

# **Circular of the State Council on Printing Out and Distribution of the National “12<sup>th</sup> Five-Year Plan” for Environmental Protection**

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The people’s government of all provinces, autonomous regions and municipalities directly under the central government, ministries and commissions of the State Council and departments directly under the State Council:

The National “12<sup>th</sup> Five-Year Plan” for Environmental Protection is now printed out and distributed to you for implementation.

The State Council

December 15, 2011

## **National “12<sup>th</sup> Five-Year Plan” for Environmental Protection**

Protecting the environment is a basic national policy of our country. The current plan is developed for the purpose of facilitating scientific development of environmental protection cause during the “12<sup>th</sup> Five-Year period and accelerating the development of resource-saving and environment-friendly society.

### **I. Environment Situation**

The Central Committee of Communist Party of China and the State Council attach great importance to environmental protection work and take it as an important component for implementation of the outlook on scientific development, an important means for transformation of economic development mode and fundamental measures

for facilitating the development of ecological civilization. In the “11<sup>th</sup> Five-Year Plan” period, the central government took significant emission reduction of major pollutants as a compulsory target for economic and social development; addressed preeminent environmental problems and made important progress in areas such as understanding, policy, system and capacity. There has been 12.45% reduction of total COD discharge and 14.29% reduction of SO<sub>2</sub> emissions compared with that of 2005, exceeding the reduction target. The pollution control facilities enjoy rapid development, sewage treatment rate in cities with a municipal government or a town serving as the seat of a county government has gone up to 72% from 52% in 2005, and the percent of thermal power generating units with desulphurization facilities has gone up from 12% to 82.6%. The policy of ecological restoration of rivers and lakes has been carried out in an all round way. The prevention and control of pollution in key river basins and regions have been deepened, and the environmental quality has been improved. The percent of surface water sections under national monitoring program meeting Grade III water quality standard has gone up to 51.9%, and the average SO<sub>2</sub> concentration in urban air has gone down by 26.3%. Great efforts have been made in supervision on environmental law enforcement. There are evident achievements in comprehensive control of rural environment, ecological protection has been enhanced, nuclear and radiation safety has been under control, public environment awareness has been continuously improved with more public participation. All the targets and key tasks of environmental protection identified in the “11<sup>th</sup> Five-Year Plan” have been achieved.

At present, the overall degradation trend of China’s environment is not under effective control with emerging environment problems and increasing pressure. Some key river basins and marine areas have serious water pollution; some regions and

cities have preeminent haze problem; the discharge of major pollutants in many areas exceeds environment carrying capacity. Rural environmental pollution is getting worse; pollution such as heavy metals, chemicals, POPs, soil and groundwater pollution have occurred. In some regions, there is serious ecological damage with degradation of ecosystem functions and fragile eco environment. There is increasing nuclear and radiation safety risks. The public has higher requirement for good environment. There is high occurrence of environmental pollution accidents. Environment problems become one of important factors threatening human health, public security and social stability. The pressure of global environmental issues such as conservation of biodiversity is increasing. Environmental protection legal system is not perfect with insufficient input, weak law enforcement and backward supervision capacity. Meanwhile, with continuous population growth and rapid industrialization and urbanization, it is expected that total energy consumption and amount of pollutants will continuously grow with increasing environmental constraints on economic growth.

## **II. Guidelines, Basic Principles and Main Objectives**

### **(I) Guidelines**

With Deng Xiaoping Theory and the important thought of “three represents” as our guidelines, we should carry out the outlook on scientific development, uplift ecological civilization, practically address preeminent environmental problems affecting scientific development and threatening public health, strengthen innovations of systems and mechanisms as well as capacity building, make more efforts in reduction of major pollutants, improve environmental quality, prevent environment risks, promote historic transformations of environmental protection in an all round way, actively explore new path to environmental protection that is small in cost, good

in benefit, low in emissions and sustainable in development, and accelerate the development of resource-saving and environment-friendly society.

## **(II) Basic Principle**

——Adhering to scientific development and strengthening environmental protection. Based on carrying capacity of resources and the environment, we will adhere to scientific development; accelerate the transformation of economic development mode; develop economy in the process of environmental protection, protect the environment in the process of economic development; and facilitate harmonious development among economy, society, resources and the environment.

——Environmental protection will benefit the people and facilitate harmony. We will adhere to the people first policy and focus more on issues such as enabling the people get access to clean water, clean air and safe food, practically address preeminent environmental problems mattering public welfare. We will gradually achieve equal public service in terms of environmental protection, safeguard public environmental rights and interests and facilitate social harmony and stability.

——Prevention first and combines with control. We will adhere to prevention at source, carry out environmental protection in the process of planning, construction, production, circulation and consumption, and improve capacity in sustainable development. We will improve construction and operation of pollution control facilities and strengthen ecological protection and restoration.

——Promote environmental protection in an all round way with breakthrough in key areas. We will insist on the principle of addressing common and overall environmental problems, as well as concentrating efforts to address environmental problems in key river basins, regions and sectors. We will establish strategic system for environmental protection; comprehensive and highly efficient pollution prevention

and control system; sound environmental quality assessment system; complete environmental protection regulations, policy and standard system; well-established environmental management and law enforcement supervision system, and social action system with full public participation that are suitable to national conditions of our country.

——Classified guidance with graded management. We will adhere to the policy of carrying out differentiated environmental policy in different regions and industries based on local conditions. Regions with suitable conditions are encouraged to adopt more active environmental protection measures. The management system with sup by the central government, administration by local government and responsibility taken by companies will be conducted. The environmental protection target responsibility system will be carried out.

——Government providing guidance, pushing forward with joint efforts. government's guidance will be adhered, the responsibilities of enterprises will be identified and coordination and cooperation among different departments will be enhanced. We will strengthen the disclosure of environmental information and supervision by the public and mobilize public participation in environmental protection. We will explore appropriate market means to promote environmental protection.

### **(III) Main Objectives**

It is planned that the followings will be achieved by the end of 2015: significant reduction of total discharge of major pollutants; effective guarantee of environment security of urban-rural drinking water source areas with significant improvement of water quality; remarkable achievements in effective control of the pollution by heavy metals, POPs, hazardous chemicals and wastes; improvement of both construction and

operation of urban environment infrastructure; reverse of eco environment degradation trend; significant enhancement of the capacity in supervision on nuclear and radiation safety with further improvement of nuclear and radiation safety; and improvement of environment supervision system.

| <b>Column 1 Major indicators for environmental protection in the “12<sup>th</sup> Five-Year Plan” period</b> |                                                                                                                               |        |        |                                             |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------|--------|---------------------------------------------|
| No.                                                                                                          | Indicator                                                                                                                     | 2010   | 2015   | Increase in 2015 compared with that of 2010 |
| 1                                                                                                            | COD (10,000 t)                                                                                                                | 2551.7 | 2347.6 | - 8%                                        |
| 2                                                                                                            | Ammonia nitrogen (10,000 t)                                                                                                   | 264.4  | 238.0  | - 10%                                       |
| 3                                                                                                            | SO <sub>2</sub> (10,000 t)                                                                                                    | 2267.8 | 2086.4 | - 8%                                        |
| 4                                                                                                            | NO <sub>x</sub> (10,000 t)                                                                                                    | 2273.6 | 2046.2 | - 10%                                       |
| 5                                                                                                            | Percent of surface water sections under national monitoring program failing to meet Grade V standard (%)                      | 17.7   | <15    | - 2.7 percentage points                     |
|                                                                                                              | Percent of surface water sections of the 7 big water systems under national monitoring program meeting Grade III standard (%) | 55     | >60    | 5 percentage points                         |
| 6                                                                                                            | Percent of cities at or above prefecture level meeting Grade II national air quality standard (%)                             | 72     | ≥80    | 8 percentage points                         |

*Note: ① Total discharge of COD and ammonia nitrogen include the amount discharged from industrial sources, urban domestic sources and agricultural sources, which is identified based on dynamic renewal of census on pollution sources in 2010.*

*② In the “12<sup>th</sup> Five-Year Plan” period, the amount of surface water sections under national monitoring program will go up from 759 to 970. Among them, the amount of surface water sections of seven big water systems under national monitoring program will increase from 419 to 574. Meanwhile, the amount of assessment factors will go up from 12 to 21. Based on these, it is estimated that*

*17.7% of water sections under national monitoring program failed to meet Grade V water quality standard, 55% of water sections of the seven big water systems under national monitoring program met Grade III water quality standard in 2010.*

*③ In the “12<sup>th</sup> Five-Year Plan” period, the number of cities subject to ambient air quality assessment will increase from 113 major cities on environmental protection to 333 cities at or above prefecture level across the country. The percent of cities at or above prefecture level meeting Grade II national air quality standard in, 2010 was 72% based on the calculation of annual average of inhalable particulates, SO<sub>2</sub> and NO<sub>x</sub>.*

### **III. Facilitating emission reduction of major pollutants**

#### **(I) More efforts in structural adjustment**

The phasing out of outdated production capacity will be accelerated. We will strictly carry out the *Catalog for Guiding Industrial Structural Adjustment* and *Catalog for Guiding Certain Industries to Phase Out Outdated Technologies, Equipment and Products*. We will make more efforts in phasing out the outdated production capacity of industries such as iron & steel, non-ferrous metals, building materials, chemicals, power, coal, paper making, printing & dyeing and tannery. We will develop annual implementation plan, divide the task down to local governments and enterprises for implementation, and make public the list of the enterprises which are required to phase out outdated production capacity. The review and approval mechanism will be set up for new construction projects with overall consideration of emission reduction and phasing out of outdated production capacity and the system of replacing production capacity with equal or reduced amount will be carried out. The

review and approval of environmental impact assessment of new and expansion projects in key industries should take total discharge control of major pollutants as the prerequisite.

More efforts will be made in reducing new increments of pollution discharge. The total consumption amount of energy will be reasonably controlled and non-fossil fuels will be promoted. It is planned that the percent of non-fossil fuel will take up 11.4% of primary energy sources by the end of 2015. Coal washing and mineral processing capacity will be enhanced. The supply of natural gas and coal-bed methane will be increased, and lower the percent of coal in consumption of primary energy will be reduced. We will carry out trial work on the control of total coal consumption in key regions of joint prevention and control of air pollution. We will make stricter environmental access to the industries with high energy consumption, high emission and excessive production capacity. We will explore and establishment the system assessing pollutant intensity per unit of products. We will actively develop strategic and emerging industries including energy saving and environmental protection as well as new energy industry, and encourage the development of energy saving and environment friendly means of transportation.

We will make more efforts in promoting cleaner production and circular economy. We will raise pollutant emission standard and cleaner production assessment indicators in industries such as paper making, printing & dyeing, chemicals, metallurgy, building materials, non-ferrous metals and tannery. Local governments are encouraged to develop stricter emission standard. The pollution discharge license system will be carried out in an all round way. The demonstration on cleaner production in the fields such as agriculture, industry, building, commerce and service will be promoted. We will carry out further demonstration and trial on circular

economy, accelerate commercialization of recycling and reuse of resources, facilitate the development of circular economy in all processes such as production, circulation and consumption, and establish resource reuse system covering the whole society.

## **(II) More efforts in reducing COD and ammonia nitrogen discharge**

We will make more efforts in reducing water pollutants of key regions and industries. We will carry out total discharge amount control of TN or TP in lakes and reservoirs subject to eutrophication as well as coastal marine areas subject to red tides in the East China Sea and Bohai Sea. We will control the total discharge amount of major heavy metals in key regions for comprehensive prevention and control of heavy metal pollution. We will facilitate industries such as paper making, printing & dyeing and chemicals to control total discharge of COD and ammonia nitrogen with at least 10% reduction compared with that of 2010. We will strictly control new construction projects that merely expand production capacity in industries such as paper making, printing & dyeing, tannery, pesticide and nitrogen fertilizers in the Yangtze River Delta and Pearl River Delta. New construction projects in industries such as non-ferrous metals, paper making, printing & dyeing, chemicals and tannery will be banned in the source areas of major river basins.

We will raise treatment rate of urban sewage; make more efforts in construction of sewage pipelines; facilitate reform of separate pipelines for run-off and sewage and speed up the construction of sewage treatment plant in counties and major towns. It is expected that by the end of 2015, about 160,000 km new urban and township sewage pipeline will be constructed across the country with additional sewage treatment capacity of 42 million t per day. Generally all counties and key towns will have capacity in sewage treatment; the load rate of sewage treatment facilities will reach over 80%, and urban sewage treatment rate will reach 85%. We will facilitate

environment-friendly treatment of sludge and reuse of sewage; strengthen assessment and examination on operation of sewage treatment facilities and reduction of pollutants; and facilitate the development of monitoring platform for urban sewage treatment plants. Urban sewage treatment plants in key watershed such as Dianchi Lake, Chaohu Lake and Taihu Lake as well as in coastal areas will raise their nitrogen and phosphorus removal rate.

Facilitate prevention and control of pollution from scaled livestock and poultry breeding with certain scale. We will optimize the distribution of livestock and poultry farms; appropriately identify the scale of such farms; improve breeding methods; promote clean livestock and poultry farms; and facilitate recycling and reuse of wastes from livestock and poultry farms. We will strictly implement the discharge standard of pollutants for livestock and poultry breeding. The pollutants from livestock and poultry farms and areas with dense individual households with livestock and poultry breeding will be under integrated collection and treatment. It is expected that by the end of 2015, over 50% of livestock and poultry breeding farms and areas with certain scale across the country will construct supporting solid waste and sewage storage and treatment facilities.

### **(III) More efforts in reducing SO<sub>2</sub> and NO<sub>x</sub> emissions**

Continuously facilitate emission reduction of power industry. Any new coal fueled generating unit will simultaneously install sulfur and nitrogen removal facilities. Any existing coal-fueled generating units without desulphurization facilities should be phased out as soon as possible or install desulphurization facilities. The smoke desulphurization facilities should eliminate flue gas bypass according to requirement. We will accelerate low-nitrogen combustion technical reform of coal-fueled generating units and installation of smoke denitrification facilities. All coal fueled

generating units with capacity at and over 300,000 kW must install denitrification facilities. We will strengthen supervision on the operation of sulfur and nitrogen removing facilities. Any generating unit failing to steadily meet emission standard should make corrections within a given period of time.

Accelerate desulphurization and denitrification of other industries. We will facilitate total SO<sub>2</sub> emission control of iron & steel industry and remove the sulfur in the smoke of sintering machines in an all round way. Any new sintering machine should construct supporting sulfur and nitrogen removing facilities. We will strengthen the control of SO<sub>2</sub> and NO<sub>x</sub> emissions of industries such as cement, petroleum, petrochemicals and coal chemicals. Industrial furnaces in industries such as petrochemicals, non-ferrous metals and building materials will carry out desulphurization reform. NSP kiln system should conduct low-nitrogen technical reform. New cement production lines should install denitrification facilities with efficiency no less than 60%. Treatment of the flue gas from coal fueled boilers should be conducted based on local conditions; new coal fueled boilers should install desulphurization and denitrification facilities, existing coal fueled boilers should remove sulfur in their flue gas. All existing coal fueled boilers in eastern part of China should also install low-nitrogen combustion devices.

Control NO<sub>x</sub> emissions from vehicles and ships. We will carry out environmental label management for vehicles. We will accelerate the phasing out of old vehicles, locomotives and ships. It is planned that by the end of 2015, all “yellow label vehicles” with operation registration before 2005 will be basically phased out. We will impose stricter environmental access to vehicles and strengthen check on production consistency. The production, sale and registration of vehicles failing to meet emission standard shall be banned. New energy powered vehicles will be

encouraged. We will implement national Stage IV emission standard for vehicles across the country. The regions with appropriate conditions will implement stricter emission standard. We will improve the quality for vehicle fuel, encourage the application of new types of clean fuel, and supply vehicle oil meeting national Stage IV standard across the country. We will actively develop urban public transport and explore appropriate ways to regulate in-service amount of automobiles in very large and big cities.

#### **IV. Practically address preeminent environmental problems**

##### **(I) Improve water environment quality**

Strong protection of protected areas for drinking water sources. We will finish review and approval of urban collective drinking water source protected areas in an all round way, prohibit any illegal construction projects within protected areas for water sources and pollutant outlets. We will facilitate environmental control, restoration and standard development of water source areas. We will enhance supervision on toxic and hazardous substances in the outside catchment areas of protected areas for water sources. Comprehensive analysis on water quality of the collective drinking water source areas for cities at or above prefecture level should be conducted at regular bases. We will improve environmental information disclosure system for drinking water sources, strengthen prevention of risks, early warning and environment emergency response relevant to drinking water.

Deepening prevention and control of water pollution of key river basins. We will identify the priority control units of each key river basin and carry out different control in different regions. The Huaihe River Basin should focus on the control of ammonia nitrogen and facilitate prevention and control of water pollution of the

mainstream of Huaihe River and cities such as Zhengzhou, Kaifeng, Huaibei, Huainan, Bengfu, Bozhou, Heze, Jining, Zaozhuang, Linyi and Xuzhou. The water quality of the mainstream of Huaihe River should meet Grade III standard. The Haihe River basin should strengthen overall plan for water use and prevention and control of water pollution. Focusing on safety of drinking water, improvement of urban water environment and coordinated control of trans-boundary water pollution, the Haihe River Basin will significantly reduce pollution load and achieve remarkable reduction of the percent of water sections failing to meet Grade V water quality standard. The Liaohe River Basin should strengthen comprehensive environment control of urban waters; facilitate the development of Liaohe River protected areas; and achieve evident improvement of water quality of the mainstream of the Liaohe River and its tributaries such as the Zhaosutai River, Tiaozi River and Daliao River. Three Gorges Reservoir areas and its upper reaches should strengthen pollution control, protection of water ecology and conservation of water sources to ensure good water quality of the upper reaches and the reservoir. The Songhua River Basin should strengthen comprehensive environment control of urban waters and control of non-point pollution. All the water sections under national monitoring program in the watershed should meet at least Grade V surface water standard. The mid and upper reaches of the Yellow River should focus on promoting prevention and control of water pollution of tributaries such as the Weihe River, Fenhe River and Huangshui River. More efforts will be made to prevent and control the environment risks of energy and chemical bases such as eastern part of Ningxia, Erdos and northern part of Shaanxi Province; the prevention and control of agricultural non-point pollution of Hetao irrigation areas will be strengthened with great improvement of water quality of its tributaries. The water of mainstream of the Yellow River will steadily meet the

functional requirements. The Taihu Lake watershed should reduce in-flowing pollution loads such as total nitrogen and total phosphorus, the water quality of the lake should go up to Grade V with control of eutrophication trend. The Chaohu Lake watershed should enhance the control of pollution from pollution of livestock and fowl farms and inflow of pollutants into the lake, reduce pollution loads of ammonia nitrogen, total nitrogen and total phosphorus (TP). It will strengthen restoration of ecology in lake area and curb the trend of lake eutrophication, the water sections of major in-flowing rivers failing to meet Grade V water quality standard will be basically eliminated. The Dianchi Lake watershed should comprehensively promote prevention and control of water pollution of the lake, ecological protected areas, utilization areas and water source conservation areas in order to improve the water quality of both inflowing rivers and the lake. Danjiangkou Reservoir and its upper reaches, which is the central line of the South-North Water Diversion Project, will strengthen prevention and control of water pollution and control of water and soil erosion, promote the control the pollution from agricultural non-point sources, and meet water quality standard in an all round way. The water source areas of the eastern line and the areas along the line should make more efforts in pollution control and ensure good water quality of diverted water.

Successful prevention and control of water pollution of other river basins. We will make more efforts in prevention and control water pollution of mid and lower reaches of the Yangtze River and Pearl River basin and achieve stable water quality with some improvement. Taking all rivers in Southwest China, Northwest China and Southeast China; Poyang Lake, Dongting Lake, Hongze Lake, Fuxian Lake, Liangzi Lake, Bositeng Lake, Aibi Lake, Weishan Lake, Qinghai Lake and Erhai Lake and so on as major areas for ensuring and uplifting water ecology safety, we will explore and

establish the indicator system for assessing water ecological environment quality, conduct comprehensive assessment on water ecology security and implement the measures for preventing and controlling water pollution and ensuring aquatic ecology safety. We will strengthen comprehensive environment control of lakes such as Changhu Lake, Sanhu Lake, Bailu Lake and Honghu Lake in Hubei Province and Yilong Lake in Yunnan Province. We will make more efforts in environmental supervision and prevention and control of water pollution of the rivers such as the Heilongjiang River, Wusuli River, Tumen River, Irtysh River and Ili River. We will make more efforts in protection of the lakes with good water quality or fragile ecology.

Comprehensive prevention and control of marine environment pollution and ecological damages. Adhering to ecosystem based management with overall consideration of both rivers and seas, we will facilitate comprehensive environmental control of major marine areas including the Bohai Sea and carry out total amount control of pollutants in key marine areas. We will strengthen the combination of prevention and control of coastal marine waters with prevention and control of water pollution of river basins. We will strengthen environment supervision on off-shore projects, ocean projects, marine dumping and ship pollution and strictly control any reclamation activity in ecologically sensitive areas. We will reduce the pollutant discharge intensity from marine culture. We will strengthen the development of coastal shelter forests and protect and restore typical marine ecology systems such as beach wetlands, mangrove forests and coral reef. We will intensify conservation of marine biodiversity. It will gradually add monitoring items such as creatures, red tides and oil spill in key marine areas, and strengthen environment emergency response to accidents including marine oil spill. We will establish data sharing mechanism for

marine environment monitoring. It is expected that by 2015, the overall water quality of coastal marine areas will keep stable and the water quality of estuaries such as Yangtze River estuary, Yellow River estuary and Pearl River estuary and key gulf including that of Bohai Sea will have some improvement.

Promotion of prevention and control of groundwater pollution. We will investigate and assess groundwater pollution and identify the control areas and prevention areas for groundwater pollution as well as general protected areas. We will strengthen supervision on groundwater environment of key industries. Groundwater pollution sources such as seepage wells and pits will be eliminated and pollution paths such as waste bore holes, shafts and pits will be cut off. Measures will be taken to prevent the pollution of groundwater by underground engineering facilities, underground exploration and mining activities. We will control the adverse impacts of hazardous wastes, urban pollution and agricultural non-point pollution on groundwater. We will strictly prevent and control the pollution from contaminated soil and waste water irrigation on groundwater. We will conduct trial work on pollution remedy in areas with preeminent groundwater pollution and intensify the prevention and control of groundwater pollution in North China. In addition, we will carry out demonstration on comprehensive prevention and control of marine water invasion.

## **(II) Conduct comprehensive control of several kinds of air pollutants**

Deepening the control of particulate pollution. We will intensify the control of industrial smoke and dust, facilitate reform of dust removal facilities of coal-fueled power plants and cement plants. All in-service agglomeration (pellets) equipment in iron & steel industry will employ highly efficient dust removers, and more efforts will be made to strengthen construction of dust removal facilities in production process. All coal-fueled furnaces with capacity at or over 20 steam tons should install highly

efficient dust remover. Other medium and small sized coal fueled industrial boilers will be encouraged to employ low-ash coal or clean energy. More efforts will be made to control the flying dusts from construction sites, transport of construction waste and road.

Strengthening control of volatile organic pollutants and toxic waste gases. We will beef up the control of VOC emissions during production, transport and storage in petrochemical industry. We will encourage the utilization of water-based, low toxic or low volatile organic solvents, facilitate the control of organic waste gas pollution and strengthen recycling and reuse of organic waste gases in fine chemicals industry. We will carry out the project to recycle and comprehensively control oil gas in gas stations, oil depot and tank trucks. We will monitor VOC and toxic waste gas, and improve pollutant discharge standards for key industries. We will conduct supervision on pollution sources and reduce the emissions of toxic and hazardous waste gases such as mercury, lead and dioxins.

Facilitating the prevention and control of urban air pollution. In major regions for joint prevention and control of atmospheric pollution, we will establish the assessment system for regional ambient air quality; conduct synergy control of several kinds of pollutants; implement special emission limit for air pollutants at regional level, and mainly prevent and control the pollution from industries such as thermal power, iron & steel, non-ferrous metals, petrochemicals, building materials and chemicals. We will monitor air pollutants including ozone and PM<sub>2.5</sub> in regions such as Beijing-Tianjin-Hebei, Yangtze River delta and Pearl River Delta, and conduct regional joint law enforcement inspection. It is planned that by the end of 2015, the combined air pollution of the above regions will be under effective control and the urban air quality of all cities will meet or be better than national Grade II standard

with significant reduction of acid rain, haze and smog pollution. We will carry out urban clean air action and intensify prevention and control of air pollution of cities including Urumqi. We will conduct classification management for urban air quality. Any city failing to meet the standard should develop and implement the program for meeting air quality standard. More efforts will be made to beef up the control of cooking fume pollution from restaurants and odor pollution.

Intensifying management of urban-rural acoustic environment. We will make more efforts in prevention and control of the noise pollution from areas such as transport, construction, industry and everyday life. We will identify or adjust acoustic environment function areas, strengthen meet-the-standard management of urban noise and expand the function area meeting noise standard. We will carry out sound control on the pollution from key noise sources, address noise pollution problem; and strengthen capacity building in noise supervision.

### **(III) Strengthen soil environment protection**

Strengthen the development of soil environment protection system. We will improve soil environment quality standard and develop the regulations and technical standards for protection and supervision on soil environment of agricultural produce bases. We will study and establish the system that assessing and recording soil environment quality of the land for construction projects and the system that investigates, assesses and remediate contaminated sites. It will make clear the subject of legal responsible and requirements for treatment and remedy of contaminated sites.

Intensify supervision on soil environment. We will deepen investigation on soil environment and conduct major investigations on in environment sensitive areas such as grain and vegetable bases as well as areas subject to the impacts of development of mineral resources. We will conduct trial work on assessment and safety rating of soil

pollution of agricultural produce bases. It will enhance environmental supervision on contaminated sites in cities, plants, mines and enterprises; assess the environmental risks of reuse of contaminated sites, and integrate assessing site environmental risks into environment impact assessment of construction projects. The transfer, development and utilization of contaminated land not subject to assessment and environment-friendly treatment will be banned. In case that any contaminated site is identified with serious impacts on human health after assessment, measures shall be taken to prevent the diffusion of pollution, such site shall not be developed into residential areas and existing residents shall be relocated.

Facilitate remedy of contaminated sites and land in key areas. Focusing on typical contaminated sites and contaminated farm land such as areas surrounding big and medium sized cities; plants, mines and enterprises with heavy pollution; land surrounding collective pollution treatment facilities, major areas for prevention and control of heavy metal pollution, areas surrounding drinking water sources and waste stockpiles, we will carry out trial and demonstration work on treatment and remedy of contaminated land and soil. We will make more input in the treatment and remedy of the soil pollution of contaminated sites left by enterprises as the main responsible body that has been disappeared.

#### **(IV) Enhance ecological protection and supervision**

Strengthen protection and development of ecological function areas. We will strengthen the protection and management of 25 national key eco function areas such as forests in Da Hinggan Ling and Xiao Hinggan Ling and forests in the Changbai Mountain, develop management measures and improve management mechanism. We will strengthen eco environment monitoring and development of assessment system, and carry out continuous monitoring and regular assessment of the structure and

functions of ecosystems. We will conduct ecological protection and restoration projects and strictly control total discharge of pollutants in key ecological function areas and raise environmental access for enterprises.

Improve development of and supervision on nature reserves. We will carry out baseline investigation and assessment of nature reserves and comprehensively improve national plan for development of nature reserves. We will strengthen the development and management of nature reserves, strictly control the scope of nature reserves and adjustment of zoning of function areas, strictly limit development and construction activities in relation to nature reserves, and standardize the management of land and marine areas within nature reserves. We will enhance standardized development of national nature reserves. We will optimize spatial distribution and layout of nature reserves and focus on the efforts in the development of nature reserves on water ecological systems in regions such as mountain and canyon areas in southwestern part of China, hilly areas of western part of Central South China and coastal marine areas. We will rescue and protect the remaining natural habitats in densely populated areas of central and eastern parts of China. It is planned that by the end of 2015, the total area of land nature reserves will remain steadily at 15% of total national land area.

Strengthen conservation of biodiversity. We will keep on implementation of National Strategy and Action Plan of China for Conservation of Biodiversity (2011-2030), make more efforts in protecting the biodiversity priority areas and finish baseline investigation and assessment of regional biodiversity of 8~10 priority regions. We will carry out trial monitoring on biodiversity and facilitate development of demonstration sites for conservation or restoration of biodiversity. We will facilitate the development of germplasm bank in key regions and industries. We will enhance

supervision on import and export of biological species and study and establish genetic resource acquisition and benefit sharing system. It will study and develop the regulations on preventing the invasion of alien species and strengthening safety management of GMOs. We will strengthen the supervision on environmental release of GMOs and utilization of microbes for improvement of the environment; it will prevent and control the invasion of hazardous alien species and make public the name list of endangered animal and plant species as well as invasion of alien species. By the end of 2015, 90% major species and typical ecosystems under national key protection programs will be under good protection.

Facilitate eco environment supervision on development of resources. We will carry out ecological function area zoning and standardize development and utilization of resources. It will strengthen ecological supervision during development of mineral resources, hydropower, tourism resources and construction of transport infrastructure. The responsibility of relevant enterprises for protection and restoration of ecology will be assumed. We will carry out deposit system for control and ecological restoration of mine site environment.

## **V. Strengthening the Prevention and Control of Environmental Risks in Key Areas**

### **(I) To facilitate whole-process management of environmental risk**

Environmental risks investigation and assessment shall be conducted. With the enterprises as the focus that discharge heavy metals, hazardous wastes, POPs, and produce and use hazardous chemicals, a comprehensive investigation of the key environmental risks sources and environment sensitive sites will be made and an environmental risk source database will be established. We will study the generation, spread, prevention and control mechanism for environment risks. We will investigate

environmental pollution and health damages, and establish risk assessment system for environment and health.

Environmental risk management measures shall be improved. We will improve environmental risk management system dominated by prevention and enterprises shall be held accountable. It should develop the standardized requirements for environmental risk assessment and improve the relevant technical policy, standards and engineering construction requirements. Clear-cut requirements for the prevention and control of environmental risk assessment shall be set out in the review and approval process of environment impact assessment of construction projects.

Emergent environmental incidents reporting and emergency response system by the enterprises should be established, together with the system that monitors and reports typical pollutants. Special check on key sources of risk and important and sensitive areas will be conducted regularly. Any enterprise with high environmental risk will be set down on the blacklist for supervision, requested to remedy or be relocated within a given period of time, or even shut down according to law if it does not meet the conditions for remedy. Environment emergency response and relief network shall be established, and environment emergency response program will be improved and emergency response exercises for environmental pollution accidents will be carried out regularly. The emergency response system for emergent environmental pollution accidents shall be further improved and an environment emergency response mechanism led by the government, coordinated by relevant departments with defined responsibility for different levels of locality and public participation shall be developed so as to properly handle emergent environmental events in a scientific manner and in accordance to laws.

Establish the mechanism for handling environment pollution accidents and damage

compensation as well as eco restoration. We will take effective prevention and appropriate addressing key environmental pollution accidents as an important task of local people's government, and integrate it into environmental protection target responsibility system. We will facilitate the development of appraisal and assessment institutions for environmental protection damages, establish appraisal and assessment mechanism and improve the damage compensation system. We will establish the technical systems for damage assessment, compensation and remedy. We will improve environment pollution liability insurance system and study and develop compulsory insurance system for enterprises with high environmental risks such as those discharge heavy metal pollutants.

## **(II) Strengthening nuclear and radiation safety management**

To improve safety level of applied nuclear energy and technologies. We will step up the efforts for analyzing, forecast and early warning of the impacts of major natural disasters upon nuclear facilities. We will further improve the reliability of design, manufacturing, installation and operation of nuclear safety equipment. We will strengthen the rectification relating the safety inadequacy of the research reactors and nuclear fuel circulation facilities to improve their safety. Any facilities failing to meet safety requirements shall be subject to operation limitations or gradual close-down. We will standardize the application of nuclear technologies, conduct integrated safety inspection on the units using nuclear technologies, and impose compulsory decommissioning of the projects that apply nuclear technologies with huge safety risk.

To intensify supervision on nuclear and radiation safety. We will improve the approaches for reviewing nuclear and radiation safety. We will intensify supervision on the safety of nuclear facilities in operation, strengthen the safety analysis and

assessment of nuclear facilities which are under construction and being planned and improve nuclear safety licensing system. We will improve safety management of those nuclear facilities built earlier. We will strengthen supervision on the safety of each links including the production, transport and storage of nuclear and radioactive materials. We will strengthen supervision on the safety of utilization of nuclear technology and improve the information system for managing radiation safety of nuclear technology. We will strengthen radiation environmental quality monitoring and supervision monitoring on the discharged waste from nuclear facilities. We will improve the international cooperation mechanism for supervision on nuclear and radiation safety and strengthen publicity on and science popularization of nuclear safety.

To strengthen prevention and control of radioactive pollution. We will facilitate the decommissioning of early nuclear facilities and treatment of radioactive pollution. We will conduct decommissioning and recycling of waste sources of civil radiation devices. We will speed up capacity building in storage, treatment and disposal of radioactive waste and basically eliminate the safety risk of industrial effluent with low radioactivity left in past production process. We will accelerate the pollution treatment of uranium mines and mines associated with radionuclides, shut down any uranium mining and metallurgy facilities failing to meet safety requirements, and establish a long-term monitoring mechanism for treatment projects of decommissioned uranium mining and metallurgy.

### **(III) Curb high incidence of heavy metals pollution accidents**

Strengthen prevention and control of heavy metal pollution of key industries and regions. Focusing on industries such as mining and mineral processing of non-ferrous metal mines (including associated minerals), metallurgy of non-ferrous metal, lead

battery manufacturing, leather and its products, chemical raw materials and chemicals manufacturing industry, more efforts will be made in prevention and control of heavy metal pollution and accelerate phasing out of outdated production capacity of enterprises involving heavy metals. We will appropriately adjust the layout of enterprises relevant to heavy metals, gradually raise industrial access and strictly follow the sanitary protection distance requirement. We will adhere to the policy of replacing phased out production capacity by equal or reduced amount of new production capacity, any new and expansion project with increase of discharge of heavy metal pollutants in key regions will be banned. Each province (autonomous region or municipality) will be encouraged to carry out trial work on replacement and trade of heavy metal emissions in non-key regions. We will identify and carry out special discharge limits for heavy metal pollutants in key regions and industries. We will strengthen comprehensive prevention and control of heavy metals pollution in river basins and regions such as the Xiangjiang River basin. It is planned that by the end of 2015, the discharge of major heavy metal pollutants in key regions will go down by 15% compared with that of 2007, and the discharge of major heavy metal pollutants in non-key regions will not exceed that of the level of 2007.

To carry out comprehensive prevention and control of heavy metals pollution. Taking the enterprises involving heavy metals as key pollution sources for management, we will establish the account for generation and discharge of heavy metal pollutants and enhance the supervision monitoring and check system. We will conduct compulsory clean production review on key enterprises once in every two years. Technical progress of relevant industries involving heavy metals will be promoted and it will encourage relevant enterprises to conduct further treatment of heavy metals pollutants. We will encourage the integration and park management of

the enterprises in industries such as lead accumulator manufacturing, non-ferrous metal smelting, leather and its products and electroplating and strengthen environmental protection requirements of industry parks or zones. We will improve the monitoring and treatment system for health hazards by heavy metals pollution.

#### **(IV) Promoting safe treatment and disposal of solid waste**

To strengthen prevention and control of hazardous waste pollution. We will carry out the whole process management system for hazardous wastes, identify the list of units generating hazardous waste under key supervision program, strengthen standard management of the units generating or operating hazardous wastes and put an end to illegal movement of hazardous wastes. Investigation and assessment will be conducted on waste utilization and disposal facilities built by enterprise itself. We will facilitate professional and scaled development of the industry that reuses and disposes hazardous wastes. We will control the landfill amount of hazardous wastes and ban any illegal processing and utilization facilities for waste lead-acid battery. We will standardize the management of hazardous waste from non-industrial sources such as laboratory. We will accelerate safe disposal of chromium slag stockpiles left from past production and ensure environment-friendly utilization and disposal of new chromium slag. We will strengthen the whole-process management of medical waste and construction of environment-friendly disposal facilities of medical waste, and facilitate environment-friendly treatment of medical waste of rural areas, towns, townships and remote areas based on local conditions. It is planned that by the end of 2015, the medical wastes of all the cities at or above prefecture level will basically under environment-friendly disposal.

To make more efforts in prevention and control of industrial solid waste. We will improve the favorable policies on encouraging reuse and disposal of industrial solid

wastes; strengthen the development of the technologies for comprehensive use and disposal of industrial solid wastes; and beef up the prevention and control of the pollution caused by large amount of industrial solid wastes such as gangue, fly ash, by-product gypsum, smelting slag and chemical residues. It is planned that by the end of 2015, the comprehensive utilization rate of industrial solid waste will reach 72%. We will carry out extended producer responsibility system, standardize recycling and disposal of waste electric and electronic products, construct recycling system and collective processing and treatment parks (zones) for wastes, and facilitate comprehensive use of resources. We will strengthen the designated area management for import wastes.

To raise garbage treatment rate. We will accelerate the construction of urban garbage disposal facilities. It is planned that by the end of 2015, environment-friendly disposal rate of urban garbage of the country will reach 80% and each county will have the capacity in environment-friendly disposal of domestic garbage. We will improve classified collection system for domestic garbage, improve classified collection, air-tight transportation and collective disposal system for domestic garbage, and strengthen supervision on the operation of disposal facilities. Environmental control will be conducted on simple treatment or stockpile facilities and sites of garbage. Ecological restoration of decommissioned landfill facilities and old garbage sites will be carried out. Biogas generation from garbage, combusting landfill biogas for power generation and heat supply as well as reuse of kitchen waste will be encouraged. We will facilitate the construction of the facilities that treat and dispose landfill leachate and garbage fly ash. We will carry out trial work on co-treatment of garbage and sludge by industrial production processes.

#### **(V) Improving chemical environmental risk prevention system**

To carry out strict environmental supervision on chemicals. We will improve the system for environmental management and registration of hazardous chemicals and new chemical substances. We will develop the Catalogue of Toxic and Hazardous Chemicals Subject to Phasing Out and phase out highly toxic, hard-to-degrade and hazardous chemicals according to law. We will develop the Inventory of Chemicals under Major Environmental Management, and limit the production and utilization of chemicals with high environmental risks. We will improve the access criteria, environmental quality standard, discharge standard and monitoring technical specification of relevant industries; carry out reporting system for discharge and movement of such chemicals; and conduct compulsory review of clean production. We will improve environmental management institutions for chemicals. We will establish life-long responsibility system for chemical environmental pollution and whole-process administrative accountability system.

To strengthen prevention and control of chemical risks. We will strengthen environmental management of chemical industrial parks (zones), make strict review and approval of environmental impact assessment of new chemical industrial parks (zones) and strengthen upgrading and reform of existing concentrated areas of chemical enterprises. Any new construction project involving hazardous chemicals should be in chemical parks or concentrating areas and existing chemical enterprises outside chemical industrial parks (zones) should gradually move in. We will develop the construction standard for environmental protection facilities in chemical industrial parks (zones) and improve the development of relevant facilities and environment emergency response system within such parks (zones). We will beef up the management and treatment of hazardous chemical waste under key environmental management program and contaminated sites. We will facilitate the construction of

temporary store of waste hazardous chemicals in hazardous chemical enterprises and development of the treatment and disposal capacity. Focusing on industries such as iron ore sintering, electric arc furnace steel making, recycled non-ferrous metals manufacturing and waste incineration, we will strengthen prevention and control of dioxin pollution, and establish a complete system for prevention and control of dioxin pollution and long-term monitoring and management mechanism. It is planned that by the end of 2015, the dioxin emission intensity of major industries will reduce 10%.

## **VI. Improving basic public service system for environmental protection**

### **(I) Facilitating equal basic public services for environmental protection**

To develop national zoning for environment function areas. Taking safeguarding environment health, ensuring the safety of natural ecology and environmental security of grain bases as the objectives based on the differences of main environment functions of different regions, we will develop national zoning for environment function areas based on national plan for main function areas; identify “ecological red line” in regions such as key ecological function areas, land and marine area having sensitive or fragile eco environment; develop environment targets, policies and standards for different regions with classified guidance and area-based management.

More efforts will be made in environmental control of priority development areas and key development areas, implement strict pollution discharge standard based on environmental carrying capacity, significantly reduce total discharge of pollutants, strengthen prevention of environmental risks, and protect and expand ecological space. We will beef up environmental supervision on main bases of agricultural produces and strengthen prevention and control of soil erosion and pollution by livestock and poultry breeding industry. We will carry out compulsory protection of nature and culture resource protected areas according to law and maintain the authenticity and

intact of natural ecology and cultural heritage, and shut down or relocate polluting enterprises according to law and achieve “zero emission” of pollutants. We will carry out strict environment access of regions such as energy bases and mineral production bases and guide appropriate and orderly development of natural resources.

To implement regional environmental protection strategy. The western part of China should adhere to the policy of putting ecology first, strengthen environmental supervision on development activities of resources and energy such as hydropower and mineral resources, protect and improve eco-service functions and develop a national ecosafety shield. Sanjiangyuan (source of the three rivers) region should further facilitate the development of comprehensive trial site for ecological conservation. The Tarim River basin should strengthen ecological control and prevention and control of desertification. Regions such as Huhhot-Baotou-Ordos-Yulin, Guanzhong-Tianshui, Lanzhou-Xining, areas along the Yellow River in Ningxia and the north slope area of the Tianshan Mountain should strictly limit the development of industries with high consumption of water, raise the efficiency of water resources and control coal smoke pollution during the heating period. Regions such as Chengdu, Chongqing, the central part of Guizhou, central part of Yunnan and central south of Tibet will strengthen prevention and control of acid rain, beef up rocky desertification control and protection of plateau lakes.

Northeast China should strengthen the protection of ecosystems such as forests, restore the wetlands in the Sanjiang Plain and Songnen Plain, intensify comprehensive control of water & soil erosion as well as desertification of the black soil, and strengthen soil environmental protection of agricultural produce bases in Northeast China Plain. Regions such as central and southern parts of Liaoning Province, Changchun-Jilin-Tumenjiang, Harbin-Dalian-Qiqihar and Mudanjiang-Suifen River

should strengthen control of urban air pollution during the heating period, facilitate prevention and control of water quality of the Songhua River basin, Liaohe River basin and coastal marine areas, strengthen comprehensive environmental control of mining subsidence areas and mine-site environment restoration, and beef up eco environment supervision on development of resources including petroleum.

The central part of China should effectively maintain resource and environment carrying capacity in the region, improve the construction of urban-rural environment infrastructure and maintain overall stable environmental quality. Taiyuan urban agglomerations and central economic development region should strengthen cooperation on the control of air pollution at regional level, strictly limit the development of industries with high consumption of water and strengthen ecological restoration of mining subsidence areas. Regions such as Wuhan urban agglomerations, Changsha, Zhuzhou and Xiangtan urban agglomerations and Wanjiang urban belt should take regional resource carrying capacity and eco environment capacity as important bases for accepting the shift of industries, impose strict requirements for conservation of resources and environmental access, make overall plan for urban-rural environmental protection, and accelerate the development of resource-saving and environment-friendly society. Efforts will be made to strengthen eco environment protection of Poyang Lake Eco Economic Development Area.

The eastern part of China will greatly reduce total discharge of pollutants, accelerate transformation of economic development mode and address the bottleneck of resources and the environment. The regions such as Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta should accelerate innovations in environmental management systems and mechanisms and effectively control combined air pollution at regional level. Region such as coastal areas in Hebei

Province, Jiangsu Province, new area of Zhoushan Islands of Zhejiang Province, west bank of the Taiwan Strait and Shandong Peninsula should further raise resource and energy efficiency, and protect coastal belts and biodiversity. They should speed up the construction of environment infrastructure in Hainan International Tourism Island.

To facilitate equal basic public service for environmental protection at regional level. Scope and criteria for basic public services on environmental protection will be identified, so as to strengthen integrated planning for urban-rural areas and inter-regions, and improve basic public service system for environmental protection. With measures such as transfer payment and eco-compensation, more support will be made for the west of China, regions prohibited from development and limited for development as well as areas with special difficulty in a bid to improve the supply of basic public environmental services. The people's government at all levels should ensure the funding for basic public environmental protection service and beef up capacity building for environmental supervision at grass-root level.

## **(II) Improve rural environmental protection**

Ensure the safety of drinking water in rural areas. We will investigate and assess rural drinking water source areas and facilitate the identification of protected areas or protected scope for rural drinking water sources and strengthen comprehensive environmental control of the drinking water sources. We will establish and improve environmental supervision system for rural drinking water source areas and make more efforts in law enforcement inspection. We will carry out publicity activities on environmental protection to raise the awareness of rural residents in protecting drinking water sources. We will promote integrated water supply for both urban and rural areas in regions with appropriate conditions.

Raise treatment rate of rural sewage and garbage. We will encourage the

construction of collective sewage treatment facilities in towns and big villages. The sewage of villages and towns in vicinity of cities will be included in urban sewage pipelines for treatment. Scattered villages should promote the construction of separate and low cost sewage treatment facilities with easy maintenance. We will strengthen the construction of the facilities that collect, transfer and dispose rural garbage, make overall plan for constructing environment-friendly collection, transport and treatment systems for the garbage of cities, villages and towns near county cities. The areas with poor transportation conditions should explore on-the-site treatment mode and guide the classification at source, on-the-site reduction and reuse of domestic garbage of rural areas.

Improve prevention and control of pollution of planting and breeding industry in rural areas. China will guide farmers to employ biological pesticides or highly efficient pesticide with low toxicity and residue. The pesticide package should be subject to environment-friendly treatment. We will facilitate fertilization by soil testing and promote the development of eco and organic agriculture. We will strengthen reuse of agriculture wastes such as waste agriculture films and straw. China will investigate the pollution from aquiculture and reduce the area of aquiculture and feeding amount in lakes such as the Taihu Lake, Chaohu Lake and Hongze Lake.

Improve rural environmental quality of key regions. We will carry out target responsibility system for comprehensive control of rural environment, conduct rural clean project, develop and extend applicable comprehensive environmental control mode and technology, and strive for improving environmental quality of the villages and towns with preeminent pollution problem. It is planned that by the end of 2015, China will finish comprehensive environmental control of 60,000 administrative

villages. We will optimize industry development distribution in rural areas, impose strict environmental access to industrial projects, and prevent the shift of pollution from cities and industries into rural areas. We will conduct comprehensive environmental control on the pollution sites due to relocation or shut down chemical and electroplating enterprises in rural areas.

### **(III) Strengthen development of environmental supervision system**

Focus on the projects in areas such as infrastructure and talents, we will facilitate equal basic public services for environmental supervision. It is planned that the monitoring system for pollution sources and reduction of total pollutants emission; environmental quality monitoring, assessment and examination system; environment early warning and emergency response system; basic public service system for environment monitoring will be basically developed by the end of 2015.

Improve the statistics, monitoring and examination system for emission reduction. We will strengthen the construction, monitoring, management and maintenance of automatic monitoring system for pollution sources. We will strengthen the development of capacity in supervision and management of emission reduction from vehicles and in rural areas. We will facilitate standardization of environmental protection capacity in areas such as monitoring, supervision, publicity & education, statistics and information in an all round way and greatly improve the capacity of cities and counties in environmental supervision. In regions with well developed economy and heavy pollution such as Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta as well as other areas with conditions, environment supervision workforce will extend their activities to townships, towns and residential blocks. Focusing on monitoring and supervision institutions at county level and some monitoring and supervision institutions at prefecture or city level in central and

western part of the country, we will facilitate the construction of the buildings for environmental monitoring and law enforcement at grass root level. We will conduct agricultural and rural environmental statistics and study appropriate ways to the control of total discharge of pollutants from non-point sources and explore and establish the verification system for reduction of pollutants from non-point sources.

Facilitate the development of monitoring, assessment and examination system for environmental quality. We will optimize national environment monitoring sections (sites) and develop assessment, examination and early warning network for environmental quality. We will develop national environment monitoring sites in key regions and improve automatic monitoring level of national monitoring network. We will improve the capacity in monitoring typical pollutants at regional level and monitor typical environment pollution factors such as heavy metals and volatile organic compounds. Including monitoring of typical pollutants into the scope of routine local monitoring will be encouraged. We will carry out trial work on monitoring water quality of drinking water sources and rivers (reservoirs) in rural areas; promote construction of baseline air monitoring sites for typical rural areas or regional monitoring sites; enhance the development of mobile monitoring capacity; raise coverage of environmental monitoring in rural areas, and start investigation and assessment of rural environment quality. We will carry out biological monitoring. We will facilitate the development and application of environment satellites; establish national eco environment monitoring network combining satellite remote sensing monitoring with ground monitoring, and monitor and assess eco environment quality. We will develop a national monitoring network for radiation environment.

Enhance the development of environment early warning and emergency response system. China will accelerate the development of automatic monitoring system at

national, provincial and city levels and establish early warning monitoring system. We will improve basic statistic and application capacity in environment information and develop environment information resource center. With the help of approaches such as internet of objects and electronic label, we will conduct whole process monitoring on processes such as storage and transport of hazardous chemicals. We will strengthen the standardized development of capacity in environment emergency response and enhance the development of regional environment emergency response and supervision institutions of key river basins and regions. We will improve nuclear and radiation environment monitoring system, establish supervision monitoring system for important nuclear facilities and real-time on-line monitoring system for the discharge from other nuclear facilities, and facilitate construction of the buildings for national base for research and development of nuclear and radiation safety supervision technologies, key laboratories and routine work. We will enhance the development of the capacity in environment emergency response to nuclear and radiation accidents and anti-terrorism capacity, and improve the emergency decision making, command and control system as well as preparation of materials for emergencies.

Raise the capacity in ensuring basic public service for environment monitoring. We will establish the channels and mechanism that ensure funds and guarantee the operation of national and local environment supervision network, renewal of equipment and maintenance and reform of business buildings according to the operation standard rate and renewal mechanism. We will strengthen the development of the workforce and improve the capacity of the staff. We will study and establish the management system for nuclear and radiation safety supervision and technical qualifications of important posts on nuclear safety. We will improve training

mechanism and strengthen the training of environment supervision workers at city and county levels especially those from the central and western parts of China. It will cultivate and introduce high-level talents and carry out national contest on environmental skills regularly.

**VII. Carry out key environmental protection projects**

To meet environmental protection targets and finish environmental protection tasks of the “12<sup>th</sup> Five-Year Plan”, we will actively carry out various environmental protection projects (the total investment demands for environmental protection will be about 3.4 trillion yuan). Among them, we will prioritize the implementation of 8 key projects on environmental protection and carry out a group of environment baseline investigation and demonstration projects. The investment demands will be about 1.5 trillion yuan. We must give full play to the role of market mechanism, develop diversified investment pattern and ensure all project investment is in place. The investment in environmental projects will mainly come from enterprises and local governments at all levels, the central government will give financial support based on different conditions. The performances of these environmental projects will be assessed regularly in order to improve investment returns.

| <b>Column 2    Key projects on environmental protection during the “12<sup>th</sup> Five-Year Plan” period</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Project on reduction of major pollutants. This includes the projects on reduction of water pollutants such as urban sewage treatment facilities and supporting pipelines, sludge treatment and disposal, prevention and control of industrial water pollution, prevention and control of pollution by livestock &amp; poultry breeding; desulphurization and denitrification in power industry, desulphurization and denitrification of sintering machines, desulphurization in key industries other than power industry as well as projects on reduction of air pollutants from industries such as cement and denitrification of industrial furnaces.</p> <p>Project on improvement of the environment for public welfare. This includes prevention and control of water pollution of key river basins and</p> |

restoration of aquatic ecology, prevention and control of groundwater pollution, joint prevention and control of air pollution of key regions, control and remediation of contaminated sites and soil and so on.

Project on rural environmental protection benefiting the people. This includes the projects on comprehensive environmental control of rural areas, prevention and control of agricultural non-point pollution and so on.

Project on eco environment protection. This includes projects such as development of key ecological function areas and nature reserves and biodiversity conservation.

Project on prevention and control of environment risks of key fields. This includes projects such as prevention and control of heavy metals pollution, POPs and hazardous chemicals; environment-friendly disposal of hazardous and medical wastes.

Project on nuclear and radiation safety. This includes the development of laws, regulations and standards on nuclear safety and prevention and control of radioactive pollution, construction of the R&D bases for technologies on nuclear and radiation safety supervision, radiation environment monitoring, capacity building in law enforcement and cultivation of talents and so on.

Environment infrastructure and public service project. This includes projects such as construction of facilities treating and disposing urban garbage and hazardous waste and ensuring the safety of urban-rural drinking water source areas.

Project on ensuring basic capacity in environment supervision and development of talents. This includes capacity building in environment monitoring, supervision, early warning, emergency response and assessment; construction and operation of on-line automatic monitoring facilities for pollution sources; projects such as talents, publicity and education, information, science and technology as well as baseline investigations; development and improvement of environment supervision system at provincial, city and county levels.

## **VIII. Improve Policy Measures**

### **(I) Implement environment target responsibility system**

We will develop indicator system for development of ecological civilization and mainstream it into the examination of the performances of local people's governments at all levels. We will carry out one vote veto system for environmental protection. We will keep on promoting the examination of reduction of total discharge of major pollutants and explore appropriate way to carry out supervisory check on

environment quality. We will carry out environment target responsibility system and regularly make public the examination results such as reduction of discharge of major pollutants, environmental quality and implementation of the plans for prevention and control of pollution in key river basins. National environmental protection authority will ask local government failing to meet environmental protection targets or responsible for very serious or big environmental pollution accidents to make report and explanation of their case, ban the approval the EIS of any new construction project of the region and investigate the responsibility of relevant officials.

## **(II) Improve comprehensive decision making mechanism**

We will improve the environmental management system responsible by the government, supervised and administrated by environmental protection department, coordinated by relevant department and fully participated by the general public. We will give full play to the role of inter-ministry joint meeting on environmental protection and facilitate joint action and information sharing among relevant departments. We will take the control of total discharge of major pollutants, environmental carrying capacity, zoning of environment functions areas and assessment of environment risks and so on as the bases for decisions on regional and industrial development. We will carry out environment impact assessment on development plan of key river basins and regions according to law, industry development plan as well as construction projects according to law. We will improve the joint action mechanism for environmental impact assessment of plans and that for construction projects and perfect environmental protection check and acceptance system for construction projects. We will strengthen supervision and administration on review of environmental impacts assessment. Environmental impact assessment will be conducted on urban master plan of major cities on environmental protection

and explorations will be made to develop master plan for urban environmental protection.

### **(III) Strengthen development of legal system**

We will enhance fundamental study on amendments of laws such as Environmental protection Law, Law on Prevention and Control of Atmospheric Pollution, Law on Promotion of Clean Production, Law on Prevention and Control of Environmental Pollution by Solid Waste, Law on Prevention and Control of Pollution from Environmental Noise and Law on Environment Impact Assessment. We will study and develop laws and regulations on areas such as control total discharge of pollutants, protection of drinking water sources, protection of soil environment, management of pollution discharge license, prevention and control of livestock and poultry breeding, prevention and control of vehicle pollution, management of toxic and hazardous chemicals, nuclear safety and prevention and control of radioactive pollution as well as the laws and regulations on pollution damage compensation.

We will make overall plan for the development and amendment of environmental protection standards such as environmental quality standard, pollutant emission standard, nuclear power standard, standard for civil nuclear safety equipment, environment monitoring standard, specifications for amendment of basic environmental standards and management specifications. We will improve environmental quality standards for air, water, seas and soil. It will improve the requirements for control of the discharge of conventional pollutants and toxic and hazardous pollutants in pollution emission standards and make stricter requirements for the control of indirect discharge of water pollutants and monitoring the environmental quality of the areas surrounding enterprises. We will facilitate the development of environment standards for identification of environmental risks,

assessment of environmental risks and environment emergency response. Local governments will be encouraged to develop and implement local pollution discharge standards.

#### **(IV) Improve environment economic policies**

We will carry out the preferential pricing policy for the electricity from coal-fueled generating units with flue desulphurization facilities, study and develop appropriate policy for the price of electricity from generating units with denitrification devices; and carry out favorable policies for the enterprises engaged in sewage treatment, environment-friendly treatment facilities of sludge, desulphurization and denitrification of non-power industries and garbage disposal. We will gradually carry out the progressive increment pricing system for non-resident use of water, and differentiated water pricing policy will be implemented for industries with high consumption of water. We will study the policy measures encouraging “zero discharge” of waste water from enterprise. We will improve the trade and utilization system for emission right and develop the market for trade of emission rights.

We will facilitate the reform of environmental taxes and fees and improve the polluter discharge fee system. It will carry out the “polluters pay” principle in an all round way and improve the system of levying fee from sewage treatment. The charge rate should gradually meet the requirements for stable operation of sewage treatment facilities and environment-friendly disposal of sludge. We will reform the ways of levying garbage disposal fee, put more efforts in collection and appropriately raise the rate of garbage disposal fee and relevant financial subsidy.

We will establish credit assessment system for corporate environment conducts and give more credit support to enterprises and projects that meet environmental protection requirements and credit principles. We will establish bank green rating

system and link green credit achievements to the assessment of performance of bank staff, institutional access and business development. We will facilitate government green procurement, gradually raise the percent of environmental products, study and promote government procurement of environmental protection services. We will develop and improve the comprehensive catalogue for environmental protection.

Explore and establish special national funds for ecological compensation. We will study, develop and implement the regulations on ecological compensation. We will establish ecological compensation mechanisms for river basins and major ecological function areas and so on. We will carry out the reserve system for sustainable development of resource oriented enterprises.

#### **(V) Strengthen scientific support**

We will improve the capacity in fundamental research and application of environment science & technology. Making solid scientific bases for development of environment criteria and standards, we will improve technical systems for environmental management such as environment investigation & assessment, monitoring and early warning and risk prevention. We will promote the construction of national key laboratories on environmental protection, environment engineering technical centers and field observation stations. We will organize and carry out key national scientific research projects including that on the treatment and control of water pollution, greatly develop high and new technologies, key technologies and universal technologies for controlling pollution, protecting ecology and preventing environmental risks. We will develop the technologies for the control of NO<sub>x</sub>, heavy metals, POPs and hazardous chemicals as well as the technologies on remedy of contaminated soil and prevention and control of agriculture non-point pollution which are suitable to our national conditions. We will greatly facilitate the research and

development of comprehensive control technologies such as integrated desulphurization and denitrification, integrated removal of phosphorus and nitrogen as well as removal of heavy metals. It will strengthen the demonstration and extension of state-of-the-art technologies.

#### **(VI) Develop environmental protection industry**

Centering on the demands of key projects, we will enhance the driving role of policies; greatly facilitate the development of manufacturing industry focusing on sewage treatment, garbage disposal, desulphurization and denitrification, soil remediation and environmental monitoring; and conduct development and demonstration on a group of new environmental materials, drugs and environment-friendly products. It will promote the development of inter-industry or inter-enterprise associations on the recycle of resources. We will carry out the operation qualification and license system for environmental protection facilities, facilitate the specialization, socialization and commercialization process of construction and operation of such pollution treatment and disposal facilities such as smoke desulphurization and denitrification, urban sewage and garbage treatment, and hazardous waste disposal. It will carry out franchising of smoke desulphurization facilities. We will develop statistic standard for environmental protection industry. We will study and develop the policy measures that will improve environment service industries such as project investment and financing, design and construction, facilities operation and maintenance, technical advisory, clean production review, product certification and personnel training.

#### **(VII) Make more investment**

We include environmental protection in annual financial budget of government at all levels and gradually raise the input. We will increase the fund for capacity building

of environmental protection at the same level at appropriate time. More support will be given to environmental protection in central and western parts of China. Focusing on promotion of equal basic public environment services and improvement of environmental quality, we will improve general transfer payment system and provide more transfer payment to the environmental protection of national key ecological function areas, central and western parts of China and ethnic minority autonomous regions. We will further carry out the policies such as “employing award to facilitate pollution prevention”, “employing award to facilitate pollution control” and “employing award to replace subsidy”, and strengthen the guiding role of financial funds of government at all levels.

We will facilitate innovations of environment financial products and improve commercial financing mechanism. We will explore the emission right mortgage financing mode, and facilitate the establishment of the mode with combination use of financial input, bank loans and social funds. We will encourage qualified local financing companies to expand investment and financing channels for environmental protection with direct and indirect financing methods. We will support environmental protection enterprises meeting relevant conditions to issue bonds or be listed after reorganization, and encourage refinancing of public listed environmental protection companies that meet conditions. We will explore and develop financing and lease business for environmental protection equipment and facilities and encourage the establishment of development funds for environmental protection industry with multiple channels. We will guide various kinds of investment enterprise, stock investment enterprises, social donations and international aid funds to increase their input in environmental protection.

#### **(VIII) Strict supervision on law enforcement**

We will improve environment supervision system and mechanism, identify law enforcement responsibility and procedures, and raise efficiency of law enforcement. We will establish trans-administrative-region environment law enforcement cooperation mechanism and inter-department joint law enforcement mechanism. China will carry out special environmental protection campaigns on overhaul of the enterprises that discharge pollutants against the law and safeguarding public health, improve the ways of punishing environmental infringements and make more efforts in law enforcement. We will continuously carry out supervision on environment safety, eliminate environment safety risks and strengthen environment supervision on industrial transfer. We will deepen the supervision system such as rejecting approval of environmental impact statement of any new construction project in a river basin, region or industry with excessive load of pollution and blacklist such enterprises for supervision. We will conduct follow-up supervision on the implementation of environment laws and regulations and corrections of environmental issues and improve the accountability system for key environmental events and pollution accidents. We encourage the establishment of environmental protection court.

#### **(IX) Give full play of the initiatives of local people's government**

We will further deepen incentive measures for environmental protection, give full play of the initiatives of local people's governments in preventing and controlling environmental pollution. We will further improve the comprehensive assessment system for the performance of government officials, guide local governments at all levels to put environmental protection at a more important position in the whole work and study and address key environmental problems in their jurisdiction in time. We will improve the management mechanism for environmental input from the central government and drive more investment of local people's governments in

environmental protection. We will facilitate trial work on development of ecological civilization and encourage the activities such as development of model cities on environmental protection and ecological demonstration areas.

**(X) Joint efforts of relevant departments to facilitate environmental protection**

The competent environmental protection department should strengthen its guidance, coordination, supervision and comprehensive management of environmental protection. Comprehensive departments on development and reform as well as finance should develop finance, taxation, industry, pricing and investment policies conducive to environmental protection. Science & technology department should strengthen the support to research & development and demonstration of key technologies on the control of pollutant discharge and improvement of environmental quality. Industrial department should make more efforts in technical reform of enterprises, impose strict industrial access, improve the mechanism of phasing out outdated production capacity and strengthen prevention and control of industrial pollution. Land and resource department should control the development of the land for ecological purpose, strengthen environmental control and restoration of development activities of mineral resources and ensure the land for key projects on environmental protection. Housing and urban-rural development department should strengthen the management of construction and operation of sewage and garbage treatment facilities in urban and rural areas. Transportation and railway departments should enhance eco environment protection during construction of highways, railway, ports and channels as well as the transportation of relevant materials. Water resource department should optimize the utilization and allocation of water resources; make overall plan for coordinating the water use for residents, production, operation and

ecological environment; strictly manage effluent discharge outlets into rivers; enhance management and conservation of water resources and strengthen the control of water and soil erosion. Agriculture department should strengthen the guidance for scientific application of fertilizers and pesticides; enhance prevention and control of pollution from livestock and poultry breeding; water conservation in agriculture; protection of agriculture species resource, aquatic organisms, fishery waters and grassland and enhance the management of alien species. Commerce department should carry out strict control of the pollution from hotels and restaurants, facilitate green trade and address environmental barriers in international trade. Health department should actively facilitate activities relevant to environment and health and make more efforts in the development of diagnosis and treatment system for disease relevant to heavy metals. Customs department should strengthen supervision and administration on import and export of wastes, make more efforts in investigating and cracking down the conducts threatening environment safety such as smuggling of waste, block illegal transboundary movement of hazardous waste. Forestry department should strengthen its efforts in development of forest ecology. Tourism department should appropriately develop tourism resources and strengthen environmental protection of tourist areas. Energy department should appropriately control total consumption of energy, conduct strategic adjustment of energy mix and raise energy efficiency. Meteorological department should strengthen meteorological monitoring and early warning services for prevention and control of atmospheric pollution and comprehensive control of water environment as well as emergency response meteorological services for nuclear safety and radioactive pollution accidents. Oceanic department should strengthen protection of marine ecology, facilitate development of marine protected areas, and beef up environmental supervision on marine projects and marine waste.

### **(XI) Actively guide public participation**

We will carry out the National Action Plan for Public Environmental Education and mobilize the whole society to take part in environmental protection. We will facilitate the activities developing green cities, schools, enterprises and communities, and advocate green production and green lifestyle. We will improve the system of releasing news on environment and disclosing the information about major environmental events. We will facilitate the disclosure of environmental information on urban environmental quality, major pollution sources, drinking water quality of major cities, corporate environment and safety of nuclear power plants and establish the compulsory disclosure system of environment information of enterprises discharging toxic and hazardous wastes. Enterprises will be guided to further enhance their awareness of social responsibility. We will establish and improve environmental protection reporting system, provide smooth and effective channels for environmental complaints by letters and visits such as the 12369 environmental protection hotline, network and emails, and encourage and give reward for such report. We will support the filing of lawsuits over public environment rights and interests.

### **(XII) Strengthen international environment cooperation**

We will strengthen environmental cooperation with other countries and international organizations; actively introduce advanced environmental protection ideas, management pattern, pollution control technologies and capital from foreign countries and publicize environmental protection policies and progress of our country. We will vigorously facilitate the implementation of international conventions on environment, nuclear safety and management of the safety of radioactive waste; improve domestic coordination mechanism. We will allocate more central budget for the activities on implementing international environment conventions and explore

mechanism that combines international resources with the funds from other channels to ensure the implementation of international environment conventions.

We will actively participate in negotiations on environment and trade as well as the development of relevant rules, strengthen the coordination of environment and trade and safeguard environmental rights and interests of our country. We will study and adjust its tariff policy on import and export of heavily-polluting and highly environmentally risky products and constrain export of energy-intensive and high-emission products. We will enhance environmental supervision on import & export trade in an all round way, ban the introduction of products, technologies and facilities failing to meet environmental protection standards and vigorously promote green trade.

#### **IX. Strengthen organization, leadership, assessment and examination**

Local people's governments are the main body for implementing the plan. They should mainstream the plan targets, tasks, measures and key projects into local master plan for national economic and social development and regard the implementation of the plan as an important component for comprehensive examination and assessment of the performance of local officials. Relevant departments of the State Council should take their due responsibility, closely cooperate with each other, improve systems and mechanisms, and provide more financial input to facilitate the implementation of the Plan. It is planned that interim assessment on the implementation of the Plan will be conducted in the end of 2013 and final examination on the implementation of the Plan will be conducted in the end of 2015. The assessment and examination results will be reported to the State Council and made public and serve as an important component for examining the performance of local governments.