



The Resistance of Green Transformation and Development

1 THE BACKWARD AND LAGGING BEHIND CONCEPT OF DEVELOPMENT

The concept of development also has a significant impact on the formation and transformation of the mode of economic development. The traditional development concept maintains the traditional development mode, and once formed, it will also generate inertia, which is difficult to eliminate in the short term and is not conducive to the transformation of the development mode. For China, the concept of green development is an imported product. When developed countries issued policies and regulations to support green development, regulated the activities of enterprises and vigorously promoted green development, the concept of green development in China was still weak and had not been widely spread in the whole society.

1.1 Focus on GDP Growth

The reform and opening up established the guiding ideology of taking economic construction as the center, further strengthened the guiding ideology of economic development oriented by GDP goals, determined the GDP growth as the indicator to measure the achievements of economic and social development and evaluate the performance of cadres, and led to the blind worship of GDP by governments and officials

at all levels from the central government to the local government. The national economic accounting system, which takes GDP as the main index, only reflects the total amount of national economic income. It does not reflect the contribution of natural resources to economic development and the huge economic value of ecological resources. It does not reflect the economic losses caused by the deterioration of the ecological environment, nor the depletion and depreciation of natural resources. The cost of environmental improvement invested by various departments is included in the total output value and added value of the department, and the input for disaster repair is also included in the GDP, which leads to a certain degree of false growth. In 2004, the cost of environmental degradation nationwide reached 511.8 billion Yuan, accounting for 3.05% of GDP. The cost of natural resource depletion and environmental degradation led to a 1.8% reduction in the original GDP in 2004. Taking this as the assessment index, it is easy to have the tendency of one-sided pursuit of development speed and neglect of development benefit, one-sided pursuit of natural output and neglect of environmental return, which is not conducive to changing the development mode and improving the quality and efficiency of economic development.

The negative effects of blindly pursuing GDP have gone beyond the capacity of the environment and society. The answer is already given in the form of smog, heavily polluted rivers and groundwater, and the depletion of vast amounts of resources, straining the relationship between population and resources.

1.2 Pure Focus on Heavy Investment Promotion and Capital Introduction

In order to meet the needs of performance evaluation and personal promotion, some local officials at all levels have formulated preferential policies, including free or low-cost use of land, water and electricity, to attract a large amount of investment in industrial projects, especially large-scale industrial projects with huge amount of investment. The launch of such projects has a significant impact on local GDP growth. Therefore, many local governments constantly increase investment, carry out redundant construction, and expand the heavy industry and chemical industry that consume high energy and pollute a lot of land in order to set up cities and set up projects through industry. It only focuses on attracting investment but ignores the negative impact on

local environment caused by the new pollution sources caused by many imported construction projects.

1.3 *Pure Focus on the Fiscal Revenue*

Since the implementation of the tax sharing system in 1994, the fiscal revenue of local governments has decreased significantly, resulting in the mismatch between the administrative and financial powers of local governments, especially in the fields of environmental protection, medical and health care, basic education, social security and other public services. In order to increase local fiscal revenue and achieve higher GDP, local governments often shelter local large taxpayers and polluting enterprises in the pillar industries of local fiscal revenue, ignoring the inefficient abuse and waste of resources and the serious consequences to the environment. In some cases, they even offer listing protection for enterprises by not allowing environmental law enforcement personnel to investigate and punish them, and openly restrict environmental law enforcement departments from administrating according to law. As a result, some “special” large polluters cannot get effective environmental supervision for a long time.

Through extensive economic development mode, it creates GDP achievements and pursues rapid GDP growth through a large amount of material input. It ignores the quality of GDP, human environment and resource and environment indicators, and takes resource and environment as the price to blindly obtain from nature, causing serious ecological and environmental problems.

1.4 *The Concept of Green Consumption Is Relatively Weak*

China’s awareness of ecological environment is generally low, making it difficult for the concept of resource conservation and environmental protection to penetrate into the conscious actions and behaviors of governments at all levels, production enterprises and the public. The consumption psychology of conformity, comparison and vanity leads to the increasingly prevalent unsustainable consumption behaviors such as premature consumption, over-consumption and luxury consumption.

First, the government’s green consumption concept is missing. For the sake of economic development, the government has carried out super-standard construction in the process of urbanization, carried out

image projects and landmark buildings, and “sought for novelty, sought for greatness, sought for foreign style and sought for novelty” in architectural style. This not only causes unnecessary waste, but also affects the production field and technological innovation direction. The construction of the new city area is in full bloom, and the urban construction has become a phenomenon of “spreading the big pancake”. Large squares, wide roads, spacious office buildings and numerous buildings have occupied a large amount of high-quality farmland and forest resources in the suburbs.

Second, social public consumerism is increasingly prevalent. The public take consuming more material goods and occupying more social wealth as the label of success and the symbol of happiness in life, and spend freely and without restraint in life practice to show their identity and social status by pursuing new, unique and special consumption behaviors. He Xiaoqing. *Research on Consumer Ethics*. Shanghai Sanlian Bookstore, 2007, page. 72. There are forms of spendthrift consumption, extravagant consumption, advanced consumption, ostentatious consumption of high consumption. Disposable products are springing up like mushrooms, and even many durable consumer goods, such as refrigerators, cameras, mobile phones, cars and so on, are being updated quickly. As soon as new products with more functions and novel styles come into the market, old consumer goods are quickly discarded. The pursuit of famous brands, luxury packaging, disposable or quasi-disposable, throw-away items are more and more, which not only greatly increased the consumption of resources, but also caused a large number of household garbage, so that human life in a “garbage world”.

Third, enterprises cater to the consumer’s “consumerism” demand. With the basic characteristics of “more consumption, less accumulation”, consumerism has rapidly spread to developing countries and China after the prevalence of capitalist countries. In modern society, the business philosophy of the customer is god seemingly is to give consumers a noble status, but in fact is the pronoun of consumer supremacy. In order to make profits, enterprises constantly create hot consumption spots and produce a large number of products to meet consumers’ consumption desire.

This mode of mass production-mass consumption-mass discarding intensifies the contradiction between the infinity of consumption desire and the limitation of resources. Not paying attention to the environmental problems caused by consumption will inevitably cause greater

problems to the environment, imbalance between man and nature, and lead to ecological crisis.

2 OBSOLESCENCE AND FETTERS OF THE OLD GOVERNANCE SYSTEM

2.1 *The Ecological Environment Management System Has Not Been Rationalized*

China's multi-sector management of ecological environment is characterized by decentralization, departmentalization and fragmented supervision. In the field of ecological and environmental protection, a multi-department and multi-level management system combining unified management and classification is implemented, which involves environmental protection, land, forestry, agriculture, water conservancy and other departments, with repeated and overlapping functions. For example, the functions of pollution prevention and control are scattered in the departments of ocean, fishery, public security and transportation, the functions of resource protection are scattered in the departments of mineral resources, forestry, agriculture and water conservancy, and the functions of comprehensive regulation and management are scattered in the departments of national development and reform commission, finance and land and resources. This system of overlapping functions and multiple governance needs multiple departments, with the various aspects to achieve the management of the ecological environment. However, driven by the interests of departments and regions, the phenomenon of buck-passing and avoiding responsibilities often occurs. That is to say, when something beneficial happens to us, we will rush in for more benefits. When something bad happens or a thankless labor occurs, everybody is passive antagonism even argues back and forth over trifles and mutually makes excuses. Therefore, it is imperative to establish a unified ecological environment management department.

2.2 *Uncoordinated Planning*

According to relevant statistics, there are a total of 72 laws in effect in China's legal system covering various types of planning, and 113 types of planning are stipulated, respectively, including special plans for national economic and social development, urban and rural planning, land use

planning, ecological and environmental protection planning, energy development planning, electric power planning and power grid planning. These plans belong to different administrative departments, with various types, complex system structure, various special plans isolated from each other, and it is also very difficult to coordinate in actual operation, which consumes a lot of time and technical costs, resulting in the reduction of planning timeliness and the excessive deviation between the actual implementation and planning.

2.3 *Weak Public Participation*

The public is an important force of ecological environmental protection and ecological environmental supervision. Although China has made obvious progress in public participation and government information disclosure, relevant laws, regulations and systems have been formulated to provide legal basis for public participation. But the scope and model of public participation remain limited. Influenced by China's top-down decision-making model, public participation in legislation and technical operation to be improved, public participation is limited to petitions and environmental impact assessment hearings, the release of information through the mass media and the Internet, and the involvement of environmental NGO and experts in government policies and decisions. The public participation level is not high and the participation ability is insufficient. Due to the influence of factors such as the lack of information disclosure, the public's insufficient understanding of some issues, and the information asymmetry they have mastered, the public is unable to put forward constructive opinions. Even when the public makes constructive suggestions, they sometimes get no response or attention. As a result, the public believes that their own opinions are insignificant to the decision-making of environmental governance, and their participation enthusiasm is not high, which is a mere formality, and the depth and breadth of participation is not enough to supervise and restrict the decision-making behavior of the government and affect the implementation effect and efficiency of decision-making.

To realize the modernization of natural resources and ecological environment governance, it is urgent to improve the public participation mechanism and protect the right of public participation.

2.4 *The Work of Amending Laws and Regulations Lags Behind*

Although China has basically established laws and regulations on ecological and environmental protection, there are still some problems that need to be further improved.

First, there is a lack of coordination and cooperation between laws. The incompatibility between China's laws, regulations and rules on environmental protection, the basic law and the separate law, the separate law and the detailed rules for its implementation, the national law and the local law, and the environmental law and other relevant laws are quite prominent, with overlapping, disconnection, contradictions and conflicts. For example, the *Water Pollution Prevention and Control Law of the People's Republic of China* and the *Water Law of the People's Republic of China* have contradictions and conflicts on the same issue, which directly affect the authority and effectiveness of the law. There is a lack of interaction and linkage mechanism among various economic means, such as fiscal, taxation, financial, price and compensation mechanism. As a result, it is difficult to form policy synergy, and the policy effect is limited.

Second, there are blank areas in the legislation of important ecological and environmental protection. China lacks special laws and regulations on energy conservation, water conservation, climate change, ecological compensation, wetland protection, biodiversity protection, soil and environmental protection, nuclear safety, desertification control, wildlife protection, toxic chemicals management and ozone layer protection.

Third is the lack of procedural law provisions and operability. Environmental protection laws and regulations have all legal abstraction, which leads to poor operability and inflexible application. Problems such as law enforcement responsibility is not clear, if problems arise, which department and who is responsible for, what to do, the consequences of such action are unclear; environmental laws and regulations in the field of services and consumption is not perfect or standard. Producer responsibility system needs to be included into the environmental legal system.

Fourth is poor cohesion between administrative law enforcement and the judicial system with contradiction and fault. The natural resources of our country property right ownership is not clear, which makes issues about the construction of ecological civilization like real estate registration, be lost in the endless wrangling and conflict.

Fifth is some laws and regulations already cannot adapt to the development of the real need. The legal system of ecological environment protection and resource management needs to improve such as the *Land Administration Law of the People's Republic of China*, the *Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution*, the *Water Pollution Prevention Law of the People's Republic of China*, the *Energy Conservation Law of the People's Republic of China* (hereinafter referred to as the *Energy Conservation Law*), *Circular Economy Promotion Law of the People's Republic of China* (hereinafter referred to as the *Circular Economy Promotion Law*), the *Mineral Resources Law of the People's Republic of China*, the *Forest Law of the People's Republic of China*, the *Grassland of the People's Republic of China* and *Wildlife Protection Law of the People's Republic of China*. Some supporting reform policies have not been introduced, the relevant supporting policies and measures of laws such as *Clean Production Promotion Law of the People's Republic of China*, *The Energy Conservation Law*, *the Circular Economy Promotion Law*, *The Renewable Energy Law of the People's Republic of China* (hereinafter referred to as *the Renewable Energy Law*) are not timely followed up, which results in that the implementation effect remains to be verified.

It is urgent to revise relevant laws, regulations, policies and standards to provide a basis for green development.

3 THE LACK AND DEFECT OF GOVERNANCE MECHANISM

3.1 *Lack of Market Trading Mechanism*

First is the property rights trading mechanism has not yet been established. Energy saving, carbon emission rights, emission and water rights trading system are not perfect and even missing. It is difficult to give play to the decisive role of the market allocation of resources.

Secondly, the mechanism of effective competition has not yet been established. Oil, gas, electricity and other industries are monopolized. Sales price mechanism of effective competition has not yet been established. Market transactions between power enterprises and users are limited. Energy saving, high efficiency and environmental protection units cannot be fully utilized; there is phenomenon of giving up hydro-energy, wind energy and optical energy from time to time; redundant power and power shortage coexist in some regions.

3.2 *Resource Price Mechanism Is not Sound*

Price is the basis of market resources; resources are important material foundation to the survival of human society. The formation mechanism of resource price plays an important role in regulating the distribution and use of natural resources.

The prices of natural resources and their products are unreasonable. The per capita possession of most resources in China is far lower than the world average level, but its price is lower than the international average level, failing to reflect the scarcity of China's natural resources, market supply and demand, resource scarcity degree, cost of ecological environment damage and repair efficiency, production safety cost and so on. Due to the low price of natural resources and their products, they cannot play a leverage role in the development and utilization of natural resources. As a result, in order to achieve rapid development and political achievements, some local governments tend to attract investment with low-priced natural resources. Enterprises make more profits, rely too much on energy-intensive industries, and accelerate the consumption of resources; Energy-intensive industries are accompanied by high emissions and high pollution, which aggravate environmental pollution and ecological damage, are not conducive to the improvement of resource utilization efficiency and economical use, and are not conducive to environmental protection and ecological conservation. At the same time, the low price of natural resources and their products increases the resistance to the adjustment of industrial structure, making the development cost of clean energy such as wind power generation and solar power generation and emerging industries appear relatively high, which is not conducive to the innovation of energy-saving and emission reduction technologies.

The price relation of natural resources and their products is not straightened out. The price comparison between China's resource products is unreasonable, the transmission between upstream and downstream is not smooth and the price comparison between coal, electricity, natural gas, crude oil and refined oil is not reasonable. In particular, conflicts and contradictions between coal prices and electricity prices have been accumulating for a long time, and the ex-factory price of natural gas is relatively low compared with the price of alternative energy. Coal and oil have been replaced by natural gas in many places, and strives for the processing projects that take natural gas as the raw material, leading to the

prominent contradiction between natural gas supply and demand in some areas. The disconnection between the cost of electricity and the selling price and the disconnection between the transmission and distribution price and the feed-in price makes it difficult to optimize and adjust the energy structure and restricts the optimization of the industrial structure.

Market-oriented pricing mechanism has not yet been fully formed. China's oil, electricity, water, gas and other resources are still subject to the government pricing. The government has too much control over resource prices. The government still controls the prices of some resources that could have been determined by the market. Some areas where government regulation is needed are less well regulated. In the field of energy and resources, due to the insufficient energy monopoly operation system and regulatory mechanism, the government lacks the transparent cost of price in some energy fields.

3.3 The Absence of Ecological Compensation System

Weak Ecological Compensation

First, the compensation range is narrow. Whether the current ecological compensation is reasonable or not is mainly concentrated in the fields of forest, grassland and mineral resources development. The ecological compensation of river basin, wetland and ocean is still in the initial stage, and the ecological compensation of farmland and soil has not been included in the work scope.

Second, the compensation standard is unreasonable. Compensation standard is directly related to the success or failure of ecological compensation and ecological construction. Due to the immaturity of ecological environmental value assessment technology, many compensation standards lack objectivity, with the phenomenon of high protection costs and low compensation standards. The compensation standard is fixed and unchanged within a certain period of time, and has not been timely adjusted according to the economic development, the increase of residents' income level and the change of ecological protection cost. For example, as the price of beef and mutton goes up, the balanced subsidy of grass and livestock is not enough to cover the economic loss caused by the increase of production cost and the decrease of livestock. In addition, in some areas, the compensation standard is uniform, without adaptation to local conditions, and does not adapt to the actual situation of different ecological regions.

Third, the compensation fund source channel and the compensation way are single. Ecological compensation is mainly the vertical compensation from the central government to the local government. The funds mainly come from the financial transfer payment from the central government. The compensation input from the local government, enterprises and institutions is obviously insufficient. Social compensation models such as ecological environmental damage insurance, NGO participation compensation, social donation and ecological compensation public welfare fund are seriously missing. Market-oriented compensation models are still being explored, and the inter-regional ecological compensation system has not yet been established. In addition to financial subsidies, industrial support, technical assistance, talent support, employment training and other compensation methods have not received due attention.

Fourth, the ecological compensation policy is not sustainable. China's ecological compensation is mostly in the form of projects such as returning farmland to forests, returning grazing land to grass, protecting natural forests, and controlling sandstorms in Beijing and Tianjin, stone desertification control in southwest lava region, Qinghai Sanjiangyuan nature reserve, Gansu Gannan Yellow River important water supply area and other ecological construction projects. Compensation funds include not only relevant construction funds, but also compensation for the residents who suffer economic losses in the process of ecological protection. Moreover, different projects often have a compensation period, during which residents will limit their behavior because they can get compensation. However, when the compensation period is over, if the local economy still maintains the traditional development mode, some residents will destroy the ecological environment again in order to make a living.

Fifth, the compensation fund payment and the management method are imperfect. In some places, compensation funds have not been distributed in full and on time, and some have even been misused or misappropriated. In addition, the relationship between ecological construction, comprehensive environmental management and ecological compensation funds has not been clarified.

Lack of Basic System for Ecological Compensation

First, the property right system is not sound. China's property right system for natural resources is not sound, and the relationship among ownership, right of use and right of management has not been straightened out. The subject, object and service value of ecological compensation

must be defined on the premise of property right. If the property right is not clear enough, it will restrict the establishment of ecological compensation mechanism. For example, the reform of collective forest rights system needs to increase the rate of issuing certificates and the rate of household registration. There are still nearly a quarter of the country's un-contracted grasslands, the area of mobile grasslands is too large, the ownership of grasslands in the south and semi-agricultural and semi-pastoral areas is not clear, and there are many disputes over the ownership of grasslands and woodlands.

Second, the national ecological function zoning and function positioning are not synchronized. Part of the provincial main functional area planning has not yet been released, resulting in the planning for ecological environment functional area cannot be released. The regionalization and function orientation of the provincial ecological function have not been carried out, and the foundation of ecological compensation is not clear.

Third, basic work and technical support are not in place. The construction of China's ecological compensation standard system, ecological service value assessment and accounting system, and ecological environment monitoring and evaluation system lags behind. Relevant parties have not reached consensus on the measurement of ecosystem service value and ecological compensation standards, and there is a lack of unified and authoritative indicator system and measurement methods. There are still some blind spots in ecological environment monitoring. Monitoring and evaluation in key ecological areas are scattered in various departments, which are independent and have not yet realized information sharing, which cannot meet the needs of practical work.

The Construction of Relevant Policies and Regulations on Ecological Compensation Lags Behind

First, there is no special legislation on ecological compensation. China has actively explored the establishment of ecological compensation mechanisms in such areas as forests, grasslands, wetlands, river basins, water resources, mineral resources development, oceans and key ecological functional zones. But at present, there is no special legislation on ecological compensation, and the existing legal provisions concerning ecological compensation are scattered in many laws, such as *Environmental Protection Law of the People's Republic of China* (hereinafter referred to as *Environmental Protection Law*), *Grassland Law of the*

People's Republic of China, Forest Law of the People's Republic of China, Marine Environmental Protection Law of the People's Republic of China which are lack of systematicness and operability.

Second, existing policies and regulations are not authoritative and binding enough. In recent years, some policies and regulations on ecological compensation have been issued such as *Measures for the Administration of the Central Forest Ecological Efficiency Compensation Fund, Grassland Ecological Protection Subsidy and Reward Mechanism and Mine Environmental Management and Ecological Restoration*, its authority and binding force are insufficient.

Third, the existing policies and regulations also have the phenomenon of non-compliance with the law, lax law enforcement. As a result of relevant policies, laws are not sound, resulting in management confusion. In the ecological compensation management system, the government is both an athlete and a referee, lacking of performance evaluation and supervision mechanism. Moreover, in the operation of ecological compensation mechanism, stakeholder participation is not enough.

3.4 *Lack of Supervision System*

Lack of Unified Ecological and Environmental Supervision Authorities

At present, all pollutants discharged by all sources of pollution, including industrial point sources, non-point sources of agriculture and mobile sources of transportation, and all pollutant carrying media, including the atmosphere, soil, surface water, groundwater and the sea, are subject to supervision in different fields, departments and at different levels. The authoritativeness and effectiveness of this supervision system are not enough to carry out scientific and reasonable top-level design and overall deployment of ecological civilization construction, and difficult to form joint forces for ecological civilization construction.

The Supervision Functions of Ecological and Environmental Protection Are Decentralized, Making It Difficult to Form Joint Supervision

First, the functions of ecological and environmental protection departments at the national level are scattered and intersected. There are problems such as insufficient decentralization and inadequate supervision, which make it difficult to form a strong synergy of strict supervision. There is a mismatch between the functions and tasks assigned to

grassroots ecological and environmental protection departments. There is the phenomenon of “little horse pulling big cart”.

Second, there is a lack of coordination mechanism among various ecological and environmental supervision departments. There are many phenomena, such as multi-headed law enforcement, multiple government departments, disjointed powers and responsibilities, decentralized supervision and construction funds. It is difficult to form a strong synergy of centralized use of funds and strict supervision.

Third, the overlapping responsibilities of various regulatory departments are prominent, the division of functions is not clear and the law enforcement is difficult, resulting in the prominent issue of striving for the benefits and buck-passing. To a great extent, it reduces the administrative efficiency.

Weak Ability to Supervise Ecological and Environmental Protection and Weak Law Enforcement and Supervision

First, there is a lack of functional allocation of environmental law enforcement supervision for local governments and relevant departments. There is a serious shortage of ecological and environmental supervision personnel, and it is difficult to put environmental supervision in place.

Second, it is difficult to form “rigid” constraints. Due to the imperfection of ecological environmental laws and regulations, the rigidity of law enforcement, the unitary means and the insufficient punishment of ecological environmental violations, the cost of violation is low and the deterrent effect of violation cannot be formed.

Third, some departments of the ecological environment at all levels lag behind in supervision capacity construction with low level of equipment. Management measures such as investigation and evidence collection, early warning of pollution accidents and emergency response have not yet been adapted to the requirements of administration according to law, which has restricted the smooth development of ecological and environmental supervision and watered down the policies and measures to solve prominent environmental problems.

Fourth is the weak pre-approval. Some new projects, in order to catch up with the progress of the project, have adopted the method of starting construction while doing environmental impact assessment (EIA) reports. It has lost the barrier of environmental assessment pre-approval.

Supervision is an effective means to fulfill the responsibility of green development. In-depth analysis of the lack of supervision mechanism is an effective way to implement the responsibility of green development.

3.5 *Serious Lack of Investment and Financing Mechanism for Ecological Environment Construction*

The Effectiveness of Government Financial Investment Is Insufficient

With the reform of the economic system, the investment and financing of China's resource development and utilization and ecological and environmental protection have introduced bank loans and foreign capital, which have gone through three phases, namely appropriation-loan-multiple channels coexistence, initially breaking the single channel of financial investment. Although eco-environment investment and financing have made great progress in terms of total volume channels and benefits, it still has the imprint of planned economy in terms of investment subject, decision-making mode, operation mechanism, operation management and capital operation. On the whole, investment and financing are still within the framework of the traditional system, with government financial investment as the main investment and financing activities. Because the total amount of government financial input is insufficient, the source of funds is unreasonable, the investment policy is vague or unsteady and the guiding force is not strong, so the effectiveness is insufficient.

Narrow Financing Channels and Single Methods

In terms of fund structure, financial funds have become the main source of funds in the field of ecological environment construction in western China. Most of the ecological environment construction projects in western China are funded by direct government investment and indirect financing (loan), and the proportion of direct financing is too low. The foreign capital utilization form is single, the scale is not big. At present, China's utilization of foreign capital for ecological environment mainly includes foreign government assistance, donations and loans from the World Bank and ADB, with less foreign direct investment.

The development of private capital market is insufficient. China's ecological environment construction has not fully utilized the domestic and foreign private capital, and the scale of investment and financing is small. There are still many obstacles in the market access, the information asymmetry is very serious and the state's capital input has not activated and attracted more social capital input.

The property rights of resources and environment are not clearly defined, and the government's financial input cannot drive the private capital, so it cannot play a leverage role, which is not suitable for the large amount of construction funds.

Lack of Investment and Financing Incentive Mechanism

Investment in ecological environment, including investment in the development and utilization of natural resources, investment in environmental governance, investment in ecological restoration, investment in major comprehensive ecological construction projects and other positive externalities, the incentive, security and guarantee mechanism for investment and financing in ecological environment construction are still seriously missing.

Lack of Security Mechanism for Investment and Financing

In terms of resource development and utilization and ecological environment construction, many construction projects are in a closed operation state and lack of open, fair and just market competition environment. In addition, the supervision mechanism and constraint mechanism in the process of project operation are not perfect enough, which makes no one assume the full responsibility of the investor. Project financing, construction, operation, debt repayment, capital recovery and other links are extremely easy to block, to a certain extent have affected the performance of investment benefits, and even brought risks. At the same time, due to the lack of market-oriented investment and operation mechanism and strong professional investment and financing institutions, the financing channels are not smooth, the use of funds is scattered and the fund management lacks the vitality and momentum of sustainable development.

Fiscal investment is insufficient, investment and financing incentive and security mechanism are seriously missing, which makes it difficult to adapt to the huge ecological environment investment demand. Therefore, the reform and improvement of ecological environment investment financing mechanism is inevitable.

4 THE LACK OF AND WEAK BASIC ABILITY

4.1 *Weak Industrial System*

Chinese traditional industries rely on the advantages of low labor cost and low resource price, so the industrial structure is unreasonable. In 2013, China's three industrial structures were 10:43.9:46.1; industry accounted for 37%; primary and secondary industries accounted for

53.1% of GDP, which is still a large proportion. Due to historical reasons, the heavy industrial structure has been a serious problem throughout China (see Fig. 1). In 2013, the proportion of heavy industry and light industry was 71.31 and 28.69%, respectively. Some traditional industries eliminated in eastern China have been transferred to western China. In addition, China's economic growth has been over-dependent on investment for a long time, so the capital-intensive industries such as petrochemical, steel, cement and other high-energy industries account for a high proportion in the industry. During the 12th five-year plan period, 26 provinces listed steel as a key industry and 25 listed petrochemical as a key industry.

Nonferrous metals are listed as key industry in 20 provinces, and their heavy industrial features will continue to be strengthened. Due to the imbalance of industrial structure and regional development in China, the typical duality of economic structure determines the existence of extensive growth mode with its inherent inevitability.

In the international competition, along with the aging of the population, resource shortage and environmental degradation, the labor cost and resource price are gradually rising, and the technical content of China's export products ranks 30th in the world.

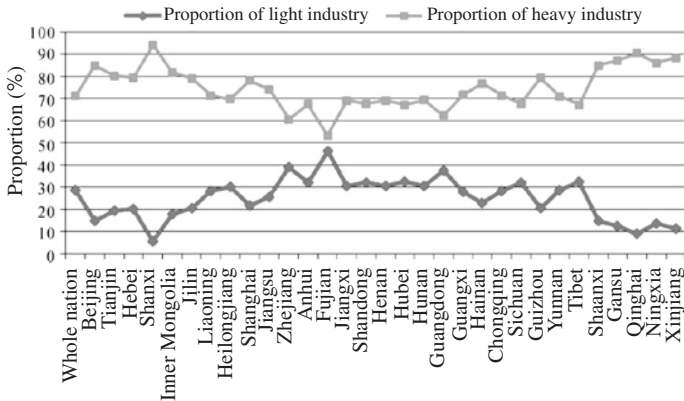


Fig. 1 Proportion of heavy industry and light industry in China's provinces (autonomous regions and municipalities directly under the central government) in 2013

4.2 *Coal Is the Mainstay of Energy Production and Consumption*

China's energy characteristics are "rich in coal, poor in oil and low in gas". In 2013, coal accounted for 66.0% of China's energy consumption, oil for 18.4%, natural gas for 5.8% and hydropower, nuclear power and wind power for 9.8%. In the world energy consumption structure, coal accounted for 30.1%, oil 32.9%, natural gas 23.7%, and hydropower, nuclear power and renewable energy 13.8% (see Figs. 2 and 3). The world's energy mix is moving toward efficient, clean, low-carbon or carbon-free natural gas, nuclear energy, solar energy, wind energy and biomass energy. China's coal-based energy mix is unlikely to change radically in the near term. The carbon emission of coal is 1.3 times that of oil and 1.7 times that of natural gas, causing serious pollution to the environment. Despite China's "west-east power transmission" project, the long distance, wide coverage and large network mode of supply pose great risks. Compared with distributed energy and smart grid, China's traditional energy supply mode relying on the huge energy power system is slow to respond, fragile and unable to give full play to the power capacity. Moreover, China's energy service industry is weak and difficult to operate. It is difficult to support green development.

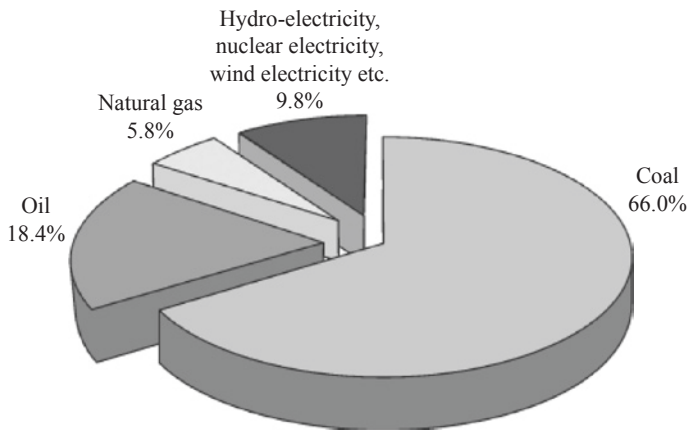


Fig. 2 Composition of China energy consumption in 2013

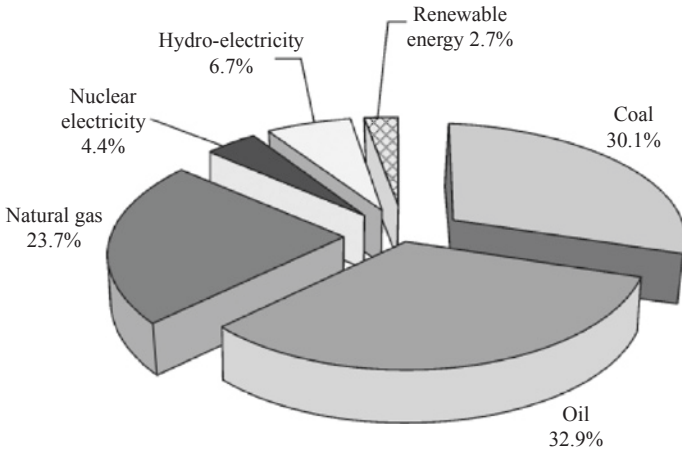


Fig. 3 Composition of world energy consumption in 2013

4.3 *Weak Technical Support Capability*

As a developing country, the biggest constraint for China's economic transformation from "black" to "green" is its relatively backward overall scientific and technological level and insufficient development and reserve of green technologies. Except for a few areas where China is at the forefront of science and technology in the world, most of them are in the catch-up stage. In the fields of energy production and utilization, industrial production and other fields, the technological development capacity and manufacturing capacity of key equipment are poor, the industrial system is weak and China lacks advanced and sophisticated technologies. Due to the blockade and restriction of Western countries, most of them cannot be imported, and the contribution rate of science and technology to economic growth is relatively low, making it difficult for China to adopt an intensive development mode. In some key industries in China, backward technology accounts for a higher proportion. The existence of a large number of backward technology and the absence of advanced technology make the traditional development of China fall into the "lock-in effect". In addition, China's overall investment in science and technology is low, and the process of scientific and technological innovation is relatively slow, which cannot effectively support the needs of green development.

4.4 *Green Development Performance Has not Been Included in the Cadre Assessment System*

First, the assessment of governance performance of leading cadres at all levels focuses on GDP, without including indicators such as resource consumption, environmental damage and ecological benefits as important indicators. The political performance view of GDP growth at the expense of blue sky, green mountains, clear water and other natural resources leads to the emphasis on development rather than protection.

Second, the audit system of leaving office of leading cadres for natural resources and assets and the lifelong accountability system for ecological and environmental damage have not been implemented, making it difficult to motivate and restrain leading cadres' behaviors. The audit system of leading cadres leaving office has been implemented for many years, but the audit mainly focuses on the economic responsibility of leading cadres leaving office. The audit of resource conservation and utilization, responsibility of environmental protection and whether the economic development is at the cost of sacrificing the environment has not been carried out yet. There is no corresponding system to restrain those who make blind decisions regardless of the ecological environment and cause serious consequences, especially those who endanger the physical and mental health of the people, harm their ecological interests and affect the stability of social order. There is no accountability or punishment. For those with good ecological environment management and having won the people's unanimous recognition, there is no corresponding system to give recognition and promotion.

4.5 *Inertia of Traditional Development Path-Dependence of Traditional Development Path*

Path dependence is similar to the "inertia" in physics. Once institutional change enters a certain path, it may be dependent on this path. After the reform and opening up, China's economy grew rapidly. Although many new ideas and thoughts appeared in the mode of economic growth, such as "exploring new ways" and "changing the development mode", the characteristics of growth can still be summarized as "three highs, three lows": That is, the traditional economic growth mode with high input and low output, high consumption and low return, high speed and low quality is a typical extensive economic growth mode.

The Current Development Conditions Make It Difficult to Change the Traditional Development Trajectory

The condition of economic development is not only an important factor affecting economic development, but also an important factor determining the mode and type of economic development. For example, the transformation from extensive mode to intensive mode requires advanced technology, scientific management and high-quality labor force. Otherwise, this transformation cannot be realized. Although the conditions for economic development have improved since the reform and opening up, they still fall far short of the world's advanced level. This is an important reason why it is difficult for China to fundamentally change its mode of economic development.

High-quality labor force and relatively scientific management are also important conditions for the fundamental transformation of development mode, and intensive mode is also based on high-quality labor force and scientific management. Since the reform and opening up, through the development of education, learning by doing in developing market economy practice and the introduction of foreign advanced management tools and methods, China's labor force quality and management level have been greatly improved, but the labor force quality and management level is still not very high, which also restricts the fundamental change in the mode of economic development.

China's Energy and Resource Endowment Structure Allows the Continuation of the Traditional Development Path

The coal-based energy structure restricts the transition to green development. China is endowed with rich coal, poor oil and little gas resources. It is rich in coal resources, accounting for 13% of global coal reserves. In terms of energy structure, China is one of the few coal-based countries in the world. Although the proportion of coal in China's energy consumption has decreased, it still accounted for 66.0% in 2013, compared with the world average of 30.1%. To ensure energy security, China's coal-based energy structure is unlikely to change fundamentally in the short term. With coal as the main source of economic growth, the six energy-consuming industries namely petroleum processing, coking and nuclear fuel processing industry, chemical raw materials and chemical products manufacturing industry, non-metallic mineral products industry, ferrous metal smelting and rolling industry, non-ferrous metal smelting and rolling industry and power and heat production and supply

industry, account for 3.66, 7.09, 5.32, 6.89, 4.26 and 5.17% of the main revenue of industrial enterprises, respectively. The problem of industry's high dependence on energy is acute.

China's Economic Development Stage Strengthens the Inertia of the Traditional Development Path

The stage of economic development is an important factor restricting the mode of economic development. Different stages of economic development have different goals and tasks, have different development conditions and have different characteristics of industrial structure, which will lead to different economic development modes.

China is still in the middle stage of industrialization and urbanization on the whole, and its strong demand for traditional industries will continue for another 15 to 20 years. In the future, China's urbanization will also grow at an average annual rate of about 1%. Under the condition that the extensive growth mode is difficult to change in the short term, the construction of urbanization infrastructure will drive the development of heavy chemical industry, increase the scale and intensity of the utilization of energy, water resources and land resources, and increase the difficulty of changing the pattern of complex regional air pollution and river basin water pollution.

China has just joined the ranks of middle-income countries and is moving toward high-income countries. The per capita living standard will also enter a stage of continuous transformation and upgrading. According to the experience of developed countries, this means that per capita resource consumption and pollutant emissions, especially per capita energy consumption, carbon dioxide emissions and solid waste production are rising, thus further aggravating the pressure on China's resources and environment. Coal consumption will peak at 4.7 billion tons in 2020, and emissions of major pollutants will peak in the next 10–30 years.

The Mindset of Putting More Emphasis on Speed Than Efficiency Slows Down the Pace of Change in the Mode of Growth

From the perspective of development goals and tasks, if people mainly pursue quantitative expansion and high-speed development, the development mode adopted will inevitably adapt to such requirements. If people pay more attention to quality improvement and efficiency

improvement, they will adopt a development mode different from the pursuit of quantity and speed. In the early days of the founding of new China, it was the right decision to focus economic construction on the extensive mode of economic growth with the focus on accelerating the speed and expanding the scale in order to change the backward situation of China's economic situation as soon as possible and to establish a strong material foundation for the new-born socialism, which greatly promoted the economic development. However, the extensive economic growth mode is essentially at the cost of more resource consumption and environmental pollution. With the passage of time, resources are increasingly exhausted, environmental pollution is increasingly serious, and the contradiction with economic development is increasingly obvious. Since the twenty-first century, China has put forward the strategic concept of scientific development and started to attach importance to the transformation of economic growth mode. However, in the actual implementation process, due to the thinking pattern formed by history, governments at all levels pay insufficient attention to the transformation of economic growth mode. Constrained by traditional ideology and the old system, there is still a widespread tendency in various places to put more emphasis on input than output, quantity over quality, and speed over efficiency. Competition for investment, projects, the pursuit of output value and the speed emerged in an endless stream. This leads to repeated construction, repeated production and disorderly competition, resulting in waste of resources, increased investment costs, reduced investment returns and ultimately slowed down the pace of change in the growth pattern.

*There Is an Urgent Need to Remove the Obstacles
to Green Transformation and Development*

To meet the challenges of green development and follow the trend of international development, China must first adopt the concept of green development and improve its performance evaluation methods, promote the development of strategic emerging industries, encourage innovation in green science and technology, establish and improve institutions and mechanisms for promoting green development, accelerate green development and seize the commanding heights and development initiative of future international competition.