## Research on the Path to Achieve Carbon Peak in China—from the Dual Perspectives of International Law and Domestic Law

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Abstract: Due to the current imperfect international conventions and domestic laws and regulations on carbon emissions, insufficient utilization of international technology transfer, and insufficient cooperation between countries in addressing climate and environmental change, achieving carbon peak on schedule is still not an easy task. To this end, on the one hand, it is necessary to explore solutions from an international perspective, that is, to improve international conventions on the atmospheric environment, and to deepen international cooperation in addressing climate and environmental change with the concept of a community with a shared future for mankind; On the other hand, we need to start from our own country, improve the relevant legal system on atmospheric environmental pollution, utilize international technology transfer to research and develop clean technologies, and achieve high-quality development.

**Keywords:** climate environment; Carbon peaking; International technology transfer; international co-operation

#### 1. Question raising

On March 11, 2021, the Fourth Session of the 13th National People's Congress passed the "14th Five Year Plan" and the 2035 Long Range Goals Outline, proposing to actively respond to climate change and implement the national independent contribution goal of addressing climate change by 2030, emphasizing the need to incorporate carbon peaking into the overall plan for ecological civilization construction<sup>[1]</sup>.

Atmospheric environmental protection is an important component of international environmental protection, and all international legal entities are responsible for the global atmospheric environment. Currently, the global climate and environmental crisis has become a common problem faced by humanity, and more and more countries have realized the importance of protecting the climate and environment and promoting sustainable development. The carbon peak target proposed by China reflects that as a responsible world power, China has the courage to shoulder the responsibility of reducing its own carbon emissions and reducing global carbon emissions. Carbon peaking is a node deployment for addressing climate change, and the legal system for addressing climate change is a key component of the national climate change governance system. This article analyzes the domestic and international difficulties faced by achieving carbon peaking, explores the domestic and international paths to achieve carbon peaking, in order to achieve the carbon peaking goal as soon as possible and further enhance China's position and level in global climate governance.

#### 2. Shortcomings in global carbon peaking practices

#### 2.1. Lack of international legal basis

From the perspective of international conventions, relevant conventions lack binding enforcement procedures. For example, Article 8 of the Montreal Protocol stipulates the handling of non invitees, and non invitees should consider and adopt the non invitees and handling procedures at their first meeting. From this clause, it can be seen that the agreement only stipulates the review and approval of cases of non-compliance with the agreement, but does not specify the specific procedures for review and the corresponding handling results of the situation. Therefore, the content of this clause in the agreement still needs to be improved. For example, the United Nations Framework Convention on Climate

Change only stipulates that contracting parties should strive to comply with its provisions, and on the other hand, it only stipulates that contracting parties should provide information related to compliance, but there is no follow-up procedure for contracting parties not to comply with its provisions. In addition, Article 14 of the Convention only stipulates that when a dispute arises between the contracting parties due to the interpretation or application of this Convention, the dispute shall be resolved through negotiation or other peaceful means, and the legal consequences are not yet clear.

#### 2.2. Insufficient transfer of international advanced technology

Environmentally Sound Technology (EST) refers to technologies that are environmentally friendly and beneficial to the environment. In the long run, the international transfer of EST has significant implications for protecting the environment and addressing climate change. The international transfer methods of EST include the promotion of technology transfer by public power entities, namely the international technology transfer method of official assistance, as well as technology transfer under private economic activities, mainly through trade or direct investment in the host country.

At present, the difficulties faced by EST international transfer mainly include the following aspects. Firstly, the utilization of technology transfer in developing countries is not effective. Developed countries have sufficient human resources and high-end technological talents, and their citizens have relatively strong environmental awareness. On the contrary, the education level of citizens in developing countries is not high enough, and the importance of environmental protection technology needs to be strengthened. Therefore, the absorption of EST transferred from developed countries by developing countries is not sufficient.

Secondly, influenced by economic factors, the technology transferor considers factors such as transfer costs, intellectual property protection, and operating profits, while the technology transferee is constrained by factors such as transfer costs, government subsidies, and environmental benefits. Developing countries need to pay a huge cost to introduce EST, and the game of interests between both parties makes the international transfer effect of EST unclear.

Once again, constrained by intellectual property protection. Most ESTs, once produced, have applied for patents and are protected by TRIPs and domestic intellectual property laws, hindering technology transfer. The advanced clean technology used by developed countries has not been transferred to developing countries, making it difficult for other countries to learn and learn from it on a large scale, and EST has not achieved maximum global benefits. While protecting patent rights, TRIPs greatly expand patent rights, and patent holders exert pressure on the recipients of EST technology through their expansive rights, in order to obtain greater economic benefits. Article 30 of TRIPs provides for exceptions to the granting of patent rights<sup>[2]</sup>. The patentee holds a dominant position in the transfer process of EST technology, Due consideration is only given to the rights of third parties.

Finally, there is a lack of regulatory constraints on the international transfer of EST in relevant international conventions. In terms of specific provisions, Article 4 (3) of the United Nations Framework Convention on Climate Change (hereinafter referred to as the "Framework Convention") stipulates that developed countries referred to in Annex II shall provide funds for technology transfer to developing countries. Article 4 (5) of the Framework Convention stipulates that developed countries shall take feasible measures to promote the acquisition of EST technology by developing countries, as appropriate, while assisting developing countries in improving their EST innovation capabilities. It can be seen that the provisions of the Framework Convention on EST transfer are very general, only providing a conceptual guidance for EST transfer. The direction for "all feasible steps" and "discretionary promotion" is not clear, and there are serious flaws in the specific implementation rules. Article 10 (4) of the Paris Agreement states the establishment of a technical framework to achieve EST transfer. However, there are no specific implementation measures or related guarantee systems specified. In summary, the international conventions on EST transfer have vague provisions on relevant concepts, unclear obligations for developed countries, and weak provisions on the performance of contracting parties, which have not fundamentally solved the problem of EST transfer.

# 2.3. There are constraints in international cooperation to address global climate and environmental change

Currently, there is still significant room for improvement in international cooperation in addressing climate change. Firstly, objectively speaking, atmospheric environmental governance involves a series of complex factors such as politics, economy, culture, and nature. In the process of promoting

governance, it also involves the interests of different international legal entities. International cooperation in climate governance is not yet sufficient.

Secondly, the contradictions between developed and developing countries constrain international cooperation in addressing climate and environmental change issues. Developed countries have more advanced technology, abundant funds, higher international status, and more international discourse power than developing countries. However, developing countries do not have a firm voice in the international arena due to their relatively low level of economic development and immature technology. Under this contradiction, some developed countries will use their international advantages to compete for more international interests with developing countries, greatly hindering countries around the world from working together to address global climate issues.

Finally, the contradiction between the overall interests of the international community and the interests of sovereign countries is the main obstacle to international environmental cooperation. China shares a common destiny with other countries around the world, and the actions and consequences of one or more countries will affect other countries around the world. However, some subjects of international law disregard the common destiny of all humanity and adhere to the narrow concept of prioritizing national and national interests, which hinders international environmental cooperation. Therefore, each country should clarify that mutual benefit and win-win situation is the direction of future international community development. Each country should uphold the concept of common development for all mankind, take a long-term development perspective, and achieve their own development in the process of practical global environmental cooperation.

#### 3. Shortcomings in China's carbon peaking practice

China is a major carbon emitter in the world, with an imbalanced domestic energy share, insufficient energy utilization, and an urgent need to adjust its industrial structure. In order to achieve the carbon peak target as scheduled and make greater contributions to global carbon emissions reduction, China has announced new national independent contribution goals and long-term vision to the world. Faced with the severe challenges of tight time and heavy tasks, China needs to achieve even more arduous goals in a shorter time than developed countries, which undoubtedly poses a great challenge to China's climate governance capabilities. China still has a long and arduous road to achieve carbon peak before 2030, and there are still a series of major challenges in addressing climate change.

#### 3.1. There are deficiencies in environmental laws in China

Since the entry into force of the United Nations Framework Convention on Climate Change, on the one hand, China has efficiently implemented the Convention and promoted the formation of a new pattern of global climate change governance. On the other hand, China is promoting the development and improvement of climate change related laws through legal reform on the basis of domestic legal construction. At present, a legal framework for carbon peak protection, guided by the Constitution and supported by environmental protection laws, energy laws, and related laws, has been preliminarily formed<sup>[3]</sup>. However, there are still many limitations in China's existing laws on carbon peaking and air pollution.

Firstly, the legal regulations on carbon emissions in China are insufficient. Due to the fact that the development of laws often lags behind the development of society, the goal of carbon peaking is not reflected in the legislative purposes of relevant environmental laws, and there are no specific institutional rules for implementing carbon peaking in various laws. There is no direct legislation at the national level in China to address carbon emissions. The legal forms include the Renewable Resources Law of the People's Republic of China, the Clean Production Promotion Law of the People's Republic of China, the People's Republic of China, the Energy Conservation Law of the People's Republic of China (hereinafter referred to as the "Air Pollution Prevention and Control Law"), the Management Measures for Carbon Emission Trading (Trial), and the Management Measures for Energy Conservation and Low Carbon Product Certification. In terms of controlling greenhouse gases, China can only indirectly control them in accordance with Article 2 (2) of the Air Pollution Prevention and Control Law, which states that "collaborative control of atmospheric pollutants and greenhouse gases" can be implemented.

Secondly, the relevant legal principles are prominent, the specific application rules are missing, and the law in the field of law enforcement is too principled. Article 26 of the Constitution stipulates the

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prevention and control of pollution; Article 89 stipulates that the state shall lead and manage the construction of ecological civilization; Article 32 of the Environmental Protection Law of the People's Republic of China stipulates that the state strengthens atmospheric protection, establishes and improves corresponding investigation, monitoring, evaluation, and restoration systems. From the above legal provisions, it can be seen that there is currently a lack of specific provisions on air pollution in China's laws, and there is a lack of mandatory legal penalties for acts that violate legal provisions and damage the climate environment. Even though Article 99 of the Air Pollution Prevention and Control Law stipulates the legal consequences of air pollution, the effectiveness of the law will be greatly reduced due to the lack of supporting legal infrastructure and relevant implementation rules. For example, in practice, it may be difficult to investigate and collect evidence on pollution behavior, there are fewer institutions for identifying pollutants, and the time and cost of identifying pollutants are longer. Therefore, there is still a lack of law enforcement efforts to investigate the polluters. The lack of applicable rules for these laws limits the functioning and implementation of environmental protection laws in achieving carbon peak goals. In addition, in terms of law enforcement supervision in response to climate change, there are still issues such as insufficient regulatory efforts, loose regulatory measures, and poor regulatory effectiveness in terms of the professional abilities of law enforcement personnel, law enforcement monitoring facilities and methods<sup>[4]</sup>.

#### 3.2. Insufficient utilization of international advanced technology in China

Since ancient times, there has been a cross-border flow of technology, such as the spread of Chinese gunpowder, papermaking, and compass to European countries, and the achievements of the industrial revolution in European countries have also spread to China. Civilization is precisely through communication and mutual learning that it can be exchanged and inherited. In the late 19th and early 20th centuries, Western countries established a system for protecting intellectual property rights and produced a series of international conventions on intellectual property protection, such as the Paris Convention and the Berne Convention. After World War II, with the third technological revolution, international technology transfer developed rapidly and became an important force in promoting the development of international trade. In recent years, international technology transfer has mainly focused on high-tech and some medium to high tech industries. In the process of China's transition from manufacturing to intelligent manufacturing, traditional labor factors are no longer able to meet China's current development speed. In addition, the upgrading of industrial structure and the demand for high-quality development have led to a significant increase in China's demand for advanced clean technology. However, China's current technological supply is insufficient and needs to rely on foreign technology to support its domestic economic development. Under the goal of achieving carbon peak, we should utilize international technology transfer to develop environmentally friendly technologies, and improve the climate and environment through the use of environmentally friendly technologies.

#### 4. The specific path to achieve carbon peaking

#### 4.1. Improving the International Convention on Atmospheric Environment Protection

From the United Nations Framework Convention on Climate Change to the Kyoto Protocol, to the Copenhagen and Paris agreements, the international community is constantly exploring new solutions to address global environmental change. However, due to the limited scope of the main body of treaties and agreements, and the fact that treaty agreements do not regulate the failure of member states to fulfill their obligations, the actual operability of established treaties is not strong. A large number of international norms, due to the lack of substantive binding mechanisms, have deficiencies in responsibility assumption and specific implementation issues, and have not played their due role.

In terms of responsibility assumption, the internal relationship between national sovereignty and international responsibility should be balanced. Based on the equality of international law subjects, international law subjects may refuse to assume international responsibility on the grounds of national sovereignty equality. To this end, it is necessary to clarify that the legal responsibility undertaken does not involve national sovereignty. The purpose of binding the obligation subject can be achieved by requiring the international law subject that violates the obligation to rectify within a specified time limit. It is also possible to consider transferring a portion of the benefits obtained by the country that violates international climate and environmental law to the injured country or stakeholders to achieve the purpose of binding the obligation subject, Only with relatively clear legal consequences as the backing to ensure compliance with the law can the law have vitality and enforcement.

In addition, the environmental governance mechanism of the Paris Agreement can be absorbed by relevant conventions. The transformation from the Kyoto Protocol to the Paris Agreement is a transformation of the global environmental governance model. The Paris Agreement changed the mandatory emission reduction provisions of the Kyoto Protocol for developed countries, abandoning the historical burden of developed countries. Under the framework of the Paris Agreement, every country has the obligation to reduce emissions, and each member country needs to contribute to global emissions reduction. The Paris Agreement emphasizes that countries around the world are in the same blue sky, and contracting parties should voluntarily reduce emissions based on their own development capabilities. The agreement advocates achieving global emission reduction goals through cooperation rather than punitive measures, and its implementation concept is the endogenous driving force for the development of contracting parties. With national autonomy and consciousness, it provides a continuous source of power for global emission reduction. The Paris Agreement adopts a hybrid governance mechanism that combines bottom-up and top-down approaches, and implements global greenhouse gas emissions reduction based on nationally owned contribution goals submitted by contracting parties at their discretion<sup>[5]</sup>. Moreover, Article 14 of the Paris Agreement establishes a regular review mechanism to ensure the effectiveness of the implementation of the Convention, which is an effective change that adapts to the development of the times. The governance model of this agreement can be referenced by other international conventions related to environmental governance, and other international conventions on climate governance can establish a flexible and binding governance mechanism based on respect for national sovereignty and equality.

#### 4.2. Improve international advanced technology transfer rules

Firstly, we call on the international community to exert international pressure on developed countries to fulfill their obligations under the Convention and take practical and feasible measures to help developing countries obtain and utilize EST, especially when developed countries make concessions in terms of technology transfer prices. When formulating international conventions, full consideration should be given to the alignment of government commitments with private interests, using international trade as a link, and constraining the commitments of developed country governments through international trade interests to be consistent with their domestic EST transfer behavior, in order to fulfill the obligations stipulated in international conventions<sup>[6]</sup>.

Secondly, it is necessary to address the issue of intellectual property protection in international technology transfer and provide a stable legal environment for technology transfer. On the one hand, international technology transfer will promote intellectual property protection. In order to benefit from international technology transfer, countries will sign some international intellectual property protection conventions, providing guarantees for technology transfer and providing reassurance to technology holders. With the advancement of technology, the demand for international technology transfer is also increasing, resulting in the emergence of more and more international intellectual property conventions, and the scope of intellectual property protection is also becoming wider and wider. On the other hand, international protection of intellectual property rights also contributes to the transfer of international technology. The signing of the International transfer of technology. Countries can benefit from the signing of the International transfer of technology. Countries can benefit from the signing of the International transfer of technology. Countries can benefit from the signing of the International transfer of technology. Technology transfer from the international transfer of technology. Technology transfer for the international transfer of technology. Countries can benefit from the signing of the International transfer of technology. Countries can benefit from the signing of the International Convention on Intellectual Property Rights, and governments and multinational corporations are more actively participating in the international technology transfer process.

#### 4.3. China's response to achieving carbon peak

## 4.3.1. Adhere to the concept of "community with a shared future for mankind" and "sustainable development"

China has always adhered to the "community with a shared future for mankind", explored and promoted the construction of the green "the Belt and Road", constantly strengthened the connection between relevant domestic laws and regulations and international advanced standards, and promoted the greening of the domestic cycle <sup>[7]</sup>. The Chinese government is continuously committed to global climate cooperation, practicing the principles of "consultation, co construction, and sharing", and achieving mutual benefit and win-win situation between China and countries around the world. In order to make the concept of a community with a shared future for mankind recognized and practiced by more countries around the world, we will promote the concept of a community with a shared future for mankind through the international platform independently built by China, the proposed China plan, and

## the public products provided, showcasing its rich connotations and practical value to the world.

Sustainable development is the purpose of protecting the atmospheric environment and achieving carbon peak, and the new development concept provides guidance for sustainable development. Sustainable development not only requires us to maintain intergenerational balance, but also to maintain balance between countries. If each country only considers short-term interests and sacrifices the atmospheric environment, this development is malignant, and the benefits of its development will ultimately be swallowed up by the cost of sacrificing the atmospheric environment. For global issues, humanity must work together to address them and engage in effective cooperation. The convergence and complementarity of national interests are the internal driving forces for promoting countries to respond to changes in the atmospheric environment, China needs to play an active leading role in promoting global climate security, and countries should also actively explore paths for international cooperation<sup>[9]</sup>.

#### 4.3.2. Collaborative promotion at the domestic legal level

Firstly, in terms of legislation, from a legally binding perspective, we need to address the deficiencies in the basic rules for the synergistic effect of air pollution and carbon reduction. The second is to incorporate carbon peaking into the environmental protection and energy legal systems. Taking carbon peaking as the legislative purpose, we will improve legislation on energy conservation, emission reduction, and renewable energy, laying a legal foundation for adjusting China's energy structure and promoting innovation, coordination, and green development. The third is to highlight or add institutional rules related to carbon peaking in other departmental laws, and incorporate the goal of carbon peaking in laws such as the Finance and Taxation Law and the Financial Law. For example, the green principle in the Civil Code states that when the civil activities of civil subjects cause damage to the climate and environment, judicial authorities should issue judicial interpretations to coordinate conflicts between the Civil Code and relevant environmental laws. Fourthly, it is necessary to explore soft methods for addressing climate change. Although soft law does not have mandatory legal binding force, it has de facto binding force on the behavior of social subjects and is a type of law that plays a practical binding role in a society<sup>[10]</sup>. In order to achieve the carbon peak goal on schedule, we need to start with specialized laws to improve it, and also strengthen the social governance effectiveness of soft laws. The two work together to inject strong impetus into the realization of the carbon peak goal.

Secondly, in terms of law enforcement, it is necessary to clarify the authority and responsibilities of law enforcement entities in responding to climate change and air pollution, and ensure that whoever enforces the law bears the responsibility. The subject, procedures, and measures of law enforcement must be statutory. In the process of law enforcement, it is necessary to clearly define the measures that administrative law enforcement agencies can take in response to illegal pollution discharge behavior. The handling decisions in law enforcement must be supported by complete evidence, and the severity of the law enforcement handling results must be adapted to the behavior that damages the climate environment. The law enforcement objects have legal channels for relief after the event.

Once again, in the field of justice, it is necessary to play the role of pre prevention and post protection of justice, improve the value of judicial prevention towards carbon peak, and adopt preventive public interest litigation<sup>[11]</sup>. Traditionally, justice is the last line of defense to safeguard environmental interests. However, in order to achieve the carbon peak goal at this stage, we still need to leverage the pre emptive value of justice. According to legal regulations, public interest litigation can be initiated against "environmental pollution and ecological destruction behaviors that pose a significant risk of damaging social and public interests", which clarifies the legitimacy of preventive environmental public interest litigation. When there is a "significant risk", preventive environmental public interest litigation procedures will be initiated. A question arises here, what is' significant risk '? For this crucial issue, in judicial practice, specialized internal institutions should be established within courts at all levels to unify the concept. When the judiciary plays a protective role in achieving carbon peak, the Supreme Court can regularly issue guidance cases and judicial interpretations on carbon emissions, providing judicial guidance for courts at all levels to hear cases of climate and environmental pollution, and leading judicial fairness.

Finally, in terms of compliance with the law, enterprises, public welfare organizations, social organizations, and individual citizens all bear the responsibility of environmental protection. Enterprises should establish the concept of low-carbon operation, research and use low-carbon environmental protection technologies, and promote the transformation and upgrading of industrial structure. Environmental public welfare organizations can also promote low-carbon concepts through organizing public welfare activities while filing public interest lawsuits related to carbon emissions.

Social organizations can choose to incentivize social entities to practice low-carbon environmental protection concepts through incentives. For citizens, it is necessary to strengthen their participation in the process of achieving carbon peak goals. On the one hand, individual citizens should establish a green and low-carbon concept, understand the harm of carbon emissions to the climate and environment, and choose the most environmentally friendly and low-carbon way of travel and lifestyle. At the same time, we will strengthen supervision over violations of climate and environmental laws, accelerate the formation of a social atmosphere that honors the protection of the climate and environment, and shamelessly damages the atmospheric environment. We will work together with social entities to achieve the carbon peak goal.

#### 4.3.3. Strengthen the development of clean technology

In terms of innovation in clean technology, both the government and enterprises should take corresponding responsibilities. The government should make a difference in technological innovation by implementing multiple incentive policies to stimulate the vitality of enterprise technological innovation, such as tax incentives, subsidies for the cost and expenses of enterprise technological research and development through property allocation, and so on. When necessary, the government can also collaborate with enterprises to complete technology research and development, exerting the government's driving role in technological innovation. Appropriate government intervention can help compensate for the shortcomings of traditional technology led market size. Government intervention can improve the efficiency of technology use, unleash greater market value of technology, expand energy output, and reduce carbon emissions and energy consumption. The effectiveness of government policies lies in forcing producers to use advanced technologies by increasing the production costs of traditional production technologies, thereby increasing the scale of new technologies in the market<sup>[12]</sup>. The government should implement multiple measures to achieve precise pollution control, scientific pollution control, and legal pollution control. Enterprises should also break through the shackles of outdated technology, explore advanced technologies, increase investment in technology research and development, and attract high-end talents to participate in the research and development of advanced technologies. In the future, the energy revolution can be integrated with digital technology, with renewable energy as the fulcrum, and new energy technologies can be vigorously developed. The current technological development is showing an international trend. China must abandon the development concept of building behind closed doors, keep up with the trend of the times, seize the opportunities of the times, and actively promote the integration of resources in various links of the technological innovation chain on a global scale<sup>[13]</sup>.

#### 5. Conclusion

Addressing climate change is related to the sustainable development of humanity, which is not only the responsibility of China as a responsible major country, but also the challenge that China needs to address to achieve its own sustainable development. In order to achieve the carbon peak climate change goal, China needs to face challenges and continuously enhance its ability to respond to climate change. By improving domestic and international regulations and utilizing international technology transfer rules, China needs to achieve the carbon peak goal on schedule. At the same time, climate and environmental change are also global issues that concern the common destiny of all humanity. Therefore, China needs to shoulder the responsibility of achieving carbon peak with other countries around the world, strengthen the awareness of a community with a shared future for mankind, strengthen international cooperation, and make significant contributions to building a clean and beautiful world.

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