

Study on current situation and Policy of Building energy conservation in Henan Province

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Abstract: Chinese building energy consumption accounts for more than one-third of the whole society can, whether it is a building energy consumption in the whole energy consumption accounted for the fact that more and more, and compared with the developed countries, building the current situation of higher consumption, serious, have prompted China and henan province needs analysis domestic and foreign construction energy conservation and environment, realize the advantages and disadvantages and building energy conservation in henan province in China, as relevant policy reference.

Keywords: Government; Building energy conservation; Measures; Henan province

1. Introduction

According to statistics, building energy consumption now accounts for about 25% of the total energy consumption, and with the continuous improvement of people's life quality, this proportion will continue to increase. It can be seen that building energy conservation has a huge impact on the whole work of energy conservation and emission reduction, and even the smooth implementation of building energy conservation will directly affect the success or failure of the whole work of energy conservation and emission reduction. The work of building energy conservation in China has been carried out for more than 30 years, but it is still in its infancy. The enthusiasm of all parties involved is not high, and the energy conservation effect is not significant, which is the most significant feature at this stage. At the government level, as a leader in building energy conservation, it is of profound theoretical significance and practical value to start with policy measures to stimulate the vitality of building energy conservation and guide the in-depth and orderly development of energy conservation.

2. Research on the current situation of building energy conservation at home and abroad and in Henan Province

2.1 Current situation of building energy conservation in foreign countries

In Europe and the United States and other developed countries, "energy conservation" is known as coal, oil, natural gas, nuclear energy in addition to the fifth. These countries have always attached great importance to energy conservation and combined energy conservation with development and efficient utilization, thus achieving good social effect and economic value. As an important part of energy conservation -- building energy conservation, western developed countries also take the lead in the world, and their energy conservation theory and practice have a lot to learn for us. As early as the 1970s, western countries put forward the idea of reducing energy consumption. They advocated reducing excessive energy consumption in building materials, heating and keeping warm, etc. In the 1990s, the reduction of energy consumption was revised to improve energy efficiency, such as the introduction of insulation materials on building walls and the use of water-saving sanitary appliances.

In the new century, the western developed countries have put forward the advanced energy-saving concept of zero carbon dioxide emission.

In Europe, America and other developed countries, building energy conservation has gradually evolved from the initial advocacy to the mandatory promotion by the government. However, it is later found that it is difficult to deepen the sustainable development of building energy conservation by relying solely on government decrees and regulations. At present, they typically through the propaganda launch, build the public opinion atmosphere of the whole people to participate in an energy conservation, advocating people and related enterprises to participate in energy conservation work, using the policies and regulations to implement the building energy efficiency at the same time, actively through tax breaks, subsidized loans, capital support and other means to encourage section construction work in the direction of further sustainable development. If the Japanese government buys energy saving appliances recognized by the government and uses them for more than one year, it can apply for the refund of the relevant tax paid to the government. In terms of encouraging energy-saving renovation of existing buildings, the Dutch government has issued a catalogue of preferential tax rates applicable to building energy-saving renovation to guide the public and enterprises to take the use of building energy-saving products as an important reference. The United States has implemented a tax reduction policy for new energy-efficient buildings. For new buildings with energy conservation of more than 30% and 50% based on THE IECC standard, taxes and fees can be reduced by 1,000 US dollars and 2,000 US dollars respectively. The EU has proposed normative fiscal and tax policies, including energy taxes, tax breaks, subsidies and investment bank loans. These economic incentive mechanisms have effectively accelerated the pace of building energy conservation.

2.2 Current situation of Building energy conservation in China

At present, China has all kinds of completed buildings with a floor area of about 50 billion square meters, of which more than 90% are traditional buildings with high energy consumption or poor energy saving effect. It is expected that in the next five years, another 15 billion square meters of building volume will be added. According to statistics, at present, the energy consumption of existing buildings in China is 2 ~ 3 times that of developed countries due to the buildings themselves are not energy-saving or the energy-saving effect is poor. The energy consumption of buildings accounts for more than one third of the energy of the whole society, which is also significantly higher than the international average. Whether it is the fact that building energy consumption accounts for an increasing proportion in the overall energy consumption, or the fact that building consumption is seriously higher than that of developed countries, it urges China to analyze the building energy conservation environment at home and abroad, and recognize the advantages and disadvantages of building energy conservation in China, so as to serve as a reference for formulating relevant policies.

Although building energy conservation has been carried out in China for more than 30 years, little progress has been made. Most people have not taken the initiative to participate in the work of energy conservation, even the most basic awareness of energy conservation is very indifferent. The design, construction and supervision units of buildings are mostly forced to participate in building energy conservation, and their own enthusiasm is not high. Most of the government's policy making is also guided from the macro level, the implementation of the rules are often missing; At the same time, the government's means to carry out the building energy conservation work are mostly forced promotion, lack of incentive measures and other flexible means. Wang Guangxi, former minister of Housing and Urban-rural Development, once said: "I want to call out that all practitioners in the whole society, whether developers, construction units or supervisors, should take social responsibility and actively promote building energy conservation." Wang Guangxi said developers should

take responsibility for building energy efficiency, saying construction authorities will deal with construction projects that fail to meet energy efficiency standards in the future.

Some government officials believe that "a successful energy-saving project should be a combination of policies and mature energy-saving technologies". The technical application of building energy conservation has reached a very high level. The thermal insulation materials and construction technology of building exterior walls have been quite mature at present. The thermal insulation and sealing of doors and Windows are also much better than ten years ago; Energy-saving lamps and lanterns, hutch defends appliance also is every year ceaseless get rid of the stale and bring forth the new. But in contrast, such as energy saving policy is for many years to stay in place without too big change, these policies or in the interest of time already cannot adapt to the needs of the rapid social development, or broad empty without the possibility of actual operation, or appropriate incentives are not difficult to tune up the participant's positive initiative and creativity. Building energy efficiency is the government an important aspect to assume the function of managing public affairs, the government in addition to formulate relevant policies and regulations, and to provide information, standards, and technology promotion measures, still should further consider the long-term energy price policy, with the design of the consumption patterns of sustainable development and guidance, make the energy supply and demand and the management mechanism to merge. Should take promoting building energy efficiency technology as promoting construction industrial structure adjustment, reform and improve the opportunity of construction, to implement the compulsory civil building energy efficiency design standards as a breakthrough for the development of building system innovation, the energy conservation transformation of existing buildings as a form a distinctive style of the city an opportunity to establish an effective means of guidance, foster and standardize the market for building energy efficiency, to big to the entire building energy saving standards, whether small to doors, Windows and other products to achieve energy saving can tend to the required performance standards, there are standard.

2.3 Current situation of building energy conservation in Henan Province

Yin Hong, Governor of Henan Province, pointed out in the Government Work Report of Henan Province for the year 20203 that "we will vigorously promote the efficient use of resources. We will improve the green and circular economy system, actively promote the development of green industries such as clean environmental protection equipment and the recycling of waste resources, create a number of demonstration bases for energy conservation and environmental protection industries, and promote the recycling of all state-level development zones and more than 80 percent of provincial-level industrial clusters. We will promote energy conservation in public institutions." With the continuous deepening of the construction of resource-saving and environment-friendly society and the work of energy conservation and emission reduction in our province, the importance and urgency of building energy conservation and emission reduction will become increasingly prominent. There is no doubt that building energy conservation has become a key area of energy conservation and emission reduction. The completion of building energy conservation task is directly related to the realization of the overall task target of energy conservation and emission reduction in our province.

Although the work of building energy conservation and emission reduction in our province has been carried out for more than 20 years, the initiative of building energy conservation implementation is still weak today, and most of them are compulsory actions of the government. Among them, the unsmooth management system, the lack of comprehensive policy support system and the lack of coordination among all aspects of the government are the important reasons for the failure to activate the building energy saving market in our

province. In sharp contrast to the lackluster situation of the building energy saving market in our province, the work of building energy saving in developed countries and regions such as Europe, America and coastal areas of China is in full swing. Successful experience shows that the government in building energy saving field can make great achievements in many aspects. The provincial governments at all levels can make a breakthrough in the building energy conservation market in terms of policies and regulations, institutional setup and management, technological development, information transmission, and coordination ability of relevant units, so as to realize the great development of the building energy conservation industry in our province.

3. China's current building energy efficiency laws, standards and policies

China began to work on building energy conservation in the 1980s, and promulgated China's first building energy conservation standard in 1986, the Civil Building Energy Conservation Design Standard. After several years of practice and operation, the standard was revised in 1995. At the same time of revising the standard, China also issued the building energy saving Technology Policy, the Municipal Public Utilities energy saving Technology Policy and other building energy saving documents, which marked the comprehensive development of China's building energy saving work. The Energy Conservation Law of the People's Republic of China was adopted at the 28th Meeting of the Standing Committee of the Eighth National People's Congress on November 1, 1997, and went into effect on January 1, 1998. The law was amended in October 2007. Article 14 of the Law clearly states that energy conservation in buildings shall strictly comply with national, industrial and local standards. Article 34 to Article 40 clearly indicate the specific requirements and supervisory responsibilities for building energy conservation; Article 79 and Article 80 also specify the punishment measures for violation of building energy efficiency standards by relevant units. This indicates that the work of building energy conservation has risen to the legal level, and the promulgation and implementation of this law also lays a good foundation for the smooth development of building energy conservation. Then a few years the country and issued by the relevant technical standards, building energy saving, procedures and other documents: "civil building energy efficiency management regulations" (1998), "regulations of technology of both heating residential building energy-saving renovation" (2000), the hot summer and warm winter area residential building energy efficiency design standard "(2003)," public building energy efficiency design standard "(2005), China energy-saving technology policy outline (2007), the cold and cold area residential building energy efficiency design standard" (2010) and so on. This series of documents and policies are issued and implemented, marking that China's building energy conservation industry is moving towards maturity.

In 1986, after China's first building energy saving standard, The Civil Building Energy Saving Design Standard, the Ministry of Construction, together with other ministries and commissions, issued the Opinions on Accelerating the Renovation of Wall Materials and Promoting Energy Saving Buildings, which is equivalent to a refinement of the design standard and makes it operable. At the same time, the introduction of this opinion has greatly promoted the historic innovation of wall, which is the component with the most consumables and energy consumption. From the promotion of building wall demonstration projects in the 1990s to the nationwide ban on the widespread use of traditional sintered clay bricks in 2007, this opinion can be credited.

At the same time, in the past 30 years, China also has a number of energy conservation special plans, in which building energy conservation has been explicitly proposed for many times. For example, in 2012, The State Council issued the Development Plan for energy conservation and environmental protection Industry during the 12th Five-Year Plan period. In the special plan for building energy conservation during the 12th Five-year Plan period, a new target for building energy conservation during the 12th Five-year Plan period was proposed, namely, building energy conservation capacity of 116 million tons of standard coal by the end of the

12th Five-year Plan period. Among them, green buildings were developed, and energy conservation in new buildings was enhanced, resulting in an energy conservation capacity of 45 million tons of standard coal. We deepened reform of the heating supply system, introduced heating metering and charging fees across the board, and improved heating metering and energy conservation in existing buildings in northern heating areas, thus creating an energy conservation capacity of 27 million tons of standard coal. We strengthened the development of a supervision system for energy conservation in public buildings, and worked to improve and manage energy conservation to produce an energy conservation capacity of 14 million tons of standard coal. We will promote the integrated application of renewable energy and construction, creating a conventional energy replacement capacity of 30 million tons of standard coal. It can be seen that the national top management attaches great importance to the work of building energy consumption and conservation. The work objectives are clearly set and the focus and starting point of the work are also very clear. These laws, standards and policies will undoubtedly become the foundation and guarantee to guide the vertical and sustainable development of China's building energy conservation work.

4. Building energy Conservation laws and regulations of Henan Province

In June 2007, Henan Provincial government formulated the Implementation Plan for Energy Conservation and Emission Reduction of Henan Province. The most prominent feature of the plan is to promote energy conservation and emission reduction in key areas, key river basins, key industries and key enterprises according to the characteristics of "structural" high energy consumption. In addition, the plan clearly puts forward the goal and implementation path of building energy conservation: "To establish a building market access system with building energy efficiency evaluation and marking as the main content, and the energy conservation standards and measures adopted must be marked in the sales contract and other documents of new commercial housing. Buildings that fail to meet the design standards for energy consumption may not go through the formalities for the record of construction commencement and completion, and may not be sold or used. To organize the implementation of low energy consumption, green building demonstration project, expanding renewable energy sources such as wind, solar, geothermal energy utilization, promote the use of high efficiency and energy saving office and home appliances and high efficiency energy-saving lighting lamps and lanterns, push both heat metering and energy efficiency of residential buildings, large public buildings and government office building energy-saving reform pilot work. We will complete the task of regulating clay brick and tile kiln plants and banning the use of solid clay brick designated by the provincial government on schedule, and accelerate the promotion of new wall materials.

In March 2008, the Henan provincial government issued the "Provisions on implementing the Accountability System for Energy Conservation and Emission Reduction Targets" and the "One vote No" system, which stipulated that the achievement of energy consumption reduction and pollutant emission reduction in each region would be included in the comprehensive assessment system of economic and social development in each region.

In March 2010, the government of Henan province and introduced the energy saving measures for the administration of public institutions in Henan province, made clear that the people's government at various levels shall encourage public institutions in new buildings and energy saving renovation of existing buildings is using new wall materials and energy-saving building materials, energy saving equipment, installation and use of renewable energy sources such as solar energy utilization system.

In 2014, Henan Provincial Government issued the Measures of Henan Province for The Administration of Special Funds for Energy Conservation and Emission Reduction and Project Construction. The key support

scope of the special funds includes building energy conservation, prefabricated buildings and ultra-low-energy buildings.

The introduction of these policy measures has effectively ensured the smooth development of building energy conservation from the local government level, stimulated the initiative and enthusiasm of building energy conservation implementers, promoted the development of building energy conservation in Henan Province, and made positive contributions to the overall energy conservation and emission reduction in Henan Province.

5. Conclusion

At present, building energy conservation has become a key field of energy conservation and emission reduction work. The completion of building energy conservation task is directly related to the realization of the overall target of energy conservation and emission reduction. Although the work of building energy conservation is still in its infancy in China, there is still a long way to go for the work of building energy conservation in Henan Province, and many policy measures still need to be formulated and improved continuously. However, as long as the government actively participates in this work, the work of building energy conservation is bound to have a great breakthrough and development.

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