires better legal definition. As long as it is cheaper to damage the environment than to pay for its maintenance, or to receive only minor fines in case of violations of laws and regulations, then enterprises are unlikely to conform. Furthermore, strict environmental liability will require much more in the way of guarantees for environmental restoration and higher payments to cover health or other damages to people and communities.

The government should move faster in developing and revising relevant laws and regulations that help promote carbon reduction; for instance, in the fields of energy generation and transfer, energy efficiency, resource saving and consumption. Climate change related laws need to be listed on the legislation agenda; the Energy Law should be developed and promulgated as soon as possible; and amendments should be made to the Coal Law, Electricity Law, Energy Saving Law and Renewable Energy Law, etc., in order to further encourage the development and consumption of clean and low-carbon energy. China should make revisions to a number of laws regarding natural resource use, including the Agricultural Law, Forest Law, Grassland Law, and Land Management Law, as well as integrated water management and various aspects related to sustainable use of the oceans.

All these laws will require administrative regulations and rules to help maintain and sometimes increase the productivity of land, water and sea, as well as the carbon sink function of agro-forest ecosystems. In addition, there is a need to revise protection and development plans for forest, farmland and grassland; to more strictly control cultivation in ecologically fragile regions and habitat important for biodiversity protection; and to forbid destruction of natural forest, grassland and farmland, and critical aquatic and marine habitats under any excuse.



The newly emerging industries in fields such as biotechnology and information technology present additional challenges, since some of their environmental impacts and benefits will require regulatory frameworks and possibly enabling legislation.

(2) Establish a comprehensive evaluation system of government policies. Rather than relying mainly on stand-alone decisions, there should be strengthened coordination among related activities, sometimes requiring cumulative impact assessments and greater use of assessments in the context of integrated regional development, river basin management, regional transportation strategies, etc. A comprehensive evaluation system should be set up for major policies or projects concerning energy efficiency and pollution reduction. When the government develops and implements major policies, projects, or makes major direct investments, the whole process from decision making to implementation should be checked for anticipated and actual results, bearing in mind the overall goal of promoting green economy.

(3) Implement green fiscal reform, including environmental taxes such as a carbon tax, and implement financial policies designed to improve market-based approaches and establish emissions trading platforms. The leading role of the government should be strengthened in fiscal, taxation, financial and pricing policies. The key need for fiscal and taxation policy reform is to provide an incentive framework that encourages green investment, green trade and green production. This reform will become a major driving force for accelerating green transformation. In the short and medium term there should be a steady increase in fiscal support for green economic initiatives, with a comprehensive set of policies for designated funds, subsidies, rewards, discount charges and guarantees. The government budget should be leveraged to maximize its benefit and establish a joint investment mechanism between the central and local governments. A tax system to promote green development should include accelerating resource tax reform, adjusting consumption tax in light of energy and environmental policies, and introducing environmental tax (carbon tax included). The consumer tax should be adjusted to include high energy-consuming, high emission products. It is also recommended to increase the tax on petroleum and other high energy-consuming products and to provide tax breaks for those certified energy-saving products.

Financial policies can also be improved by introducing relevant credit policy and financial instruments to encourage investment and innovation in energy and environmental areas. Reform of the resource pricing system should fully reflect resource scarcity and environmental costs. Pricing reforms of key resources and products, such as water, electricity, coal, oil and natural gas should be deepened. The existing cross-subsidization policies should be reformed to protect socially vulnerable groups and to provide direct subsidy to these groups using national funds. Market-based instruments should be fully explored and introduced in emission reduction and energy conservation. Markets and exchanges for emissions trading, including both carbon dioxide and conventional pollutants, should be established to facilitate its implementation, with pilots being carried out as early as possible.

## **5. Promote green innovation.**

Promote green innovation including the establishment of a “green innovation” strategy mainly based on fundamental research, technological R&D, and human resources development. Green innovation strategy should bridge the connection between fundamental research and commercialization. Green innovation should also be achieved through institutional reform and by use of new environmental policy instruments, such as standards, green procurement and innovation reward systems. Green innovation should be more open to international cooperation and provide support for technology transfer for small- and medium-sized enterprises, and for public-private partnerships through the creation of an international green innovation and investment platform.

## **6. Enhance international cooperation on green economy.**

It is beneficial for China to carry out international cooperation on green economy. This can be done within China and abroad by engaging in green improvements related to economic globalization; by drawing upon advanced ideas and experience of the international community on green economy; and, in cooperation with partner countries, by promoting exchanges and transfer of know-how, information and technology, and capacity building.

### **RECOMMENDATION 3. Build a low carbon industrial system that champions and supports green transformation of economic development mode.**

#### **1. Map out a development plan for low carbon industrialization in China with carbon intensity targets set for main heavy industrial sectors.**

There is a need to establish a low carbon industrialization plan, to coordinate this plan with other plans, and to develop a comprehensive development strategy for low carbon industrialization. Sectoral carbon reduction targets should be set up for heavy and chemical industries like power, iron and steel, chemicals, construction materials and non-ferrous metals, to take full advantage of the autonomy and motivation of respective sectors in setting up sector-based policies and develop R&D capacity.

#### **2. Increase support for emerging strategic industries, the driving force for low carbon transformation.**

The development of strategic emerging industries is a driving force for green and low carbon industrial transformation. The government should further lower the access hurdles and create a more favorable business environment for strategic emerging industries. The development plans for the seven main strategic emerging industries should be drafted, issued and implemented as soon as possible. A special fund supporting the development of strategic emerging industries should be established. In the emerging industry parks, the central and local governments should provide support to the infrastructure construction, certain key projects, R&D, public service platform and innovation capacity building. Tax and financial

tools should be adopted to accelerate commercialization of strategic emerging industries. The government could also consider the joint-stock approach, set up capital and equity investment funds, and encourage more investment in innovative but early-to-middle-stage companies of strategic emerging industries. Moreover, the government should develop relevant policies to encourage private and foreign investment in these industries.

In areas and sectors where pilot initiatives are being carried out, priority should be given to ensuring that prices for electricity, energy, and products are allowed to fully reflect the impact of trading or green taxes. It is also important that they are underpinned by carefully regulated data systems, and in relation to the development plan for low-carbon industrialization. Particular attention should be paid to the coordination of sectoral initiatives with cross-sectoral policies and programs. This will ensure synergies, and avoid duplication or offsetting effects.

### **3. Promote technological innovation and application to support low carbon transformation.**

More support should be given to low carbon research, and its weight in the total R&D budget should be increased. In line with the development trend towards low carbon industries, there should be greater effort to make technological breakthroughs in the fields of carbon capture and sequestration, alternative energy and other technologies, 3R (reduce, reuse and recycle), energy and biological technology, new materials, ecological restoration, and multi-pollutant control technologies. China should set up a world-class national energy lab and support basic and generic research, with open access to enterprises, universities and other research institutions. It is important to develop a new innovation system where enterprises play a leading role. The governmental funds for science and technology should increase their support to enterprises so as to attract more investment from all sectors. More efforts should be made to protect related IPRs. A cross-sector technological union should be formed to promote industrial integration and innovation. Meanwhile, international cooperation should be strengthened on low carbon technological innovation in order to make good use of international resources and position China to take advantage of international innovation related to low carbon technology.

### **4. Improve the regulatory and voluntary standard system for low carbon production and products.**

First, amend energy efficiency standards of buildings, transportation equipment, major industrial equipment, and main energy consuming items like household appliances and lighting products. Second, improve energy-efficient label management and accreditation; expand the scope of mandatory energy labeling; explore how to introduce “carbon footprint labels” in a phased manner; carry out low carbon product accreditation; and guide consumption behavior to become ‘lower carbon’. Third, strictly implement energy efficiency standards and raise access of energy intensive sectors, and carry out carbon-reduction assessment for new and expansion/rehabilitation industrial projects and for energy efficiency

evaluation of new public buildings and commercial housing upon completion. For those projects and buildings that do not meet mandatory standards, project completion approval should be suspended so as to control emissions from the source. Establish energy efficiency monitoring and verification processes and certification policies. Fourth, enhance monitoring, indicator and evaluation systems of energy saving and pollution reduction, strengthen accountability of energy saving targets, and improve incentive-disincentive mechanisms.

**RECOMMENDATION 4. Develop a green trade and investment system, establish green supply chains, and champion a goal-oriented green transformative strategy for China's trade and investment.**

**1. Promote an environment-friendly strategy for improving foreign direct investment (FDI) in ways that better serve green transformation in China.**

China's foreign investment policy should be adjusted and improved to encourage more FDI in strategic fields, such as high-tech, environmental protection and other strategic emerging industries. China should implement the *Decision on Accelerating the Development of Strategic Emerging Industries* promulgated by the State Council in October 2010 in order to attract more FDI in middle and western regions and inland cities in an orderly and sustainable manner. The current *Catalogue of Industrial Guidance for Foreign Investment* should be updated to encourage green investment in China. By drawing upon the advanced experiences of FDI source countries, especially those with high environmental standards, the FDI legal framework of China could be further amended and improved.

**2. Promote sustainable outbound direct investment (ODI) and share the fruits of green development.**

China should make good use of the China-Africa Summit, China-ASEAN Summit and other mechanisms to carry out policy dialogue and cooperation on sustainable investment, and strengthen sustainability and security of Chinese investment in foreign countries. A complete evaluation and supervision system should be set up so that the government can keep an eye on the operations of enterprises that invest overseas, including both state-owned and Chinese private enterprises of all sizes and types. China should promote capacity building for sustainable investment and strengthen mutual trust between Chinese investors and the public and private institutions, civil organizations and the people in recipient countries. A new Guideline on Corporate Social Responsibility (CSR) should be introduced to make the Chinese CSR standards consistent with internationally recognized ones. Chinese and foreign companies should report their performance openly and transparently using approaches such as the *UN Global Compact Communication on Progress*, or the *Global Reporting Initiative* reporting guidelines.

Together with the host country, China should also create the Sustainable Development Funding financial instruments to mitigate the impact of China's natural resource procurement activities, particularly when they result in the depletion of non-renewable mineral, oil and gas,

natural forest, and other biological resources, either domestically or abroad. There are a number of such funds in the world, some of which have served to offer alternative development options to the populations affected by these extractive activities. Others have created a savings account instrument to be used by future generations, when these resources will have been depleted. Such funds must be structured jointly between the host state, its local community, and the investor with strong stakeholder participation. They can be capitalized through payment of royalties levied on the resources that are being explored and should be managed by third-party professionals as independent trust accounts, which must be accountable to the public and other related stakeholders, not just to the host government.

### **3. Promote sustainable development of green trade and investment through greater participation in international rules setting.**

China should expand the import of sustainably produced products, and cut tariffs to encourage the import of energy intensive products, while reducing domestic production of such products so as to support industrial upgrading. The government should provide guidance and incentives to stimulate the export of products with low energy consumption and environmental damage so that the country's export mix can be greener. Export tax rebates on dirty products (energy intensive, heavily polluting and resource guzzling) should be abolished, and an additional export tax should be imposed on such products. These policies should be consistent and not affected by economic and trade fluctuations to ensure effective implementation.

China should play a more active role in the setting of green rules for international, regional and bilateral trade and investment, and in this way will help realize green transformation of itself and the world at large. China should promote the implementation at home and abroad of international environmental agreements that China has signed, and work to include environmental and social clauses in bilateral and regional investment and trade agreements currently under negotiation. China should also encourage enterprises and research institutes to carry out studies on international best practices and their dissemination, and promote 'south-south-north' cooperation under current international frameworks.

### **4. Set up and improve green supply chains in China and support green transformation of the whole production system by promoting green consumption and fostering green market.**

The government can play an enabling role in the development and management of green supply chains. Green government procurement action should be strengthened and made more prominent, especially at local levels via the Government Procurement Law. A government procurement platform should be created, quotas for green procurement should be introduced and general guidelines on green government procurement should be developed based on proper green certification of products. An environmental information network of the products procured by the government should be developed and publicized. Green procurement should take place at all levels of government and in public institutions such as universities and hospitals.

China should develop a Regulation on Green Supply Chain Management and Sector Evaluation Standards of Green Supply Chain, and develop an accreditation system for green supply chains based in part on existing environmental accreditation processes. Meanwhile, ‘promotion centers’ of green supply chain should be established to strengthen collaboration among industries, the government, NGOs and other external groups.

**RECOMMENDATION 5. Develop a strategy and national action plan for managing mercury use in China in order to reduce impacts on public health and the environment.**

**1. Develop a national strategy and action plan on mercury management.**

The national strategy and action plan on mercury management should aim to reduce health and environmental damage by mercury and cut China’s contribution to global mercury emissions. The strategy and action plan should be in line with the *12th Five-Year Plan on Comprehensive Prevention and Treatment of Heavy Metals Pollution (2011-2015)*, and identify short- and long-term mercury reduction targets for the period of 2011-2015 and beyond. Effective measures should be taken to reduce and prevent negative impacts of mercury on human health and the environment. A mandatory, facility-based and publicly accessible inventory of mercury releases and transfers should be developed to support decision making by the government, the relevant industries and communities. The strategy and action plan should be integrated into the strategies of other sectors, helping to improve environmental performance of mercury related industries and communities, and promoting clean production and realize green transformation.

**2. Strengthen technical support, risk control, environmental supervision and pollution reduction of mercury related industries.**

China should strengthen its legal and regulatory system for mercury management, strengthen its capacity for the enforcement of relevant laws, and carry out priority-based management of mercury with effective implementation across the country. Market-based instruments should be used as important supplements to mandatory measures and targets for reducing releases and uses of mercury and improving the management of mercury-containing waste. Scientific and technological needs should be identified to help the government make informed decisions on mercury risk control. China should promote structural adjustment of mercury related industries and communities by developing strategies with the relevant sectors to ensure that the restructuring harmonizes with market demand, urban and rural layout, regional characteristics and other essential factors. More weight should be given to a structural approach to reducing pollution (i.e., through industrial restructuring) while continuing projects to reduce and manage pollution (i.e., reducing pollution through specific treatment projects and improved management).

In order to reduce mercury emissions, mercury use should be forbidden or severely restricted in the relevant industries such as chemicals (including the production of PVC plastic),

lighting, battery, medical care and pharmaceuticals. Clean production techniques and technology should be promoted and pilot programs launched to explore the best feasible technologies and environmental management practices. Where appropriate, mercury pollution prevention and treatment technologies from abroad should be introduced and commercialized within China. There is a need to support research and development of low-mercury and mercury-free alternative products and processes, gradually reaching the goal of low-mercury and mercury-free industries and realizing mercury control at the source.

Measures that should be taken to protect Chinese citizens from possible exposure to mercury include: strengthening of occupational health and safety procedures for workers; rigorous management of contaminated sites, hazardous wastes and mine tailings; enhanced monitoring for mercury in selected foods; and the provision of appropriate information to the general public and populations that may be at risk.