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China

Climate Public Expenditure and Institutional Review



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Climate Public Expenditure and Institutional Review in China

Research Group of Research Institute for Fiscal Science,

Ministry of Finance

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Note about the report

Since 2011, over twenty CPEIRs or similar studies have been implemented globally. The Governance of Climate Change Finance team based in UNDP's Bangkok Regional Hub has been supporting CPEIRs as a tool to help Ministries of Finance and Planning, together with Climate Change related institutions, understand better the depth and breadth of their investments that relate to climate change. The purpose of the review is to help initiate discussion on how climate change can be better integrated into the budget process.

With UNDP support, a number of countries have now implemented budget related reforms that more systematically bring climate change considerations into budget formulation and reporting processes, for example. Methodologies for implementing CPEIRs vary according to the context and priorities that each country has delineated for the focus of a CPEIR. For example, in the case of China, this first CPEIR has been conducted to identify and classify expenditures according to high, medium and low relevance to climate change. A weighting of expenditures has not been undertaken based on the data that was reviewed. Further methodological guidance on implementing CPEIRs, as well as other country examples of CPEIR reports and the reforms that have been supported to mainstream climate change within the budget is available at <http://climatefinance-developmenteffectiveness.org/>.

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Executive Summary

China has achieved some important preliminary successes in its efforts at addressing climate change. The Chinese government has placed climate change at the top of its policy agenda and has put considerable resources into green sectors. For instance, China is now the world leader in clean energy investment, attracting USD 54 billion to the renewable sector in 2013.¹ It leads the world in terms of installed wind capacity and ranks second in terms of installed photovoltaic power capacity.² The China Development Research Center of the State Council (DRC) estimates that green investment in China exceeded an estimated RMB 1,261.4 billion (USD 200 billion³) in 2012, or about 2.43% of GDP.⁴

Despite these successes, more climate actions are clearly needed. Like many countries in the world, China is grappling with how to deliver the transition to a sustainable, low carbon economy. This transition requires a shift in its development model, policies and regulations, which in turn require substantive changes in the public and private financing system. Investment needs across key green sectors in China will be approximately RMB 2.9 trillion per year from 2015 to 2020 (USD 460 billion). Two thirds of this, about RMB 2.0 trillion annually (USD 320 billion), will need to come from domestic and international financial and capital markets, given fiscal limitations and priorities.⁴

In particular, public sector interventions provide an enabling environment for communities, households, and private firms to change their behavior, their consumption and investment choices. Such interventions can include a wide range of policies: information, regulation, taxation, and public spending. Yet the choice between these policies, and how they complement each other is not clear cut, and needs to be based on evidence of what works – their effectiveness. However, while it is clear that very sizeable public financial resources have been dedicated to climate change mitigation and adaptation in China, extensive review of the existing literature on the climate finance landscape in China indicates that there have been no attempts to systematically estimate the overall size and pattern of the government's public climate expenditure. The lack of a clear picture of China's climate-related public spending patterns makes it very difficult for the government to evaluate and inform the alignment of public spending with its climate-related priorities and other policies.

Against this backdrop, UNDP initiated a Climate Public Expenditure and Institutional Review (CPEIR) in partnership with the Research Institute for Fiscal Science (RIFS) under the Chinese Ministry of Finance (MOF). The aim of the China CPEIR is to assist the Government of China in strengthening its understanding of public climate expenditure patterns and, eventually, to ensure climate change priorities are being delivered

1. Source: Pew Charitable Trust. 2014. Who's Winning the Clean Energy Race? 2013. Link: <http://www.pewtrusts.org/en/research-and-analysis/reports/2014/04/03/whos-winning-the-clean-energy-race-2013>.

2. Source: <http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy/review-by-energy-type/renewable-energy/wind-energy.html> (wind energy); <http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy/review-by-energy-type/renewable-energy/solar-energy.html> (solar energy).

3. The USD figures in this paper are calculated by authors using the 1:6.1 exchange rate between USD and RMB.

4. Source: Zhang Chenghui, Simon Zadek, Chen Ning and Mark Halle. March 2015. Greening China's Financial System - Synthesis Report.

effectively and efficiently through China's budget formulation and implementation process.

CPEIRs have already been published for other countries, which use a particular methodology developed by UNDP. Since 2011, 19 CPEIRs or similar studies have been executed.

The first step in doing so was to examine China's climate change related policies, institutional arrangements, and budgeting framework. Chapter I and II reviewed climate-related law, policy, and regulation in China, including a wide spectrum of government measures, ranging from administrative processes to economic policies that have implications for the country's efforts at addressing climate change. Chapter III reviewed the institutional authorities and their roles in climate-related public finance. Chapter IV explained the national budget framework and compilation method of "two-up" and "two-down", by which budgets are first prepared bottom-up at department levels, and then go through two iterations of an approval process by the Ministry of Finance. It also explained and presented the budget line items of the three classifications: the classification of income, classification of expenditure, and classification of economic spending.

The second step was to examine China's central and local government's "direct" financing of policies and programmes for energy conservation and environmental protection (Chapter V). The report found that from 2006-2012, the government financed a series of policies and measures to promote energy conservation and emission reductions that cost more than RMB 400 billion (USD 66 billion). However, the total share of national public expenditure for such programmes was on an overall downwards trajectory. Specifically, it accounted for 2.7% of the total national budgetary expenditure in 2010, expenditure fell to 1.3% in 2013, then rose slightly

to 1.4% in 2014. In addition, the report showed that local government dominated this spending – with a local-central spending ratio of 6.25:1. For instance, in 2014, direct budgetary expenditure by the central government is predicted to total RMB 30 billion (USD 4.9 billion), versus RMB 182 billion (USD 29.8 billion) by local governments.

However, these "direct" figures nevertheless seemed like underestimates, so a third step was taken to examine another 800 items on the Chinese central government budget that were deemed to be "climate relevant" - dividing them into high, medium, low, or no climate-relevance (NB: This methodology – developed by UNDP – is explained further in Chapter V). Based on this methodology, the study estimated the share of climate-relevant expenditure in the total central government budget for 2013 and 2014.

The report found that **in 2014, a total of RMB 138 billion (USD 23 billion) was spent by the central government that was highly/moderately relevant to climate change adaptation or mitigation – equivalent to 6.9% of the central government budget** (excluding payments for the principal and interest of debt). Figures for 2013 were very similar, accounting for 7.6% of the central government budget.

The fourth step was to examine lessons from similar reviews for other countries and make policy recommendations (Chapters VI and VII). Policy recommendations include: establishing national reports on public expenditure and climate change systems; strengthening fiscal management; improving and formulating relevant climate-related policies and systems; and boosting coordination and cooperation among ministries and institutions, amongst others. It is encouraging to note that, based on previous research cooperation between RIFS, MOF and the Climate Change Department of NDRC, a new subsection named "Addressing

Climate Change Management Affairs” has been introduced into the 2015 Government Revenue and Expenditure Classification System, under the “Development and Reform Affairs” section of the “General Public Services” category.

Finally, the report also noted a number of caveats and areas for further analysis. Specifically:

1. Given the accessibility of data, this report focused primarily on central government expenditure on climate change. As noted, however, a major portion of public climate expenditure is made by local governments. Using similar “climate-relevant” methodology for local government-level data could be helpful in obtaining a fuller picture of China’s public climate expenditure.

2. This report examined direct government expenditure related to climate-friendly activities. However, many governments also allocate budgets to items that have a negative impact on climate change (so called “negative expenditure”), for instance fossil fuel subsidies. In addition, many governments also gather or forgo revenues (for instance through preferential tax treatments) in order to create incentives for and promote climate-friendly actions. Both negative expenditure and revenue streams should also be examined to provide a fuller picture of China’s public climate expenditure.

3. While the report examined the expenditure, it said little about how effective or efficient the spending on climate change policies and programs is, including on how well they leverage or shift private investment into climate friendly actions. Understanding the value for money of each RMB or USD spent on climate change action will be critical for the Chinese government to consider, especially as the domestic appetite and demand for such action increases. However, the report provides a basis for selecting a short list of central and local

government budget items that could be subjected to cost-effectiveness assessment – for instance budget items that are of high climate relevance and considerable scale.

RIFS and UNDP plan to conduct further analysis in these areas in the future, so that the Chinese government can ensure its public financial resources are well estimated and tracked, and spent as effectively and efficiently as possible now and over the coming years. This will be critical, especially as China continues its progress towards peaking greenhouse gas emissions and sustainable development.

I. Necessity of Climate-Related Public Financial Statistics

(I) Significance and Urgency of Climate-Related Issues for China's Development

1. Climate is a crucial international issue

More and more scientific evidence proves that climate change has a remarkable impact on natural ecology and human society. To address climate change, we not only need deceleration measures to control the long-term warming tendencies, but to also take active and adaptive actions that will both alleviate the damage and also make the most of the favorable factors this phenomenon can bring.

The international society has attached much significance to the importance and urgency of climate change. In the “Bali Roadmap”, people identified “adaptation, deceleration, capital and technology” as the four wheels to drive climate change; three years later people established the “Cancún Adaptation Framework” and founded “Green Climate Fund”; Developed countries also formulate their respective adaptation strategies and action plans and increase the financial input – for example, New York has invested \$20 billion to adapt to climate change. These nations also safeguard their national security and maintain that developed countries take the lead in economics, military superiority and technology, as well as promoting their influence in international affairs. For their part, developing countries have used international capital sponsorship to establish their “National Adaptation Plan of Actions” (NAPA), to address climate change.

2. As the largest developing nation, China is undergoing rapid industrialization and urbanization, and feeling the challenges of development, poverty alleviation, high energy consumption and rising emission levels, as well as a severe environmental and climate situation.

China is a major power consumer and greenhouse gas emitter, but also a country heavily influenced by global climate change. As a developing country, China’s carbon dioxide emissions per capita is far below that of the developed countries, with the lowest accumulative emission per capita. A majority of total emissions pertains to the developmental emissions and transferability emissions of transnational corporation in China. On the other hand, for China to realize the Chinese dream and construct “beautiful China”, the country has to save energy and resources, reduce greenhouse gas emissions and protect the environment, although China now has no compulsory responsibility for emissions reduction. As the largest developing country, China is vulnerable to climate change because of their limited natural resources. But the country’s rapid urbanization and industrialization means the Chinese face the pressures of development and poverty reduction with an imperfect risk defense system against accelerated economic development and unreasonable planning. This will increase China’s vulnerability to ecological and social problems, so the climate situation is not optimistic.

3. The long-term sustainable development of China's economy also needs the government to treat climate-related issues as the key mission of macroeconomic control.

As the Chinese government continues to prioritize climate change, climate issues have become an important objective of governmental macroeconomic regulation and control. China not only treats addressing climate change and developing green and low carbon industries as significant policy issues, the government also includes them into the overall plan of the country’s economic and social development.

The Political Bureau of the Central Committee organized the collective climate change study in June 2008 and in February 2010. During the study, China put forward that addressing climate change should be the significant strategy of China’s economic and social development, that should accelerate the transformation of economic

development, and should adjust the economic structure. In August 2009, the 10th session of the Provincial Meeting of National People's Congress passed the *Decision of the 11th Provincial Meeting of National People's Congress on Positively Addressing Climate Change*, which put forward that positively addressing climate change would be treated as a long-term task for realizing sustainable development strategy and part of the national economic and social development plan. This included specific targets, assignments and requirements. Afterwards, the Executive Meeting of the State Council specified the action target to control greenhouse gas emissions by 2020. China expects to reduce the carbon dioxide emissions per unit of GDP by 40-45 percent over 2005, to increase the share of non-fossil fuels in primary energy consumption to around 15 percent, and to increase the area of forest and stand volume respectively by 40 million hectares and 1.3 billion m³. In the Outline of the "12th Five-year Plan" passed in March 2011, "positively coping with the global climate change" formed an independent chapter that specified obligatory targets. During the the "12th Five-year Plan", we expect to decrease carbon intensity by 17 percent, the share of non-fossil fuels in primary energy consumption to 11.4 percent and increase the forest growing stock by 600 million m³. The chapter also requests reasonably controlling the total volume of energy consumption and improving resource productivity.

(II) Significant Role of Financial Support for Addressing Climatic Change

1. The climate-related externality demands financial support

Generally, climate change refers to rising global temperatures and increasing numbers of storms, significant enough to alter the statistical significance of the average climate state. Although climate change is either attributed to nature's internal factors or mankind's external forces or actions, current research shows that long-term changes of climate type is induced by greenhouse gas emissions such as carbon dioxide. In paragraph

1 of the United Nations Framework Convention on Climate Change (UNFCCC), the "climate change" is defined this way: "After the observation for quite a long period, the climate change refers to the change of global atmospheric composition induced by direct or indirect activities of humans, beyond the natural climate change."

Climate change is a significant global issue that affects not only the environment but also development. The environment is considered nonexcludable and of limited non-competitiveness. Nonexcludability means that some people using the product won't exclude others, while non-competitiveness means that increase in consumers won't raise production costs. In other words, the marginal cost of more than one person is zero. This means environmental resources are regarded as public goods, being competitive in consumption or use, and exclusive in benefits. Generally, governments or social groups provide public goods, whose production is secured by public expenditure and whose operation and management is undertaken by non-profit organizations. Being of common global concern, environmental issues should be considered global public goods. Obviously, this issue can be only solved by a global solution. For example, the international society enacts Kyoto Protocol and other international agreements to reduce the greenhouse gas emissions; this signifies the world's firm determination to solve global climate issues.

In addition to the property of public good, climate change also has remarkable external characteristics, which cause the nonuniformity between private and social marginal costs, or between personal and social marginal benefits. The nonuniformity distorts the price signals and cannot promote the products or services provided by the market to reach pareto optimality. External characteristics fall into positive and negative externality. Positive externality refers to the positive external influence triggered by economic behaviors, enabling others to reduce costs and increase benefits, while negative externality makes others increase costs and reduce benefits. However, both positive externality and negative externality will impact resource allocation, and such externalities are likely to induce market failure.

2. The financial publicity dominates the necessity of climate-related supports

In 1997, the World Development Report summarized the core mission of each modern government, reflecting five basic duties, they should exercise, namely:

- Determining legal foundation;
- Maintaining a constant policy environment, including a stable macro economy;
- Investing in basic social services and social infrastructure;
- Protecting vulnerable groups;
- Protecting the environment.

Climate is crucial for human survival. To this end, addressing climate change is performing governmental duties for environmental protection. Climate change cannot be fully addressed by the so-called “free market”; it is a public good subject to outstanding externalities and therefore requires governmental participation. Governments must serve as leaders and organizers for coping with climate change.

3. Functional roles of finance include important key fields for direct climate-related support, as well as policy regulation, application of Public Private Partnership (PPP) model and guidance for funds and forces of the entire society

(1) Fiscal policy is an important policy instrument to address climate change.

As one important policy instrument of national macro-economic control, fiscal policy can improve the market mechanism and promote coordinated societal and economic development. In particular, climate change and addressing climate change have the properties of public goods, so attendant market failure must be solved via policy instruments. Although the economic policy to address climate

change includes diversified policy instruments such as industry policy, fiscal policy, credit policy and investment policy, governments of all countries treat the stronger, more flexible fiscal policy as crucial, since it coordinates and cooperates with policies in finance and industry, both of which have played a significant role in addressing climate change.

(2) Fiscal policy is a material assurance to address climate change.

Addressing climate change takes plenty of capital, so governments’ financial investment serves as the major source of funds. Taxation is a major source of the national fiscal income and also an important provider of public goods and functions. However, the nature and features of taxation as well as the severe reality of capital shortage facing China’s environmental protection have decided that taxation does not provide for advancing green growth but also serves the function of raising capitals for environmental protection. Through levying carbon tax, improving the environmental resource tax and the environmental consumption tax, as well as further expanding the environmental protection tax base, the Chinese government provides a steady and sufficient source of capital for addressing climate change. Meanwhile, public finance investment can help stimulate the capital investment of enterprises and society, which provides the solid guarantee to launch all work for addressing climate change. In this view, fiscal policy provides material assurance for the governmental activities to address and adapt to the climate change. It is essential to gradually establish a steady inputs mechanism by optimizing the structure of fiscal expenditure and increasing the financial budgets for addressing climate change.

(3) Fiscal policy plays an important guiding role in addressing climate change.

The fiscal policy plays a guiding role in addressing climate change, having incentive and constraint functions in energy, energy substitution and new energy aspects. Fiscal policy has three incentive roles in addressing climate change. First, fiscal policy encourages the positive externality. Governments grant tax exemptions or fiscal

subsidies for economic subjects that aid resource conservation and environmental protection. Second, taxation and expenditure policies such as fiscal subsidies, accelerated depreciation and investment tax credit (an example would be subsidies for energy-saving electronic products) not only enhance support for the environmental protection and energy conservation industries, but also play the role in guiding, stimulating and attracting social capital investment, forming a stable channel that directs investment into the area of environmental protection. Third, the measures such as a financial investment and tax preference are launched to encourage the development and popularization of new environmental and energy-saving technology.

Constraint functions take the form of limitations and penalties against resource waste and high energy-consumption industries. Negative externality incurred is internalized, with efforts to enhance the effective utilization of resources and energy, realize the sustainable development of economy and environment, and mitigate the pressure of greenhouse gas emissions. Under the current taxation system, the penalty and preferential treatment for environmental protection and abating greenhouse gas emissions have played a guiding role in protecting the environment and addressing climate change. The relevant taxes mainly include value-added tax (VAT), resource tax and consumption tax. Although these are not environmental taxes in the true sense, they have helped incentivize resource utilization and environmental protection. In the new round of tax system reform, as with consumption tax, the government will enhance the role of taxation with respect to environmental protection and resource utilization.

(III) Significance of China's Climate-Related Public Financial Statistics

1. Will provide an exacting presentation of climate-related financial expenditure

Until recently, China had no complete statistics of climate-related public finance. This innovative study will help government and society grasp the climate-related financial expenditure situation.

2. Will benefit both comparative analysis and international exchange of climate-related financial expenditure between China and foreign countries.

Comprehensive understanding of China's climate-related public finance's statistical data not only shapes the contrastive analysis with other countries' climate-related financial expenditure, but also promotes international exchange and cooperation.

3. Will further promote and improve budgetary reform in China's climate-related finance sector, as well as strengthening government's financial support of climate-related issues.

The statistical analysis of climate-related public financial expenditure helps reform and improve China's budget system. Relevant departments reach consensus and make joint efforts to strengthen the governmental attention and support for climate issues.

4. Will support the decisions to address climate change

Capital is always the core issue in addressing climate change. Improving statistical work for China's climate-related public finance will also benefit the macro decision-making process of climate issues.

II. Analysis on China's Current Policy to Address Climate Change

(I) Overall Policy Evaluation

Since the “11th Five-year Plan” (2006), China has launched and improved laws, regulations and policy measures to control greenhouse gas emissions. That same year, China established the binding target dictating that energy consumption per unit of GDP must be decreased by around 20 percent from that of 2005. In 2007, China became the first developing country to formulate and implement the national program to address climate change. In 2009, China determined the action objective that by 2020, the greenhouse gas emissions per unit of GDP would decrease by 40-45 percent from that of 2005. In 2011, China formulated and carried out the outline of the “12th Five-year Plan”, which requested binding targets to decrease the energy consumption per unit of GDP by 16 percent, carbon dioxide emissions per unit of GDP by 17 percent and the share of non-fossil fuels in primary energy consumption to 11.4 percent. The outline further specified China's mission, task and policy orientation of addressing climate change for the next five years.

1. Laws and regulations

(1) Improving the relevant laws and regulations

Since the “11th Five-year Plan”, China has formulated or revised relevant laws including *Renewable Energy Law*; *Circular Economy Promotion Law*; *Energy Conservation Law*; *Law on Promotion of Cleaner Production*; *Law on Water and Soil Conservation*; and *Islands Protection Act*. The country has promulgated regulations including *Regulations on Energy Conservation in Civil Buildings*; *Regulations on Energy Conservation by Public Institutions*; *Drought Control Regulation*; and has released *Interim Measures for Energy Conservation Evaluation and Review of Projects Investing in Fixed Assets*; *Measures for the Supervision and Administration of Energy Conservation in Special High-Energy Consumption*

Equipment (Title Only); and *Interim Measures for the Supervision and Administration of Energy Conservation and Emissions Reduction at Central Enterprises (Title Only)*. Meanwhile, China conducted preliminary research on legislation addressing climate change.

(2) Formulating and implementing *China's National Climate Change Programme*

In 2007, China formulated and promulgated the China's National Climate Change Program, which specified guiding ideology, key areas and major tasks of addressing climate change. According to the Programme, 31 provinces (autonomous regions and municipalities) in China have finished formulating local programmes addressing climate change and have entered the organization and implementation stage. Addressing climate change has been on local government agendas, and gradually included in the overall layout of economic and social development throughout the country. Relevant ministries and departments released action plans and work programmes association with ocean, meteorology and environmental protection in succession.

2. Administrative policy

(1) Releasing a series of important policy documents

Since the “11th Five-year Plan”, the Chinese government successively released important documents including the *Mid-To Long-Term Development Plan for Renewable Energy*; *the Medium- and Long-Term Development Plan of Nuclear Power*; *the "11th Five-year" Plan for Development of Renewable Energy*; *the Decision on Strengthening Energy Conservation*; and *Several Opinions on Accelerating the Development of Circular Economy*. Issued in 2007, the *Comprehensive Working Program for Energy Conservation and Emissions Reduction in the 11th Five-Year Plan Period* defined specific targets, key fields and policy measures of energy conservation and emissions reduction, which helped conduct the related work in the "11th Five-year Plan" period. To implement China's mission of addressing

climate change in the "12th Five-Year Plan" and promote green and low-carbon development, the State Council issued a series of important policy documents including the *Work Plan for Greenhouse Gas Emissions Control during the 12th Five-Year Plan Period* and the *Comprehensive Working Programme for Energy Conservation and Emissions Reduction in the 12th Five-Year Plan Period*, to boost planning and guidance for addressing climate change.

(2) Establishing the relevant work mechanism

Since the "11th Five-year Plan", China established and improved the management system and working mechanism of addressing climate change. All relevant ministries divided their responsibilities and all industries participated in addressing climate change under the uniform leadership of the NLGACC and under the centralized management of NDRC..

Established in 2007, the NLGACC members are ministers from 20 departments, with the State Council's prime minister serving as the group leader. Besides overseeing the NLGACC, the NDRC set up the Climate Change Department in 2008, which coordinated and conducted centralized management in addressing climate change. In 2010, NDRC set up the Liaison and Coordination Office under the NLGACC framework, strengthening interdepartmental coordination and cooperation, as well as establishing the National Expert Committee of Climate Change, which boosted the scientific motivation of addressing climate change. All provinces (including autonomous regions and municipalities) established the Work Leading Group to Address Climate Change and special operating mechanisms; some vice-provincial cities and prefectural-level cities established similar mechanisms. Relevant State Council departments successively established supporting institutions such as the Strategic Research and International Cooperation Center for Addressing Climate Change and the Research Center for Addressing Climate Change; some institutes of high learning and scientific research also began addressing climate change.

3. Economic policy

The "11th Five-year Plan" explicitly put forward the binding target that energy consumption per unit of GDP must decrease by around 20 percent and total discharge of major pollutants must decrease by 10 percent. In 2007, the State Council also released the *Comprehensive Working Program for Energy Conservation and Emissions Reduction*. The "12th Five-year Plan" requested the binding targets to decrease the energy consumption per unit of GDP by 16 percent, carbon dioxide emissions per unit of GDP by 17 percent and the share of non-fossil fuels in primary energy consumption to 11.4 percent. Then the State Council successively issued a series of important policy documents such as the *Work Plan for Greenhouse Gas Emissions Control during the 12th Five-Year Plan Period* and *Comprehensive Working Program for Energy Conservation and Emissions Reduction during the 12th Five-Year Plan Period*. The documents emphasized the application and improvement of economic policies and relevant instruments. In addition to various fiscal and tax policies covered below, the documents also include a variety of economic policies such as price policy, industrial policy and financial policy.

Price policy: Since the "11th Five-year Plan", the Chinese government has promoted the cost composition mechanism of coal price and reforms in product oil and natural gas prices, including taxes implemented in 2008. The government also has improved the time-of-use pricing method for peak and valley load of electric power; reduced the price of small thermal power plants and carried out the power rate policy in favor of flue gas desulfurization; encouraged renewable power generation and the utilization of afterheat, residue pressure, gangue and urban garbage power generation; implemented the relevant power rate policy; reasonably adjusted various water prices; accelerated the implementation of laddered water rate and price markup system for excessive and overrated water use; implemented the punitive water rate of high water consumption enterprises as per the national industrial policy; formulated the price policy favoring development and utilization of reclaimed water, brackish water, mine water, rainwater and desalinated seawater, as well as

boosting efforts in collection of water resources fees; strengthened management and enhanced the collection standards for sewage charges of pollution discharge units; stopped the "negotiating charge" and "quota charge"; comprehensively began levying taxes on urban sewage treatment and enhanced the charging criterion; enhanced the charging standards for garbage disposal; improved the mode of charging; and others.

Industrial policy: According to the documents, the government has controlled the excessive growth of high energy consumption and high contamination enterprises; strictly executed the "six essential conditions" in establishing project construction; implemented a reporting and disclosure system for newly launched projects; connected new high energy consumption and high contamination projects to local energy conservation and emissions reduction targets, as well as eliminating obsolete production capacity; implemented various export policies of high energy consumption and high contamination projects. The government has also eliminated or is phasing out the obsolete capacity of such industries as electric power, steel, building materials, electrolytic aluminium, ferroalloy, calcium carbide, coke, coal and plate glass; formulated specific regional and yearly work plans to phase out outdated capacity. The government has publicly announced the list of enterprises with outdated capacity and progress status of the elimination and phase-out process; and has established the exit mechanism for obsolete capacity and arranged fiscal support.

Financial policy: This mainly includes green-credit policy and green insurance policy. The former encouraged financial institutions to strengthen their credit aid to circular economy projects, environmental protection and technical transformation in energy conservation and emission reduction, as well as prioritizing direct financing services to eligible projects of energy conservation, emission reduction and circular economy. Meanwhile, arranging international financial institutions and foreign government loans further emphasized support for energy conservation and emission reduction projects. Green insurance policy established a liability insurance system for

environmental pollution, but it is still limited in both coverage and scale.

(II) Financial Investment Policy

1. Directly addressing climate change

(1) Special fund for preventing air pollution

To implement the Notice of the State Council on Issuing the Air Pollution Prevention and Control Action Plan, in 2013, the central government set up the Special Fund for Air Pollution Prevention and Control, which ensured the limited funds would be better utilized. In 2013, the central government allocated RMB 5 billion to invest in air pollution control for Beijing, Tianjin, Hebei Province, and peripheral areas such as Inner Mongolia, Shanxi and Shandong Provinces—with a special emphasis on Hebei. Allocation was based on three factors: the anticipated reduction of pollutants, pollution control inputs, and the reduction of the areas' PM2.5 ratio, by way of "giving rewards in place of subsidies". At the end of this fiscal year, the central government will appraise their work and then release reward funds according to the actual appraisal results, thus emphasizing the role of performance orientation.

In 2014, the central government allocated RMB 10 billion in the area of air pollution prevention and control. On May 16, 2014, the MoF appropriated a special fund of RMB 8 billion upon State Council leaders' approval, promoting local efforts to realize the dream of "blue sky and white clouds" sooner, and supporting Tianjin, Beijing, Hebei and peripheral areas, Yangtze River Delta, and Pearl River Delta to conduct the air pollution prevention and control, of which Beijing, Tianjin and Hebei were among the key points. The remaining RMB 2 billion will be appropriated in the second half of the year, for Beijing, Tianjin, Hebei and peripheral areas.

According to State Council demands for reforming approvals and guaranteeing equality between responsibilities and rights in the area of air pollution prevention and control, the special fund shall be appropriated in segments. Meanwhile,

the MoF will request local agencies to register the allocation and use of funds in the MoF and the Ministry of Environmental Protection (MEP), to ensure efficiency and proper usage of funds.

2. Readjusting industrial structure

(1) The central government rewards companies for phasing out outdated capacity.

On December 11, 2007, the MoF released the *Interim Measures for Management of Central Government Incentive Funds for Eliminating the Obsolete Production Capacity* (Cai Jian [2007] No.873). The specific fiscal transfers offered incentives to eliminate the outdated capacity in thirteen industries such as electric power, iron-smelting, steelmaking, electrolytic aluminium, ferroalloy, calcium carbide, coke, cement, glass, papermaking, alcohol, monosodium glutamate and citric acid in the underdeveloped economic areas. The local governments took responsibility for eliminating the obsolete production capacity, while the MoF determined the amount of reward based on results, and then assigned local departments to arrange and use the rewards to help solve prominent personnel conflicts.

(2) Fiscal subsidy funds to construct demonstration model of industry and enterprise energy management center.

On October 14, 2009, the MoF released the *Interim Measures for Management of Fiscal Subsidy Funds for Construction Model Projects of Industrial and Enterprise Energy Management Center* (Cai Jian [2009] No.647) to examine energy management centers in major energy-consuming industries such as steel, nonferrous metal, chemical industry and building materials. This determined subsidies granted to energy management centers of industries and enterprises.

3. Energy conservation and enhancement of energy efficiency

(1) Fiscal incentive for transformation of energy-conserving technology.

On August 10, 2007, the MoF and the NDRC issued the *Interim Measures for Management of Fiscal Incentive for Transformation of Energy-Conserving Technology* (Cai Jian [2007] No.371). According to Measures, supports and incentives would be granted to the 10 key energy-conserving projects (see the following table) by way of "giving rewards in place of subsidies". Meanwhile, Measures defined targets, means, conditions and incentive standards. The amount of incentives depended upon the actual saved amount of energy and specified standards after the technical transformation was completed. Measures also marked enterprises as the principal position of energy conservation, implementing liabilities and strengthening appraisal and supervision.

Table 2-1: 10 Key Energy-Conserving Projects

10 Key Energy-Conserving Projects	
Utilization Project of Waste Heat and Pressure	Transform and build the utilization devices and equipment for waste heat, pressure and energy such as pure low-temperature waste heat power generation, and differential pressure power generation. Recycle by-product combustible gas and low heating value gas in the high energy-consuming industries including steel, building materials and chemicals.
Economized and Substituted Petroleum Engineering Project	Implement the economized and substituted petroleum transformation in the industries such as electric power, petroleum, petrochemical, building materials, chemicals and transportation; develop coal liquefaction petroleum products, alcohol ether fuel and biodiesel.
Reconstruction Project of Coal-burning Industrial Boiler (kiln)	Make replacements and technical innovations in inefficient industrial boilers and build the centralized delivery and processing centre of coal used exclusively by regional boilers; eliminate the kilns of obsolete industries and conduct the comprehensive energy-conserving transformation for existing industrial kilns.
Energy-Conserving Projects of Motor System	Make replacements and technical innovations in inefficient electric motors, transform the velocity of medium and large-sized motor systems with maneuverability, and conduct the energy-conserving transformation in motor system equipment.
Optimization Project of Energy System	Implement energy-conserving transformation for enterprises engaging in oil refining, ethylene, synthetic ammonia, iron and steel
Regional Project of Combined Heat and Power (CHP)	Build comprehensive demonstration thermal plants for CHP and industrial CHP, distributional CHP and combined cooling, heat and power systems, as well as low heating value fuel and straw by prioritizing heating supply
Building Energy Conservation Project	Comprehensively and strictly execute and supervise the standards of energy reduced by 50 percent for new buildings and 65 percent for four municipalities, as well as cold areas in north China. Construct low energy-consuming and ultra-low energy-consuming buildings, build the demonstration project of renewable energy and building integration, conduct the municipal demonstration and transformation for existing residential and public buildings, and carry forward the industrialization of new wall materials and energy-conserving building materials.
Green Lighting Project	Conduct technical reconstruction of energy-conserving production lines oriented to improve product quality, reduce production costs, enhance the ability for independent innovation, and promote the application of efficient lighting products
Energy-Conserving Project of Governmental Agencies	Conduct the energy-conserving transformation of existing buildings, carry out comprehensive electricity efficiency transformation, energy conservation review and whole-process monitoring for new buildings, and carry out the governmental procurement for energy-conserving products
Construction Project of Energy Conservation Monitoring and Technical Service System	Conduct replacements and technical innovations for energy conservation monitoring apparatus and equipment of the provincial energy conservation monitoring (supervision) center, and organize the energy audit for key energy-consuming enterprises, and so on.

(2) Fiscal incentive for energy performance contracting.

In accordance with the *Opinions on Accelerating the Energy Performance Contracting and Enhancing the Development of Energy-Conserving Service Industry* issued in April 2010, in June 2010, the MoF and NDRC jointly released the *Interim Measures for Management of Fiscal Incentive Funds for Energy Performance Contracting* (Cai Jian [2010] No.249). A total of RMB 1.24 billion was allocated to support the energy service companies that implemented energy conservation transformation for enterprises through energy performance contracting. The Measures stipulated that the fiscal incentive funds were granted to support the energy-conserving transformation projects in the area of industry, building and communication, and public organizations implemented the specifics of energy performance contracting. Projects must meet the following conditions: an energy service company makes an investment of 70 percent and the contract stipulates how to receive energy conservation benefits; the annual saved energy (energy conservation capacity) of a single project is higher (inclusive) than 100 tons of standard coal, but below 100,00 tons of standard coal. Among the projects, the industrial project shall save the equivalent energy of over 500 tons of standard coal (inclusive); the energy consumption metering equipment is complete; the companies have perfect energy statistics and regulatory systems, and the saved energy can be measured, monitored and checked. Qualifying companies receive a disposable reward for their energy performance contracting project, according to the annual saved energy and specified standards. The central government will provide contributions to the incentive fund at RMB 240/ton of standard coal, and provincial governments will contribute no less than RMB 60/ton of standard coal. Incentive standards may be enhanced as appropriate.

(3) Fiscal subsidy for “Energy-Conserving Products Discount Program”.

On May 18, 2009, the MoF and NDRC jointly issued the *Notice on Conducting the "Energy-Conserving Products Discount Program"* (Cai Jian [2009] No.213), to arrange special funds and

support the generalization and use of efficient energy-conserving products via fiscal subsidy. In accordance with the *Interim Measures for Management of Fiscal Subsidy Fund for Generalization of Efficient Energy-Conserving Products*, the efficient energy-conserving products granted with fiscal subsidy must meet the specific conditions, which mainly refer to 10 categories of efficient energy-conserving products such as air-conditioners, refrigerators, panel TVs, washing machines and TVs with energy efficiency above grade one or two. This also includes efficient illumination products, as well as energy-conserving and “new energy” automobiles. In June 2013, the subsidies for energy-conserving electrical appliances were stopped after the policy expired.

(4) Fiscal subsidies for “Old-For-New Service” of automobiles and household appliances.

On May 19, 2009, the State Council researched and deployed the policy measures to encourage people to exchange their old automobiles and electrical appliances for new ones. Based on the existing scrappage subsidy policy, the State Council decided to increase the size and scope of subsidies, and developed the "Old-for-new Service" pilots for five categories of electrical appliances including TV sets, electric refrigerators, washers, air-conditioners and computers in Beijing, Shanghai, Tianjin, Jiangsu, Zhejiang, Shandong, Guangdong, Fuzhou and Changsha; the central government will increase the scrappage subsidy fund from RMB 1 billion to RMB 5 billion, and allocated RMB 2 billion as the subsidies for "Old-For-New Service" in association with electrical appliances.

(5) Fiscal subsidy for popularization of efficient lighting products.

On December 28, 2007, the MoF and the NDRC released the *Notice on Issuing the Interim Measures for Management of Fiscal Subsidy Funds for Generalization of Efficient Lighting Products* (Cai Jian [2007] No.1027). The central government set up a special fund supporting the standardization and use of efficient lighting products under the fiscal subsidies, which included self-ballasted lamps; double-ended tubular fluorescent lamps with three primary colors (model T8 and T5);

(6) Fiscal subsidy for demonstration and popularization of energy-efficient and new energy automobiles.

On January 23, 2009, the MoF and Ministry of Science and Technology (MoST) released the *Notice on Conducting the Pilot Work for Demonstration and Standardization of Energy-Efficient and New Energy Automobiles* (Cai Jian [2009] No.6), and decided to conduct these pilots for energy-efficient and new energy automobiles in 13 cities including Beijing, Shanghai, Chongqing, Changchun, Dalian, Hangzhou, Jinan, Wuhan, Shenzhen, Hefei, Changsha, Kunming and Nanchang. The aim was to encourage public service sectors such as transportation, environmental sanitation and postal service to take the lead in the using energy-efficient and new energy automobiles, and receive a subsidy reward. The central government granted subsidies to the purchasers, while local governments rewarded those in construction and maintenance of supporting facilities.

(7) Special fund for energy conservation of public buildings.

On October 24, 2007, MoF released the *Interim Measures for Management of Energy Conservation Special Funds for Office Buildings of National Organs and Large Public Buildings* (Cai Jian [2007] No.558). The special funds were used to develop the building energy efficiency supervision system, and included subsidy expenditure to establish building an energy consumption monitoring platform generating energy consumption statistics and an energy audit, as well as publicizing the concept of energy efficiency. The subsidy expenditure for establishing an energy consumption monitoring platform included installing itemized metering devices and data networking; granting discounts for energy-conserving transformation of buildings; and other energy conservation-related expenditure for office buildings of national organs and large, MoF-approved public buildings.

(8) Fiscal incentive for the heating measurement and energy-conserving transformation in the existing residential structures.

On December 20, 2007, the MoF released the *Interim Measures for Management of Incentive Funds for Heat Metering and Energy-Conserving Reconstruction of Existing Residential Structures in the Northern Heating Areas* (Cai Jian [2007] No.957). The central government will appropriate special funds as rewards for northern heating areas to convert to heat metering and energy conservation in the existing residential buildings. On May 21, 2008, Ministry of Housing and Urban-Rural Development (MoHURD) and MoF released the *Opinions on Implementation of Heat Metering and Energy Conservation Transformation for Existing Residential Structures in the Northern Heating Areas* (Jian Ke [2008] No.95), in order to further promote the conversion to heat metering and energy conservation for existing residential structures in the northern heating areas and exert the effectiveness of fiscal funds.

(9) Special fund for application of buildings with renewable energy.

On September 4, 2006, the MoF and MoHURD released the *Interim Measures for Management of Special Funds for Application of Renewable Energy Buildings* (Cai Jian [2006] No.460). The special funds supported the key areas such as domestic hot water; heating and cooling; photovoltaic conversion and illumination of building integration powered by solar energy; heating and cooling powered by ground-coupled heat pump and shallow underground water heat pump; heating and cooling by utilization of freshwater source heat pump in the areas with abundant surface water; heating and cooling by the seawater-source heat pump technology in coastal areas; heating and cooling by sewage source heat pump technology; and other supporting areas as approved.

(10) Fiscal subsidy for solar photovoltaic buildings

On March 23, 2009, the MoF and MoHURD released the *Opinions on Implementation of Accelerating the Application of Solar PV Buildings* (Cai Jian [2009] No.128), also known as "Solar Roof Program". The Opinions emphasized the guiding role of fiscal

fund policy to form the mechanism of government action and market promotion, and to accelerate the development of photovoltaic commercialization. Over the same period, MoF released the *Interim Measures for Management of Fiscal Subsidy Funds for Application of Solar PV Buildings* (Cai Jian [2009] No.129). The scope of subsidies targeted the following aspects: lump-sum grants for application of building-integrated photovoltaic (BIPV) in cities and utilization of building photovoltaic in rural and remote regions; compilation of technical standards for construction and installation of solar PV products; and integration and standardization of key common technologies for solar PV building applications. Meanwhile, local governments were encouraged to release and implement the supportive policy for photoelectric development.

(11) Funds for establishing the treatment plant for abandoned appliances and electronic products.

On February 25, 2009, the State Council released the *Regulations on Management of Recovery Processing of Waste Electronic and Electrical Products* (State Council Decree No. 551), in an effort to standardize the recovery processing activities of waste electronic and electrical products, promote the integrated utilization of resources and development of the circular economy, protect the environment and safeguard human health. The Regulations pointed out: "The State established the special funds to grant subsidies for the recovery processing costs of waste electronic and electrical products. Waste electrical and electronic products treatment fund shall be included in the budget management. Ministry of Finance under the State Council worked with other ministries and agencies under the State Council that oversees environmental protection, integrated resource utilization, industries, and information technology to formulate the management of the funds, and implement the funds upon approval by the State Council".

(12) Subsidy for "Old-For-Reproduced" reproduced products.

In August 2013, the NDRC, MoF, Ministry of Industry and Information Technology (MIIT),

Ministry of Commerce (MOFCOM) and General Administration of Quality Supervision, Inspection and Quarantine (GAQSIQ) released the *Notice on Issuing the Implementation Scheme for Pilot Projects of "Old-For-Reproduced" Products*, officially launching the pilot work for "Old-For-Reproduced" products. The policy means that a domestic purchaser of reproduced products can return old components and purchase the reproduced product at a reduced price. For those products eligible for "Old-For-Reproduced" standardization, the central government granted a lump-sum subsidy to purchasers of reproduced products through pilot enterprises. They received the price difference between reproduced products and recovery price of old components, within certain limits. The NDRC worked with the MIIT, the MOFCOM and the GAQSIQ to determine the category of subsidies. The details of enterprises and product models are decided through open solicitation.

This work was conducted in a few pilot enterprises and individual reproduced products. The range of pilots gradually expanded upon implementation. In 2013, the targets were reproduced products in the automotive engine and gear box area. This work was to establish the rigid reproduction quality assurance system, standardize the reproducing enterprise behaviors, enhance the social recognition of reproduced products, encourage consumers to promote and directly participate in the development of reproduction industrialization and create a solid reproduction market.

4. Optimizing energy structure

(1) Special fund for development of renewable energy.

On May 30, 2006, the MoF released the *Measures on Special Funds for Renewable Energy Development* (Cai Jian [2006] No.237), which functioned as the supporting measures of Renewable Energy Law. According to the regulations, special development funds were to finance the following activities: science and technology research; formulation of standards and demonstration projects for development and utilization of renewable energy; utilization projects of renewable energy for domestic energy

consumption in rural areas; construction of an independent power system of renewable energy in remote districts and on islands; construction of resource investigation, evaluation and relevant information system of renewable energy; localized equipment production for promoting the development and utilization of renewable energy.

(2) Financial supporting policy for biological energy.

On September 30, 2006, MoF, NDRC, the Ministry of Agriculture (MoA), the State Administration of Taxation (SAoT) and the State Forestry Administration jointly issued the *Opinions on Implementation of Preferential Tax Policy for the Development of Bioenergy and Biochemical Engineering*, proposing to implement the relevant preferential tax policies. In 2007, the MoF released the *Interim Measures for Management of Non-Grain Guided Reward Funds for Bioenergy and Biochemical Engineering* (Cai Jian [2007] No.282) and the *Interim Measures for Management of Subsidy Funds for Raw Materials Base of Bioenergy and Biochemical Engineering* (Cai Jian [2007] No.435), which specified flexible subsidies to compensate loss, raw materials base, and “backbone” biochemical enterprises.

(3) Special fund for industrialization of wind power generation equipment.

To accelerate China's technical progress in the wind power manufacturing industry and promote the development of wind power, the central government allocated special funds to support the industrialization of wind power generation equipment and vigorously support wind power development. Based on the evaluation and planning of wind resources, China constructed large-sized wind power bases and established a solid wind power industry. On August 11, 2008, the MoF released the *Interim Measures for Management of Special Funds for Industrialization of Wind Power Generation Equipment* (Cai Jian [2008] No.476). The wind power equipment manufacturing enterprises applying for industrialization funds must meet the following conditions: owning the intellectual property rights and equipment brand,

including independent research and development; joint development or re-innovation of introduced technology; possessing the complete technical documents, including the complete set of design and calculation files, design drawings, specifications on key parts, technological and quality control files, and so on; owning core or key technology; and owning the trademark registration certificate approved by Chinese trademark administrative agency. Also, the unit capacity of wind turbines must be over 1,500kw (inclusive), and must have passed the product certification of China General Certification Center. The wind turbine's blade, gearbox and generator must have been manufactured by Chinese-funded or Chinese-holding enterprises. The application should suggest that converters and bearings have been manufactured by Chinese-funded or Chinese-holding enterprises. Should an enterprise that previously submitted an application apply for funding again, it is encourage to apply funding for products of different models but use the same technology, and differences of the products in power should be over 500kw (inclusive). The wind turbines were manufactured, installed and debugged at home, running for over 240h free of failure and passing the acceptance inspection of the owner.

(4) Subsidy for energy-oriented utilization of straw.

To speed up the energy-oriented utilization of straw and develop the market for application of straw energy products, the central government allocated funds to support industrialized development. On October 13, 2008, the MoF released the *Interim Measures for Management of Subsidy Funds for Energy-Oriented Utilization of Straw* (Cai Jian [2008] No. 735). The subsidy targeted enterprises engaging in straw energy-oriented production such as straw briquettes fuel, straw gasification and straw carbonization. After comprehensive subsidy, the funds supported enterprises collecting straw, and/or producing and marketing straw energy products. The enterprise applicants shall meet the following conditions: the registered capital must be over RMB 10 million; the energy-oriented utilization of straws must conform to the

comprehensive area planning of straw; enterprises must have the consumption capacity of over 10,000 (inclusive) tons of straw; enterprises must have sold straw energy products and have regular clients.

(5) “Jintaiyang” demonstration project.

To promote the technical progress and development of the photovoltaic power generation industry, and to foster strategic emerging industries, the central government allocated a part of renewable energy special funds to support the demonstration and application of photovoltaic power generation technologies in all sectors. This includes industrializing key technologies, and developing the photovoltaic domestic market. On July 16, 2009, Ministry of Finance released the *Notice on Implementing the "Jintaiyang" Demonstration Projects* (Cai Jian [2009 No. 397]) and formulated the Interim Measures for Management of Fiscal Subsidy Fund for "Jintaiyang" Demonstration Projects. Projects eligible for fiscal subsidy funds must meet the following conditions: the implementation schemes have been incorporated in the "Jintaiyang" demonstration projects of the local areas; the *installed capacity of a single project was not lower than 300 kWp; in principle, the construction cycle shall be one year, and term of operation shall be not less than 20 years; the owner's total assets of the grid-connected photovoltaic power generation projects shall be not less than RMB 100 million, and the project capitals shall not be less than 30 percent of total investment.* The owner of the independent photovoltaic power generation project must guarantee the long run of the project. The project must meet the following technical requirements: photovoltaic power generation products and system integration must be advanced; photovoltaic components, controllers, converters, storage batteries and other major equipment must pass state-approved authentication agencies' approval; the grid-connected projects must meet the relevant technical standards and requirements for grid connection; and the project was provided with data metering devices for power generation, which worked normally.

(6) Subsidy for development and utilization of coalbed methane (gas).

To accelerate the development and utilization of coalbed methane, the MoF released the *Opinions on Implementation of Subsidy for Development and Utilization of Coalbed Methane* (Cai Jian [2007] No. 114) on April 20, 2007, granting fiscal subsidy for enterprises engaging in exploitation of coalbed methane, which includes gas. The specific conditions shall be as follows: enterprises must have exploited coalbed methane for sale or private use as civil fuel and industrial chemicals; enterprises must have installed the measuring equipment to accurately measure the drainage, sale and use of coalbed methane, and can provide accurate volume for development and utilization of coalbed methane. Also, the part of coalbed methane that enterprises exploited for power generation shall be not eligible for the subsidy policy, but such enterprises may enjoy the relevant policy as stipulated in the *Notice of National Development and Reform Commission on Issuing the Opinions on Implementation of Power Generation by Coalbed Methane (Mine Gas)* (NDRC Energy [2007] No.721). The standards for subsidy shall be that the central government granted a subsidy of RMB 0.2/m³ coalbed methane (net) for enterprises of coalbed methane exploitation. Based on this standard, local governments may grant an appropriate subsidy for development and utilization of coalbed methane in accordance with the local reality. Local fiscal departments can determine specific standards and subsidy measures at their discretion.

(7) Financial investment in efficiency enhancement, expansion and transformation of rural water and electricity.

Rural water and electricity is an important source of renewable energy and clean energy and also major countryside infrastructure, having multiple functions such as flood prevention, irrigation, ecological conservation and improvement of people's livelihood. In 2011, MoF and the Ministry of Water Resource (MoWR)s implemented the enhancement, expansion and conversion pilot projects for rural hydropower stations built prior to the end of 1995, respectively in six provinces, prefectures and municipalities, such as Zhejiang, Chongqing, Hubei, Hunan, Guangxi and Shanxi. By the end of 2012, the central government had

invested RMB 1.2 billion and stimulated the inputs of RMB 2.5 billion from local governments, enterprises and financial institutions. It took less than two years to complete the project of enhancement, expansion and conversion of 733 rural hydropower stations, which created remarkable economic and social benefits. The pilot work reached the anticipated targets and won the full affirmation of State Council leaders. To further implement the leaders' instructions and increase the positive effects, the MoF and MoWR have continued enhancing, expanding and transforming rural water and electricity policies since 2013.

The objective and plan of comprehensively implementing enhancement, expansion and transformation is as follows: From 2013 to the end of 2015, the central government invested around RMB 8 billion and stimulated approximately RMB 14 billion from local governments and social investments to finish converting over 4,000 old rural hydropower stations that had been operating

prior to the end of 1995. The installed capacity rose to over 8.1 million kW, from 6.8 million kW; the annual power generation rose to 3.2 million kWh, from 2.2 million kWh in the past. The central government had allocated in advance the subsidy fund of RMB 1.79 billion for projects that were launched in 20 provinces (districts and cities) and the Xinjiang Production and Construction Corps, striving for commencing 2,600 projects and bringing 500 projects into production.

5. Promoting the reduction of pollutants discharge

(1) Key projects

In accordance with the "11th Five-year Plan" outline's requirements, the central government invested in five key environmental governance projects and 10 key ecological protection projects (see the following table).

Table 2-1: 10 Key Energy-Conserving Projects

Environmental Governance Project	Policy Description
Water Pollution Control of Key River Basins	The water pollution control project for "Three rivers and three lakes", Three Gorges reservoir area, the upper reaches of Yangtze River, the upper and middle reaches of Yellow River, Songhua River, water source and path of the South-to-North Water Diversion Project.
Flue Gas Desulfurization of Coal-Fired Power Plants	Increase the desulfurization ability of existing coal-fired power plants, making 90 percent of existing plants meet standard discharge requirements.
Disposal of Medical Wastes and Hazardous Wastes	Build facilities for centralized treatment of medical wastes and hazardous wastes, ensuring their safe disposal.
Nuclear and Radiation Safety Project	Accelerate the construction of disposal sites for low- and intermediate-level radioactive wastes, solving the issues of permanent disposal of high radioactive wastes
Pollution Control of Chromium Residue	Conduct comprehensive control over the soil for storing chromium residues and contaminated soil, rendering residue non-toxic.

Table 2- 3: 10 Key Ecological Protection Projects

10 Projects	Policy Description
Protection Project of Natural Forest Resources	Implement comprehensive and effective protection for natural forest and other forest areas of 94.18 million hectares, and plant 5.79 million hectares of trees in the project areas of the upper reaches of Yangtze River and the upper and middle reaches of Yellow River.
Return Cultivated Land to Forest or Pastures	Continue returning cultivated land to forest or pastures in the soil erosion areas of Yangtze River and Yellow River, as well as the in the sandstorm areas of north China
Restore Grazing Land from Grassland	Restore degraded rangeland in four areas - eastern Inner Mongolia, western regions of Inner Mongolia, Gansu and Ningxia, eastern Qinghai-Tibet Plain and northern Xinjiang.
Control Sandstorms in Beijing and Tianjin	Return 340,000 hectares of farmland to forestry; plant 290,000 hectares of trees in Yilin's barren mountain and desert areas; implement 1.27 million hectares of artificial afforestation; plant 1.45 million hectares of trees by air seeding; plant 950,000 hectares of trees and grasses to stabilize sand; and control 2.91 million hectares of grassland.
Expand Forest Protection System	Construct the Phase-IV project of forest protection system for China's three "norths", namely northwest China, north China, and northeast China). Implement the forest protection system project for the Yangtze River and the Pearl River, as well as projects of Mt. Taihang afforestation, and plain greening and coastal forest protection system. Promote construction of treelawn for Three Gorges Reservoir Region
Establish Wetland Conservation and Protection	Construct 222 wetland conservation zones, including 49 state-level wetland conservation zones; restore important wetland through reasonable allocation and management of water resources.
Implement Ecological Protection and Construction Projects in Sanjiangyuan National Nature Reserve of Qinghai	Return 6.44 million hectares of grazing land to grassland; return cultivated land of 6,500 hectares to forest or pastures; establish governance area of 800,000 hectares for forest conservation; control desertization of land; protect wetland and black earth sands, safeguard the 2.09 million hectare area against damage caused by rats, and protect the 50,000 hectare area against soil erosion.
Expand Soil and Water Conservation Project	Increase the 19 million hectare-area under soil erosion control. Implement comprehensive control over Shiyang River Basin
Construct Wildlife Preserve and Nature reserve	Construct and improve nature reserves and continue to implement rescue projects for critically endangered species of wild animals and plants.
Controlling Rocky Desertification Areas	Strengthen efforts to control the rocky desert areas by measures such as protecting vegetation, and converting farmland into forests; closing hillsides to facilitate afforestation and grass growth; planting grass and raising livestock; undertaking reasonable development and utilization of water resources, land reclamation and water-soil conservation; changing agricultural methods; constructing rural methane facilities; and alleviating poverty by relocation measures.

(2) Supporting the construction of environmental supervision system

In 2007-2012, the central government allocated RMB 9.5 billion cumulatively to construct 350 pollution source monitoring centers at the national, provincial and prefectural levels and to configure more than 180,000 sets of environmental monitoring and statistics equipment. The funding programme also implemented automatic pollution source monitoring for more than 15,000 enterprises, achieved all-round and multi-level monitoring on the atmospheric environment and enterprise pollution outlets, clarified the roles and responsibilities of those involved in environmental protection and established the environmental monitoring system.

(3) Conducting rural environmental protection

In 2008-2012, the MoF and the MEP signed a letter of responsibility with Jiangsu, Liaoning, Sichuan and Henan to support rural environment improvement by "giving rewards to promote governance". Their allocation of RMB 13.5 billion supported the comprehensive improvement 38,000 villages' rural environment, to the benefit of nearly 80 million people.

6. Comprehensive demonstration for energy conservation and emissions reduction

In 2011, the MoF and the NDRC chose eight cities, including Beijing and Shenzhen, to promote energy conservation and emissions reduction in a systematic, platform-oriented and integrated manner. They achieved this through integrated fiscal policies in areas of the low carbonization industry, clean mode transportation and green buildings, aiming to bring the policy efforts into play. In 2012, the central government cumulatively appropriated RMB 4 billion to the model cities, where work was undergoing steady implementation.

(III) Tax Policy

1. Major tax categories

- Resource tax policy

In 2006, the MoF and SAoT revoked the preferential policy of reducing mineral resource tax on non-ferrous metal. They also recovered the full amount of resources tax on iron ore (calculated based on the stipulated tax standard), raised the resource tax standard for rock gold mine, and unified the national standard for taxable amount of vanadium ore resource tax. Since August 1, 2007, China's resource tax on copper ore, lead zinc mine and tungsten ore rose sharply. This was the first time China raised the resource tax on these ores since this tax was launched. In 2007, MoF and SAoT released the *Notice on Adjusting the Standard for Taxable Amount of Coking Coal Resource Tax* (Cai Shui [2007] No.15), which specified the standard of RMB 8 per ton of coking coal and effectively boosted regulations and control over enterprises with high pollution, high energy-consuming and resource-dependent products. Since June 1, 2010, China took the lead in the resource tax reform pilot programmes for price-based taxation in Xinjiang. Assessing resource tax on crude oil and natural gas was changed from quota-based taxation to price-based taxation. After the change, the tax rate was five percent. Since December 1, 2010, the pilot projects of resource tax reform in crude oil and natural gas have been promoted in other western provinces and prefectures. Since November 1, 2011, the resource tax reform in price-based taxation on crude oil and natural gas has been promoted nationwide. Meanwhile, mining royalties levied on ocean and overland oil and gas resources exploited under foreign cooperation were cancelled and changed into the uniform resource tax.

- Reform of vehicle and vessel tax

Since January 1, 2007, China has been implementing the Interim Regulations on Vehicle and Vessel Tax, which replaced the former vehicle and vessel tax, as well as the attendant license tax,, and has raised the level of taxable amount. In 2011,

China passed the new Vehicle and Vessel Tax Law, which has been in effect since January 1, 2012. Compared with the original *Interim Regulations on Vehicle and Vessel Tax*, the new law made major adjustments; specifically, the passenger vehicle's tax rate was levied according to air displacement instead of quantity, which raised the taxable amount. The common passenger vehicle taxable amount rose to RMB 60-5,400/vehicle/year, from RMB 60-660/vehicle/year in the past. After the reform, the vehicle and vessel tax reflected the policy guides of tax revenue for automobile consumption, energy conservation and emissions reduction.

- Consumption tax policy

In December 2008, the State Council promulgated the *Notice on Implementing the Reforms in Price and Tax of Crude Oil* (Guo Fa [2008] No.37), which went into effect January 1, 2009, increasing the unit tax rate of product oil consumption. According to the *Notice on Adjusting the Consumption Tax Rate for Oil Products* (Cai Shui [2008] No.167), the unit rate of gasoline consumption tax rose to RMB 0.8/L, the unit rate of diesel oil consumption tax rose to RMB 0.7/L and the unit rate of oil products was increased correspondingly. In addition to the existing rate, the adjusted unit rate of gasoline, naphtha, solvent naphtha and lubricating oil was RMB 1/L, while the unit rate of diesel oil, fuel oil and jet fuel was RMB 0.8/L.

- Reform of passenger vehicle consumption tax

In 2006, China conducted a major reform in the passenger vehicle consumption tax policy. The tax rate of passenger vehicles were subdivided and adjusted according to different air displacement, which raised the consumption tax rate of large-displacement vehicles. Since September 1, 2008, China readjusted the passenger vehicle consumption tax rate, which increased the tax rate of large-displacement vehicles but reduced

the consumption tax rate of small-displacement cars. According to different air displacement of passenger vehicles, China adopted the differential tariff, namely, one percent, three percent, five percent, nine percent, 12 percent, 25 percent and 40 percent, which better reflected the regulatory guidance of passenger vehicle consumption tax for energy conservation and emission reduction.

2. Consumption tax policy.

(1) VAT policy for comprehensive utilization of resources.

According to the *Notice on Policies Regarding the Value-Added Tax on Products Made Through Comprehensive Utilization of Resources and Other Products* (Cai Shui [2008] No.156), the *Supplementary Notice of Ministry of Finance and State Administration of Taxation on Policies Regarding the Value-Added Tax on Products Made through Comprehensive Utilization of Resources and Other Products* (Cai Shui [2009] No.163), the *Notice of Ministry of Finance and State Administration of Taxation on Adjusting and Improving the Value-Added Tax Policies for Products and Labor Services That Comprehensively Utilize Resources* (Cai Shui [2011]No.115) and the *Notice of Ministry of Finance and State Administration of Taxation on the Relevant Issues Concerning the Implementation of the Standard for Pollutant Discharge by Taxpayers that Enjoy the Value-Added Tax Preferential Policy for Comprehensive Utilization of Resources* (Cai Shui [2013] No.23), China further adjusted and improved the VAT policy for comprehensive utilization of resources and specified the scope of products eligible for tax exemption, refund immediately after payment and partially immediate VAT rebate. China also explicitly stipulated that, for taxpayers enjoying the tax rebate and exemption policies for products and labor services that comprehensively utilize resources, the pollutant discharge must meet the pollutant drainage standard accordingly. This policy took effect April 1, 2013.

1 The Notice of Ministry of Finance and State Administration of Taxation on Releasing the Regulations on Several

Table 2-4: Current Policies for Value-Added Tax for Comprehensive Utilization of Resources

Type of Policy	Contents of Policy
Value-Added Tax (VAT) Exemption	Sale of self-produced goods: reclaimed water; gelatine powder completely made of junked tires; renewed tires; specific building materials made of raw materials mixed with no less than 30 percent of waste residues; building sandstone aggregate made of raw materials such as building (structure) wastes and gangue; labor services for sewage treatment; garbage disposal; and sludge treatment.
VAT Policy of Refund Immediately After Payment	Sale of self-produced goods: high-purity carbon dioxide products made from industrial waste gas; electric power or heating power produced by garbage fuel; shale oil produced with oil shale wastes produced during the process of coal exploitation and recycling asphalt concrete produced with waste asphalt concrete; cement (including cement clinker) produced by the rotary kiln process or cement produced with outsourcing cement clinker by the grinding process, of which the raw materials for cement is mixed with no less than 30 percent of waste residues; electric power and heating power produced by waste heat and pressure during the industrial production; electric power and heating power produced with kitchen garbage, poultry excrement, rice hull, peanut shell, cob, oil-tea camellia shell, cotton seed shell, the “three remains”, shoddy and little fuelwood, oily sewage, organic wastewater, sludge after sewage treatment and oil sludge (scum) produced during oil extraction and the methane produced by fermentation of above resources; dried sludge and fuel produced with sludge after sewage treatment; feed-grade mixed grease produced with waste animal oil and vegetable oil; industrial oil materials such as lube base oil, gasoline and diesel oil produced with reclaimed water mineral oil; emulsified oil adaptogen and auxiliary products of waterproof coiled materials produced with oil sludge (scum) during oil extraction; raw human hair (extensions) made of human hair.
VAT Policy of 80 percent Refund Immediately After Payment	Wood, bamboo and/or straw fiberboards; wood, bamboo and/or straw shaving boards; laminated wood boards; active carbon; tanning extracts; alcohol hydrolysates and carbon rods produced with three categories of agricultural and forestry residuum such as the “three remains”, shoddy and little fuelwood and crop straws; cardboard paper produced with salix mongolica.
VAT Policy of 50 percent Refund Immediately After Payment	Sale of self-produced goods: nitrocellulose powder for coatings produced with retired military propellant powder; by-products produced by desulfurization with fume, high-sulfur natural gas of coal-burning power plants and various industrial enterprises; steam, active carbon, white carbon black, lactic acid, calcium lactate and methane produced with stillage wastes and wine-making spent wash; electric power and heating power produced with gangue, coal sludge, bone coal and oil shale; a part of new wall materials; bagasse pulp, bagasse particleboard and various paper articles produced with bagasse; alumina and activated calcium silicate produced with coal ash and gangue; sludge microbe protein produced with sludge; porcelain insulator and calcined kaolin produced with gangue; gold, silver, palladium, rhodium, copper, lead, mercury, tin, bismuth, tellurium, indium, selenium and platinum metals produced with scrap batteries; wastes materials such as photorecording waste materials, waste colour developer, waste catalyst,

	waste bulbs (tubes), electrolysis wastes, galvanization wastes, waste circuit boards, and resin wastes; smoke and dust; wet mud; smelting slag; bed-silt; waste engines and scrapped cars; gasoline, diesel oil, waste plastic (rubber) oil; refinery coke; carbon black; regenerated pulp; aluminium dust; modified recycle materials for automobiles; modified recycle materials for motorcycles; modified recycle materials for electrical appliances; modified recycle materials for pipes; modified polyester materials for chemical fiber (impurity content is less than 0.5mg/g, moisture content is lower than one percent); regenerated polyethylene terephthalate (PET) resin for bottles (quality fraction of acetaldehyde is less than and equal to one ug/g) and regenerated plastic products produced with waste plastics; waste polyvinyl chloride (PVC) goods; waste rubber products and scrapped packaging materials of polyethylene-aluminum composite paper; fibre yarn and weaving cotton cloth; adhesive-bonded cloth; felt; binder and regenerated polyester products produced with waste natural fiber; chemical fiber and relevant fiber goods; and shaped graphite objects, graphite blocks, graphite powder and graphite carburant produced with waste graphite.
VAT Policy of Refund After Payment	Coalbed methane extraction and sale by VAT general taxpayer of coalbed methane extraction enterprises; sale of self-produced biodiesel by comprehensive utilization (diesel oil produced with waste animal oil and vegetable oil).

- Income tax policy for comprehensive utilization of resources.

For enterprises that utilize the resources as listed in the *Catalogue of Resources for Comprehensive Utilization Entitling Enterprises to Income Tax Preferences* as their major raw materials to make products which are not restricted or prohibited by the state and are consistent with the relevant state or industrial standards, the income derived therefrom shall be calculated into the enterprises' total income in the year at the reduced rate of 90 percent. The proportion of raw materials accounting for materials of derived products shall not be less than the standard stipulated in the *Catalogue of Resources for Comprehensive Utilization Entitling Enterprises to Income Tax Preferences*.

- Preferential income tax policy for energy-conserving projects.

According to the new *Enterprise Income Tax Law* implemented in 2008, for enterprises engaging in eligible projects of environmental protection, energy conservation and water conservation,

including public sewage treatment, public garbage disposal, comprehensive development and utilization of methane, technical transformation of energy conservation and emissions reduction, as well as seawater desalination, the incomes derived therefrom shall be exempt from enterprise income tax from the first to third years, and subject to enterprise income tax at a rate reduced by one half from the fourth to sixth years, commencing from the tax year when the first operating income was received through the project.

- Preferential tax policy for energy performance contracting projects.

To accelerate energy performance and promote the energy service industry development, in December 2010, China issued the *Notice on Issues Concerning the Value-Added Tax, Business Tax and Enterprise Income Tax Policies for Promoting the Development of the Energy Services Sector* (Cai Shui [2010] No.110). The Notice stipulated that the taxable incomes for business tax shall be exempted temporarily for those involved with energy performance contracting projects implemented

by eligible energy service companies. Eligible enterprises that implement energy performance contracting projects may enjoy the above policy of "three-year tax exemption and tax reduction at a reduced rate of 50 percent for the next three years". For eligible energy service companies and energy-consuming enterprises that enter the shared savings contract, the business income tax on relevant assets of energy performance contracting projects shall be executed as follows: the reasonable expenditure that an energy-consuming enterprise pays to an energy service company according to the energy management contract may be deducted from current taxable income, no longer distinguishing service charges and asset prices. At the expiry of the energy management contract, the energy service company will transfer the assets formed due to the implementation of the energy performance contracted project to the energy-consuming enterprises, and such assets shall be treated as the depreciation or assets at the expiry of amortization period. Correspondingly, energy-consuming enterprise should deal with their taxes as assets depreciated or at the expiry of amortization period; after the expiration of energy management contracts, the assets paid by energy-consuming enterprises need no longer to be included in the incomes of energy service companies when they complete the ownership transfer with energy-consuming enterprises.

(5) Preferential tax policy for imports of energy-conserving technical equipment.

According to the regulations of the *Notice on Adjusting the Import Tax Policies for Major Technical Equipment Including Large-scale Equipment of Environmental Protection and Comprehensive Utilization of Resources, large-scale equipment for environmental protection and comprehensive utilization of resources produced by eligible domestic enterprises under the state support shall be exempted from tariff and value-added tax for importation links* (Cai Guan Shui [2010] No.50). This refers to large, clean and efficient power generation equipment and large equipment for environmental protection and comprehensive utilization of resource; the policy took effect June 1, 2010.

(6) Preferential enterprise income tax policy for enterprises engaging in energy-conserving equipment.

Where the enterprise incurs actual expenditure on special equipment that is listed in the *Catalog of Equipment for the Exclusive Use in Environmental Protection That Receives Tax Preferences and the Catalog of Equipment for the Exclusive Use in Energy and Water Conservation that Receives Tax Preferences*, 10 percent of the actual expenditure can be credited against the tax payable for the current year. If the tax payable is not enough, credits can be carried over for use in the next five tax years.

(7) Export tax rebate policy

Since the reform of export tax rebate system, the Chinese government adopted the policy to stop the processing trade of partial products, cut down the export rebate rate of partial products, cancel the export tax rebate policy of partial resource-dependent products and control the export volume of partial resource-dependent products (Fa Gai Jing Mao [2005] No.2595, Cai Shui [2005] No.184, Cai Shui [2006] No.42 and Cai Shui [2006] No.139, etc.). This has been in effect since the end of 2004, with the goal of restraining the exportation of high-pollution, high energy-consuming and resource-dependent products. Chinese government successively cancelled tax rebates for primary iron products such as electrolytic aluminium, ferroalloy, phosphorus, calcium carbide, unwrought nickel, urea, diammonium phosphate and billet steel, and reduced the export rebate rate of copper, nickel, ferroalloy, coking coal and coke. The adjustments involved over 30 industries and around 200 product varieties. The global financial crisis resulted in a serious decline of China exports, so in the second half of 2008, China raised the export rebate rate for partial products again. However, the government generally retained the former import and export tax policy for "high-pollution, high energy-consuming and resource-dependent products".

(8) Preferential tax policy for nuclear power.

In accordance with the *Notice on the Relevant*

Issues Concerning the Taxation Policies for the Nuclear Power Industry (Cai Shui [2008] No.38), the VAT policy of "refund after payment" should be applied uniformly for nuclear power enterprises that produced and sold electric power products. The policy is applicable within the 15 fiscal years starting from the month after the nuclear power unit was officially put into production. The refund proportion was gradually reduced in a three-step process.

(9) Tax policy for ecological environmental protection projects

Enterprises engaging in eligible environmental protection projects, such as energy and water conservation, including public sewage treatment; public garbage disposal; comprehensive development and utilization of methane; technical conversion of energy conservation; emissions reduction; and seawater desalination, the incomes derived therefrom shall be exempt from enterprise income tax from the first to third years and subject to enterprise income tax at a rate reduced by one half from the fourth to sixth years, commencing from the tax year when the first operating income was received through the project.

Enterprises that incur actual expenditure for special equipment that is in the *Catalog of Equipment for the Exclusive Use in Environmental Protection that Receives Tax Preferences and the Catalog of Equipment for the Exclusive Use in Energy and Water Conservation that Receives Tax Preferences*, 10 percent of the actual expenditure can be credited against the tax payable for the current year. If the tax payable is not enough, the credits can be carried over for use within the next five tax years.

Special funds that enterprises withdraw for environmental protection and ecological restoration according to laws, administrative regulations, and relevant provisions can be deducted. Using special funds for different purposes renders them non-deductible..

On March 23, 2009, The MoF and SAoT released the Notice on the *Enterprise Income Tax Policies for the China Clean Development Mechanism Fund and the Enterprises Implementing the Clean*

Development Mechanism Projects (Cai Shui [2009] No.30). It stipulated that the following incomes shall be exempt from business income tax: the income from greenhouse gas emissions reductions transfers in Clean Development Mechanism (CDM) projects that is turned over to the state treasury; grants from international financial organizations; interest from capital deposits; interest on purchased treasury bonds; and grants from domestic and foreign institutions, organizations and individuals. Regarding the implementation enterprises, the Notice stipulated that 65 percent of the income from the greenhouse gas emissions reduction transfers in hydrofluorocarbons and perfluorocarbons projects, 30 percent of the income from these same transfers in nitrous oxide projects, and two percent of the income from these transfers in CDM projects such as key fields prescribed in Article Four of *Measures for the Operation and Management of Clean Development Mechanism Projects* as well as the afforestation projects, shall be turned over the state treasury and deducted upon the computation of taxable incomes. The incomes of the above two categories shall be exempt from enterprise income tax from the first to third years and subject to enterprise income tax at a rate reduced by one half from the fourth to sixth years, commencing from the tax year when the first operating income from the transfer of greenhouse gas emissions reductions was received through the project.

(10) Preferential tax policy for vehicle and vessel tax.

Since January 1, 2012, energy-conserving vehicles and vessels shall be subject to vehicle and vessel tax at a rate reduced by one half; the new energy vehicles and vessels shall be exempt from vehicle and vessel tax.

(IV) Governmental Procurement Policy

1. Mandatory governmental procurement for energy-conserving products

In December 2004, the state released the *Opinions on Implementation of Governmental Procurement*

for Energy-Conserving Products. Based on that, the State Council promulgated the Notice on Establishing the System of Mandatory Governmental Procurement for Energy-Conserving Products. According to the Notice, when using the fiscal funds to conduct governmental procurement, governmental agencies at all levels must prioritize energy-conserving products, provided that technical and service indicators met the procurement demands. Also, certain products meeting the requirements for energy effects and performance must be procured mandatorily, so as to promote energy conservation, environmental protection and reduction of governmental agencies' energy expenditure. On December 5, 2007, the MoF and the NDRC released the *Notice on Adjusting the List of Energy-Conservation Products Procured by the Government* (Cai Shui [2007] No.98). It adjusted the previously issued "List of Energy-Conservation Products Procured by the Government", and determined nine categories as energy-conserving products for mandatory governmental procurement, including air-conditioners, computers and printers.

2. Governmental procurement policy for environmental labeling products

In November 2006, the State Environmental Protection Administration and the MoF jointly released the *Opinions on Implementation of Governmental Procurement of Environmental Labeling Products and first List of Environmental Labeling Products Procured by the Government.* The first-level budgetary units of both the central and the provincial governments, which included cities specifically designated in the state plan, were requested to carry it out first. The Opinions were thoroughly implemented on January 1, 2008. In 2010, the MoF continued to strengthen the governmental procurement for energy-conserving and environmental products, as well as establishing the preferential procurement of environmental labeling products and formulating the *List of Environmental Labeling Products Procured by the Government.*

III. Analysis on China's Climate-Related Public Fiscal Authorities

(I) Coordinating Agency: National Leading Group to Address Climate Change

To boost the leading efforts on addressing climate change, in June 2007, the State Council established the NLGACC based on former Cooperating Team to Address Climate Change. The Premier of the State Council served as the group leader, overseeing 30 colleagues from related departments. As the national deliberation and coordination agency to address climate change, this group undertakes the following major tasks: research and formulate the national major strategies; suggest guidelines and policies to address climate change; assign work to address climate change; research and deliberate the international cooperation and negotiation programmes; coordinate and solve the major issues of addressing climate change; organize and implement State Council guidelines and policies on energy conservation and emissions reduction and arrange the relevant work; research and deliberate the suggestions of major policies; and coordinate and solve major work issues. Specifically, NDRC is responsible for NLGACC's routine work.

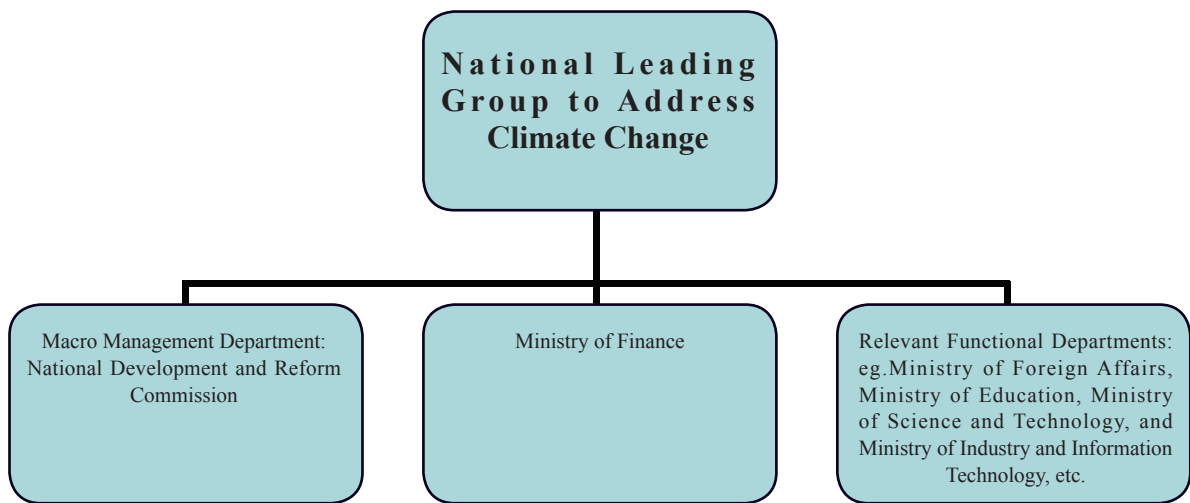


Figure 3-1 China’s Macro-Coordination Mechanism to Address Climate Change

(II) Major Governmental Organs

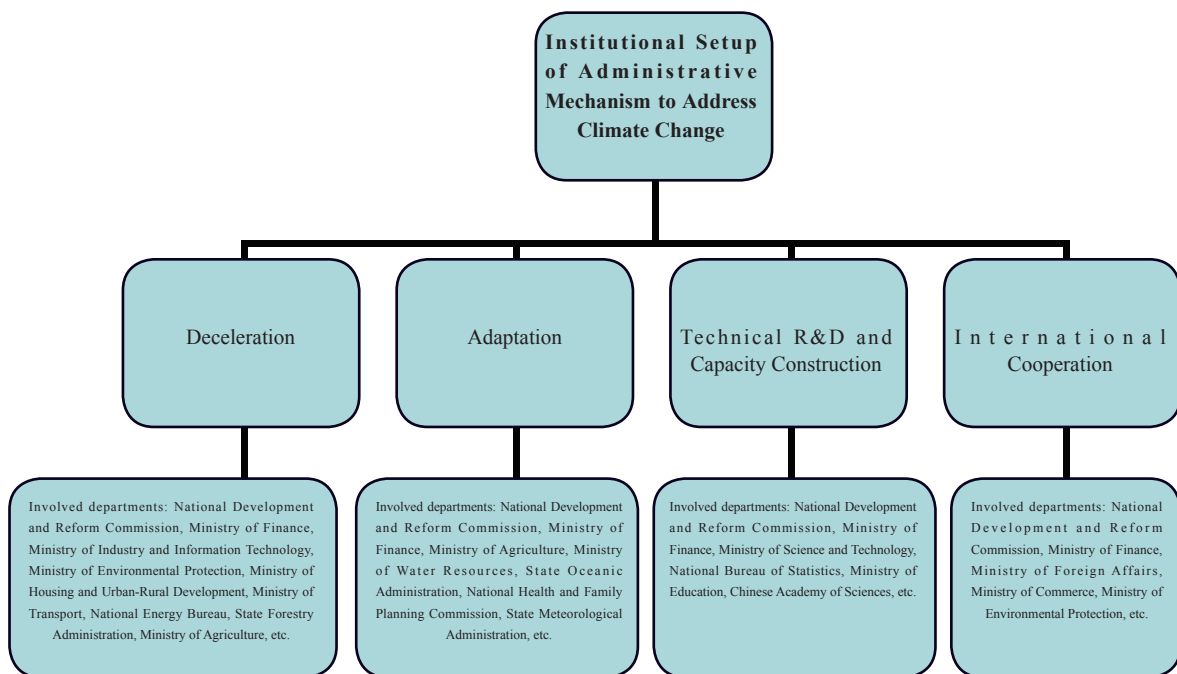


Figure 3-2 China’s Institutional Setup of the Administrative Mechanism to Address Climate Change

1. National Development and Reform Commission (NDRC)

The commission's climate-related functions mainly include the following:

- Organizing and drawing up important strategies, plans and policies to address climate change; working with relevant departments to jointly lead and participate in the international negotiation for climate change; and performing the relevant work of the UNFCCC.
- Undertaking the specific work of NLGACC in areas of energy conservation and emissions reduction; working with the Leading Group for Western Regional Development of the State Council and the Leading Group of the State Council for Revitalizing Old Industrial Bases in the Northeast and Other Regions.
- Advancing sustainable development strategies; taking charge of comprehensive coordination of energy conservation and emissions reduction; organizing the formulation and implementing plans and policy measures for developing the circular economy; conservation and integrated utilization of all-society energy and resources; participating in compiling plans for ecological construction and environmental protection; coordinating the major issues related to ecological construction, conservation and integrated utilization of energy and resources; coordinating aspects of the environmental industry; and promoting cleaner production.
- Strategically adjusting the economic structure; formulating comprehensive industry policy; coordinating major development issues of the primary, secondary and tertiary industry; integrating and balancing relevant developmental planning and major decisions; undertaking the responsibilities for planning major construction projects and productivity layout; drawing up controlled targets, policies and measures for total scale of fixed asset investment and investment structure; integrating and balancing special planning for ventures involving the central government and major construction projects' investment.

To properly address climate change, in 2008, the NDRC established the Office to Address Climate Change to enact institutional reform. Its main duties are to comprehensively analyze the impacts of climate change on economic and social development; organize the formulation of major strategies, plans and policies to address climate change; take the lead in undertaking the relevant work of UNFCCC; work with relevant organizations to organize and participate in the international negotiation of climate change; coordinate and launch the international cooperation and capacity construction to address climate change; organize and implement the work of CDM; undertake the specific work of NLGACC and concentrate on energy conservation and emissions reduction for addressing climate change.

Other relevant departments and bureaus include Department of Energy Conservation and Environmental Protection, Fiscal and Financial Department and Office of Special Delegate for Major Projects, and so on.

2. Ministry of Finance

As the State Council's comprehensive administration, the MoF undertakes multiple duties, such as formulating macroeconomic policies; overseeing all revenue and expenditure control of the central government; managing the governmental nontax revenues and the national treasury; drawing up tax-related laws, regulations and adjustments of tax policies; as well as managing domestic and foreign government debt.

Among them, the climate-related duties are to compile and organize the annual central budget programmes, as well as the final accounts that cover the budgets for climate-related administrative departments; improve the transfer payment system including the mechanism for ecological compensation; undertake budget work concerning departments of industry, transport, resources and construction; oversee financial administration for policy subsidies; research the agricultural financial support policies, manage and distribute relevant supporting funds; research and put forward central government policies for relevant industries; draw

up laws and regulations concerning the environmental protection tax and other relevant tax categories, as well as creating a tax policy adjustment programme that involves energy conservation, emissions reduction and a comprehensive utilization of resources; organize and formulate the treasury's centralized payment system; arrange the governmental procurement system for energy-saving and environmental products, among others, as well as conduct supervisory management; perform duties related to foreign consultation, negotiation; sign businesses on foreign governmental loans and supervise the use and repayment of said loans; raise, manage and use China's clean development mechanism fund, and so on.

The relevant departments and bureaus include the Budget Department, Department of Economic Construction, Department of Agriculture, Department of Tax Policy, Department of Treasury, Department of International Affairs, Department of Finance, China's Management Center of Clean Development Mechanism Fund, and others.

3. Ministry of Environmental Protection

The MEP suggests the scale and direction of fixed-asset investment in the environmental protection sector; puts forward opinions on arranging national fiscal capital; and examines and approves the fixed-asset investment projects under national programmes and annual plans based on powers specified by the State Council. The agency also coordinates the competent authorities to organize, implement and supervise the work; participates in the guidance and promotes the development of the circular economy and environmental protection industry; and takes part in addressing climate change.

In addition, the MEP is responsible for preventing and controlling environmental pollution and damage at the pollution source. Under the State Council's direction, the MEP shall perform environmental impact assessments (EIA) on major economic and technological policies, as well as develop plans and programmes; raise suggestions of environmental impact regarding proposed

environmental laws and regulations; and approve the EIA documents for major development and construction regions, as well as projects according to national provisions.

The relevant major departments and bureaus include the Department of Planning and Finance, the Department of Pollution Control, the Department of Natural Ecological Protection, the Department of Scientific Standards, the Department of International Cooperation, and others.

4. Ministry of Science and Technology

The major duties of Ministry of Science and Technology (MoST) are to formulate national key fundamental research programmes, high-tech research and development programmes, and scientific and technological support programmes. Other duties include coordinating basic and cutting-edge technology research, technological research for major public welfare and research for key and common technologies. The MoST must supervise key technologies for important sectors of the national economy and social development. In addition, the MoST will work with competent authorities to organize the project approaches, integrated balance, evaluation and acceptance, and formulation of relevant supporting policies during the implementation of major scientific and technological projects.

Many projects under the National Key Basic Research Programme of China, or the 973 Programme, and the National High Technology Research and Development Programme of China, known as the 863 Programme, involve sectors such as energy, environmental protection, and clean development, all directly related to addressing climate change.

The relevant major departments and bureaus include the Department of Development Programme, the Department of High-Tech Development and Industrialization, and others.

5. Ministry of Industry and Information Technology

The MIIT suggests the scale and direction of fixed-asset investment in the industry, communication and information sectors, including utilizing foreign capital and overseas investment. The agency also advances opinions on arranging national fiscal capital, as well as examining and approving the fixed-asset investment projects under the national programmes and annual plans based on its State Council-specified powers.

In addition, the MIIT also implements new programmes, policies and standards for sectors such as biological medicine, new materials, aerospace, and the information industry, as well as guiding the industry technology innovation and technological advancement to transform traditional industries using advanced and appropriate technologies. The agency also organizes and implements the key national scientific and technological special projects, advances the industrialization of scientific research results, and promotes software development, information servicing and emerging industries.

The relevant major departments and bureaus include the Department of Energy Conservation and Comprehensive Utilization.

6. China Meteorological Administration

The China Meteorological Administration (CMA) conducts industry management on meteorological administration of other departments under the State Council; plans for development and layout of meteorological sounding, the information website, the meteorological station network and meteorological infrastructure on land and in oceans across the nation, as well as reviewing national large and medium-sized meteorological projects.

The CMA releases the national weather forecast, as well as short-term climatic predictions, urban environment weather forecasts, fire weather index forecasts and climatic impact evaluation. The agency also organizes and guides the development, utilization and protection of climatic resources as well as organizing and reviewing the meteorological condition arguments for national key construction projects, major regional economic

development projects and urban-rural construction planning.

In addition, the CMA organizes the popularization and application of major scientific research and results in the meteorological technology sector; guides and coordinates meteorological education; helps publicize and popularize meteorological sciences and knowledge, and helps raise awareness about meteorological disaster prevention and mitigation as well as climatic resources.

7. Ministry of Commerce

MOFCOM is responsible for foreign aid. Its duties are to formulate, compile and execute foreign aid policies and programmes; advance the reform on the foreign aid model; determine and implement projects, manage the use of governmental funds; and manage the donations received via multilateral and bilateral relationships. Part of foreign aid projects and assistance to China are related to climate change.

In addition, MOFCOM formulates administrative methods for importing and exporting commodities and processing trade, as well as cataloguing controlled import and export commodities and technologies. The agency draws up policies and measures to promote foreign trade growth; organizes the implementation of gross import and export of industrial products, raw materials and important agricultural products; works with relevant departments to coordinate the bulk import and export commodities, and guides trade promotion activities as well as promoting foreign trade.

Relevant major departments and bureaus include the Department of Foreign Investment and Economic Cooperation, the Department of International Economic and Trade Relations, and the Department of Foreign Aid.

8. National Energy Administration

The National Energy Administration (NEA) researches and promotes energy development and industry policies; analyzes the impact of policies

concerning fiscal tax, finance, price, trade, foreign investment and consumption regarding energy development as well as the supply-demand balance; suggests promoting energy development, energy conservation, energy safety and technical innovation; draws up laws and regulations; and formulates technological energy industry regulations and standards. As a major administrator in the energy sector, the NEA is also responsible for management of new energy, renewable energy, clean utilization and developing traditional energy technologies.

9. Ministry of Agriculture

The MoA is a State Council department responsible for agriculture and rural economic development. This means overseeing agricultural sustainable development and guiding the utilization of farmland, fisheries, grassland, intertidal zones and wetlands suitable for farming, as well as developing rural renewable energy. The ministry also protects and manages agricultural resources of biological species, and organizes agriculture-related international economic and technological exchange and cooperation. The relevant department and bureaus include the Department of Development Planning, the Department of Plantation Management, and so on.

10. Ministry of Water Resources

Ministry of Water Resources guarantees the reasonable development and utilization, as well as the strategic planning and policies of water resources. The ministry must execute water conservation; prevent water and soil loss; formulate relevant programs; and decrease the possible impact of climate change on water resources. The relevant departments and bureaus include the Department of Planning and Programmes, the Department of Water Resources, the Headquarters for Flood and Drought Control, and so on.

11. Ministry of Transport

Regarding climate change, the Ministry of Transport's duties involve project management in the energy-saving transportation sector. The

internal departments and bureaus include the Office for Energy Conservation, Emissions Reduction and Climate Change and the Project Management Center for Energy Conservation and Emission Reduction in Transport.

12. Ministry of Housing and Urban-Rural Development

In the sector of climate change, the MoHURD's duties involve promoting construction of energy-saving buildings, such as formulating policies, developing programmes and supervising implementation, as well as organizing and implementing major energy-saving building projects. Internally, the ministry supports the Department of Building Energy Conservation and Science.

13. State Forestry Administration

The State Forestry Administration (SFA) supervises and manages national forests and ecological construction; guides and supervises national afforestation and advances the forest coverage rate, as well as protecting and developing forest resources. In addition, the SFA also organizes and coordinates the protection of national wetlands, desertification control and wildlife resource protection. The relevant major departments and bureaus include the Department of Afforestation Management and the Department of Development Planning and Fund Management.

14. National Health and Family Planning Commission

The National Health and Family Planning Commission (NHFPC) must prevent, monitor and respond to diseases induced by climate events with extreme weather conditions. On the basis of the impact evaluation on climate change, and the establishment of the sound monitoring warning system and network, the NHFPC has developed emergency plans and has implemented prevention and control technology, as well as adaptation technology. This will reduce the damage caused by climate-change related diseases.

IV. Statistics and Budgets of Climate-Related Public Finance

(I) Introduction to the Policy Framework of China's Budget System

Since the budgetary reform of Central Governmental departments in the fiscal year of 2000, China has established a preliminarily standard budget management model, which has budgeting at its core, with centralized revenue collection and spending, and government procurement as major budget implementation tools. To adapt these budget reform needs, all departments have adjusted their internal organizational structure and have redefined budgeting responsibilities. To help central government departments understand and execute policies, advance the quality of budgetary formulation and submission, unify the operating mechanism of internal budget management, and realize the regulatory and institutionalized budgets, the MoF has issued budget reference materials and regulations for central governmental departments. However, as departmental budgetary reform continuously changes, it is necessary to modify and improve the budgeting reference regulations so as to shape a departmental budgeting mechanism with a reasonable division of labor, mutual cooperation and smooth operation.

(II) Compilation of Departmental Budgets

Central Departments Adopt the Basic Flow of “Two-Up and Two-Down”.

“One-Up”: This refers to the suggested amount of departmental budgeting as prepared from grassroots budgetary units. In recent years, the suggested project budget has been prepared according to the spirit and requirement of the annual budgeting notice. Meanwhile, government agencies must provide the basic data and relevant materials related to the budgeting demands, which mainly involves staffing size and number of people approved by the basic expenditure, as well as documents for increasing personnel and

expenditure of essential and additional items. After examination at all levels, the budget unit examines and prepares the suggested amount of departmental budget and reports it to the MoF.

“One-down”: This refers to the controlled amount of budget issued by the MoF. As for the suggested budget amount reported by all government agencies, all relevant MoF departments will conduct the preliminary examination, after which the Budget Department will examine and balance the amount. After repeated negotiations and communication within the MoF, the Budget Department finally summarizes the information, creates the preliminary plan of this budgetary level and reports it to the State Council. Upon the approval, the controlled budgetary quota will be announced to all departments. To confirm the quote of departments with rights of allocating budgets, the relevant MoF departments will conduct the communication, and then the allocation plan will be incorporated into the controlled budgetary amount under “one-down”. Correspondingly, the MoF will release the amount to all central government agencies.

“Two-up”: Government agencies report the budget. According to the MoF-issued controlled budgetary amount, government agencies report the budgetary draft back to the MoF. As for the basic expenditure of “items”, government agencies shall prepare it independently according to current regulations.

“Two-down”: The MoF approves the budget. Here, the MoF approves the departmental budget according to the central budgetary draft as approved by the National People's Congress. After ministry examination and approval, the budget comes before the Budget Commission of the Standing Committee of the National People's Congress and NPC Financial and Economic Committee. Finally, the budget goes to the National People's Congress for deliberation. One month after the approval of the National People's Congress, the Budget Department under MoF will coordinate with other departments under the Ministry to uniformly approve the budgets, while correspondingly all departments shall approve the budgets of all subordinate units within 15 days upon MoF approval. The general flow of budgeting

is shown in the Figure 4-1.

During daily operations, all government agencies must make necessary adjustments according to each fiscal year, combining the requirements and depth of budgetary reform. During the budgeting process, all government agencies may negotiate and discuss the budgetary issues with MoF at any time.

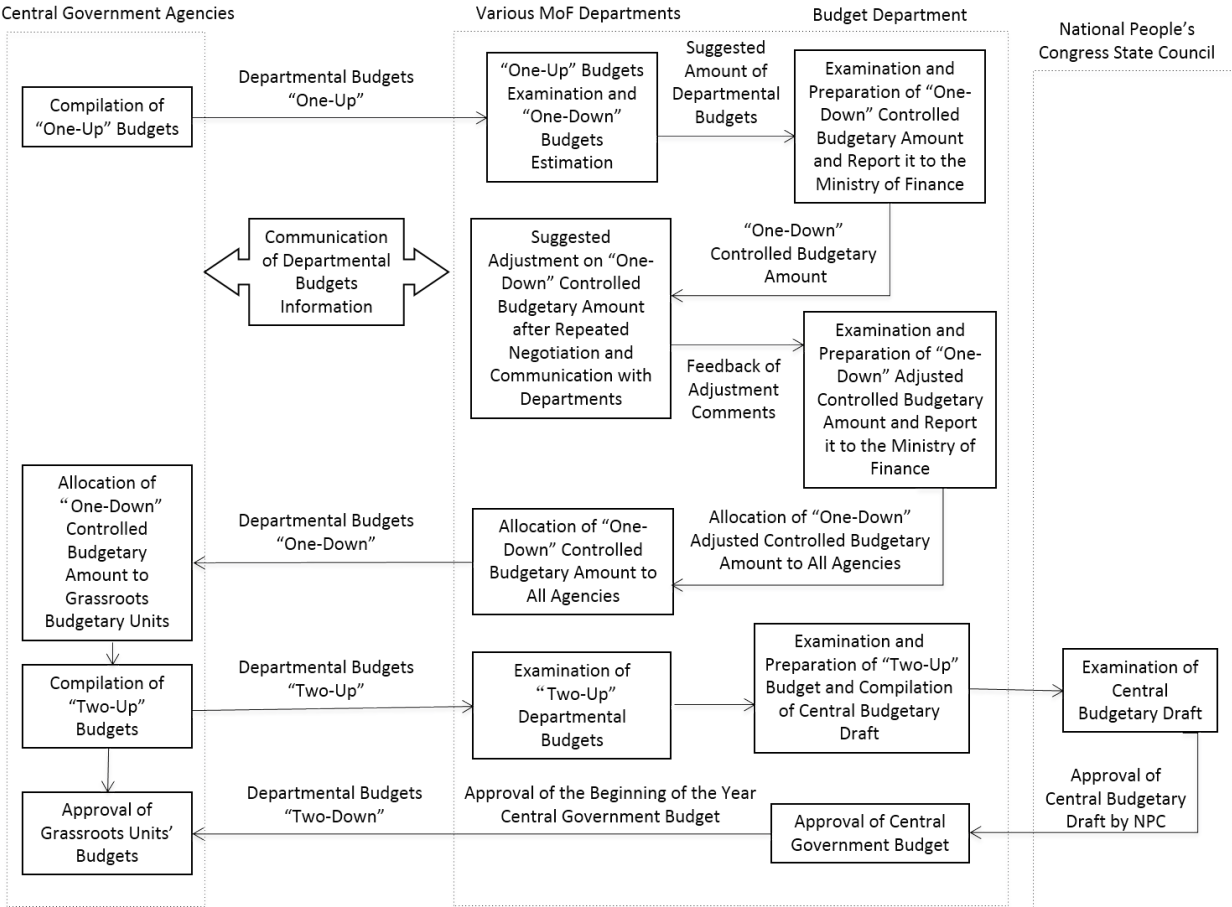


Figure 4-1 Flowchart of Budgeting and Approval of Central Governmental Departments

(III) Setup of Budgetary Items

China's current classification of governmental income and expenditure was officially established in 2007. This new system specifically falls into three parts, namely, classification of income, classification of expenditure and classification of economic spending. Since its implementation, reforming classification of governmental income and expenditure have also been launched in the following three categories:

1. Classification of income

The governmental income is uniformly classified in an all-round, regulatory and precise manner, which comprehensively reflects the source and nature said income. These not only include the on-budget income, but also cover all income pertaining to the scope of governmental income, such as off-budget income and income of social insurance funds. Income classification before 2007 was merely a

simple list of taxes, charges involved in administrative fees and penalties, confiscatory income, and so on. According to the scientific standards and international practices, the post-reform governmental income are classified into taxes, social insurance funds, nontax revenues, principal income from reloan recovery, debt revenue and income from transfers. This new method has created favorable conditions for strengthening income management and data statistical analysis. In terms of structure, the pre-classification reform income falls into three levels: category, sub-category and items. However, reform added one more level – entry. Four levels of accounting subjects are gradually refined to meet the management requirements for different levels.

At present, the latest classification of incomes includes six categories, namely, tax income, income of social insurance funds, nontax income, principal income from reloan recovery, debt revenue and income from transfers. Details are shown in the following table.

Table 4-1: Income Subjects of Governmental Classification for Income and Expenditure in 2012

101 Tax Revenue	
01	Value-added tax
02	Consumption tax
03	Business tax
04	Business income tax
05	Company income tax rebate
06	Personal income tax
07	Resources tax
08	Fixed-asset investment regulation tax
09	Urban maintenance and construction tax
10	Real estate tax
11	Stamp tax
12	Tax on using urban land
13	Increment tax on land value
14	Vehicle and vessel tax
15	Tonnage dues
16	Vehicle purchase tax
17	Tariff
18	Farmland occupation tax
19	Transfer tax

20	Tobacco tax
99	Other tax revenues
102 Revenue of Social Insurance Funds	
01	Revenue of pension insurance fund
02	Incomes from unemployment insurance fund
03	Revenue of basic medical insurance fund
04	Incomes from work-related insurance fund
05	Incomes from maternity insurance fund
06	Incomes of New Rural Cooperative Medical Care Fund
07	Incomes of basic medical insurance fund for township dwellers
08	Incomes of new old-age insurance fund for rural residents
09	Incomes of endowment insurance fund for township dwellers
99	Other incomes of social insurance funds
103 Non-Tax Revenue	
01	Revenue of government funds
02	Special revenue
04	Income from administrative fees
05	Penalty and confiscatory income
06	Business revenue of state-owned properties
07	Revenue of compensable use of stated-owned resources (assets)
08	Other revenue
104 Principal Income From Reloan Recovery	
01	Principal income from domestic loan recovery
02	Principal income from foreign loan recovery
03	Principal income from domestic reloan recovery
04	Principal income from foreign reloan recovery
105 Debt Revenue	
01	Income of domestic debt
02	Income of foreign debt
110 Income from Transfers	
01	Revenue on return
02	Income of general transfer payment
03	Income of special transfer payment
04	Revenue of government fund transfer
07	Income of post-earthquake recovery and restoration subsidy
08	Balance revenue of last year
09	Transferred income
10	Transfer-in capital for post-earthquake recovery and restoration
11	Income of re-lending of creditor's rights

2. Classification of expenditure function

The expenditure function classification system was established during the 2007 reform, and now reflects all functional government activities more clearly. According to governmental administration and departmental budget requirements, the expenditure functions

uniformly fall into three levels based on the actual functions, instead of the nature of expenditure such as initial costs, administrative fees and operating expenses. There are 17 categories, over 170 sub-categories and over 800 items. The “categories” cover functional government activities, such as defense, diplomacy, education, science and technology, social security and

employment, environmental protection, and so on, with sub-categories reflecting work that performs a governmental function. For example, “common education” would fall under the sub-category of “education”. As for items, the subjects reflect the specific expenditure to accomplish certain work, such as “drought control” and “conservation of water and soil” under the item “water resources”. The new subjects of expenditure functions clearly reflect the contents and directions of the governmental expenditure, solving previous problems of being considered incomprehensible for “both outsiders and experts”.

After a few years of revisions, the categorized subjects of expenditure functions specified in *Classified Subjects of Governmental Incomes and Expenditure in 2012* include 27 categories

(see details in the following table), which are as follows: general public service; foreign affairs; national defense; public security; education; science and technology; cultural sports and media; social security and employment; social insurance fund expenditure; medical treatment and public health; energy conservation and environmental protection; urban-rural community affairs; affairs of agriculture, forestry and water; transportation; resource exploration and power information; commercial servicing; financial supervision expenditure; post-earthquake reconstruction and restoration expenditure; affairs of land, resources and weather; housing security expenditure; affairs of reserves of grain, oils and materials; budget reserves; and budgetary expenditure on payment for the principal and interest of debts; as well as other expenditure and other transfer expenditure.

Table 4-2: Classified Subjects of Expenditure Functions under the Governmental Classification for Incomes and Expenditure in 2012

201 General Public Service	
01	NPC-related affairs
02	CPPCC-related affairs
03	Affairs of governmental offices and related institutions
04	Affairs of development and reform
05	Affairs of statistical information
06	Financial affairs
07	Affairs of tax revenue
08	Auditing business
09	Affairs of customs
10	Affairs of human resources
11	Affairs of discipline inspection and supervision
12	Affairs of population and family planning
13	Affairs of business and trade
14	Affairs of intellectual property
15	Affairs of industrial and commercial administration
16	Affairs of supervision of quality and technology and inspection and quarantine
17	National affairs
24	Religious affairs
25	Affairs of Chinese in Hong Kong, Macao and Taiwan
26	Filing affairs
28	Affairs of democratic party and association of industry and commerce
29	Affairs of mass organizations
31	Affairs of the Office of Party Committee and related institutions
32	Organizational affairs
33	Propaganda related affairs

34	Affairs of a united front
35	Affairs of foreign liaisons
36	Other expenditure for affairs of the Communist Party
99	Other expenditure for general public service
202 Foreign Affairs	
01	Management of foreign affairs
02	Institutions abroad
03	Foreign aid
04	International organizations
05	Foreign cooperation and exchange
06	Foreign propaganda
07	Border survey and joint inspection for boundaries
99	Other expenditure for foreign affairs
203 National defense	
01	Troops on active service
02	Reserve forces
03	Military personnel
04	Scientific research for national defense
05	Special projects
06	Mobilization for national defense
99	Other expenditure for national defense
204 Public security	
01	Armed police
02	Public security
03	National security
04	Procuratorial work
05	Penal system
06	Judicature
07	Jail
08	Re-education through labor
09	State secrets
10	Anti-smuggling police
99	Other expenditure for public security
205 Education	
01	Affairs of educational management
02	General education
03	Vocational education
04	Adult education
05	Broadcast education
06	Overseas education
07	Special education
08	Teachers' development and further education of cadres
09	Expenditure for arrangement of educational surcharge
10	Expenditure for arrangement of local educational surcharge
99	Other expenditure for education
206 Science and Technology	
01	Management affairs of science and technology
02	Basic research
03	Application research

04	Technological research and development
05	Condition and service of science and technology
06	Social sciences
07	Popularization of science and technology
08	Exchange and cooperation of science and technology
09	Significant projects of science and technology
10	Expenditure for treatment and disposal of spent fuels of nuclear power station
99	Other expenditure in science and technology
207 Cultural Sports and Media	
01	Culture
02	Cultural relics
03	Sports
04	Radio and television
05	News publication
06	Expenditure for arrangement of cultural construction fees
07	Special fiscal funds for development of national film industry
99	Other expenditure for cultural sports and media
208 Social Security and Employment	
01	Management affairs of human resources and social security
02	Civil administration affairs
03	Fiscal subsidy for social insurance fund
04	Supplement for national social security fund
05	Retirement of administrative institution
06	Subsidy for enterprise reform
07	Employment subsidies
08	Pension for the disabled or for the family of the deceased
09	Retirement settlement
10	Social welfare
11	Undertakings for disabled persons
12	Minimum livelihood guarantee for urban inhabitants
13	Other assistance for urban living
15	Survival aid for natural disasters
16	Red Cross undertakings
17	Minimum livelihood guarantee for rural residents
18	Other assistance for rural life
22	Post-relocation support fund for displaced persons due to large- and medium-sized reservoir construction
23	Supporting fund for displaced persons due to small-sized reservoir construction
24	Social assistance fund for road traffic accidents
60	Employment insurance expenditure for the disabled
99	Other expenditure for social security and employment expenditure
209 Fund Expenditure for Social Insurance	
01	Fund expenditure for basic endowment insurance
02	Fund expenditure for unemployment insurance
03	Fund expenditure for basic medical insurance
04	Fund expenditure for work-related injury insurance
05	Fund expenditure for maternity insurance
06	Fund expenditure for new rural cooperative medical care
07	Fund expenditure for township dwellers' basic medical insurance
08	Fund expenditure for rural residents' new old-age insurance

09	Fund expenditure for township dwellers' endowment insurance
99	Other fund expenditure for social insurance
210 Medical Treatment and Public Health	
01	Management affairs of medical treatment and public health
02	Public hospitals
03	Community-level medical and health care institutions
04	Public health
05	Medical security
06	Traditional Chinese medicine
10	Management affairs of food and drug administration
99	Other expenditure for medical treatment and public health
211 Energy Conservation and Environmental Protection	
01	Management affairs of environmental protection
02	Environmental monitoring and supervision
03	Prevention and control of pollution
04	Natural ecological protection
05	Wildwood protection
06	Returning cultivated land to forest or pastures
07	Prevention of desertification
08	Returning the grazing land to grassland
09	Returning cultivated grassland to pastures
10	Energy conservation and utilization
11	Pollution reduction
12	Renewable energy
13	Comprehensive utilization of resources
14	Energy management affairs
99	Other expenditure of energy conservation and environmental protection
212 Urban-Rural Community Affairs	
01	Urban-rural community management affairs
02	Urban-rural community planning and management
03	Public facilities of urban-rural communities
05	Environmental sanitation for urban-rural communities
06	Management and supervision of established markets
07	Fund expenditure for government housing
08	Expenditure for financing arrangement of selling of state-owned land-use right
09	Expenditure for additional arrangements of urban public utilities
10	Fund expenditure for state-owned land income
11	Capital expenditure for agricultural land development
12	Expenditure for arrangement of paid use of increased construction land
13	Expenditure for arrangement of subsidiary fees for urban infrastructures
99	Other expenditure for urban-rural community affairs
213 Affairs of Agriculture, Forestry and Water	
01	Agriculture
02	Forestry
03	Water conservation
04	South-to-North Water Diversion Project
05	Poverty relief
06	Combined agricultural development
07	Comprehensive rural reform

60	Expenditure for development and construction of new vegetable plots
61	Expenditure for woods-raising fund
62	Expenditure for arranging recovery fee for forest vegetation
63	Fund expenditure for the Central Authority water conservancy facility
64	Fund expenditure for local water conservancy facility
66	Expenditure for storehouse district of large and medium-sized reservoirs
67	Expenditure for storehouse district of Three Gorges Reservoir
68	Fund expenditure for South-to-North Water Diversion Project
69	Fund expenditure for national significant water conservancy projects
99	Other expenditure for affairs of agriculture, forestry and water
214 Communications and Transportation	
01	Highway and water transportation
02	Railway transportation
03	Civil aviation transportation
04	Subsidy of petroleum price reform for communications and transport
05	Expenditure for postal service industry
06	Expenditure for vehicle purchase tax
60	Expenditure for extra charge arrangement of high-grade road vehicles in Hainan Province
61	Expenditure for toll revenue arrangement of transferring the governmental repaid roads
62	Expenditure for vehicle toll arrangement
63	Expenditure arranged for port construction charges
64	Fund expenditure for railway construction
66	Fund expenditure for the civil aviation infrastructure
67	Expenditure arranged for management and construction fees of civilian airport
99	Other expenditure of communications and transport
215 Affairs of Resource Exploration and Electric Power Information	
01	Expenditure for exploration, development and service of resources
02	Manufacturing industry
03	Building industry
04	Expenditure for electricity regulation
05	Expenditure for supervision of industry and information industry
06	Supervision of safety production
07	Supervision of state-owned assets
08	Expenditure for supporting development and management of small- and medium-sized enterprises
60	Special capital expenditure for bulk cement
61	Special fund expenditure for new wall materials
62	Expenditure for repayment of rural power grid
63	Fund expenditure for sustainable coal development for Shanxi Province
64	Expenditure for revenue arrangement of reserved asset realization under electric power reform
99	Other expenditure for affairs of resource exploration and electric power information
216 Affairs of Commercial Service Industry	
02	Affairs of commercial distribution
05	Expenditure for tourism management and services
06	Expenditure for foreign development and services
99	Other expenditure for other affairs of the commercial service industry
217 Expenditure for Financial Supervision Affairs	
01	Administrative expenditure for financial department
02	Supervision expenditure for financial department

03	Expenditure for financial development
04	Expenditure for financial regulation and control
05	Expenditure for rural financial development
99	Other expenditure for affairs of financial supervision
218 Expenditure for Post-Earthquake Reconstruction and Restoration	
01	Reconstruction and restoration of collapsed and damaged civilian structures
02	Reconstruction and restoration of infrastructure
03	Reconstruction and restoration of public service facilities
04	Production recovery and reconstruction of agriculture and forestation
05	Production recovery and reconstruction of business enterprises
06	Reconstruction and restoration of party and government offices
07	Reconstruction and restoration of army and armed police
99	Other expenditure for reconstruction and restoration
220 Affairs of Land, Resources and Weather	
01	Affairs of land and resources
02	Marine affairs and resource management
03	Surveying affairs
04	Earthquake affairs
05	Meteorological affairs
99	Other expenditure for affairs of land, resources and weather
221 Housing Security Expenditure	
01	Government-subsidized housing expenditure
02	Expenditure for housing reform
03	Urban and rural community housing expenditure
222 Affairs of Reserves of Grain, Oil and Materials	
01	Affairs of grain and oil
02	Affairs of goods and materials
03	Energy reserves
04	Reserve of grain and oil
05	Important commodity reserves
227 Budget Reserve	
228 Budgetary Expenditure on Payment for the Principal and Interest of Debts	
01	Repayment of principal for domestic debts
02	Repayment of principal for national bank borrowings
03	Repayment of principal for other domestic loans
04	Repayment of principal for borrowings from foreign governments
05	Repayment of principal for borrowings from international organizations
06	Repayment of principal for overseas loans of the Central Government
07	Local repayment of principal for overseas loans
08	Payment of interest for domestic debt
09	Payment of interest for overseas debt
10	Debt issuance of domestic and foreign debts
11	Supplementing the reserve fund for repayment of loan
12	Repayment of principal for local governmental treasury bonds issued by the agent Ministry of Finance
13	Payment of interest for local governmental treasury bonds issued by the agent Ministry of Finance

229 Other Expenditures
02 Reserves at the beginning of the year
04 Other governmental fund expenditure
06 Expenditure for donations for Wenchuan earthquake
08 Expenditure arranged for operating costs of issuing lottery tickets and running sales institutions
60 Fund expenditure arranged for lottery ticket public welfare
99 Other expenditure
230 Transfer Expenditure
01 Expenditure on return
02 General transfer payment
03 Special transfer payment
04 Transfer payment of governmental fund
07 Supplementary expenditure for post-earthquake recovery and restoration
08 Adjustive funds for other use
09 Annual balance
11 Expenditure for on-lending bonds

3. Expenditure Economy Classification

The goal here is to establish an expenditure economy classification system, which reflects the specific objects of various expenditure in a comprehensive, standardized and detailed way. Based on practical principles, expenditure economy classification has been separated into two levels of 12 classes and more than 90 sections. The class-level subjects include: wages and welfare expenditure; goods and service expenditure; subsidies for individuals and families; transfer expenditure; capital construction expenditure; and so on. The section-level subjects expand on the class-level subjects, reflecting specific requirements of department budget establishment and financial management of the budget unit. For example, the capital construction expenditure can be subdivided into the following categories: acquisition and construction of buildings, purchase of special

equipment, large-scale renovation and others. The comprehensive, detailed classification of economic expenditure is an important means to carry out government budget management, financial department management, and government statistical analysis.

In the revised 2012 Classification of Government Revenue and Expenditure, the subject of economic expenditure classification included: wages and welfare expenditure; goods and service expenditure; subsidies for individuals and families; subsidies to enterprises and institutions; transfer expenditure; donations; debt interest expenditure; debt principal repayment expenditure; capital construction expenditure, other capital expenditure; loan on-lending, equity participation and other expenditure, and so on, which comes to 12 classes in total (see table below).

Table 4-3: The Subject of Economic Expenditure Categorization from Classification of Government Revenue and Expenditure in 2012

301 Wages and Welfare Expenditure
01 Basic wages
02 Allowance and subsidies
03 Bonuses
04 Social insurance payments
05 Board expenses
06 Board subsidies
07 Performance pay
99 Other wages and welfare expenditure
302 Goods and Service Expenditure
01 Office expenses
02 Printing expenses
03 Consulting fees
04 Handling charges
05 Water rates
06 Electricity charges
07 Charges for telecommunications and postage
08 Heating fees
.... (omitted)
303 Subsidies for Individuals and Families
01 Pensions for released veterans
02 Pensions for retired veterans
03 Severance fees (army discharge bonuses)
04 Pensions for the disabled or for the family of the deceased
05 Living subsidies
06 Relief funds
07 Medical charges
08 Student subsidies
.... (omitted)
304 Subsidies to Enterprises and Institutions
01 Policy-related subsidies to enterprises
02 Subsidies to institutions
03 Finance discounts
04 Expenditure for state-owned capital management budget charges
99 Other subsidy expenditure to enterprises and institutions
305 Transfer Expenditure
01 Transfer expenditure of governments from different levels
02 Transfer expenditure of governments from same levels
306 Donation

01	Domestic donation
02	Overseas donation
307 Debt Interest Expenditure	
01	Payment of domestic debt interest
02	Interest payment for national bank loans
03	Other interest payment for domestic loans
04	Interest payment for foreign government loans
05	Interest payment for international organization loans
06	Other interest payment for foreign loans
308 Repayment of Debt Principal Expenditure	
01	Building construction
02	Purchase of office equipment
03	Purchase of special equipment
05	Infrastructure construction
06	Large-scale renovation
07	Information networks construction
08	Material reserves
....	(omitted)
310 Other Capital Expenditures	
01	Building construction
02	Purchase of office equipment
03	Purchase of special equipment
04	Infrastructure construction
06	Large-scale renovation
07	Information networks construction
08	Material reserves
....	(omitted)
311 Loan On-lending and Equity Participation	
01	Domestic loans
02	Foreign loans
03	Domestic on-lending
04	Foreign on-lending
05	Equity participation
06	Capital expenditure of state-owned capital management budget
99	Other expenditure on assets on-lending and equity participation
399 Other Expenditures	
01	Budget reserves
02	Reservations
03	Subsidies for National Social Security Fund
04	Undivided project expenditure
05	Other expenditure for state-owned capital management budget
99	Other expenditure

V. Definition and Descriptive Analysis on Statistics of China's Climate Public Finance

(I) Scope Definition on Statistics of China's Climate Public Finance

1. Expenditure for reducing climate variation

-Saving energy and improving energy efficiency: 10 energy-saving projects; energy-saving and people-benefit projects; demonstration of fiscal policy concerning comprehensive energy conservation and emission reduction; subsidies for fuel-efficient cars; the city's comprehensive pilot on energy demand-side management; financial incentives to employ energy-saving technology and building energy efficiency support; and so on.

-Energy structure adjustment: support for renewable energy (wind, solar, biomass, and so on.); support for clean coal technology; nuclear power support; and others.

-Industrial structure adjustment: the elimination of obsolete production capacity (with emphasis on employee relocation and debt restructuring); the development of strategic emerging industries of special funds (seven industries); support for new services; and others.

-Development of forest carbon sinks: six major forestry projects; forestry ecological compensation; afforestation fund; forestry loan with discounted interest rates; subsidies for forestry insurance premiums; and so on.

2. Expenditure for adapting to climatic change

-Agriculture: expenditure on agricultural monitoring and early warning systems; disaster prevention and mitigation; improving adaptability.

-Water conservancy: expenditure on flood control and drought relief; water conservancy; and so on.

-Meteorology: expenditure on monitoring, forecasting and evaluating China's climate change

-Hygiene and health: expenditure on hygiene and disease control, impact assessments of climate change on human health

-Urban infrastructure construction: expenditure on revising relevant standards; strengthening risk management and disaster emergency systems; expenditure for underground pipelines and so on.

3. Expenditure on climate capacity building

-Institutions and personnel: expenditure for the operation of relevant government climate departments and agencies

- Expenditure for Research and Development

- Expenditure for climate teaching

- Expenditure for climate training

- Expenditure for climate international exchange

4. Definition of negative expenditure

In theory, negative expenditure is the fiscal expenditure that brings increased greenhouse climate emissions and results in inadaptability to climate change. But this is difficult to determine with any certainty using statistics.

(II) The Status of Related Public Expenditure in China

1. Financial investment under related central policy

In recent years, we have intensified our efforts in energy conservation and emission reduction, developing and implementing a series of relevant policies and measures. We have introduced dozens of fiscal expenditure policies and have adjusted the financial structure to promote energy conservation and energy efficiency; new energy and renewable energy development; resource conservation as well

as comprehensive utilization and development of a circular economy; reducing pollutants and protecting the ecological environment; and others..

From 2006 to 2012, the central government arranged a total of more than RMB 400 billion for related issues.

Table 5-1: Financial Investment Under Related Central Policy

Time Period	2006-2012 Total (Unit: RMB 100 million)
Supporting Energy-Saving and Cost-reducing Measures With the Following Methods:	
1. Launching 10 key energy conservation projects	331
2. Transforming existing buildings by using energy-saving technology	231 ²
3. Implementing heat metering and energy-saving technology for existing north China residential buildings.	346
4. Eliminating obsolete production capacity	316 ³
5. Conserving energy and reducing emissions in the transport industry	49.17 ⁴
Promoting Pollution Reduction	
1. Obtaining capital construction-related investments from the central government	1176
2. Constructing environmental supervision system	95
3. Preventing and controlling water pollution	935 ⁶
4. Protecting the ecological environment of lakes	24.5 ⁷
5. Comprehensively improving the rural environment	135 ⁸
6. Preventing and controlling heavy metal pollution	75 ⁹
7. Applying and promoting cleaner production technologies	12.77 ¹⁰

2.This data is the accumulated investment amount during 2007-2012.

3.This data is the accumulated investment amount during 2007-2012.

4.This data is the accumulated investment amount during 2010-2012.

5.Including projects that support the construction of urban sewage and garbage treatment facility, sewage pipe network, prevention and control of water pollution in key water basins, water pollution control in the Three Gorges Reservoir Region, and so on.

6.This data is the accumulated investment amount during 2007-2012.

7.This data is the accumulated investment amount during 2011-2012.

8.This data is the accumulated investment amount during 2008-2012.

9.This data is the accumulated investment amount during 2010-2012.

10.This data is the accumulated investment amount during 2009-2012.

Expanding consumption of energy-saving and environmentally friendly products	
1. Creating projects that benefit people by promoting energy-saving products	400 ¹¹
Support new energy and renewable energy	
1. Generating wind power	5.9 ¹²
2. Launching the Golden-sun Demonstration Project and photovoltaic power generation roof plan	268 ¹³
3. Developing biomass energy	18 ¹⁴
4. Generating additional subsidies to lower the renewable energy electricity price	540
Developing the energy-saving and new energy automotive industry	
1. Promoting and demonstrating the new energy automobile	166 ¹⁵
2. Promoting the innovative technology used in the new energy automobile industry	16 ¹⁶
3. Launching comprehensive demonstration models for energy conservation and emissions reduction	40 ¹⁷

2.National fiscal expenditure for energy efficiency and environmental protection

National fiscal expenditure for energy efficiency and environmental protection was RMB 244.198 billion in 2010. It increased to RMB 296.346 billion in 2012 and then declined to RMB 180.39 billion the following year, rising to RMB 210.909 billion in 2014. Among them, the central government expenditure on energy efficiency and environmental protection increased significantly,

from RMB 6.948 billion in 2010 to RMB 29.067 billion in 2014. However, the local expenditure increased but then declined, beginning with RMB 237.25 billion in 2010 and rising to RMB 289.981 billion in 2012, but the following year falling suddenly to RMB 156.596 billion. The 2014 budget expenditure is RMB 181.842 billion. Within the past five years, the share of the total national fiscal expenditure for energy conservation and environmental protection was trending downward, accounting for 2.72 percent in 2010, 1.29 percent in 2013 and approximately 1.38 percent in 2014.

11.This data is the accumulated investment amount during 2007-2012.

12.This data is the accumulated investment amount during 2007-2011.

13.This data is the accumulated investment amount during 2009-2012.

14.To calculate based on RMB 300 million yuan/year from 2007 to 2012.

15.This data is the accumulated investment amount during 2010-2012.

16.The value only in 2012.

17.The value only in 2012.

Table 5-2 Details on National Fiscal Expenditure of Energy Efficiency and Environmental Protection

Unit: RMB 100 million yuan

	2010	2011	2012	2013	2014
Central Government	69.48	74.19	63.65	237.94	290.67
Local government	2372.50	2566.79	2899.81	1565.96	1818.42
Total	2441.98	2640.98	2963.46	1803.90	2109.09

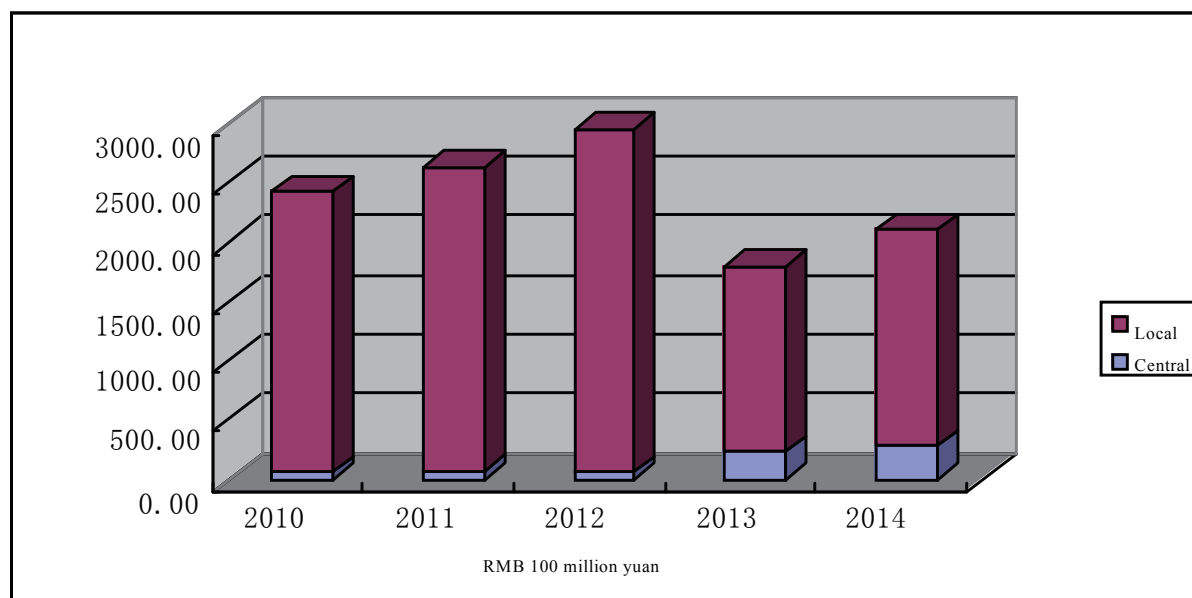


Figure 5-1 Details on National Fiscal Expenditure of Energy-Saving & Environmental Protection

Data sources: *Financial Yearbook of China of 2012 and 2013, Report on the Central and Local Budget Performance in 2013 and the Central and Local Drafted Budgets in 2014* issued by the Ministry of Finance, and the budget sheet on central

government public finance expenditure in 2014. In the figure above, all the data are on budget performance except those in 2014, which are on budget.

3.The central fiscal expenditure structure of energy efficiency and environmental protection

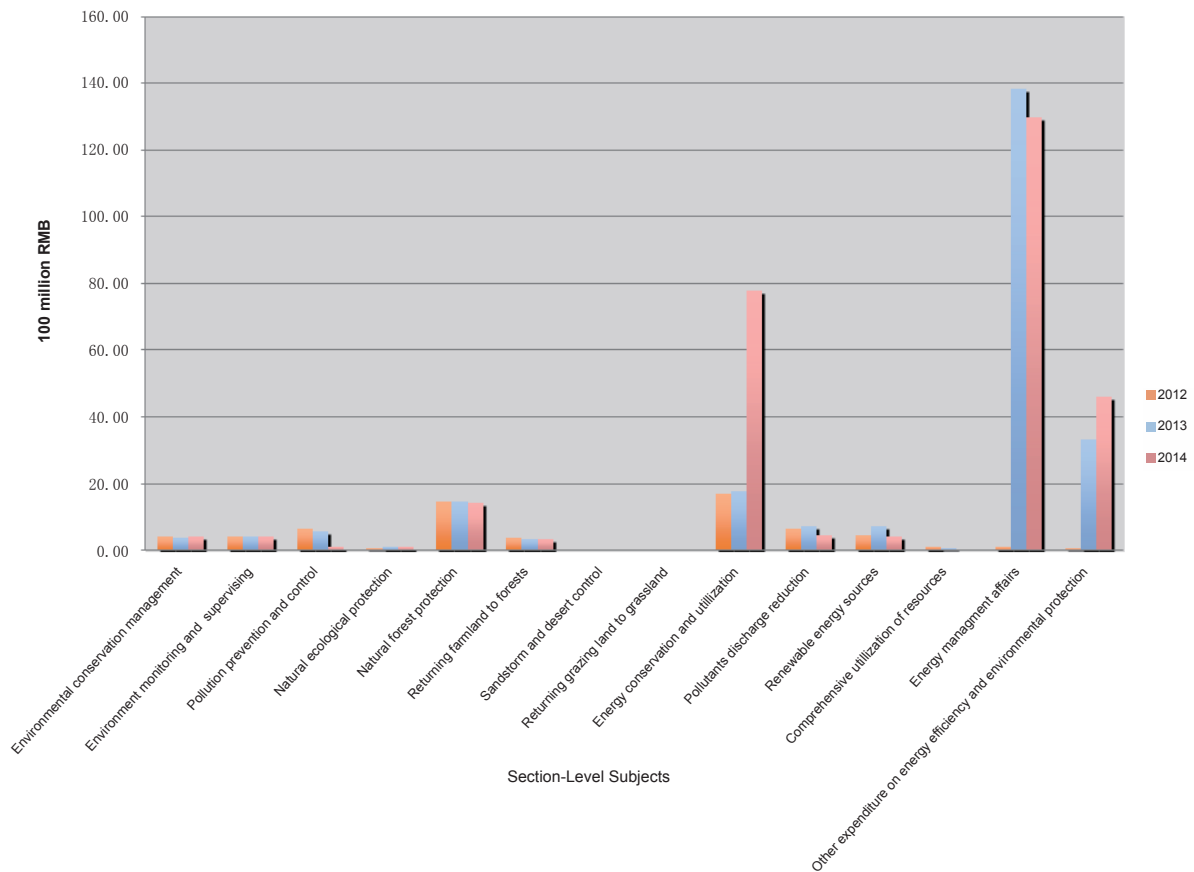
There are 14 sections under central government expenditure of energy efficiency and environmental protection, among which, "natural forest protection" and "energy conservation and utilization" take a relatively large amount. But in

2013, "energy management" soared to RMB 13.851 billion from RMB 83 million in 2012. In 2014, the expenditure dropped slightly to RMB 12.997 billion, but still accounted for 44.7 percent of the central expenditure of energy efficiency and environmental protection. Also in 2014, the section-level expenditure of "energy conservation and utilization" significantly increased from RMB 1.774 billion in 2013 to RMB 7.798 billion.

Table 5-3: The Structure of Central Expenditure Of Energy Efficiency and Environmental Protection

Section-Level Subjects	2012	2013	2014
Environmental conservation management	4.01	3.92	4.16
Environment monitoring and supervising	3.98	4.20	4.24
Pollution prevention and control	6.25	5.50	1.10
Natural ecological protection	0.77	0.88	1.12
Natural forest protection	14.56	14.71	14.19
Returning farmland to forests	3.71	3.52	3.41
Sandstorm and desert control	0.00	0.32	0.00
Returning grazing land to grassland	0.26	0.28	0.00
Energy conservation and utilization	16.85	17.74	77.98
Pollutants discharge reduction	6.51	7.39	4.38
Renewable energy sources	4.35	7.20	4.08
Comprehensive utilization of resources	0.95	0.44	0.04
Energy management affairs	0.83	138.51	129.97
Other expenditure on energy efficiency and environmental protection	0.59	33.33	46.00
Total	63.62	237.94	290.67

Figure 5-2 The Structure of Central Expenditure Of Energy Efficiency and Environmental Protection



Data sources: *Financial Yearbook of China of 2012 and 2013, Report on the Central and Local Budget Performance in 2013 and the Central and Local Drafted Budgets in 2014* issued by the Ministry of Finance, and the budget sheet on central government public finance expenditure in 2014. In the figure above, all the data are on budget performance except those in 2014, which are on budget. The central government expenditure do not include the transfer expenditure from the central to the local departments.

(III) Central Climate Expenditure Statistics Based on the Existing Government Revenue and Expenditure Classifications

1. Basic research ideas

The Research Group believes that climate statistics data should be primarily extracted from the existing

budget data, and should not change the existing budgeting and management framework if possible. Statistics of similar ongoing matters, such as those on "three rural" expenditure also followed this principle.

As to the specific practices of gathering climate statistics, given the context of China, we have focused on government revenue and expenditure, as well as examining specific expenditure items. That means we should locate the subject involved with climate statistics according to government revenue and expenditure classification, and then combine this with expenditure under various subjects and in line with the different degrees of climate relevance.

2. Division based on the degree of climate relevance

The fiscal expenditure is divided according to the expenditure analysis classification methods of

Nepal, Thailand, Cambodia and other countries. This is combined with settings of class, section and item in China's current government revenue and expenditure classification, and in accordance with their degree of climate relevance.

(1)High relevance: The primary or dedicated goal of expenditure is directly related to countermeasures taken to combat climate change. These include renewable energy; natural ecological protection; natural forest protection; the returning of farmland to forests and grazing land to grassland; energy conservation and utilization, the provision of living assistance against natural disasters; disease prevention and control; emergency treatment for sudden public health events; basic public health services; major and dedicated public health projects; forestry; disaster prevention and mitigation; and so on.

(2)Medium relevance: The secondary or partial target of expenditure is related to countermeasures taken to combat climate change. These include water conservation; energy management services; development and reform in general public services; environmental protection and management services; basic research; other public health expenditure

excluding ones related to height, planning and protection of key national scenic spots; planning and management of urban and rural communities; facilities for urban and rural communities; south-to-north water diversion; railways; and so on.

(3)Low relevance: this includes or involves expenditure related to countermeasures taken to combat climate change, such as financial and statistical information affairs in general public services; science and technology management services in science and technology expenditure; technology conditions and services; urban and rural community management affairs in urban and rural communities expenditure; agricultural administrative operation in expenditure for agriculture, forestry, water; expenditure for poverty alleviation; and so on.

(4)No relevance: expenditure that is unrelated with countermeasures to combat climate change include NPC affairs; CPPCC affairs' human resource affairs in general public service; defense expenditure; public security expenditure such as public security organs (PSB, procuratorial organs and people's courts); expenditure on culture, sports and media; and so on. Expenditures with no relevance here also contain unidentifiable ones.

3. Climate relevance analysis of the existing government revenue and expenditure items

Table 5-4 Climate relevance of Government Revenue and Expenditure

Section-Level Subjects	High relevance	Medium relevance	Low relevancy	No relevance
I. Expenditure on general public services		V	V	V
II . Diplomacy expenditure		V	V	V
III . Defense expenditure				V
IV . Public security expenditure				V
V . Education expenditure				V
VI . Science and technology expenditure		V	V	
VII . Expenditure for culture, sports and media				V
VIII . Expenditure for social security and employment		V		V

IX . Expenditure for medical treatment, public health and family planning	V	V	V	V
X . Expenditure for energy conservation and environmental protection	V	V		
XI . Expenditure for urban and rural communities			V	V
XII . Expenditure for agriculture, forestry and water	V	V	V	
XIII. Expenditure for traffic transportation				V
XIV. Expenditure for resource exploration information			V	V
XV. Expenditure for business service industry				V
XVI. Financial expenditure				V
XVII. Expenditure for land and marine meteorology	V	V	V	
XVIII. Expenditure for housing security				V
XIX. Expenditure for material reserves such as grain and oil				V
XX. Other expenditure				V

4. Statistical Results

In recent years, Chinese government has made the budget increasingly open and transparent. The disclosed budget content has become more and more detailed, which also offers us the basic data for executing climatic statistics. In accordance with the aforementioned method for compiling climatic statistics and the latest budget data released by the Treasury Department, our statistical results are as follows:

Excluding repayment of principal and interest of national debt, in 2013, the central government expenditure with high climate relevance is RMB 24.054 billion, accounting for 1.31 percent; moderately relevant expenditure is RMB 114.212

billion, accounting for 6.24 percent; the expenditure at low relevance is RMB 318.378 billion, accounting for 17.39 percent; and the expenditure at no climate relevance is RMB 1373.792 billion, accounting for 75.05 percent.

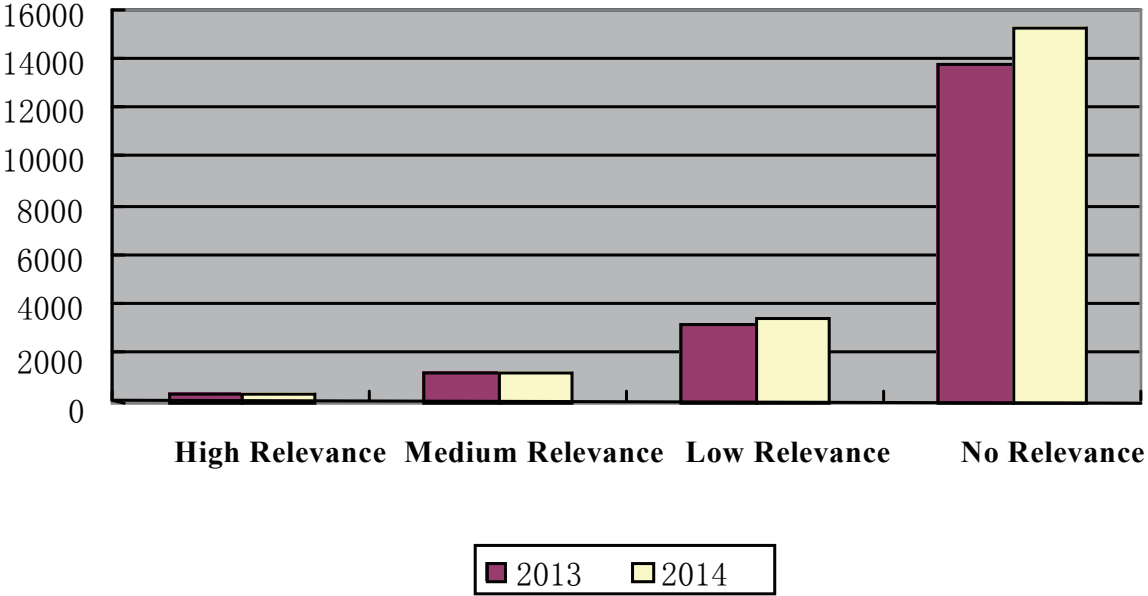
In 2014, and again excluding expenditure on repayment of principal and interest of national debt, the central government expenditure at high climate relevance is RMB 29.069 billion, accounting for 1.46 percent; expenditure at medium relevance is RMB 108.942 billion, accounting for 5.46 percent; low-relevance expenditure is RMB 337.416 billion, accounting for 16.91 percent; and the expenditure at no relevance is RMB 1520.385 trillion, accounting for 76.18 percent.

Table 5-4 The Central Expenditure Divided According to Degree of Climate Relevance

Unit: RMB 100 million yuan

	High Relevance	Medium Relevance	Low Relevance	No Relevance	Total
2013	240.54	1142.12	3183.78	13737.92	18304.36
2014	290.69	1089.42	3374.16	15203.85	19958.12

Figure 5-3 Central Government Expenditure Classified According to Climate Relevance(Unit:100 millionRMB)



Data sources: *Report on the Central and Local Budget Performance in 2013 and the Central and Local Drafted Budgets in 2014* issued by the Ministry of Finance, and the budget sheet on central public finance expenditure in 2014. The

2014 data is on budget while the 2013 data is on budget performance. The central expenditure here does not include expenditure on repayment of principal and interest of national debts.

VI. Summary of relevant international experiences of CPEIR

As part of the China CPEIR, a supporting report examining international experiences of CPEIR was also being prepared. This section summarized the experience and lessons learnt from the CPEIRs of selected countries, including Cambodia, Bangladesh, Thailand, Nepal, Samoa and Indonesia.

(I) Implementing National Climate Public Expenditure and Institutional Reviews

The Climate Public Expenditure and Institutional Review (CPEIR) methodology was built on the Public Expenditure Review methodology developed by the World Bank. This method involves the analysis of allocation, management and results of public expenditure, and is especially appropriate for analyzing public expenditure between governments. Government commissions established by each country are committed to implementing climate-related public expenditure, while financial sector representatives manage this expenditure and related institutional arrangement.

The CPEIR approach, which combines the review of public expenditure and institutional arrangement, is a major methodological innovation. Identifying climate-related expenditure, CPEIR categorized them based on their climate relevance. These classifications are inevitably subjective; different interpretations may give rise to different public expenditure analyses. Current public fiscal management systems, as well as the availability of data, also affect the analysis of expenditure.

(II) Formulation of Climate-Related Public Expenditure Policy

It is observed from international research works that every country formulates climate policy under the guidance of the UNFCCC. Each national climate change policy reflects specific national conditions, including economic development and specific

geographical situations, and all have one feature in common: the policies are integrative, without strongly prioritizing particular policies nor engaging in clear policy sequencing. National climate policy outlines the different policies of relevant departments, such as transportation, energy, agriculture, water management, and others.

(III) Arrangement of Climate-Related Public Expenditure System

On behalf of national governments, environmental protection ministries are responsible for developing and drafting climate policies and institutional arrangement. However, unlike planning and finance ministries, these ministries have a limited effect. To combat this, commissions are set up to coordinate climate policies, influence different ministries' climate-related expenditure patterns, establish proper incentives, and enhance ministries' ability to evaluate climate-related priorities. In order to make sure local situations are reflected in climate-related expenditure, the system employs decentralized and dispersed rights. But transparency and accountability of national institutions' responses are still limited.

One question raised in the CPEIR study is how much information and how many human resources are needed to engage in climate-financing management. Expanding levels of capital inflow dispersal and the lack of cooperation between donors bring about challenges for collaboration. Even though international funding dedicated to climate change only takes up a small portion of total climate funding, it is necessary to establish proper institutional arrangement to manage international funding.

(IV) Analysis of Climate-Related Expenditure

The main contribution of CPEIR's analysis is the assessment of the share taken up by climate-related public expenditure – as defined by researchers – in total government expenditure. Climate-related public expenditure accounts for about 2.7 percent of public expenditure in Thailand according to the

country's CPEIR report, while in Bangladesh this figure is 16.9 percent. Different countries have discrepant calculation and classification methods, which affect comparisons, while different national conditions influence the level of climate-related expenditure. Climate-related expenditure of considerable size is reflected in ministries' total expenditure, and the allocation and scale are influenced by ministerial budgets rather than by climate policies. With economic development, infrastructure financing will begin relying on private sector investment instead of public funds. For example, Thailand's investments in renewable energy and the public transport network are mainly accomplished by public-private partnerships rather than the financial budget, while in Samoa, renewable energy investments depend primarily on grants.

Various ministries and departments undertake activities in climate-related expenditure. For instance in Bangladesh, 37 government agencies are engaged in climate change-related activities. From the cases of the five countries discussed, the supporting report concludes that 60-80 percent of climate-related expenditure is assumed by three ministries. In Nepal and Bangladesh, local government agencies are responsible for the biggest share of climate expenditure, while in Thailand, the Royal Irrigation Department plays that same role. Samoa's Electric Power Corporation works on energy-related fields and is one of the three largest agencies undertaking climate-related expenditure.

As to the financial sources of climate-related expenditure, donors' contributions to climate financing are directed more toward extra-budgetary funds. The three countries assessed the proportions of expenditure allocated to climate mitigation and adaptation, and the results show that funds for climate adaptation activities account for 70-80 percent, while 20-30 percent go toward mitigation activities.

(V) Suggestions on Reform of Climate Policies and Institutional Arrangement

The main findings of CPEIR are that climate

policies inform the overall content of climate-related expenditure. Governments should adopt strategic approaches to develop policies relating to climate change adaptation and reducing climate risks. Planning and fiscal mechanisms play major roles in public investment and policy development at the ministerial and local governmental levels. All aforementioned countries have covered national climate change strategies in their CPEIR reports.

Carrying out institutional arrangement reforms dedicated to addressing climate change, alongside reforms on existing project management can be very effective. CPEIRs of Samoa and Bangladesh recommend establishing an annual inspection report, which would cover the development of new climate-related policies among relevant ministries, the disclosure of the latest trends in climate-related expenditure, and the current outlook of climate funding.

There is major institutional overlap between agencies responsible for disaster risk management, and agencies responsible for climate change adaptation, which makes reform a necessity. CPEIRs advocate the research and development of priority ministries' skills in assessing policy, testing performance and evaluating climate change prospects. CPEIRs stress the need to strengthen local-level stakeholders' awareness of climate change. The report suggests that local government agencies implement vulnerability assessment, analyze the impact of climate change on different regions, and ensure funding is used in priority areas.

Bangladesh proposed to assess capacity-building and compare the advantages of different regions in managing large projects. Local government should determine the effectiveness of climate adaptation expenditure. The nation's parliamentary committee plays an important role in implementing and developing government's climate policies.

Regarding fiscal management, all the reports on climate-related public expenditure and systems claim there is no need for government to develop new budgetary systems to solve climate change problems. The introduction of functional markers

attached to climate-related expenditure helps track funding decisions. The report also proposed to introduce output indicators to measure the quality of climate-related spending to assess its efficiency.

The Bangladeshi CPEIR recommends the government and founders of funds work together to ensure donations are used more professionally. In addition, funding should be directed toward specific ministries to avoid duplication.

(VI) Implementation of Future CPEIRs

Implementation of national CPEIRs should be encouraged, and countries should follow the overall CPEIR methodology. More details should be explored in future CPEIRs. In addition to examining expenditure clearly related to climate change, other types of expenditure will also need examination, taking country-specific policy objectives into consideration.

The existence of different government policies require a more flexible CPEIR methodology, which may also help contribute more to formulating the international definition of climate-related expenditure. Rather than focus on climate-related expenditure, it is more important to reposition expenditure considered irrelevant.

The current report establishes a relationship between budgetary expenditure and climate change, but it ignores some indirect relationships, such as those between tax policies and climate change, and between tax expenditure and cooperation among firms. Subsequent studies should attach more importance to institution and management analyses.

The current CPEIR methodology does not indicate if the budget allocation system is appropriate, because it lacks adequate statistics on household expenditure as well as both government and private-sector investments. In the future, expect to see more climate-related expenditure allocated to address poverty.

Very few of the existing CPEIRs highlight the

international community's debate on climate change. A key challenge for future international debates is about how to explore development of climate-financing mechanisms in the context of existing national budgetary systems, in order to reduce donors' risks of being the victims of fraud.

VII. Lessons from selected countries' CPEIR for China

By analyzing the CPEIRs of five selected countries in the Asia-Pacific region, some lessons for China's future climate-related public expenditure can be drawn:

(I) Implement National CPEIR Report

The report should cover many areas, including climate policies, climate institutional arrangement, public financial management, and national climate funds disputes, and how to truly integrate climate-related expenditure into budgetary management.

(II) Strengthen Fiscal Management

Introduce output indicators to assess the efficiency and quality of climate-related expenditure, and eventually curtail the extensive way of using funding. Appoint a special agency to manage all climate-related budgets to avoid duplication and to use climate funding more professionally.

(III) Improve and Formulate Relevant Climate Policies and Institutional Arrangement

Specific ministries, such as the MEP, and others should be designated to draft climate policies and institutional arrangement, while other ministries should coordinate their development. The formulation of policies and institutional arrangement needs to take into account China's current national conditions and economic development. Such formulation should cover a national strategic action plan on climate

change, climate change policies, and ministerial climate change policies, so to ensure climate funding is mandated by government policies.

1. Clearly define and classify climate-related expenditure. As in Cambodia and other countries, expenditure can be classified into high, medium, low, and no relevance, so that allocation of government funding into different categories of climate spending can be made clear.

2. Specify national ministries, regional authorities and other government agencies to take charge of climate change activities, prepare climate budget plans for ministries and departments, and clearly identify the sources of climate funding.

3. Establish dedicated climate budget lines to ensure provision of climate funding. Introduce a rolling budget approach, so that unspent funding in one year can be carried over to the following year. This will avoid funding that was originally allocated for climate actions being used for other purposes.

4. Research possible compilation of climate budget. This means the central and local governments should prepare climate budgets that ensure climate spending makes up a certain percentage of GDP. At the same time, the national climate budget should be disaggregated into different ministries and departments, with responsibilities clarified and an accountability mechanism in place.

5. Establish a policy incentives mechanism, such as subsidies, tax rebates, tax incentives, and financing concessions to stimulate the private sector, non-state-owned units, non-governmental organizations and donors to invest in the area of climate change. This will fill the demand gap in climate funding, will explore the possibilities of Public-Private Investment Partnership, and will improve the utilization of funds.

6. Explore techniques to categorize mitigation and adaptation funds. Currently, every country has difficulties in distinguishing overlapping adaptation and mitigation funds. We should develop a scientifically sound classification method to clearly

determine expenditure types, thus providing a basis for assessing fund utilization efficiency.

(IV) Strengthen Coordination and Cooperation among Ministries, Departments and Institutions

Coordination and cooperation among climate-related key ministries needs improvement. Accountability mechanisms need to be established to manage funds in an orderly way, which includes budget planning, distribution, use, monitoring and evaluation, in order to improve fund utilization efficiency.

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Appendix I: Climate Relevance of Government Revenue and Expenditure Categories (Detailed Table)

Item	High relevant	Medium relevant	Low relevant	Not relevant
I. Expenditure on general public services		V	V	V
Consists of: NPC affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Organ services				V
• NPC sessions				V
• NPC legislation				V

• NPC supervision				V
• Capacity building for NPC deputies				V
• Work of representatives				V
• NPC's work on petitioning				V
• Enterprise operation				V
• Other expenditure regarding NPC affairs				V
CPPCC affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• CPPCC sessions				V
• Inspection of CPPCC members				V
• Participation in administration and discussion of state affairs				V
• Enterprise operation				V
• Other expenditure on CPPCC affairs				V
Affairs of government office (room) and related organizations				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Special services				V
• Special business activities				V
• Legal construction				V
• Petition letter affairs				V
• Counselor affairs				V
• Enterprise operation				V
• Other expenditure on affairs of government office (room) and related organizations				V
Development and reform affairs		V		
• Consists of: Administrative operation		V		
• General administrative management matters		V		
• Agency services		V		
• Strategic planning and implementation		V		
• Social undertakings development plan		V		
• Commodity price management		V		
• Enterprise operation		V		
• Other expenditure on development and reform affairs		V		
Statistical information services			V	

• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Special statistical operations			V	
• Statistical management			V	
• Special general investigation			V	
• Statistical sampling			V	
• Enterprise operation			V	
• Other expenditure on statistical information affairs			V	
Financial affairs			V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Budget reform operation			V	
• Fiscal treasury operations			V	
• Fiscal supervision			V	
• Information construction			V	
• Enterprise operation			V	
• Other expenditure on financial affairs			V	
Tax revenue affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Tax handling				V
• Tax registration certificate and invoice management				V
• Charges for withholding, collecting and levying taxes				V
• Tax publicity				V
• Assisting and protecting taxation				V
• Information construction				V
• Enterprise operation				V
• Other expenditure on tax revenue affairs				V
Audit affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Audit operation				V
• Audit management				V

• Enterprise operation				V
Customs affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Fee-based business				V
• Anti-smuggling activities				V
• Construction and maintenance of electronic law enforcement system at ports				V
• Information construction				V
Financial affairs				V
• Enterprise operation				V
• Other expenditure on customs affairs				V
Manpower resource affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Special government allowance				V
• Subsidizing returned overseas students				V
• Placement of officers and civil cadres transferred to civilian work				V
• Postdoctoral daily expenses				V
• Costs for introducing talents				V
• Assessment of civil servants				V
• Capacity building of civil servants to perform their duties				V
• Civil servant recruitment				V
• Integrated management of civil servants				V
• Enterprise operation				V
• Other expenditure on manpower resource affairs				V
Business affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Foreign trade control				V
• International Economics Cooperation				V
• Foreign capital management				V
• Domestic trade management				V
• Enterprise operation				V

• Other expenditure on business affairs				V
Intellectual property affairs				V
• Consists of : Administrative operation				V
• General administrative management matters				V
• Patent examination and approval				V
• National intellectual property strategy				V
• Pilot and promoting the industrialization of patents				V
• Patent enforcement				V
• Macro-management of intellectual property rights				V
• Enterprise operation				V
• Other expenditure on intellectual property affairs				V
Industrial and commercial administrative management affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Special industrial and commercial administrative management				V
• Special law enforcement and case handling				V
• Protection of consumers' rights and interests				V
• Information construction				V
• Enterprise operation				V
Quality and technical supervision, inspection and quarantine service				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Administrative law enforcement and business management of entry-exit inspection and quarantine				V
• Technical support for entry-exit inspection and quarantine				V
• Administrative law enforcement and business management of quality and technical supervision				V
• Quality and technical supervision and technical support				V
• Certification and accreditation supervision and administration				V

• Standardization management				V
• Information construction				V
• Enterprise operation				V
• Other expenditure on quality and technical supervision, inspection and quarantine service				V
Ethnic affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Special nationality work				V
• Enterprise operation				V
• Other expenditure on ethnic affairs				V
Archive affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Archives				V
• Other expenditure on archive affairs				V
Mass organization affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Factory affair publicity				V
• Rehabilitation and recuperation of labor union				V
• Enterprise operation				V
• Other expenditure on mass organization affairs				V
• Diplomacy expenditure				V
Consists of: Diplomacy management affairs				V
Institution functioning abroad				V
Foreign aid		V		
International organization				
Foreign cooperation and communication			V	
• Defense expenditure				V
• Public security expenditure				V
Consists of: Armed police				V
Police security				V
Procuratorate				V
Court system				V
Administration of justice				V

Anti-smuggling police				V
• Education expenditure				V
Consists of: Education management affairs				V
• Consists of: Administrative operation				V
• Major scientific and technological cooperation projects				V
• General administrative management matters				V
• Other expenditure on education management affairs				V
General education				V
• Consists of: Preschool education				V
• Primary school education				V
• Junior middle school education				V
• Senior middle school education				V
• Higher education				V
• Other expenditure on general education				V
Vocational education				V
• Consists of: Elementary vocational education				V
• Secondary specialized education				V
• Technical school education				V
• Higher vocational education				V
Radio and television education				V
• Consists of: Broadcast and television school				V
• Educational television station				V
• Other expenditure on radio and television education				V
Overseas education				V
• Consists of: Education for Chinese studying abroad				V
• Education of overseas students in China				V
Further education and training				V
• Consists of: Further education for teachers				V
• Cadre education				V
• Training expenditure				V
• Other further education and training				V
Other educational expenditure				V
• Consists of: Other educational expenditure				V
• Science and technology expenditure		V	V	
Consists of: Science and technology management affairs			V	

• Consists of : Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Other expenditure on science and technology management affairs			V	
Fundamental research		V		
• Consists of : Institution operation		V		
• Key basic research planning		V		
• Natural science fund		V		
• Key laboratory and related facilities		V		
• Major scientific projects		V		
• Basic research for special projects		V		
• Other expenditure for basic research		V		
Application research			V	
Technology research and development			V	
Vocational education			V	
• Consists of: Institution operation			V	
• Research and development on applied technology			V	
• Research and development on industrial technology			V	
• Commercialization and diffusion of scientific and technological achievements			V	
• Other expenditure on technology research and development			V	
Scientific condition and services			V	
• Consists of: Institution operation			V	
• Special conditions for science and technology			V	
• Other expenditure on scientific condition and services			V	
Social sciences			V	
• Consists of: Social science research institutions			V	
• Social science research			V	
• Expenditure for social science fund			V	
• Other expenditure on social science			V	
Popularization of science and technology			V	
• Consists of : Institution operation			V	
• Activity to popularize scientific knowledge			V	
• Scientific and technological activities for teenagers			V	

• Academic communication activities			V	
• Science and technology museum station			V	
• Other expenditure on popularization of science and technology			V	
Scientific and technological communication and cooperation			V	
• Consists of: International communication and cooperation			V	
• Major scientific and technological cooperation projects			V	
• Other expenditure on scientific and technological communication and cooperation			V	
• Expenditure for culture, sports and media				V
Consists of: Culture				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Library				V
• Cultural presentation and commemorative institutions				V
• Art performance troupes				V
• Cultural activities				V
• Mass culture				V
• Cultural communication and cooperation				V
• Cultural creation and protection				V
• Cultural market management				V
• Other expenditure on culture				V
Cultural relics				V
• Consists of : Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Preservation of cultural relics				V
• Museum				V
• Other expenditure on cultural relics				V
Sports				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Sports management				V
• Athletic contests				V
• Athletic training				V

• Stadium				V
• Sports exchanges and cooperation				V
• Other expenditure on sports				V
Radio, film and television				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Radio				V
• Television				V
• Film				V
Press and publication				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Newsletters				V
• Publications				V
• Copyright administration				V
• Publishing market management				V
• Other expenditure on press and publications				V
Other expenditure on culture, sports and media				V
• Consists of: Special expenditure on propaganda of cultural development				V
• Special expenditure on development of cultural industries				V
• Other expenditure on culture, sports and media				V
Expenditure for social security and employment		V		V
Consists of: Human resource and social security management affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Integrated service management				V
• Labor security supervision				V
• Employment administration affairs				V
• Social insurance business management services				V
• Information construction				V
• Social insurance agencies				V

• Labor relations and rights protection				V
• Regulation and arbitration of labor and personnel dispute				V
• Other expenditure on human resources and social security management affairs				V
Civil administration affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Support for the army and preferential treatment for the families of military personnel and martyrs				V
• Aging affairs				V
• Non-governmental organization management				V
• Administrative divisions and place names management				V
• Grassroots political power and community construction				V
• Other expenditure on civil administration affairs				V
Financial assistance to the social insurance fund				V
• Consists of: Financial assistance for basic endowment insurance fund				V
Complement the national social security fund				V
• Consists of: Supplementing fund with public finance budget				V
Retirement in administrative institutions				V
• Consists of: Retirement in administrative institutions under centralized management				V
• Retirement in public institutions				V
• Management organization for the retired				V
• Retirement in administrative institutions under decentralized management				V
• Other expenditure on retirement in administrative institutions				V
Subsidies for enterprise reform				V
• Consists of: Subsidies for closed and bankrupt enterprises				V
Employment subsidies				V
• Consists of: Supporting public employment services				V

• Subsidies for vocational training				V
• Subsidies for occupation introduction				V
• Social insurance subsidies				V
• Subsidies for public welfare positions				V
• Small guaranteed loans with discounted interest				V
• Supplementary microfinance guarantee fund				V
• Specific expenditure on employment policy				V
• Probationary employment subsidies				V
• Subsidies for high-skilled talent cultivation				V
• Other expenditure on employment subsidy				V
Pension				V
• Consists of: Death pension				V
• Disability pension				V
• Living subsidies for demobilized ex-soldiers				V
• Expenditure on public institutions providing preferential treatment				V
• Other expenditure on preferential treatment				V
• Arrangement for retired veterans				V
Social welfare				V
• Consists of: Child welfare				V
• Elderly welfare				V
• Prosthesis orthopedics				V
• Funeral and interment				V
• Social welfare institutions				V
Careers for the disabled				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Rehabilitation of the disabled				V
• Employment and poverty alleviation for the disabled				V
• Sports for the disabled				V
• Other expenditure for disabled affairs				V
Minimum living allowance for urban residents				V
• Consists of: Expenditure for providing minimum living allowance to urban residents				V
• Temporary subsidies to urban residents for guaranteeing a minimum living standard				V

Other urban living relief				V
• Consists of: Relief for street people				V
• Other expenditure on urban living relief				V
Natural disaster relief	V			
• Consists of: Natural disaster subsidies from central government	V			
• Other expenditure on natural disaster relief	V			
Red Cross affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Other expenditure on Red Cross affairs				V
Other rural relief				V
• Consists of: Other expenditure on rural relief				V
Other expenditure on social security and employment				V
• Consists of: Other expenditure on social security and employment				V
• Expenditure for medical treatment, public health and family planning	V	V		V
Consists of: Management affairs for medical treatment and public health				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Other expenditure on management affairs for medical treatment and public health				V
Public hospitals				V
• Consists of: General hospitals				V
• Traditional Chinese medicine (ethnic) hospitals				V
• Occupational disease prevention hospitals				V
• Psychiatric hospitals				V
• Maternity hospitals				V
• Children's hospitals				V
• Other specialized hospitals				V
• Professional hospitals				V
• Other expenditure for public hospitals				V
Basic-level medical and health organizations				V
• Consists of: Urban community health agencies				V

• Township hospitals				V
• Other expenditure for basic-level medical and health organizations				V
Public health	V	V		
• Consists of: Organizations for disease prevention and control	V			
• Maternity and child care institutions		V		
• Emergency treatment agencies		V		
• Other professional public health agencies		V		
• Basic public health services	V			
• Major special public health	V			
• Emergency treatment for sudden public health events	V			
• Other expenditure on public health		V		
Medical security				V
• Consists of: Medical subsidies to entitled groups				V
• Basic medical insurance for urban residents				V
• Urban and rural medical assistance				V
Traditional Chinese medicine				V
• Consists of: Dedicated expenditure to traditional Chinese medicine (ethnic medicine)				V
• Other expenditure on traditional Chinese medicine				V
Population and family planning services				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Research on population planning and development strategies				V
• Rewards to families following family planning policies				V
• Construction for population and family planning information system				V
• Family planning and reproductive health promotion project				V
• Comprehensive treatment to sex ratio at birth				V
• Construction of population and family planning service network				V
• Expenditure on contraceptives for family planning				V

• Expenditure on population and family planning publicity and education				V
• Management and services of family planning concerning the floating population				V
• Assessment of the target-oriented responsibility system of population and family planning				V
• Other expenditure on population and family planning services				V
Food and pharmaceuticals supervision and administration affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Pharmaceutical affairs				V
• Cosmetics affairs				V
• Medical devices affairs				V
• Food security affairs				V
• Enterprise operation				V
• Other expenditure on food and pharmaceuticals supervision and administration affairs				V
Other expenditure on medical care and public health				V
• Expenditure for energy conservation and environmental protection	V	V		
Consists of: Environmental protection management affairs		V		
• Consists of: Administrative operation		V		
• General administrative management matters		V		
• Agency services		V		
• Environmental protection propaganda		V		
• Regulations, planning and standards on environmental protection		V		
• International cooperation and implementation of international agreements on environmental protection		V		
• Administrative license for environmental protection		V		
• Other expenditure on environmental protection management affairs		V		
Environmental monitoring and surveillance	V			
• Consists of: Review and supervision of EIA (environmental impact assessment) on construction project	V			

• Nuclear and radiation safety supervision	V			
Pollution prevention and control	V			
• Consists of: Atmosphere	V			
• Water	V			
• Noise	V			
• Solid waste and chemicals	V			
• Expenditure on sewage charge arrangements	V			
• Other expenditure on pollution prevention and control	V			
Natural ecological protection	V			
• Consists of: Rural environmental protection	V			
• Nature reserves	V			
Natural forest protection	V			
• Consists of: Forest management and protection	V			
• Subsidies for social insurance	V			
• Expenditure and subsidies under policy and for society	V			
• Natural forest protection project construction	V			
Returning farmland to forests	V			
• Consists of: Cash for the act of returning farmland to forests	V			
• Subsidies for the act of returning farmland to forests by compensating farmers with grain-equivalent cash	V			
• Project construction for returning farmland to forests	V			
• Other expenditure for returning farmland to forests	V			
Sandstorm and desert control	V			
• Consists of: Construction of sandstorm source control project in Beijing and Tianjin	V			
Return grazing land to grassland	V			
• Consists of: Project construction of returning grazing land to grassland	V			
Energy conservation and utilization	V			
• Consists of: Energy conservation and utilization	V			
Pollutants discharge reduction	V			
• Consists of: Environmental monitoring and information	V			

• Supervision of environmental law enforcement	V			
• Dedicated expenditure for pollutants discharge reduction	V			
• Dedicated expenditure for cleaner production	V			
Renewable energy	V			
• Consists of: Renewable energy	V			
Comprehensive utilization of resources	V			
• Consists of: Comprehensive utilization of resources	V			
Energy management services		V		
• Consists of: Administrative operation		V		
• General administrative management matters		V		
• Energy strategic planning and implementation		V		
• Industrial management of energy		V		
• Energy management		V		
• Petroleum reserve development management		V		
• Rural power grid construction		V		
• Enterprise operation		V		
• Other expenditure on energy management services		V		
Other expenditure on energy conservation and environmental protection	V			
• Consists of: Other expenditure on energy conservation and environmental protection	V			
XI. Expenditure for urban and rural communities		V	V	
Consists of: Urban and rural community management services			V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Preparation and supervision of the engineering construction standard specification			V	
• Engineering construction management			V	
• Market regulation in the municipal utility industries			V	
• Planning and protection of key national scenic areas		V		

• Supervision of residential construction and real estate market			V	
• Certified qualification registration and qualification review			V	
• Other expenditure on urban and rural community management services			V	
Planning and management of urban and rural communities		V		
• Consists of: Planning and management of urban and rural communities		V		
Urban and rural community facilities		V		
• Consists of: Infrastructure construction in small towns		V		
• Other expenditure on urban and rural community facilities		V		
Other expenditure on urban and rural communities			V	
• Consists of: Other expenditures on urban and rural communities			V	
• Expenditure for agriculture, forestry and water	V	V	V	
Consists of: Agriculture	V		V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Enterprise operation			V	
• Operation of agricultural reclamation			V	
• Technology promotion			V	
• Pest and disease control			V	
• Quality control of agricultural products			V	
• Law enforcement and supervision			V	
• Statistical monitoring and information service			V	
• Agriculture industry business management			V	
• Foreign communication and cooperation			V	
• Disaster relief	V			
• Subsidies for agricultural production materials and technology			V	
• Insurance subsidies for agricultural production			V	
• Organized and industrialized operation in agriculture		V		
• Processing and marketing of agricultural products			V	

• Public welfare establishments in rural areas			V	
• Comprehensive financial subsidies			V	
• Protection and utilization of agricultural resources	V			
• Rural road construction			V	
• Comprehensive subsidies to agricultural materials			V	
• Subsidies to fisheries due to the price reform of oil			V	
• Subsidies to college graduates to serve the grassroots			V	
• Other agricultural expenditure			V	
Forestry	V			
• Consists of: Administrative operation	V			
• General administrative management matters	V			
• Agency services	V			
• Forestry institutions	V			
• Forest cultivation	V			
• Promotion of forestry technology	V			
• Forest resources management	V			
• Forest resources monitoring	V			
• Forest ecological benefit compensation	V			
• Forest nature reserve	V			
• Animal and plant protection	V			
• Wetland protection	V			
• Forest law enforcement and supervision	V			
• Prevention and control of desertification	V			
• Forestry quality control	V			
• Preparation and supervision of the engineering construction standard specification	V			
• Forestry engineering and project management	V			
• Foreign cooperation and communication of forestry	V			
• Information management	V			
• Policy development and propaganda of forestry	V			
• Fund audit and inspection of forestry	V			
• Public expenditure of forest districts	V			
• Forestry loan with discount interest	V			

• Subsidies to forestry due to the price reform of oil	V			
• Forest insurance premium subsidies	V			
• Forestry disaster prevention and mitigation	V			
• Other forestry expenditure	V			
Water conservation		V		
• Consists of: Administrative operation		V		
• General administrative management matters		V		
• Agency services		V		
• Business management of water conservancy industry		V		
• Water conservancy construction		V		
• Operation and maintenance of water conservancy projects		V		
• Preliminary work of water conservancy projects		V		
• Law enforcement and supervision of water conservancy		V		
• Conservation of soil and water		V		
• Management and protection of water conservation		V		
• Water quality monitoring		V		
• Hydrological forecast		V		
• Flood prevention		V		
• Drought resistance		V		
• Irrigation and water conservancy		V		
• Water technology promotion		V		
• Expenditure on the arrangement of water resources		V		
• Information management		V		
• Rural drinking water for people and livestock		V		
South-to-north water diversion		V		
• Consists of: Administrative operation		V		
• General administrative management matters		V		
• South-to-North Water Diversion Project construction		V		
• Policy research and information management		V		
• Engineering check		V		
• Preliminary work		V		
• Management and protection of environment, migration and water		V		

Poverty alleviation			V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Rural infrastructure construction			V	
• Production development			V	
• Reward and interest subsidy of poverty alleviation loan			V	
• Poverty alleviation utilities			V	
• Other expenditure on poverty alleviation			V	
Overall development of agriculture			V	
• Consists of: Organization operation			V	
• Land governance			V	
• Industrialized operation			V	
• Other expenditure on overall development of agriculture			V	
Comprehensive rural reform			V	
• Consists of: Subsidies to the act of “One Case, One Meeting” of village			V	
Other expenditure on agriculture, forestry and water			V	
• Consists of: Other expenditure on agriculture, forestry and water			V	
XIII. Expenditure for traffic transportation		V	V	
Consists of: Highway and waterway transport			V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Highway maintenance			V	
• Waterway maintenance			V	
• Secure communications			V	
• Navigation management of Three Gorges Reservoir			V	
• Navigation management			V	
• Ship inspection			V	
• Rescue and salvage			V	
• Maritime management			V	
• Navigation mark development expenditure			V	
• Other expenditure on highway and waterway transportation			V	
Railway transportation		V		
• Consists of: Administrative operation		V		

• General administrative management matters		V		
• Agency services		V		
• Construction of the railway network		V		
• Railway safety		V		
• Other expenditure on railway transportation		V		
Civil air transportation			V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Airport construction			V	
• ATC (air traffic control) system construction			V	
• Civil aviation safety			V	
• Dedicated transportation of civil aviation			V	
Subsidy to transportation due to price reform of oil			V	
• Consists of: Subsidies for urban public transport			V	
• Subsidies for rural road passenger transportation			V	
• Subsidies for taxis			V	
• Other subsidy expenditure due to price reform of oil			V	
Expenditure of postal industry			V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Industry supervision			V	
• Universal and special postal service			V	
• Other postal expenditure			V	
Expenditure of vehicle purchase tax			V	
• Consists of : Expenditure on road vehicle purchase tax for infrastructure construction such as highways			V	
• Other expenditure on vehicle purchase tax			V	
Other transportation expenditure			V	
• Consists of: Other transportation expenditure			V	
XIV. Expenditure for resource exploration information			V	V
Consists of: Exploration and development of resources			V	
• Consists of: Coal exploration and washing			V	
• Exploration and exploitation of oil and gas		V		

• Exploration and mining of ferrous metal ore			V	
• Exploration and mining of non-metallic mineral			V	
• Other expenditure on resource exploration industry			V	
Manufacturing industry				V
• Consists of: Pharmaceutical industry				V
• Manufacturing industry for communications equipment, computers and other electronic equipment				V
• Transportation equipment manufacturing industry				V
• Manufacturing industry for electrical machinery and equipment				V
• Manufacturing industry of chemical materials and chemical products				V
• Non-ferrous metal smelting and rolling processing industry				V
Construction industry				V
• Consists of: Other construction expenditure				V
Supervision and management of industry and information technology				V
• Consists of: administrative operation				V
• General administrative matters				V
• Agency services				V
• Emergency readiness				V
• Personnel communication				V
• Radio supervision and management				V
• Industry and information technology support				V
• Industry supervision				V
Supervision on safety production				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Special projects from State Security Committee of the State Council				V
• Special project on safety supervision and monitoring				V
• Coal security				V
• Other expenditure on safety production supervision and management				V

State-owned assets supervision				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Special project of state-owned enterprises supervisory board				V
• Special management of central enterprises				V
• Other expenditure on state-owned assets supervision				V
Expenditure for supporting small and medium enterprises (SME) development and management				V
• Consists of: Technology innovation fund of technology-based SME				V
• SME special development project				V
• Other expenditure for supporting SME development and management				V
Other expenditure on electric power information of resource exploration				V
• Consists of: Gold Affairs				V
• Loan with discounted interest of construction project				V
• Expenditure on technical transformation				V
• Other expenditure on electric power information of resource exploration				V
XV. Expenditure for business service industry				V
Consists of: Commercial distribution affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Market monitoring and information management				V
• Loan with discounted interest on civilian trade and civilian goods				V
• Enterprise operation				V
• Other expenditure on commercial distribution services				V
Expenditure on tourism management and services				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Agency services				V
• Business management of tourism industry				V

• Other expenditure on tourism management and service				V
Expenditure on foreign development services				V
• Consists of: Other expenditure on foreign development services				V
Other expenditure such as the commercial service industry				V
• Consists of: Infrastructure construction of the service industry				V
• Other expenditure such as commercial service industry				V
XVI. Financial expenditure				V
Consists of: Administrative expenditure of financial sectors				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Enterprise operation				V
• Other administrative expenditure in the financial sector				V
Expenditure on financial sector supervision				V
• Consists of: Supervision of key financial institutions				V
• Financial audit and case processing				V
• E-construction in financial sector				V
• Employees qualification examination				V
• Other supervision expenditure of financial sector				V
• Financial development expenditure				V
• Other financial expenditure				V
XVII. Expenditure for land and marine meteorology	V		V	
Consists of: Land and resources affairs	V		V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Planning and management of land and resources			V	
• Land resources survey			V	
• Utilization and protection of land resources	V			
• Social services in land and resources industry			V	
• Business management of land and resources industry			V	

• Geology and mineral resources survey			V	
• Financial discount of geological restructuring project			V	
• Expenditure on special revenue arrangements of mineral resources			V	
• Enterprise operation			V	
• Other expenditure on land and resources services			V	
Marine management services	V		V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	
• Management and utilization of sea areas			V	
• Protection and monitoring of marine environment	V			
• Marine survey and assessment			V	
• Maritime rights and interest maintenance			V	
• Marine law enforcement supervision			V	
• Marine disaster prevention and mitigation			V	
• Marine satellite			V	
• Polar research			V	
• Research on marine mineral resources exploration			V	
• Expenditure for sea area utilization			V	
• Seawater desalination			V	
• Enterprise operation			V	
• Other expenditure on marine management affairs			V	
Surveying and mapping affairs			V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Basic surveying and mapping			V	
• Aerial photography			V	
• Surveying and mapping project construction			V	
• Enterprise operation			V	
• Other expenditure on surveying and mapping services			V	
Earthquake affairs	V		V	
• Consists of: Administrative operation			V	
• General administrative management matters			V	
• Agency services			V	

• Earthquake monitoring			V	
• Earthquake prediction			V	
• Earthquake disaster prevention	V			
• Earthquake emergency rescue	V			
• Earthquake environment exploration			V	
• Earthquake disaster mitigation information management			V	
• Basic management of earthquake disaster mitigation			V	
• Earthquake utilities			V	
• Other expenditure on earthquake affairs			V	
Meteorological services	V			
• Consists of: Administrative operation	V			
• General administrative management matters	V			
• Agency services	V			
• Meteorological utilities	V			
• Research and application of meteorological technology	V			
• Meteorological detection	V			
• Meteorological information transmission and management	V			
• Weather forecasts	V			
• Meteorological services	V			
• Support and maintenance of meteorological equipment	V			
• Meteorological infrastructure construction and maintenance	V			
• Meteorological satellite	V			
• Meteorological regulations and standards	V			
• Audit and inspection of meteorological funds	V			
• Other expenditure on meteorological services	V			
• Other expenditure on land and marine meteorology			V	
XVIII. Expenditure for housing security				V
Consists of: Expenditure on affordable housing projects				V
• Consists of: Low-rent housing				V
• Shantytowns renovation				V
Earthquake affairs	V			V
• Nomad settlement project in ethnic minority areas				V

• Rural dilapidated housing rehabilitation				V
• Public housing				V
• Other expenditure of affordable housing projects				V
Expenditure on housing reform				V
• Consists of: Housing provident fund				V
• House-rental subsidies				V
• House-purchase subsidies				V
XIX. Expenditure for material reserves such as grain and oil				V
Consists of: Grain and oil affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Expenditure on finance and auditing of grain				V
• Grain information statistics				V
• Dedicated grain business activities				V
• Interest subsidization about financial credit of grain				V
• Enterprise operation				V
Goods and materials affairs				V
• Consists of: Administrative operation				V
• General administrative management matters				V
• Railway special line				V
• Expenditure for armed police and military personnel for protecting warehouse				V
• Building of warehouse				V
• Security and protection of warehouse				V
• Enterprise operation				V
• Other expenditure on goods and materials				V
• Grain & oil reserve				V
XX. Other expenditure				V



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