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Part on Green and Low-Carbon Development of China's Environmental Code System Response and Institution Implementation in Sustainable Development

ZHANG Zhongmin

Abstract The sustainable development integrity, national development goals, and legislative status quo have determined that the "Green and Low-Carbon Development Part" must be designed and incorporated into the China's Environmental Code (Code). The theoretical evolution in the action field, system composition, value function, and operation mechanism of the Environmental Law, as well as the practice development of the Environmental Protection Law legislation, enforcement, and judicial practices have laid a solid theoretical and practical foundation for the incorporation of green and low-carbon development into the Code. The institutional layout of green and low-carbon development should respect and highlight its own traits. Furthermore, it is important to stress communication and coordination with other parts of the Code, follow the laws of energy development and utilization, and satisfy the inherent requirements of raw material reduction, reuse, and recycle. The layout method should abide by the general principle of "general first, specific second; domestic first, international second; defined first, undefined second" with "decomposition goals of carbon peaking and carbon neutrality" as an exception. The layout effect of the "flexibility first, rigidity second" is pursued. The chapters of General Provisions, Cleaner Production Green Circulation, Green Consumption, Support and Supervision, and International Cooperation, and Climate Change Response, are specifically designed. Efforts are made to improve new systems, such as strategies and standards for green and low-carbon development, green logistics, energy performance contracting, green finance, carbon emissions trading, and energy early warning.

Keywords "Green and Low-Carbon Development Part," the Environmental Code, sustainable development

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ZHANG Zhongmin 张忠民 (✉)
Law School, Zhongnan University of Economics and Law, Wuhan 430073, China
E-mail: zhangzhongmin@zuel.edu.cn

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Introduction

The conditions are essentially opportune for compiling the Environmental Code (Code). Following the compiling principle of moderate codification, the layout of the Code framework is critical. The consensus now is that the Code has four parts: General; Pollution Prevention and Control; Nature Conservation; and Ecological and Environmental Responsibility. The major disputes are specific titles, key messages, and logical relationships between and among clauses. As a reflection of XI Jinping thought on ecological civilization construction and the rule of law in the New Era for advancing sustainable development, how will the Code address the climate change response, the carbon peaking and carbon neutrality goals, the energy development and utilization, among other emerging questions? Should these questions be regulated by the would-be energy basic law or applicable specific laws, or should they be regulated by any parts of this Code? Should we design a specific part for their overall adjustment? How should we design the standardized layout and system? To answer these questions, it is necessary to accurately understand sustainable development, identify current national development goals, and clarify the legislative status quo of the Environmental Protection Law. As such, we are exploring concepts and methods to organize this part into the Code.

I. Incorporating the Part on Green and Low-Carbon Development in the Code for Three-Level Demand

Green and low-carbon development is a concept aiming at the sustainability of social production. It promotes the application of cleaner production, resource recycling and consumption optimization, and advances emissions cutting in energy development and utilization. Theoretically, “low-carbon development” is a kind of green development, and

a mode of sustainable development due to low energy consumption, low pollution, and low emissions.[1]

A. Holistic Demand for Sustainable Development

Since the sustainable development theory was born, the integrity of visual threshold and method has always received much attention.

Firstly, the integrity of the economy, society, and ecology. It aims for better human lives and development, and involves various elements concerning human lives and development. Sustainable development is a comprehensively social, economic and ecological development, in which the ecological sustainability is the foundation, economic sustainability is the condition, and social sustainability is the goal.[2]

Secondly, the international and domestic integrity. It aims for building a community with a shared future for mankind and involves domestic and international responsibilities. Sustainable development is the "golden key" to addressing current global problems and has similar goals and concepts to that of building a community with a shared future for mankind, which both benefit the world and mankind.[3] The "Green and Low-Carbon Development Part" meets the above two overall demands. It takes social development activities of production, circulation, and consumption as action objects, and leverages cleaner production, green circulation, and low-carbon consumption to address issues of sustainable economic development. In this regard, it is different from the "Pollution Prevention and Control Part" and the "Ecological and Environmental Responsibility Part" in terms of promoting sustainable development. In addition, compared with the "Pollution Prevention and Control Part" and the "Ecological Protection Part," both focus on addressing domestic issues, the "Green and Low-carbon Development Part" has the broadest international exposure since it faces global environmental governance, climate change response, and international energy exchange and cooperation. Therefore, the integrity of sustainable development requires the Code to incorporate the "Green and Low-carbon Development Part."

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[1] LI Yining, ZHU Shanli, LUO Laijun & YANG Deping, 低碳发展作为宏观经济目标的理论探讨——基于中国情形 (A Theoretical Exploration of Low-Carbon Development as a Macroeconomic Goal—Based on China's Situation), 6 管理世界 (*Journal of Management World*), 2 (2017).

[2] CHEN Quansheng & ZHANG Zitai, 宪法与行政法的生态化 (*Ecology-Ism of Constitution and Administrative Law*), Law Press (Beijing), at 146 (2001).

[3] XI Jinping, 坚持可持续发展共创繁荣美好世界——在第二十三届圣彼得堡国际经济论坛全会上的致辞 (Ahead with Sustainable Development and the Building of a Community with a Shared Future for Mankind—Address at the 23rd St. Petersburg International Economic Forum Plenary Session), 人民日报 (*People's Daily*), Jun. 8, 2019.

B. Demand for National Development Goals

China's Outline of the 14th Five-Year Plan (2021—2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035 set a target for ecosystem protection, which states that extensive green production and lifestyle will be delivered; carbon emissions will decline after reaching its peak; ecological environment will be significantly improved, and the goal of Building a Beautiful China will be essentially completed. In a nutshell, this statement contains two sub-goals: complete the building a beautiful China campaign and achieve the "carbon peaking and carbon neutrality" goals. It is evident that these two sub-goals have a kind of indirect association with what the environmental protection law system is about: preventing pollution, controlling improper emissions and discharge, advancing ecological protection, promoting public health, and raising humanity-nature harmony.

Delivering the goals of "carbon peaking and carbon neutrality" need to be based on the building a beautiful China campaign. These goals mean an extensive and profound systemic transformation in economic and social sectors. Thus these goals have to be installed into the overall ecological civilization construction program.[4] Green development specified in the "Green and Low-Carbon Development Part" is an inevitable requirement for building a high-quality modern economic system. Such development aims for transforming the traditional production mode and consumption mode featuring "mass production, mass consumption, and mass emission," so that resources, production, consumption and other related elements are well matched and adapted to coordinate and integrate economic and social development, ecological and environmental protection, and harmonious humanity-nature coexistence.[5] In this sense, a healthy, comfortable public environment, and a beautiful and sound ecology presented in the building a beautiful China campaign, are the natural and social foundations for delivering the "carbon peaking and carbon neutrality" goals.

Moreover, delivering the "carbon peaking and carbon neutrality" goals underpin and facilitate the completion of building a beautiful China campaign. The legal system must be strictly enforced to protect the ecological environment, and deploy an ecologically civilized institution to restrain development behaviors, and promote green, circular, and

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[4] XI Jinping, 推动平台经济规范健康持续发展把碳达峰碳中和纳入生态文明建设整体布局 (Promote the Regulated, Healthy and Sustainable Development of the Platform Economy and Incorporate the Peaking of Carbon Emissions and Carbon Neutrality into the Overall Layout of Building an Ecological Civilization), available at http://www.xinhua-net. com//mrdx/2021-03/16/c_139813420.htm (last visited Jul. 20, 2021).

[5] XI Jinping, 习近平谈治国理政 (*XI Jinping: The Governance of China*) , Volume 3, Foreign Languages Press (Beijing), at 367 (2020).

low-carbon development.[6]

C. Demand for Improving the Legislative Status Quo

In later 2010, a multi-level socialist legal system with Chinese characteristics was formed, featuring the Constitution, laws, administrative regulations, and local rules. As such, the national economic, political, cultural, social, and ecological activities all have laws and regulations to comply with.[7] In recent years, China has revised the Environmental Protection Law, the Solid Waste Pollution Prevention and Control Law, the Air Pollution Prevention and Control Law, the Water Pollution Prevention and Control Law, and the Environmental Impact Assessment Law. In addition, China has enacted the Environmental Protection Tax Law, the Nuclear Safety Law, the Soil Pollution Prevention and Control Law, the Resource Tax Law, the Bio-Safety Law, and the Yangtze River Protection Law. These laws have played important roles in the Five-Sphere Integrated Plan (the overall national development strategy, encompassing economic, political, cultural, social, and ecological development), and in diversifying and reinforcing China's socialist legal system. However, advancing forward, there are still rooms for improvement.

China's prevailing laws concerning ecological civilization construction are fragented, overlapping and conflicting. For example, some clauses on recycling solid waste in the "Green and Low-Carbon Development Part" can be found in the Cleaner Production Promotion Law, the Circular Economy Promotion Law, and the Environmental Protection Law. The major differences between and among them are specific articles and particular focuses.[8] To a certain extent, laws in China are sufficient in quantity, but not so in quality. In other words, China is no longer facing a shortage of laws, but about the coordination between laws of different ranks, and about averting conflicting, repetitive and overlapping provisions of various laws and regulations.[9]

China's prevailing ecological civilization legal system and institutional design have not been adapted to the demand for green and low-carbon development. Current green and low-carbon development is primarily policy-driven instead of legal-system-

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[6] 中共中央关于全面推进依法治国若干重大问题的决定 (Resolution of the Central Committee of the Communist Party of China on Major Issues Concerning the Enhancement of All-Round Law-Based Governance), 人民日报 (*People's Daily*), Oct. 29, 2014.

[7] Information Office of the State Council of the People's Republic of China, 中国特色社会主义法律体系 (白皮书) (*The Socialist System of Laws with Chinese Characteristics* [*White Paper*]), Oct. 2011.

[8] PAN Jiahua, 中国的环境治理与生态建设 (*China's Environmental Governance and Ecological Construction*), China Social Science Press (Beijing), at 216 (2016).

[9] CHAI Rong, 中国传统生态环境法文化及当代价值研究 (A Study of Chinese Traditional Ecological Environmental Protection Law Culture and Contemporary Values), 3 中国法学 (*China Legal Science*), 303 (2021).

driven, as no legal system or institution has been developed in this regard.[10] Although the environmental law system has been developed rapidly, and both the number and rank of the environmental protection law system have been greatly improved, the complicated environmental law system has still generated several "useless" norms. This includes that the Circular Economy Promotion Law has been inactive, while the Cleaner Production Promotion Law has been shelved, and the overall effectiveness of the environmental law system, in a broad sense, has been weakened.[11]

Only comprehensive and systematic laws can coordinate pollution prevention and control, ecological protection, and green and low-carbon development. Otherwise, a subject-specific law may take a part for the whole, like blind men touching an elephant.

Therefore, the prevailing legislation for ecological civilization construction should be now systematically integrated and revolutionized for green and low-carbon development, since such a development is a national development goal that can fulfill the overall requirements of sustainable development and, to a certain extent, represents the future of environmental laws.

II. Basis for Incorporating the Part on Green and Low-Carbon Development into the Environmental Code: Theoretical and Practical Preparation

A. Environmental Law Theory Change

1. Changes in action field and system composition of the Environmental Protection Law. These changes have taken place with the times. The Environmental Protection Law has seen its role growing from pollution control-oriented initially, to natural-resource and eco-conservation-centered and to recently increasing attention to international environmental protection regarding climate change. Its action field has been growing as well. The American environmental law has developed similarly, changing from a relatively limited pollution control into a broader resource and ecological protection. In China, the Environmental Protection Law has faced new challenges with changes in the international and domestic situations.[12] Therefore, its action field and regulatory focus should not only include environmental protection in a narrow sense characterized by pollution control, but also in a broad sense characterized by resource utilization and ecological protection. From the perspective of departmental laws, its action field

[10] YANG Jiejun, 面向低碳的法律调整和协同：基于应然的分析与现实的检讨 (Legal Adjustment and Synergy for Low Carbon: Analysis the Virtual and Review the Real), 2 法学评论 (*Law Review*), 143–144 (2014).

[11] ZHANG Zitai & CHENG Feihong, 论环境法法典化的深层功能和实现路径 (On the Deep Function and Realization Path of Environmental Protection Law Codification), 31(6) 中国人口资源与环境 (*China Population, Resources and Environment*), 12 (2021).

[12] See Richard Lazarus, 环境法的形成 (*The Making of Environmental Law*), translated by ZHUANG Han, China Social Science Press (Beijing), at 49 (2017).

and composition system have been expanding. From the perspective of the three basic concepts of environment, resources, and energy, environment is greater than resources, which is greater than energy. Therefore, the Environmental Protection Law certainly includes the Resource Law and the Energy Law from a semantics perspective. However, since it emphasizes pollution control and ecological protection, the Environmental Protection Law focuses on protecting human health and highlighting the natural properties and ecological value of environmental resources. The Energy Law focuses on energy exploration and development, processing and conversion, storage and transportation, supply chain management, and trade regulation, with more attention placed on the development and utilization of energy to highlight the economic attributes and safety value of environmental resources. Nowadays, the integrated protection of environment, resources, and energy is increasingly strengthened, the boundary between different legal departments is downplayed, the ideals and methods of domain laws are reinforced, and meaningful conversation does not debate over the boundaries of the Environmental Protection Law and Energy Law, but rather over how we could maintain the inertia and trait of each law, while carrying out supportive interactions. In other words, the Environmental Protection Law emphasizing environmental protection should appropriately respond to emerging problems, such as economic development, industrial structure adjustment, and international energy cooperation regarding energy development and utilization, while the Energy Law focusing on energy development and utilization provides proper answers to associated problems surrounding energy saving and emissions reduction, such as cleaner production, green circulation, and low-carbon consumption.

2. Evolution of value function and operation mechanism of the Environmental Protection Law. The value function and operation mechanism of the Environmental Protection Law have been advancing. The value function is primarily reflected by the continuous improvement of the concept interpretation of sustainable development, as well as the evolution of its operation mechanism in the action field expanding from point to surface and then to body. This is the logical transformation from passively suppressing side effects to actively increasing benefits. The law's mission is to discover through experiencing and to develop through reasoning the ways for adjusting relationships and arranging actions, so as to maximize the effect for the entire interest scheme with minimal resistance and waste.[13] China's environmental rule of law construction has always insisted on putting forward China's countermeasures on the basis of China's reality, by tackling China's problems, and reasonably drawing on the experience of developed countries to gradually form a legislative concept of "integrating the construction of five major civilizations (material, political, spiritual, social, and ecological civilization) to ensure ecological

[13] Roscoe Pound, 通过法律的社会控制：法律的任务 (*Social Control Through Law*: *The Task of Law*), translated by SHEN Zongling and DONG Shizhong, The Commercial Press (Beijing), at 71 (1984).

support and promote sustainable economic and social development." [14] The same is true of the operational mechanism. In the middle of the 20th century, the primary strategy for addressing environmental problems was primarily terminal control. However, since the 1990s, the principle of source control and whole process control has become increasingly important in many countries.[15] The operation mechanism of the Environmental Protection Law expanding from point to surface and to body is characterized by five features, specifically "comprehensive prevention, mutual assistance by multiple subjects, integration of various methods, application of scientific and technological achievements, and responding to the needs of a changing society." [16] The "Green and Low-Carbon Development Part" is responding to such an evolution. Compared to the emphasis on the "constraint" elements of pollution prevention and ecological protection to sustainable development, the green and low-carbon development focuses on "development." In order to achieve the green development, we must resort to advocating, encouraging, and flexible means because higher requirements have been made on the action subject to promote positive benefits. This is different from the Pollution Control Law focusing on remedying negative damages and from the Ecological Protection Law targeting on maintaining ecological balance.

B. Development of the Environmental Protection Law Practice

1. Pollution control practices in the traditional category are increasingly sophisticated. The practices of the Environmental Protection Law in China have become increasingly sophisticated in legislation, law enforcement, and judicature, developing towards delicacy, diversity, and specialization.

(1) Take the Pollution Control Law as an example. The delicacy development of the environmental legislation is primarily reflected by the following aspects: First, the full coverage of environmental elements. An environmental law system, focusing on environmental-element protection, gradually makes a legislation covering air, water, soil, solid waste, environmental noise, and radioactive pollution. Second, the pollution classification and judgment criteria are becoming increasingly systematic. At present, the scope of pollution control addresses not only substantive pollution, but also inhibitory

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[14] LYU Zhongmei & WU Yiran, 中国环境法治 70 年: 从历史走向未来 (70 Years of Environmental Protection Rule of Law in China: From History to the Future), 5 中国法律评论 (*China Law Review*), 112 (2019).

[15] LYU Zhongmei, GAO Lihong & YU Yaojun, 环境资源法学 (*Environmental Resources Law*), Science Press (Beijing), at 61 (2004).

[16] JIAN Xiaodong, 论生态文明背景下环境法功能运行之趋势与模式 (On the Trend and Mode of the Functional Operation of Environmental Protection Law in the Background of Ecological Civilization), 4 浙江学刊 (*Zhejiang Academic Journal*), 136 (2009).

pollution.[17] Finally, there has been a revolutionary shift in both the concepts and methods of pollution control. For example, the concept of pollution control has shifted from its initial emphasis on post-governance, to the gradual emphasis on prevention as its governance principle, and then to the most recent emphasis on risk prevention and control. This is particularly so in the enforcement of the Soil Pollution Prevention Law.[18]

(2) Diversified development of the Environmental Protection Law enforcement is primarily reflected in two aspects: Firstly, the enforcement tools of administrative agencies are constantly diversified. The Environmental Protection Law revised in 2014 has empowered competent ecological and environmental authorities a number of "hard powers," including seizing, imposing a daily fine, restricting production, stopping production for rectification, and detention. In addition, these ecological and environmental authorities can increasingly exercise "soft powers" since they have been authorized to harness finance, taxation, government procurement, and other economic means.[19] Secondly, more and more subjects are involved in law enforcement. In addition to relevant administrative bodies to perform ecological environment supervision in a broad sense, qualified social organizations and legally-prescribed authorities can file publicinterests environmental protection lawsuits and launch ecological environmental damage compensation lawsuits. Even experts and the public who participate in environmental decision-making, hearing, discussing or supervising, are all de facto law enforcement agents.

(3) Specialization development in environmental justice is primarily reflected in two aspects. From an external perspective, we have constructed the increasingly complete and specialized environmental judicial institutions, procedures, mechanisms, teams, and theories after years of development.[20] From an internal perspective, we have strived to ensure that every environmental case is professionally adjudicated. In terms of environmental cases, specific causes could not be identified in the early days. Later on, cases were essentially submerged in a vast number of related causes. Then, cases were classified in accordance with five types of cause in the "Environmental Resource Case Types and Statistical Specifications (Trial)" (Fa [2021] No. 9) released by the Supreme

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[17] ZHANG Bao, 环境侵权解释论 (*Interpretation of Environmental Tort*), China University of Political Science and Law Press (Beijing), at 87 (2018).

[18] YU Wenxuan, 生态文明语境下风险预防原则的变迁与适用 (The Change and Application of the Risk Prevention Principle in the Context of Ecological Civilization), 59 (5) 吉林大学社会科学学报 (*Journal of Social Sciences of Jilin University*), 104 (2019).

[19] ZHANG Zhongmin, 从刚性单一到柔性综合：环境污染防治法律制度的嬗变 (From Rigid Unicity to Flexible Comprehensiveness: The Evolution of the Legal System of Environmental Pollution Prevention and Control), 41(21) 环境保护 (*Environmental Protection*), 37–38 (2013).

[20] ZHANG Zhongmin, 环境司法专门化发展的实证检视：以环境审判机构和环境审判机制为中心 (An Empirical Review of the Specialized Development of Environmental Justice: Focusing on Environmental Judicial Institutions and Environmental Judgment Mechanisms), 6 中国法学 (*China Legal Science*), 177–196 (2016).

People's Court of the People's Republic of China in January 2021. Specifically, these five types of causes are "environmental pollution control, ecological protection, resource development and utilization, climate change, and ecological environmental governance and service." All of these are the result of professional development.

2. Emerging practices of green and low-carbon development are in the ascendant. Firstly, the legal norm system has been developing and has taken a good shape. At present, this system is composed of laws and regulations, including the Coal Law, the Electricity Law, the Energy Conservation Law, the Renewable Energy Law, the Cleaner Production Law, and the Circular Economy Promotion Law.

Secondly, relatively fragmented and individual initiatives have been formalized into institutions on the back of policies and laws. For example, a list of technologies and products of circular economy, the statistical evaluation of circular economy, and the identification and certification of reproduction products, can all be legislated and institutionalized.[21]

Thirdly, the Energy Law has been made on the legislative agenda for integrating decentralized energy legislation, which is also an established international practice. For example, the Basic Law on Green Growth, which was promulgated and implemented in South Korea in 2010, comprehensively absorbed the Basic Law on Energy, the Basic Law on Sustainable Development, and the Basic Law on Climate Change Countermeasures. It has become a "pan-green" legislation, guiding the epoch-making transformation of South Korea's social and economic structure.[22] Another example is that the EU has passed the Climate Energy 2020 Package Act and the Climate Energy 2030 Package Act for reduction of greenhouse gas emissions. The interim report shows that the implementation of the former is relatively optimistic.[23] In a word, we must look at the evolution and practice of the Environmental Protection Law theory from the perspective of dynamic development, meaning the action field, system composition, value function, and operating mechanism of the Environmental Protection Law, as well as the legislation, enforcement, and judicial practice of the Environmental Protection Law, will naturally adjust and change with the times.

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[21] DENG Xiaoyun, 论我国的低碳法治建设 (On China's Low-Carbon Legal Construction), 2 学术交流 (*Academic Exchange*), 62 (2015).

[22] Research Team of China International Economic Exchange Center, 中国实施绿色发展的公共政策研究 (*A Study of the Public Policy of China's Implementation of Green Development*), China Economic Press (Beijing), at 146–147 (2013).

[23] PENG Feng &YAN Lidong, 环境与发展：理想主义抑或现实主义？——以法国《推动绿色增长之能源转型法令》为例 (*Environment and Development: Idealism or Realism? —Taking the French Energy Transition Act to Promote Green Growth as an Example*), 32 (3) 上海大学学报 (社会科学版) (*Journal of Shanghai University* [*Social Science Edition*]), 18–19 (2015).

III. How to Incorporate the Part on Green and Low-Carbon Development into the Code: Institutional Construction and Reasons

A. Holistic Layout of Institutional Construction in the Part on Green and Low-Carbon Development

1. The principles and laws of layout concept. Green and low-carbon development refers to resource reduction, recycling, and reuse, which is achieved using clean energy and raw materials, applying advanced technology and equipment, improving management, conducting comprehensive utilization, as well as other measures in the process of production, circulation, and consumption, by minimizing input, loss, and waste. Thus, the four features of green and low-carbon development are determined. From the perspective of the action object and target, clean energy and some raw materials are utilized. From the perspective of action behavior and mode, measures are taken to introduce advanced technology, improved management, and comprehensive utilization. From the perspective of action field and process, production, circulation, and consumption are covered. From the perspective of action purpose and effect, consumption is reduced, loss is minimized, and waste is eliminated for achieving resource reduction, recycling, and reuse.

To observe this Part from an external perspective, two principles must be respected. Firstly, we must respect and highlight the Part's features and maintain its relative independence. Focusing on the action links of energy and its development and utilization, the Part covers green and low-carbon products and technologies to aid establishment of corresponding systems for cleaner production, green circulation and green consumption. It is different from the "Pollution Prevention and Control Part" which focuses on preventing and controlling environment and environmental elements from being polluted, and which sets institutional layouts up for specific prevention and control of new types of pollution, such as water, marine, air, soil, solid waste, environmental noise, radioactive, toxic and harmful substance, and light pollution. It is also different from the "Nature Conservation Part" which focuses on the protection of natural resources and their dependent ecology, and particularly focuses on the natural ecology protection planning, zoning, and information, utilization control and protection improvement of ecological elements, protection of ecological regions, nature reserve, species and gene diversity, prevention and improvement of natural ecological degradation, and funds and improvement of natural ecological protection. Secondly, communication and coordination are emphasized in addition to the maintenance of appropriate openness.

(1) For the market subject, there are some progressive relationships among the three parts. To a certain extent, the "Pollution Prevention and Control Part," the "Nature Conservation Part," and the "Green and Low-Carbon Development Part," represent separately the historical development of China's Environmental Protection Law. Their

focuses have been transformed from the initial pollution prevention and control, to the current ecological protection, and to the future green development, reflecting that the environmental protection has been gradually "growing" and "upgrading."

(2) The institutional system of cleaner production, recycling and carbon emissions in the fields of industry, agriculture, and forestry in the "Green and Low-Carbon Development Part," is closely related to the systems of green procurement, green consumption, and environmental standards, in the "Pollution Prevention and Control Part," and to the systems of mining development and protection, ecological compensation, and forestry carbon sink in the " Nature Conservation Part."

(3) The three parts are closely related with each other in planning development. Such a close relationship has a close association with the adoption of environmental protection tax, eco-conservation tax, green tax, green finance, green banking and other relevant means. From the internal perspective, this "Green and Low-Carbon Development Part" shows the following laws: Firstly, it abides by the applicable process of energy development and utilization, covering most provisions on environmental protection. Therefore, it is necessary to set up the applicable standard and evaluation index system, and define the corresponding rights and obligations starting with formulating a strategy or a plan. Specifically, the focus is placed on cleaner production, green logistics, recycling, green circulation service system, and green consumption. Support measures and supervision measures are made to advance international cooperation and climate change response. Secondly, it meets the inherent requirements for raw material reduction, reuse, and recycling. For cleaner production, it is necessary to determine the directories of technologies, processes, equipment and products, and focus on supporting the reduction of raw materials through information systems and technical consulting service systems, clean energy development, green logistics and other measures. Emphases are placed on supporting and delivering recycling in many fields, such as industry, agriculture, forestry, and grassland, and on improving energy performance contracting.

2. Fundamental layout methods and exceptions. The following steps are taken in the institutional layout for this Part: Step 1, maximize the list of institutional clusters in energy legislation. Applicable institutions should be identified based on the whole process of energy exploration and development, processing and conversion, storage and transportation, and supply chain management and trade regulation, and then their core factors and critical concepts should be extracted.

Step 2, select the provisions of these institutions that are highly related to environmental protection; select the factors and concepts of these institutions that are closely connected to ecological attributes; while eliminate provisions that clearly belong to civil laws and economic laws, such as resource ownership, market regulation, and macro-control.

Step 3, abstract the core meaning of the finally selected institutional clusters, and apply the special database developed by Peking University Magic Package for the legislation of the Environmental Code to list all relevant provisions in the database, including laws, regulations, normative documents and other norms of various levels of effectiveness.

Step 4, following digestion and absorption of relevant provisions, put together articles in line with the institutional layout concept of this Part, and make the specific layout. In terms of the layout method, the basic principles are "general first, specific second, domestic first, international second; defined first, undefined second," with the exception of "decomposing goals of carbon peaking and carbon neutrality."

To put in detail, the so-called "general first, specific second " means first putting the "general rules" as the "mini general provisions" for this Part, which defines this Part, and presents the all-inclusive generalized green and low-carbon related development rules in strategic planning, management system, basic system, and fundamental principles governing, so as to provide the maximum abstract and inclusive space for general application of specific clauses, and to address issues, such as limit to application of specific clauses that may result from future development. Then, corresponding institutional systems are designed as sub-systems according to the specific link of production, circulation, and consumption. Then, support measures, such as fiscal taxation, financial policies, as well as supervision measures of early warning and investigation are designed as the overall guarantee. The "domestic first, international second" principle means that the main provisions of domestic laws should be applied before applying provisions of relevant international laws, including climate change response, energy development, trade cooperation, and international energy support cooperation. The principle of "defined first, undefined second" means that the defined and relatively mature systems, such as cleaner production monitoring, auditing, licensing system, mandatory recycling system in the current Energy Conservation Law, Renewable Energy Law, Cleaner Production Promotion Law, Circular Economy Promotion Law, Mandatory Recycling System, should be applied. The systems that are not covered by prevailing laws but should be included in this Part should be developed, such as the systems related to courier packaging, green storage and transportation, carbon emission trading, and green finance. Finally, according to the above-mentioned layout concepts, the integrated layout is made. The "decomposing goals of carbon peaking and carbon neutrality" as an exception in this Part means that achieving carbon peaking and carbon neutrality does not have to be confined by any specific chapter or part of the Code. Instead, they are spread in a variety of clauses and do not need to follow the principle of "general first, specific second," or "domestic first, international second." The provisions on delivering the "double goals of carbon peaking and carbon neutrality" are embedded in most clauses of this Part so that these double goals can be truly decomposed and reflected in the links

of production, circulation and consumption. Only by doing so, can overall and practical effect be acquired, even though there are no direct or core provisions.

3. Flexibility and rigidity in the layout effect. Compared to the "Pollution Prevention and Control Part," and the "Nature Conservation, the "Green and Low-Carbon Development Part" has higher requirements for social subjects, emphasizing promotion of positive economic and social benefits, rather than simply remedying negative damage from environmental risks, regulating or maintaining ecological balance. Such requirement is higher than the traditional obligations in environmental protection. Firstly, from the perspective of humanity assumption, people are regarded as "healthy environmentalists" according to the traditional environmental protection obligation, and such an assumption puts "healthy environmentalist" higher than the "rational economic man" assumption, requiring people to do their best to avoid negative externalities, such as environmental pollution. In contrast, the green and low-carbon development considers people as "green environmentalist," requiring people to undertake more obligations and responsibilities on the basis of overcoming negative externalities to increase public interests, which include environmental benefits. Secondly, from the perspective of behavior mode, the traditional environmental obligations are to regulate pollution discharge and environmental damage, and emphasize the maintenance of balance by not discharging too much to or taking too much from nature. The green and low-carbon development begining with the whole process of human production, life, and consumption, pay attention not only to China, but also to other countries, emphasizing minimizing energy consumption, eliminating extravagance, and promoting the reuse and recycling of environmental resources. Thirdly, from the perspective of value pursuit, "reducing pollution as much as possible" and "promoting harmony as much as possible" are the traditional environmental protection obligation, but "producing no pollution" and "turning waste into treasure" are the targets of the green and low-carbon development. Therefore, the institutional layout of this Part will be clearly directed by the principle of "flexibility first and rigidity second."

Legal clauses to be developed following the principle of "Flexibility First and Rigidity Second" means that their tone is advocating and encouraging, words such as "might," "may," "can," "encourage," "support" are to be used rather than "shall," "should," "must," "prohibit," "shall not" and other obligatory or compulsory words. In terms of the legal responsibility design, generally there are no explicit and specific legal responsibility clauses such as negative legal evaluation. The principle of Flexibility First is reflected in the design of all chapters of this Part, but primarily reflected in: flexible management and incentive mechanism in general provisions; demonstration and popularization of cleaner production technology in cleaner production and cleaner production agreement; energy performance contracting in green circulation; certification, labeling and promotion of green and low-carbon products in green consumption; tax break and financial support in support and regulation. Rigid norms are primarily embodied in: green and low-

carbon development obligations, index system and carbon emissions standards in general provisions; cleaner production monitoring and auditing in cleaner production; mandatory recycling mechanism in green circulation; green procurement and restriction on disposable consumer goods in green consumption; energy statistics and early warning mechanism in support and supervision; obsolete equipment elimination, and monitoring, investigation and punishment for illegal carbon emissions. It must be noted that these flexible clauses in the green lifestyle provide citizens with a "soft constraint." They do not have an enforcement effect, but they do have a great deal of legal effect on changing the public philosophy and behavior and on solving environmental problems.[24] Since the comprehensive and diversified regulation mode, which integrates rigid regulation and flexible regulation, and integrates formal and informal institutional layouts, is the proper meaning of environmental regulation.[25]

B. Specific Layouts for Institutional Construction of Green and Low-Carbon Development

1. General provisions. General provisions are rules of high abstraction and generalization of each chapter of this Part and can be widely applied as the general regulations of each chapter. They can address issues, such as the green and low-carbon development's connotation and denotation, applicable objects, management system, relevant policies and planning, main mechanism and institutional composition, core rights and obligations, as well as method and path. Therefore, this chapter has clauses on green and low-carbon development definition, strategy, planning, management system, duty, standard system, evaluation index system, evaluation mechanism, product certification directory, technical promotion directory, carbon emissions standards, emissions quota, energy-saving mechanism, flexible management, incentive mechanism, publicity and education, information disclosure, and international communication and cooperation. Among them, special emphasis should be placed on: Firstly, the green and low-carbon development strategy should be considered at the national level. Thus, it is recommended to stipulate that "setting the green and low-carbon development up as a major national economic and social development strategy, which follows the clauses on integrated planning, rational layout, governmental promotion, market orientation, and public participation." Secondly, the core status of standards should be strengthened, stressing the establishment of the green and low-carbon development standard system. Thus, it is recommended to stipulate that "the competent standardization authority under the State Council, working together with the National Development and Reform Commission,

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[24] Daniel Bodansky, *The Art and Craft of International Environmental Protection Law*, Harvard University Press (Cambridge, MA), at 253 (2010).

[25] CHEN Zhenliang, 环境保护的国家义务研究 (*A Study of National Obligation of Environmental Protection*), Law Press (Beijing), at 273 (2015).

Ministry of Environmental Protection Ministry, and other relevant ministries of the People's Republic of China, to formulate the national and industry standards concerning cleaner production, green circulation, and carbon emissions; and to develop the standard system for green and low-carbon development." Thirdly, the distribution and trading of carbon emissions quotas should be clarified for fully delivering the goals of "carbon peaking and carbon neutrality." It is recommended to stipulate that "the State should work out a policy to govern distribution of carbon emissions quotas, which are to be primarily distributed for free and secondarily distributed for a fee. All institutions and individuals may legally transfer their legitimate carbon emissions quotas. The relevant government departments shall notify the institutions and individuals that they have been allocated the annually distributed carbon emissions permits and their respective share of the total annual carbon emission quotas. The State encourages the key institutions and individuals to proactively forfeit their legitimate carbon emissions quotas." Fourthly, to highlight flexible management, it is advisable to list advocacies that "the governmental development and reform authorities and ecological authorities at all levels should execute flexible management for supporting green and low-carbon development by the means of administrative contracts, planning, guidance, mediation, green and low-carbon development management."

2. Cleaner production, green circulation, and green consumption. They are the key areas and links of green and low-carbon development, and are the core systems of various chapters of this Part. The chapter of cleaner production includes cleaner production definition, implementation planning, technology, process, equipment and product selection guide directories, guidelines, capital investment, information systems and technical consulting service systems, technology demonstration and promotion, green and low-carbon product labels, clean energy development, cleaner production measures, product and package design in the process of development and technological transformation, cleaner agricultural production, cleaner production monitoring, auditing and licensing system, and environmental management certification system. Since the Cleaner Production Law has made clear those provisions related to cleaner production, in this Part, the cleaner production definition, planning, product selection guide directory, capital investment mechanism, cleaner production measures, product packaging, monitoring and auditing systems in technological transformation, can fundamentally follow the prevailing laws and regulations. In addition, the regulation on the development and utilization of clean energy should be added. It is recommended to stipulate that "the State encourages the clean and efficient development and utilization of biomass fuels, and the development of energy crops. The State also encourages the production and utilization of bio-liquid fuels. In accordance with the regulations formulated by the energy administrative department of the State Council or the provincial government, petroleum sales companies should incorporate those national-standards bio-liquid fuels

into their fuel sales network. The State encourages and supports the development and utilization of renewable energy and clean energy in rural areas." Moreover, given the fundamental role in which agricultural production has been playing, it is suggested to update the prevailing provisions on agricultural cleaner production, which may be stated as "agricultural producers should wisely use chemical fertilizers, pesticides, agricultural films, and feed additives, adopt the advanced planting and breeding technologies (i.e. saving water, fertilizer, pesticide, and energy), promote the combination of planting, breeding, and the comprehensive development of agricultural resources, and prioritize the development of ecological circular agriculture. Governments at all levels should work to promote the reduction of agricultural inputs, clean production, recycling of wastes, eco-industrialization models, and guide the whole society toward living a highly-civilized and healthy life featuring wise, green, and low-carbon consumption."

The green circulation chapter includes three sections: green logistics, recycling, and service system. Among them, green circulation consists of courier logistics packaging, green storage, green transportation, and informationalization construction. Recycling includes the mandatory recycling mechanism, industrial waste exchange information system, waste recycling system, industrial waste, industrial waste water, by-product heat and pressure, construction waste, domestic waste, waste electrical and electronic products, waste plastic products, recycling in agricultural fields, forestland and grassland, and recycling base construction. The service system consists of energy performance contracting, energy consumption assessment mechanism of circulation businesses, and consumption reduction of circulation products. It should be emphasized that: Firstly, green logistics reflects the current characteristics of China. The introduction of green regulations on courier packaging, storage and transportation will help promote energy conservation and emission reduction in the circulation field. It is recommended to stipulate that "the State encourages circulation enterprises to widely apply Internet technology and strengthen information control of circulation channels and terminal outlets. Resources should be allocated in time to raise the level of big data analysis and circulation efficiency to advance green and low-carbon development through information utilization."

Secondly, a comprehensive recycling network is established that combines mandatory and voluntary recycling, covering industry, agriculture, forestland, grassland, construction waste, and domestic waste. In this regard, for those relatively comprehensive provisions already made in the Recycling Economy Promotion Law, their adjustments and improvements in this Part are necessary in light of social development. For the more mature systems among them, such as the mandatory recycling mechanism, the original regulations can be applied, which require "enterprises that produce products or packaging materials listed in the mandatory recycling list shall be responsible for recycling the discarded products or packaging materials. The production enterprises shall be responsible for the utilization of the useable materials and those unsuitable for utilization due to the

lack of technical and economic conditions. The production enterprises shall be responsible for the harmless disposal of those materials." Certainly, in view of the rise of the third-party governance, relevant subjects can also be permitted to commission third parties to perform their obligations in accordance with applicable laws, regulations, and agreements. For those institutional provisions that have changed significantly, they must be properly improved in this Part. For example, in the field of agriculture, it is recommended to stipulate that "the State encourages and supports agricultural producers and related enterprises to adopt advanced or applicable technologies to recycle crop straws, livestock and poultry manure, by-products of agricultural processing industry, waste agricultural films, develop and utilize biogas and other biomass energy, promote combination of planting and breeding, comprehensive development of agricultural resources, and give priority to the development of ecological and circular agriculture." Another example is in the field of forestry and grassland, where it is recommended to stipulate that "the People's governments at or above the county level and their forestry and grassland authorities should actively develop ecological forestry, encourage and support forestry producers and related enterprises to adopt wood conservation and substitution technologies, and carry out comprehensive utilization of forestry waste and sub-small fuelwood and shrubs to increase the wood comprehensive utilization rate."

Thirdly, in the service system, emphasis is placed on the application of energy performance contracting, which is an energy-saving mechanism where a company provides energy-saving services by entering into service contracts with users, investing or financing energy-saving projects for users, providing users with energy efficiency analysis, project design, procurement, and construction, among other services, and sharing the energy-saving benefits with users. It should also stress that "the State actively promotes the energy performance contracting mechanism. The governments at or above the county level should strengthen financial support, implement tax support policies, define relevant accounting systems, and develop financial services to further universalization of energy performance contracting and the rapid development of the energy-saving service industry."

The chapter on green consumption covers the certification and labeling of green and low-carbon products, product promotion, information publicity, green procurement and office operation, restrictions on disposable consumer goods, construction of green consumption market, incentive mechanism, taxation, and publicity and education. Since the majority of this chapter is about advocacy clauses, it is necessary to encourage producers of green and low-carbon products to voluntarily request for certification. It is recommended to stipulate that "the green and low-carbon product manufacturers, on the basis of their free-will, apply for certification of their products from the organizations, which are accredited by the certification, accreditation supervision, and administration authority of the State Council to engage in certification of green and low-carbon products.

The certification organizations shall observe the applicable national evaluation and certification standards and rules, carry out the certification operations, and develop the national catalogue of certified green and low-carbon products. After having their product being certified, the applicant would receive the green and low-carbon product certificate and logo." In addition, the government has an obligation and responsibility to call on the whole society to develop a green consumption lifestyle, thus it is recommended to stipulate that "the people's governments at or above the county level should establish an incentive mechanism for green consumption to support and guide green consumption through tiered prices, purchase subsidies, tax incentives, and trade-in."

3. Safeguard regulation, international cooperation and climate change response. The chapter on support and supervision consists of green tax reduction and exemption, financial support, construction of green financial system, carbon emissions trading, clean energy investment, energy reserves, policy support for recycling waste products, technical information provision and services for green and low-carbon development, innovation encouragement and promotion, preparation of green and low-carbon development plan, clean energy production and supply chain security support, energy statistics and early warning, clean energy management, comprehensive supervision of clean energy consumption, supervision and agreement of carbon emissions in key industries, supervision and guidance of carbon emission in agricultural and rural areas, agricultural and rural renewable energy development planning, elimination of outdated equipment, monitoring, investigating and punishing illegal carbon emissions. Firstly, the listing and generalizing methods are adopted for the construction of the green financial system, and it is recommended to stipulate that "the State encourages financial institutions to develop green credit, green bonds, green development funds, green insurance and other financial instruments, build a green financial system, and provide financial support for green and low-carbon development. Where conditions are mature, local governments are encouraged to promote establishment of specialized green guarantee mechanisms and green development funds to develop green and low-carbon industries." Secondly, a diversified energy reserves system should be developed. Thus, it is recommended to stipulate that "the State should establish an energy project reserves system, optimize the reserves layout and structure of coal, oil, natural gas, electric power, new energy, and renewable energy, focus on the development of new energy and renewable energy reserves, and promote the diversification of energy reserves methods. The State should encourage key energy companies to improve their reserves capacity and steadily promote the construction of local reserves emergency response capacities." Thirdly, China's energy security heavily depends on the international market, so it is necessary to put energy security early warning system high on the agenda. Thus, it is recommended to stipulate that "the competent energy authority of the State Council should develop the energy security forecasting and early warning mechanism in line with fluctuations of both international

and domestic energy markets, and improve emergency response capabilities. The governments at or above the county level should strengthen energy security forecasting and early warning practices, and when needed, immediately provide forecasting and early warnings report on energy supply and demand, energy price fluctuations, and energy security risks." The chapter of international cooperation and climate change response should have clauses on domestic response to climate change, international cooperation subjects, energy development cooperation, energy trade cooperation, energy support cooperation, infrastructure cooperation, technology cooperation and transfer, information system construction, and education and training exchanges. The top priority of this chapter is the multiple players participating in national cooperation, and taking multi-dimensional measures to promote the realization of the domestic "carbon peaking and carbon neutrality goals." Therefore, it is recommended to stipulate that "the State should promote international cooperation in accordance with the requirements of the green and low-carbon development action targets, strengthen energy conservation and emissions reduction, control greenhouse gas emissions, promote climate change mitigation and adaptation, and prompt the realization of carbon peaking and carbon neutrality goals. China should strengthen cooperation with other countries and international organizations, and establish a long-term institutional partnership for environmental protection and climate change response. The State should guide local governments, enterprises, research institutions, and industry associations to participate in international cooperation projects on environmental protection and climate change response, and build a multi-field, multi-level international cooperation network."

Conclusion

Sustainable development needs the sustainability of economy, ecology and society, as well as the overall international and domestic development. The national development goals make it necessary to achieve the "carbon peaking and carbon neutrality" while building a Beautiful China. The prevailing legislation for ecological civilization construction favors a systematic integration of the green and low-carbon development. The above all determine that the Code of the New Era must include the "Green and Low-Carbon Development Part." The institutional cluster of green and low-carbon development should be constructed considering the following aspects:

Firstly, in terms of layout concept, we must respect and highlight the characteristics of this Part, maintain its relative independence, and promote communication and coordination with other parts, and remain moderate openness; abide by the laws of relevant processes of energy development and utilization, meet the inherent requirements of raw materials reduction, reuse and recycling.

Secondly, in terms of layout method, the basic principle is "general first, specific second; domestic first, international second; and defined first, undefined second," except

"decomposing the goals of carbon peaking and carbon neutrality" should be followed.

Thirdly, in terms of layout effect, the principle of "flexibility first and rigidity second" should be observed.

Fourthly, in terms of the specific institution design, chapters on general rules, cleaner production, green circulation, green consumption; support, supervision, international cooperation, and climate change, should ultimately respect those prevailing legislations, reinforce the strategies and standards for green and low-carbon development, and step up new legislations for green logistics, energy performance contracting, green finance, carbon emissions trading, and energy security early warning.